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THE PSYCHOLOGY OF
ABNORMAL PEOPLE

BY

JOHN J. MORGAN



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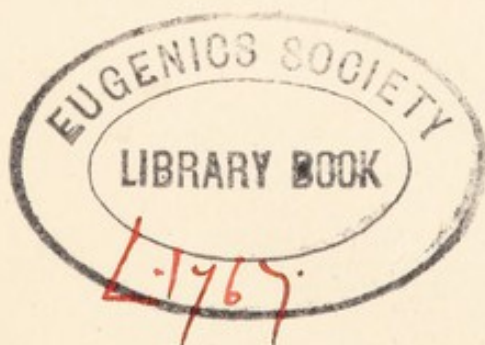


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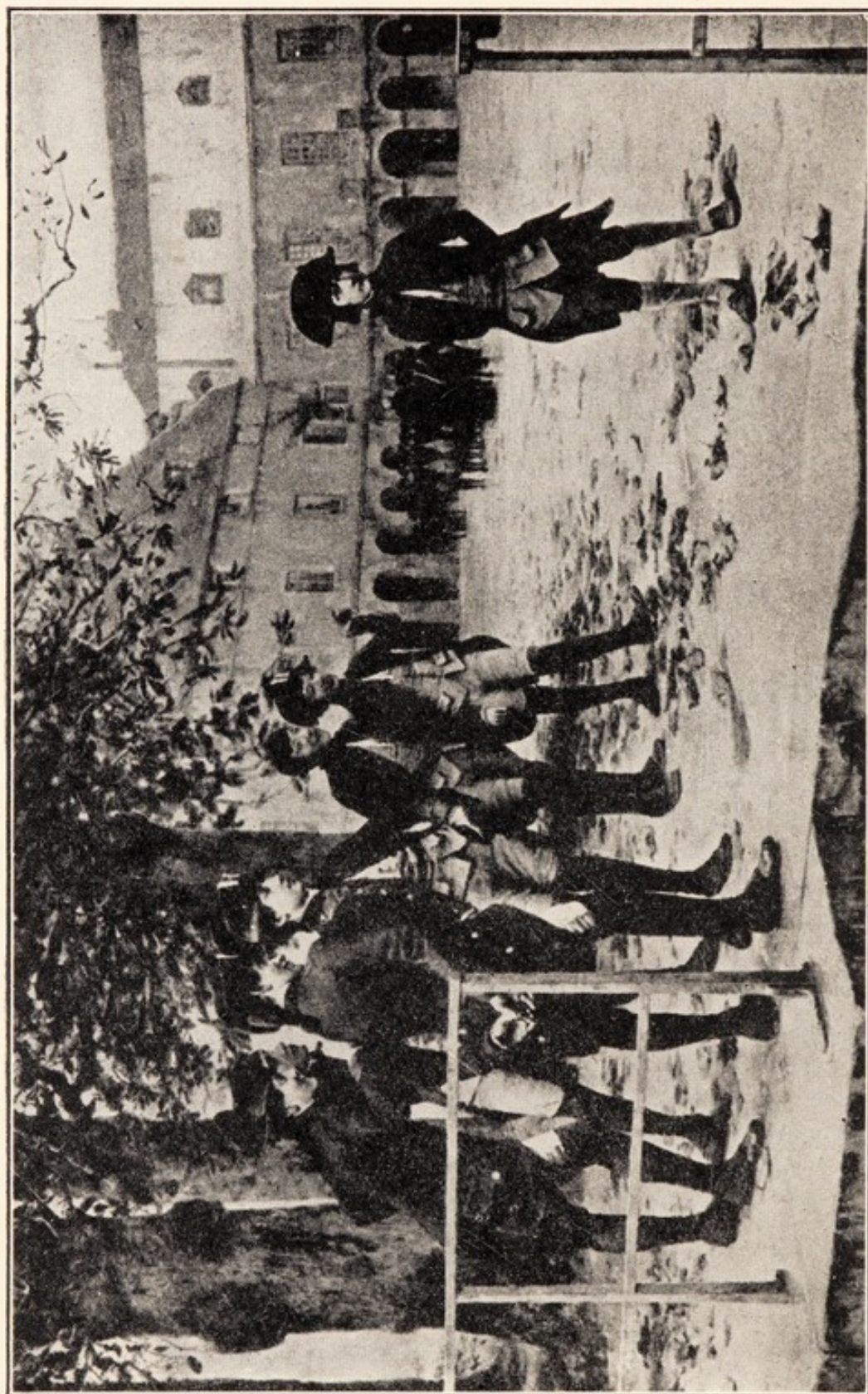
THE PSYCHOLOGY OF ABNORMAL
PEOPLE, With Educational Applications.
By JOHN J. B. MORGAN.

IN PREPARATION

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imental Research and Professor of Education,
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**THE PSYCHOLOGY OF
ABNORMAL PEOPLE
WITH EDUCATIONAL APPLICATIONS**



NAPOLEON AT SCHOOL

As a lad the future Emperor of the French was an object of amusement to his schoolmates. From the painting by Realier Dumas, in "The Book of Knowledge," by permission of the Grolier Society.

Longmans' Education Series

THE PSYCHOLOGY OF ABNORMAL PEOPLE

WITH EDUCATIONAL APPLICATIONS

BY

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PREFACE

OF all our possessions we value none more highly than our mental integrity. The esteem with which we view our mental achievements may carry with it a fear that something may happen to some of our mental processes. The greater the value of a possession the greater is our horror at the thought of losing it. A fear, thus engendered by high regard for mental excellence, may tend to make us close our eyes to the possibilities of mental disturbance and to ignore possible dangers. Too often people hold to the superstition that a consideration of a mental disturbance might produce a susceptibility to its ravages.

Such superstitious fear has been shown by modern research to be ridiculous. We can better order our mental lives when we see clearly the ways in which they operate, even if some of the operations we observe may turn out to be somewhat peculiar. In other words, mental health is furthered greatly by the frank study of mental abnormality.

A study of mental processes, both normal and abnormal, emphasizes the fact that the basic factor in their acquirement is learning. No matter how queer our personality may be, nor how well-balanced it may be, it is our training which has made it that way. Some accidental physical shock to our brains, or some disease, may produce aberrations, but these are in the minority in the general formation of mental attitudes. The major portion of our mental attainments comes through the process of education.

If we find that we have learned peculiar mental trends, the way to overcome them is naturally through the process of relearning. If we have learned to spell badly, we do not

correct such a defect by recalling the fact that we fell from a tree in childhood or by consulting a physician to examine our bodies—we take lessons in spelling. In like manner, if we have an abnormal fear, if we have false beliefs, or if we hate all our neighbors, we do not correct such conditions by blaming our defection upon some disorder of our stomach or heart, but by educating ourselves into a different attitude. A great part of mental hygiene is education.

Since the foundations of education are centered in childhood and youth, it follows that correct thinking and mental balance should be learned at these periods of life. When wrong attitudes and vicious mental habits are discovered it is usually found that they had their origin in the early life of the individual. The opportune time for guiding people into correct mental habits is in their early years rather than in adult life when the incorrect habits have become strongly entrenched. This means that the entire process of development must be understood by those who have children in their charge so that the first signs of incorrect thinking may be discovered and correct teaching given.

Every teacher should be familiar with the mental mechanisms herein discussed so as to guide her pupils into correct mental habits. Likewise every college student should become thoroughly familiar with the workings of the mind of the abnormal person as well as the processes which are considered more normal. Such an understanding will, without doubt, prepare him better to meet the problems of life.

The material in this book is the substance of a course given to college students. It represents those parts of the vast literature on this subject which the writer has found to fit best into the needs of the college student, supplemented with actual clinical case material.

We are deeply indebted to Professor Frederic B. Knight for his many excellent suggestions as to the presentation of the material, and to Miss Ruby Gerhardt for her help in the final shaping of the manuscript and the reading of the proof.

JOHN J. B. MORGAN

EDITOR'S INTRODUCTION

MODERN thought in psychology is contributing its fair share to the sum total of human happiness. One section of psychological thought and experimentation at the present time seems particularly fruitful. This section is directly concerned with an understanding of and attempts to gain control over those intricate and varied factors both within an individual and in the external environment which affect in serious ways the individual's personality and character. And here a study of the causes of breakdowns in personality and character formations is especially enlightening. An understanding of "errors," insight into the nature and causes of deformed or mutilated personalities, a grasp of the psychology of misbehaviors of varying degrees of severity and of different types add greatly to a genuine and useful knowledge of human nature itself. In other words, a study of abnormal psychology (the futile, the wrong, and the inadequate) contributes to a dynamic understanding of normal behavior (the successful, the right, and the adequate).

The purpose of Professor Morgan's book is to aid the reader to an understanding of the more common weaknesses in human nature to the end that character and personality deformities may be avoided. This understanding, it is hoped, will be used by the reader both in his own self-management and in his management of others. Obviously the content of Professor Morgan's book is of prime importance for teachers. The general student of psychology as well as the intellectually competent among business men, lawyers, social workers, and parents will find this book well worth their openminded study and meditation.

F. B. KNIGHT

CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
II. DISORDERS OF SENSATION	33
III. DISORDERS OF PERCEPTION	69
IV. DISORDERS OF ASSOCIATION	109
V. DELUSIONS	151
VI. ABNORMALITIES OF MEMORY	181
VII. EMOTIONAL DISORDERS	223
VIII. MOTOR DISORDERS	268
IX. ABNORMALITIES OF INTELLIGENCE	310
X. PERSONALITY	349
XI. SLEEP AND DREAMS	394
XII. SUGGESTION AND HYPNOSIS	430
XIII. HYSTERIA	472
XIV. DISORDERS OF REGRESSION	506
XV. COMPENSATORY DISORDERS	534
XVI. EPISODIC DISORDERS	565
XVII. MENTAL HYGIENE	593
INDEX	617

THE PSYCHOLOGY OF ABNORMAL PEOPLE

CHAPTER I

INTRODUCTION

In this chapter we shall find that the normal person is the one who keeps his balance while adjusting to difficulties of different levels of complexity. From a survey of the ways in which abnormal persons have been treated in the past we shall learn to adopt a more rational attitude than that held by our forefathers. We should learn how to apply scientific methods to the study of the problems of mental abnormality which have in the past been so perplexing. We shall discover the great social and individual importance of a study of abnormal individuals and gain a viewpoint which will enable us to benefit personally from our study.

1. A specific instance of character breakdown. Recently the writer was asked for assistance by a man of about thirty-five years of age who spoke about himself in the most disparaging terms. He stated that he was a good-for-nothing drunkard, that he had made a wreck of his life, that he was shaking the foundations from his home and about to be deserted by his wife, that he should be hanged if he got what he deserved, that he was not fit to associate with his one-year-old daughter, and that he was certain that he was going crazy. He had taken different alcoholic cures, he had been given the

2 THE PSYCHOLOGY OF ABNORMAL PEOPLE

strongest incentives to remain sober but he had not done so. He felt sure that his case was hopeless.

This man's trouble could be traced to an unfortunate combination of home and school conditions. His father, being suspicious that others were trying to obtain his wealth by tricky methods, was inclined to hate everybody, and had taught his boy to distrust others. Consequently, as the boy progressed through the grades and high school he had fewer and fewer friends, until finally he found himself unsought and friendless when a freshman student in an exclusive college.

At the beginning of his second year he began to realize his condition and determined that he would make friends with the other students. He was so zealous in his endeavors that by his senior year he had become president of his class and captain of the college football team. Even while condemning himself as a drunkard his face lighted up as he told of his success in making friends in college.

Unfortunately his head was turned by his overdone zeal and his apparent success and he went too far. He was the leader in all the pranks as well as in sports and social affairs with the final result that he was caught with some of his comrades in a drinking bout. In spite of the protests of his father he was expelled in disgrace and not permitted to be graduated. Feeling that he had wrecked everything, he went off into lumber camps and became a wanderer for ten years. He had a temporary lapse from his vagabondage when he fell in love with a charming girl and, promising himself and her that he would forego his wild life, was married.

His good resolutions lasted for some time. Eventually, however, he found that he longed for the "wild and rough life" while his wife wanted him to "dress" and attend social functions. Contention over this issue was the immediate cause of his latest drinking and led to the extreme remorse for his defection.

In the story of this man there are enough factors in evidence to indicate that a large part of his trouble grew out of an inability to adjust to various difficult situations. The im-

portant problem is to analyze the adjustment failure rather than to assign a diagnostic name. Misbehavior problems in school are not solved by telling the pupil that he is bad; neither are adjustment problems solved by assigning names to them. It would do no good to say that this man was insane, that he was psychopathic or that he was a chronic alcoholic. Our problem is to discover why he failed to adjust.

2. Some questions. How many queries arise from the review of such a story? Did he inherit a tendency to drink? Did he inherit his suspicious tendency from his father or did he learn it from him? What part did his attempt to become a social favorite play in his trouble? What would have happened if he had not been expelled from college? Why was not his love for his family strong enough to overcome his drinking tendencies? Was the drink the largest contributor to his downfall or was it just an incident? Can anything be done for him at this late date? What might have been done had he come for help earlier? Certainly such a career involves a multiplicity of interacting conditions. To understand life our viewpoint must be comprehensive enough to give due weight to all the factors involved.

3. Living is adjusting. Life brings keen enjoyment to all of us, but even enjoyment has to be earned. We soon learn that life is, from the beginning to the end, a struggle, a fight to exist in the face of circumstances designed to crush. Few of us go through this struggle unscathed. Some meet the simpler contingencies only to succumb when the situation becomes more complicated. Some are able to keep the major part of their personalities intact, but show the marks of the conflicts that they have encountered. No two persons meet a difficulty with the same reactions and the effects of an encounter are different with different persons. Some adjust easily, while others seem to have an especially hard time in meeting life's exigencies.

Throughout this struggle and turmoil if an individual is able to take care of himself and fill a niche in society he is considered normal. If he cannot integrate his varying experi-

ences into a coördinated whole, or if he cannot satisfactorily adjust his life to the lives of others he gets into varying degrees and different kinds of difficulties.

4. Purpose of this book. The primary object of this book is to point out the principles of successful adaptation to the varying phases of life. Faulty adjustments may begin very early; they may become habits if not checked in time and the child may develop into an abnormal adult simply because his teachers did not know enough about human nature to recognize the significance of his minor peculiarities, nor how to correct them if, by chance, they did notice them.

Abnormal psychology has usually been regarded as an abstruse subject devoid of human interest, a subject of value only to medical students. Modern investigations point more and more to the conclusion that many mental disorders are educational rather than medical problems. Mental health depends upon the child's learning to adopt correct attitudes toward life: to adjust to the manifold social situations and to meet the varying conditions of life with a point of view that will lead to mental health rather than to worry, irritability, subterfuges and the other compromises which often result in actual mental ill-health.

The teacher needs to know the principles we intend to expound in this book so that he or she may direct the pupils in the ways of mental health and happiness. The student preparing to meet life needs to know how to order his entire mental life in a proper manner. Indeed, any one at all concerned with human problems should gain valuable insight through a study of abnormal psychology when it is presented as a phase of human education rather than as a dry enumeration of vague symptoms.

This book is built upon the theory that the school should teach the student mental balance as well as give him intellectual training. A true conception of mental balance comes from a study of those who to some extent have failed. We are going to study not a few human curios, but rather how to order our own lives in a better fashion.

I. LEVELS OF ADJUSTMENT

For allies in his contest for existence man has a wonderful system of adjusting mechanisms. These are so complex that it is most difficult to classify them. For the sake of clearness we have chosen to subdivide them on the basis of complexity, beginning with the simplest, most elementary type. While such a division cannot be found to exist in concrete form, it will serve to show the importance of mental adjustments as compared with other forms.

5. Physical adjustments. The simplest and most fundamental adjustments are physical adjustments. Every organism, both human and animal, has to learn to move his muscles. These muscles act as forces which actuate his bony mechanism, and which are, as we know from our study of physiology, a system of levers. If a bone breaks, the lever is incapacitated. Every person has to adjust to contacts with other physical objects. If he gets in front of a moving car he may be physically injured thereby. He may be killed by a bomb, may fall from a precipice or be the victim of other similar physical injuries. Disability or death as a result of circumstances of this sort is due to the failure to adjust ourselves to things about us on the physical level.

6. Chemical adjustments. Next in order come the chemical adjustments. The chemical processes going on in the human body are numerous and complex. First in importance are the digestive processes. Here the various classes of food-stuffs, under the influence of the digestive juices, are transformed into more or less soluble products adapted for absorption. Oxidation is the principal method by which the organic tissues are broken down, thereby furnishing the organism with energy to maintain its vital functions. The efficient liberation of energy in the body is dependent upon the proper functioning of the digestive apparatus; the efficiency of circulation; and the proper working of the excretory apparatus—the skin, lungs and kidneys. Failure on the chemical level may be a gross failure due to such a violent disturbance as

being gassed or being poisoned by some toxin taken from without the body or produced within; or it may be due to a more subtle condition such as a minor change in some of the chemical reactions of the body.

7. Neural adjustments. The nervous system furnishes the basis for the coördination of all the various parts of the human being both in their relations to each other and in relation to conditions in the environment. In an organism as complex as the human body the value of neural integration attains a high rank. Failure here may be local and cause a breakdown of some specific function or it may be widespread and lead to a failure in the coöperation of the various parts. Neural adjustments may be disturbed by a failure on the physical and chemical levels of the organism. A blow on the head may cause nervous injury, or a poison may cause neural disintegration. But neural failure does not depend solely upon physical or chemical injury. For example, a person may stammer because he has an impulse to say two different things at the same time. In such a case there is nothing wrong with the nervous tissue, it simply is not working in harmony.

8. Social adjustments. Most important of all is the necessity for adjustment to society. Can the individual get along with other members of his family, with his school or business associates, and with those whom he meets casually? Is he loved and respected by others or do they shun him? Is he contributing to the advance of society or is his influence a pernicious one? Is he a criminal, a liar, or a recluse? Is he happy when with others or is social contact painful? When he achieves something worth while do others gladly give him credit or do they discredit his work because of his unwholesome personality? These questions and many others that might be asked indicate the importance of adjusting in relation to others. One might live as an organism and be a total failure socially. For man this highest level is essential if he is to be a complete man. It is possible for a human being merely to vegetate, to grow as a plant does, but he must do more than avoid physical breakdown, chemical deterioration,

or neural disintegration—he must adjust socially if he is to be considered successful as a human being.

9. Difficulties of adjustment will be studied. Our study will emphasize consideration of those persons who have difficulty in adjusting on the two higher levels. To attempt to confine our study to failures on the neural level would be to evade and ignore social factors which inevitably have a determining influence on the mental life of the individual. The manner in which this determining influence operates we shall see as we proceed. It simply needs to be pointed out here that our study is of man as a social being, a human organism living in a society. His adaptation is not an adaptation to his own existence but to his existence in relation to others.

The subject of our study will then be “men, women and children in difficulty, suffering, hoping, thwarted, groping.” But to suffer, hope, grope and be thwarted is not a sign of mental disease, it is just what we are all doing each day of our lives. We want to know how to attain those factors of character and personality which will lead us, as individuals, to live happily adjusted to the lives of others. Hence our study is not of weird, morbid things but of life itself. It is not a study of those we find stowed away behind bars in our state institutions. It is a study of the individual differences that we find in the seething masses of humanity who swarm our city streets, who till our fields, who are teaching and studying in our educational institutions, who are in our shops, in professions, and in pleasure resorts. It is a study of ourselves.

II. CRITERIA OF NORMALITY

Now that we have in mind the fact that life is adjusting and that adjustments are of several types, such as physical, chemical, neural and social, let us take up a second fundamental consideration. We wish to know the general specifications for good adjustments, in contrast to those for poor adjustments. We wish to answer the question, “What do we mean by normal?” There are several meanings that should be distinguished.

10. The normative view. According to this view normal is an authoritative standard. It is an ideal as nearly perfect as one can conceive, hard to attain and worthy of the mightiest efforts to achieve. This is not the conception that we use in the study of psychology. We have no mental standards to set up, no combination of personality traits that we hold out as an ideal to which we might urge readers to conform. Nevertheless, this normative view has its place. For example, in the realm of morals it is customary to construct an ideal toward which to strive. But however valuable this may be, the psychologist does not occupy himself with the establishment of norms in this sense.

11. Pathological view. According to this second view any one is normal who has no unusual condition serious enough to be considered morbid. Normal vision, from this point of view, is vision that does not seriously impair our ability to see; a normal stomach is one that is not diseased. This is just the converse of the normative view. As the latter selects a few individuals at the extreme of perfection and calls them normal so the pathological view selects a few at the extreme of imperfection and calls them abnormal. Medicine is the field wherein the pathological norm reigns supreme.

12. The statistical norm. The normal person, statistically, is the one who is near the central tendency of a typical group of individuals. This is used in connection with such characteristics as height and weight. The normal weight is found by weighing great numbers of individuals and averaging all their weights. If the average weight of 18 year old boys is 135 pounds then this is taken as the normal weight for boys of that age. If the average height of boys of 18 years is found to be 67 inches that is taken as the normal height for boys of that age. The normal is what we find to prevail.

The need, then, is for the observer to approach his problem without any of the bias which ordinarily dominates the normative and pathological points of view. If the normative attitude is held toward any trait it is because that trait is revered. If the pathological attitude is maintained it indicates an emo-

tional attitude of tolerance and sympathy. The statistical view assumes that judgment has not been passed upon that trait, that the observer neither craves possession of it nor loathes it. The emphasis upon statistical norms should help one to study the situation objectively and unemotionally.

13. Many degrees of abnormals. The statistical conception is the one that we wish to use in our study. A normal person we shall consider is one who is like the average person. There may be all degrees of abnormality. Some may deviate very slightly from the average while others may show marked differences. We are not merely interested in those who are so different that they are considered diseased, but in all those gradations which lie between the average and those so far from

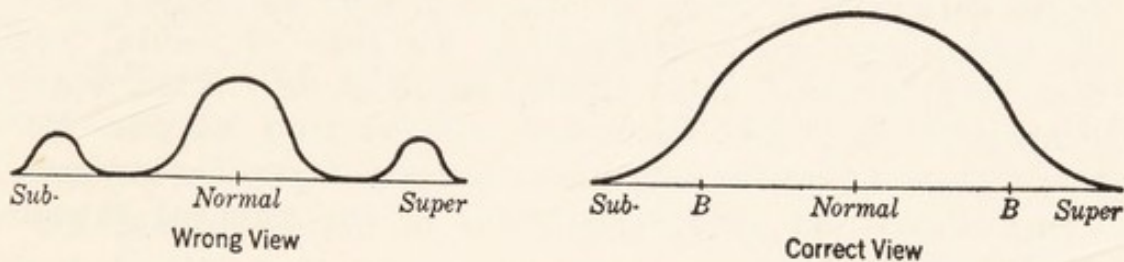


FIG. 1. RELATION OF NORMAL TO ABNORMAL

The figure to the left indicates a commonly held misconception of the distinction between normal individuals, and sub- and super-normal individuals. We do not find the sharp distinction between the three groups that this graph indicates. The actual situation is represented in the graph to the right. Since the height of the curve represents the number of persons at each point on the base line, it may be seen that the greater number of individuals are between the points marked *B*, which may be used to represent arbitrary borderlines between normality and abnormality. A few extreme cases are found at each end of the distribution curve beyond these lines of demarkation. It should be clearly noted that the position of *B* on the base line is arbitrary and depends wholly upon the judgment of the individual who attempts to place it. There is no sharp distinction between normal and abnormal.

the average as to be considered pathological. Indeed, the true understanding of the pathological comes only when we are able to trace the intervening steps between it and the normal.

Abnormal psychology is interested in all the little twists of personality that are usually ignored. It is these little twists that may later become large perversions, or may at least have a causal relation with larger deviations. A person may be

10 THE PSYCHOLOGY OF ABNORMAL PEOPLE

just like others in the major part of his being but may be over-irritable, another may be all right in every respect except when he harps upon his pet hobby, whereupon he bores everybody about him. Such minor peculiarities may be of the same order as, though different in degree from, serious disorders.

III. HISTORICAL BACKGROUND

Records of abnormal individuals may be found as far back as we have historical chronicles. Indeed one of the charms of history lies in its description of the vagaries of mankind both individually and in groups. Interpretation of peculiarities of conduct of characters who stand out in history is a stimulus to our greatest efforts. When we consider the profound emotional reaction that must have been produced upon our forefathers when one of their number became suddenly deranged, it is no wonder that they speculated upon the cause and, not understanding the laws of mental life, that they invented superstitious explanations. Even today "insanity" is looked upon with awe by most people. For this reason it may be instructive to view briefly the progressive changes that have taken place in our thinking toward mental aberrations.

14. Theory of demoniacal possession. Since the belief in demons, both of the beneficent and malevolent varieties, was so widely accepted in ancient times it is not surprising that peculiar conduct should have been interpreted as the working of malevolent spirits in the individual. There is evidence that the idea of possession by good and evil spirits¹ was current

¹ "This idea of diabolic agency in mental disease had grown luxuriantly in all the Oriental sacred literatures. In the series of Assyrian mythological tablets in which we find those legends of the Creation, the Fall, the Flood, and other early conceptions . . . have been discovered the formulas for driving out the evil spirits which cause disease. In the Persian theology regarding the struggle of the great powers of good and evil this idea was developed to its highest point. From these and other ancient sources the . . . theory of diabolic causes of mental disease took a firm place in our sacred books. . . . In Greece, too, an idea akin to this found lodgment both in popular belief and in the philosophy of Plato and Socrates; and though . . . the great leaders in medical science had taught with more or less distinctness that insanity is the result of physical disease, there was a strong popular tendency to attribute the more troublesome cases of it to hostile spiritual influence." Andrew D. White, "History of the Warfare of Science," 1900, Vol. II, p. 100. D. Appleton and Company.

in the ancient civilizations of Egypt and Babylonia. It existed in Persia, Judea, Greece, and Rome, and held a large place in the life of Christian nations until the end of the eighteenth century.

At a time when physical phenomena, such as lightning, earthquakes, fires, floods and winds were explained as the activities of spirits it would have been remarkable indeed if the more intricate and more frightful things, such as disease and insanity, should have been explained as natural events.

The frenzies of the dervish signified that the individual was possessed by an outside spirit, whose spokesman he became by virtue of this possession. Many of these had episodes which resembled, if they were not actually the same as, what we now know to be hysteria and epilepsy. The belief that their conduct and utterances were the product of spirits made them immune to a great extent to the wrath their frankness would otherwise have provoked. This immunity is illustrated in the feigned possession of David, which was an attempt to simulate what appears to have been an epileptic fit:

“And David laid up these words in his heart, and was sore afraid of Achish the king of Gath. And he changed his behavior before them, and feigned himself mad in their hands, scrabbled on the doors of the gate, and let his spittle fall down upon his beard.”¹

His ruse was successful and the king permitted him to depart.

While these ancient peoples had an awe of the working of the different spirits through the persons possessed of them there was an attempt to suppress those who were controlled by malevolent spirits. Witches were persons who, through their relationship with spirits, were able to injure their fellow human beings and even in Old Testament times were condemned. In Exodus 22, 18 we read an injunction as follows: “Thou shalt not suffer a witch to live.” In Leviticus 19, 26 we read: “Neither shall ye use enchantment.” Leviticus 19, 31: “Regard not them that have familiar spirits.” Leviticus

¹ I Samuel 21, 12-13.

20, 27: "A man also or woman that hath a familiar spirit, or that is a wizard, shall surely be put to death: they shall stone them with stones: their blood shall be upon them." When Saul visited the witch of Endor (I Samuel, 7-14) he had to promise her immunity from punishment. It is quite probable that the ancient ideas concerning witchcraft were not identical with the later ones that became current during the Middle Ages, but they typify the belief in the demonological interpretation of peculiar mental phenomena.

Two types of possession have been indicated although the distinction has at times been hazy. There is the possession where the victim is unwillingly seized by the evil spirit. Such is the nature of the possession where one goes insane or becomes afflicted with a disease. Another type of possession is where the person is in league with the devil. This latter conception is behind the emphasis given to the superstitions of witchcraft that had such a vogue throughout Europe and the United States until rather recently. It is hard to realize that the last execution for witchcraft in England was in 1682 and that a legal trial of a witch was held in Massachusetts as recently as 1793.

Witches were persons supposed to have made a compact with the devil consummated by signing, in blood, a book presented to them by Satan. This compact gave signers a number of supernormal powers. They could torture God's people, they could cause pestilence and death, they could cure disease as well as spread it, they could ride through the air, they could transform themselves into animals, they could blast crops, cause milk to sour and eggs to spoil. In short, any mysterious circumstance could be disposed of by the explanation of witchcraft. Whereas one who was unwittingly possessed by a devil and thereby made insane deserved sympathy, a witch deserved only condemnation. The search for witches, their trial and execution, was one of the popular pastimes of our none too remote forefathers.

15. Exorcism. With the demoniacal view of its nature, the cure for insanity was to cast out the spirit who had pos-

session of the victim. This process was known as *exorcism*. The forms which exorcism has taken are a remarkable commentary upon the ingenuity of man.

1. *Whipping*. One method was to whip the devil from the body of his victim. While this whipping was directed against the devil it was hard on the poor mentally diseased person for, if the disease continued after due whippings, torture was often resorted to.

2. *Hurting the pride of the devil*. Whipping and torture are rather crude and have little appeal to the imagination. This lack was supplied by the methods devised to injure the pride of the devil. The main trait of the devil is pride. It is this characteristic which led to his fall. Hence, if his pride can be hurt he will leave. The method best calculated to hurt his pride was to disgust him.

This could be accomplished by the use of thunderous names. For this purpose long, meaningless words were manufactured from the Greek and Hebrew. Another method was to drive him out with filthy and rank-smelling drugs, such as asafetida and sulphur. Pictures of the devil were spat upon, tramped under foot and sprinkled with foul compounds.

Research has shown that some paralyses, blindnesses, deafnesses, and other similar disorders can be effective but still have no organic basis. Their explanation is to be found in the mental processes of the patient. This understanding removes all such cures from the realm of the miraculous and makes them the subject of scientific study just as truly as a broken bone can be so studied. The nature of these disorders can be understood as mental rather than as physical diseases and their interpretation will be apparent in our treatment of the so-called functional disorders.

16. Medical views. There is no more interesting romance than that of the development of medical theory and practice. We have seen that all diseases were, in primitive times, interpreted as the work of malevolent spirits, and medicine has had a terrific struggle, that is equaled by no other conflict in history, to place its work upon a scientific basis.

14 THE PSYCHOLOGY OF ABNORMAL PEOPLE

In the fifth century before Christ, Hippocrates broke away from the old traditions and laid the foundations of medical science upon experience, observation, and reason. His teachings were taken up by the School of Alexandria and studies in anatomy were begun. Progress in this direction was extremely slow because of popular prejudice, and we are told that even in the fourteenth century A.D. the few cadavers dissected had to be stolen from the graveyards by students. Gradually, however, one disease after another that had been regarded with superstitious awe was studied until the actual cause was discovered and treatments instituted on a rational basis. Diseases of the nervous system offered the most difficult problems in this advance, and even today the most baffling problems of medicine lie in this field.

An illustration of the spectacular contribution of medicine to the understanding of mental disease has been the discovery of the cause and treatment of paresis. This disease had been described as a deteriorating disease whose main symptoms were delusions of grandeur. Such patients thought they had great talents and possessions and manifested very little judgment in the way they boasted of their exploits. Nothing could be done for patients suffering with paresis until it was discovered that their trouble was caused by the disease of syphilis. The presence of this disease can be accurately discovered by laboratory tests, and various methods have been devised for treating it successfully. So paresis, once poorly understood and hence poorly treated, turns out to be a by-product of a blood disease more or less susceptible to medical treatment.

So many different fields have contributed toward the understanding of mental disorders that there has developed a branch of medicine whose main function has been to gather together and coördinate all these contributions. This specialty is called psychiatry. The greatest contributor to this field has, of course, been neurology, which is the science of disorders of the nervous system.

17. Classification versus analysis of symptoms. In its early stages, under the influence of Kraepelin, a German psy-

chiatrist, the work of the psychiatrist was taken up mainly with describing and classifying symptoms. This procedure has been strongly criticised by some students on the ground that it leads nowhere and encourages a false pretense of understanding where there is none. Giving a name to something does not increase our understanding of it. Consequently, there has been a counter tendency to supplement these descriptions of the psychiatrists with attempts at psychological explanation. Those in the foreground of this movement have been called psychoanalysts. They have made a strenuous attempt to study the relationship of the various mental symptoms and to treat them by the application of psychological principles. The chief leaders in this movement are Freud, Jung, Adler, and Ferenczi. In America this point of view has been taken up with avidity and a vast number of psychiatrists show the influence of this movement.

To be sure, Kraepelin and his followers never advocated the principle that the classification of symptoms was an end in itself. They undoubtedly recognized the importance of arriving at the meaning of symptoms, but hoped that if symptoms were carefully enough noted, described, and logically classified, their meaning would become apparent. Lack of success from this procedure was due largely to the fact that these men carried over the methods of medicine and attempted to classify the symptoms logically instead of analyzing them psychologically. Little was known about psychology as a study of life, and the academic psychology then current often had slight bearing on the interpretation of mental symptoms. Modern psychology is making good this lack and, as we shall try to show in this text, now has considerable to contribute toward the understanding of mental symptoms. What one needs is to maintain a balance between emphasis on classification and interpretation. Without such a balance one may easily become lost in either direction.

18. Organic view versus functional view. Two other divergent points of view arose in the attempt to interpret symptoms. These have been called the organic and functional

viewpoints. The organicist states that anatomical structure is the important thing, that one can understand function only in terms of structure. This emphasis has led to what has been called the brain spot hypothesis. According to this theory every mental aberration is caused by a definite injury to the nervous material. To understand abnormalities of mental life one must find the locus or place of physical injury. Any study of behavior should merely be to guide one in the search for a physical disturbance of the nerve tissue. Workers on this theory contend that any inability to account for specific troubles by definite injury to the cortex is due to a lack of knowledge and does not tend to qualify the basic hypothesis. For these men, to speak of function is "an admission of insufficiency of anatomical knowledge."¹ They worship the machinery of the human organism, but minimize the work that the machinery is designed to accomplish.

To the functionalist the marvelous thing is what the nervous system does. He does not deny the fact that if the nervous system is injured or broken by disease it will not function properly. He simply contends that the initial failure of a complex machine may be some lack of adjustment between parts that are in themselves intact. This has been called the mental twist hypothesis. If one floods the carburetor of his automobile it will fail to start. If the timing mechanism is not adjusted so that the spark ignites the gas at the right moment it will not operate properly. Furthermore, the operation of a car which has a part of its mechanism out of adjustment may terminate in actual physical injury to part of the engine. When historically it can be shown that the break was caused by improper adjustment, why say that the broken engine is the important thing? The functionalists use this same logic to emphasize their point of view.

Southard² has well expressed the fact that there are prob-

¹ A. Meyer, "Pathopsychology and Psychopathology," *Psychol. Bull.* 1912, 9, p. 131.

² E. E. Southard, "The Mind Twist and Brain Spot Hypothesis in Psychopathology and Neuropathology," *Psychol. Bull.*, 1914, 11, p. 234.

ably two ways of looking at the same thing. He said: "Structure is in the main the spatial aspect of facts and events, function in the main is the temporal aspect of the same facts and events." The difficulty in thought has arisen no doubt from the philosophic notion of dualism, that mind and body are two separate entities. If one accepts this hypothesis, then one must explain how they are related and which is dominant. From the scientific point of view it is just as ridiculous to separate mind and body as to separate a machine from its function. To say that a mind can exist and function separate from a nervous system is to indulge in pure speculation. On the other hand, wherever there is a vestige of live nervous tissue we have function of some sort. The task before us is not to attempt any futile separation where unity exists, but to discover the relationship between the various parts of the mechanism in question.

IV. THE PSYCHOLOGICAL APPROACH

We have given this historical review (Articles 14-18) in order to indicate that there is an important place for psychology in the interpretation of mental symptoms. Medicine has performed immortal service in overthrowing the superstitious explanation of demoniacal possession and in furnishing a sound background of scientific procedure. It has shown that a number of mental diseases are due to organic diseases of the nervous system and should be treated as any other disease. The lesson from history is that progress lies in the direction of scientific study. It certainly should warn against any tendency to revert to animistic explanation of abnormal mental phenomena. But there are some mental disorders that medicine has not explained on an organic basis, so that it seems that psychology has a place in this field. The development of psychology as a science instead of a discipline of speculation has made possible developments in this field which are no less worthy than the contributions of medicine.

19. Abnormal psychology must be scientific. If we take the historical lesson it is obvious that the approach of the student of abnormal psychology should be as a scientific ob-

server of human conduct or behavior. Let us analyze this approach in terms of scientific method.

1. *The collection of data.* The scientific psychologist studies human beings in general and thus obtains the data with which to work. He observes how persons act under different circumstances. He studies the relations of their various words, acts, and expressive movements to conduct in general. From studies of this sort he establishes his norms, which are merely statements of what the average person is, does, and thinks. He obtains his data in the same manner that data are secured for the establishment of such norms as size, weight, wealth, food consumption, and sleep.

2. *Classification of data.* He observes how certain individuals differ from the average individual. He attempts not only to distinguish different traits qualitatively but quantitatively. One of the great contributions of modern psychology to the study of abnormal mental life has been the emphasis upon the fact that these abnormalities are exaggerations of traits that in different quantity would be considered normal. The emotions of the normal man are of the same kind but milder in degree than those of the wildly excited patient in the hospital for the insane. Normal persons have queer ideas, but they are mild and not so tenaciously held as are those of the abnormal individual. The errors in judgment of the normal person differ only in degree, not in kind, from those of the deluded person. We have found that the most peculiar traits are not new entities, but normal traits in unfortunate proportions. The care that must be exercised here is that the distinction in traits be based upon differences in behavior and not on abstractions of an ethereal sort.

3. *The evaluation of data.* The psychologist attempts to discover if possible how the trait which is outstandingly abnormal in amount developed its lack of proportion. In this search he must again be guided by scientific observation and not by any valuation of such traits which his training may have given him. Thus a psychologist, in studying a man who has a murderous tendency, is far more interested in the origin

of that tendency and how it may influence the man personally and socially, than in condemning the man as immoral.

4. *Formulation of hypotheses.* He formulates his hypotheses or theories as to the nature of the particular disorder. The retention or rejection of the hypothesis awaits experimental investigation. It is to be considered a tentative explanation of the facts in hand. The student should be warned at this point against over-simplification and over-generalization in the formation of hypotheses.

5. *Verification by experiment.* He finally attempts to verify his hypothesis by experiment. The experimental procedure may be of different forms, depending upon the nature of the trait to be studied and on other circumstances surrounding it.

20. Forms of experimentation in abnormal psychology.

1. *Experimental work with children.* Childhood is the period in which we form our personality. The observation of children in this formative period yields us a natural experimental laboratory. That this field is furnishing a wealth of material is apparent to all who are familiar with the great development in the study of child education in recent years. Various behavior clinics¹ have been established where children are treated who show beginnings of unfortunate traits. Pre-school laboratories are springing up where the young child is observed in his reactions to controlled situations of various sorts. This work is furnishing a great proving ground in which to test out the theories that we have formulated about the development of personality peculiarities.

2. *Animal experiments.* Certain theories cannot be tried out by experiment on children because of the possibility of

¹ Such clinics are variously organized. Some are connected with universities, some with the public schools, some with juvenile courts, while some are independently operated. A well-operated clinic gives the problem child referred to it various mental and personality tests, investigates his family and social background, and looks for any possible disease or physical defect; in short, gives the child a thorough examination from all angles in a search for causes of maladjustment, and then institutes a definite program of reëducation.

deleterious effect. In such cases experiments with animals give the psychologist an opportunity to test hypotheses. The findings from such studies, while not conclusive when applied to humans, enable the student to clarify his thinking and to set the problem a little differently for work with the human individual. This field has scarcely been touched in relation to pathological mental conditions, but what has been done is most promising.

3. *Treatment of patients.* In lieu of such definite experimentation, every bit of treatment of abnormal individuals partakes of the nature of an experiment. Treatment is based on a theory of cause. If the hypothesis is correct the treatment should cause the result which the theory indicates. A careful check on the effect of such treatment will either corroborate or vitiate the hypothesis. The difficulty here has been that most treatment has been carried out by practitioners and not by scientific investigators. The practitioner is so likely to be enthusiastic over his attempted cure that he distorts results. To lead to valid conclusions, treatment must be carried out under rigidly controlled conditions and the results interpreted by an impartial observer.

For example, at one time in the history of medicine it was deemed efficacious to treat the blade of the knife that had caused a wound in order to cause the wound to heal. If you try this experiment you will find that such treatment of an inanimate object may be accompanied by the healing of a wound. But a very casual observation will show that the wound will heal even if the knife blade, or other object, is not treated at all. This illustrates what we mean by controlling conditions. If we treat a number of wounds, say fifty, by applying ointment to the blade causing the injury, and fail to treat the blade in another fifty similar wounds we are controlling one set of conditions. If the same percentage of wounds heal in each case we can assume that our treatment was ineffective. We could not assume it was effective without such a controlled experiment even if we had one hundred percent cures by treating the blade. This is an important prin-

ciple in all experimentation. If thoroughly understood it forever answers the argument, "This is a good remedy because the patient recovered." He might have recovered without the remedy.

4. *Biological experimentation.* Adequate knowledge of abnormal phenomena will also pave the way for rational biological experimentation to determine the hereditary factors that may be related to mental disorders. These studies have not been very enlightening in the past because biological experiments have not been possible with humans. Human eugencies awaits the development of an adequate analysis of mental traits.

21. What abnormal psychology studies. We have defined abnormal psychology as the scientific study of the behavior of abnormal individuals. For an individual to be abnormal does not imply that he is equally abnormal in all directions. In fact this is seldom the case. He may be normal in many respects. Our study must first of all be concerned with locating the traits in which he is outstandingly different. Such peculiarities we call symptoms.

22. The nature of symptoms. A symptom is a sign. The very meaning of the term indicates that it points to something else. It is a token that something is wrong, but it is the thing that is wrong that must be our focus of interest and not the symptom or signpost. If you are lost in the country you welcome the sight of a signpost. But you do not stop to examine this signpost in great detail. You do not take its dimensions, make a memorandum of its color and precise location. You read it and are guided by the information it gives you in reference to your desired goal.

The difficulty with signposts or symptoms of mental troubles is that the directions are not printed in plain English for all to read. They have to be interpreted. But let us remember that interpretation is not helped by losing ourselves in irrelevant details. Hence, when we study a symptom it will be to read the characters and get our bearing. If, in the same individual, we get a number of symptoms that point

to the same source of trouble, then we can become a little more confident of our explanatory hypothesis. But we must continually bear in mind that our interpretation of mental symptoms is still young. Our interpretations may have to be revised when additional facts come to hand.

Mental symptoms are peculiarly difficult to interpret because they are often adopted by the patient as a method of deceiving either himself or others. The nature of this distorting of symptoms we will understand better as we proceed. In many organic diseases the cause of a symptom can be derived by a study of possible relationships and a system of logical analysis which will eventually lead one to an adequate interpretation. In mental disturbances there is often an additional step that must be considered in any reasoning back from the symptom to the cause. This may be formulated in a question that must be continually asked, "What is this symptom designed to hide?" In other words many mental symptoms are what are called "defense reactions."

23. A sample symptom. For example, a man may come to a clinic with the complaint that he has a terrible pain in his abdomen, that he is sure that he has a sarcoma (a disease growth due to a foreign body) and will be dead in just six weeks. The natural thing is to look for the cause of the pain. Suppose that investigation shows that there is no sarcoma, that there is no other organic condition that might account for the pain. The physician may then conclude that the pain "is in the man's head and not in his abdomen." This is the ordinary logic of diagnosis. If, in spite of the physician's statements as to his organic integrity, he insists that he has a sarcoma, the physician is likely to conclude that the man is mentally unbalanced, cannot appreciate reason, or express his notion of the man's mental makeup in some other such vague meaningless term.

But suppose, after you have gone this far, you adopt our formula and ask, "What is this symptom designed to hide?" "Why did he adopt this defense mechanism?" "In what way is it a defense?" "What can he be defending?" Such

questions, if followed, lead eventually to a clue as to the cause of the disturbance. To assure the man that it is in his head and that there is nothing really wrong with him is not only to show our ignorance of mental phenomena but to do the man an injury.

In order to indicate how such a procedure operates we will state here that it was learned that this man had a perverse tendency that was similar to one in a friend of his. His friend developed a sarcoma and died as a result in about six weeks. The patient thinking the sarcoma was the result of the perversion thought that he was sure to follow in the track of his friend. Instead of telling the physician that he was a pervert he told him that he had a sarcoma. Such a man could not be dealt with effectively by hunting for a sarcoma. Effective treatment could be accomplished only by dealing with the real trouble (the perversion) which the sarcoma was adopted to hide.

24. Types of symptoms. In observing patients to obtain symptoms for study there are different groups of behavior manifestations that we use.

1. *Manifest signs.* The first are the purely objective symptoms, what Gosline¹ calls the first degree of observation. They are peculiarities that are plainly to be seen by anybody who looks. If a patient is so depressed that she spends all her time vigorously crying and moaning, any one can see that she is emotionally depressed. If another is so wildly excited that she cannot control herself for a single instant, but must be singing, talking, prancing about and exerting herself violently, anyone can see that she is over-active.

2. *Signs having interpretive value.* The second are those that have some interpretive value or what may be called the second degree of observation. These may be just as objective as the first, the distinction is that they have been observed and studied in other persons and have been found to indicate specific underlying causes. They are peculiarities with a prob-

¹ H. A. Gosline, "The Conduct of the Insane," *Jour. of Abnormal and Social Psychol.*, 1917, 12, 240-255.

able meaning. In this group are likely to be included things which might not be observed by the lay observer; or, being observed, might not be considered unusual. The sarcoma in the illustration in Article 23 is of this type.

3. *Signs having quantitative value.* The third are symptoms that have been studied and which can be measured quantitatively. An example of this is intelligence, of which we have a number of definite indicators. To hear a little boy say, "I am a boy" would not mean much to a lay person. To the psychologist it means that the boy probably has at least as much intelligence as the average three-year-old child. Similarly if a child can repeat six digits¹ it is, to a psychologist, passing a test which normal ten-year-old children can pass but children younger or more immature mentally can not pass. To the outsider it is merely a reply, to the psychologist it has quantitative significance.

It is in the development of adequate scales for the measurement of symptoms of the third type that the scientific psychologist is proving of greatest value in the study of mental disorders. The psychiatrist has been handicapped because he has been forced to use qualitative descriptions. The psychologists have been making strides in developing mental measurements and the near future promises to see the development of such measures for various personality traits.

25. Summary. We have found that the study of abnormal psychology follows the essential steps of scientific procedure. It involves (1) the collection of data, (2) the organization of such data, (3) the evaluation of data, (4) the formulation of theories to explain the facts at hand, and

¹ To give this test, numbers of varying size, usually three of each size, are given at the rate of one digit per second. After each number has been read the child attempts to reproduce it. A typical series is as follows:

641	352	837
4739	2854	7261
31759	42835	98176
374859	521746	752638
2183479	9728475	3826475
72534896	49853762	83795482

(5) the verification or rejection of the theories by means of adequate experimentation.

Experimentation in this field may occupy itself with different subject-matter, including children, animals, and mentally sick patients. The mentally sick patient forms an excellent laboratory subject because he exhibits a particular trait to such an extreme degree that it can be studied more or less in isolation.

The main task, then, is the study of symptoms. From a psychological point of view these are indicators of the significant facts, which are usually not easily apparent, but which must be at first inferred, and later proved, from the nature of the symptoms.

V. VALUE OF THE STUDY OF ABNORMAL PSYCHOLOGY

The understanding of mental peculiarities is of the utmost social and personal significance, especially for teachers who are interested in the character development of the young, at which time personality is formed. If we do not understand mental disorders we tend to go placidly on our way until some one near to us is taken with some maladjustment which affects his mind, whereupon we become excited and humiliated and hasten to get him into some place of refuge. Then we try to hide the fact that he has become mentally unbalanced, and to forget it ourselves except when we consider it our duty to visit him. This attitude is wholly unwarranted and we are sure widespread understanding of mental difficulties will displace it. We must learn to take the same attitude toward mental abnormalities that we do toward physical defects. We do not want them, we try to correct them when they appear and take rational steps to prevent them. But when they do come we treat the unfortunates with the utmost consideration and sympathy.

26. Social and economic importance of mental diseases. That the incidence of mental disease is not a thing to be ignored will be seen when we consider the great numbers who are so afflicted. It is hard to get accurate figures on this subject. We can find the rate of admissions to institutions

but these must be qualified if their true meaning is to be properly interpreted. We are admitting more persons today, but on the other hand we are becoming more aware of the need for care and treatment. The increase in population of our institutions may mean, not an increase of mental disease, but an advance in our scientific information and our willingness to apply it. Increase in the population of hospitals may be a good sign rather than the opposite, and most probably does not mean that the human race is growing weaker in mental poise.

27. Development of state hospitals. The increasing recognition of our obligation to those having mental disease is portrayed by the rapid development in the number of state hospitals organized to care for them. The first of such institutions was opened in 1773 in Williamsburg, Virginia. Maryland came second in this development and opened a hospital in 1798. Since that time there has been a rapid increase until at this time there is not a single state that does not have at least one such institution. New York has fifteen, Massachusetts has twelve. Ohio and Illinois have nine each, and Pennsylvania has seven.

These are not merely custodial institutions but are hospitals organized to care for the patients in a truly scientific manner and in many instances are doing research work which will be of profound benefit to future generations.

The manner in which patients are cared for has undergone remarkable change. With no understanding of the nature of mental disease the victims of these disorders at one time were hoarded together and handled as so many animals. The attendants were afraid of them, in many instances, and their sole thought was to protect themselves and others from the outbreaks of these wild creatures. Restraining devices were used which were not far removed from torture instruments.¹ In this country these have been almost universally discarded

¹ Many institutions now display in museum fashion these instruments of torture which they have discarded. One notable exhibit is at the entrance of the state hospital at Trenton, New Jersey.

largely due to the influence of the work of Clifford W. Beers. Mr. Beers, having gone through a period of profound mental disturbance, recounted his experiences¹ and has been instrumental in organizing the mental hygiene movement which has revolutionized our methods of treatment of the mentally diseased.

Besides state institutions there are a large number of private institutions designed for the care of mental patients. Today practically every first-class hospital has a ward for mental patients. Nurses and physicians are receiving special training in the care of these patients.

28. Methods of prevention. More important than all these advances in methods of caring for the mentally diseased is the recent mental hygiene movement. This began as a humanitarian step about 1908, but has since that time developed into a mighty wave of research and study into the nature of mental disease and the elaboration of means of prevention.

In 1908 the National Committee for Mental Hygiene was organized and began work. Study had not proceeded very far when it was realized that mental hygiene was a problem of childhood. Adult cases were too well established in most instances to yield to treatment, and any work of value must be done with children. Their great contribution has consequently been in this direction.

Child guidance clinics have been organized to demonstrate what might be done by the proper treatment of incipient cases of mental disorder. The result of this has been that we have learned that most of the mental problems that can be successfully handled are problems of psychology and not of medicine. While the clinics have been headed by medical men, the approach that has yielded results has been the psychological approach. Cases of incipient mental maladjustment have been received in these clinics, the sources of trouble have been located and changes recommended which have in many in-

¹ Clifford W. Beers, "A Mind That Found Itself," Longmans, Green & Co., 1908.

stances led to improvement in the ability of the youthful patient to adjust.

This readjustment has in most cases been found to be a problem of education and this has in turn directed the center of interest to proper education. Mental hygiene, which began as a medical problem, has now been found to be an educational problem. Instead of clinics for treatment of mental disease we have turned to educational clinics and these in turn have emphasized the proper development of habits in very young children.

29. The school as a center for mental hygiene. Since mental health depends in large part upon the development of proper mental habits, it naturally becomes a school problem. Not a school problem in the sense that a clinic should be established in every school, but that every teacher should study the problem of the proper personality training for her pupils.

Education today is more than training the child to construct compositions or to solve mathematical problems. It is a training of the whole individual. It is personality training. A teacher cannot make the statement that her work is with normal children and that she has no time for the peculiar one. She must be trained to interpret each child and do the thing that is best for him. Teaching is essentially guidance and if the instructor will work only with those who need no guidance she is a poor teacher.

With teachers trained to teach the students in our schools proper emotional and personal habits as well as intellectual skills, we shall have gone a long way toward solving the mental hygiene problem.

30. Personal value of the study of abnormal psychology. From this survey of the history of the development of mental hygiene it is obvious that the key to the situation is widespread education of the problems of mental life. This emphasis has given to the study of psychology an importance and personal interest that it never had before. Heretofore a few colleges offered a course in abnormal psychology which consisted of a

summary of the symptoms of some of the major forms of mental disease, or a study of methods of testing the feeble-minded. Little attempt was made in any of these courses to understand the meaning of the mental symptoms and consequently such courses were unpopular and uniformly disliked. With the new emphasis upon the relationship of mental peculiarities to life adjustments the field of abnormal psychology has been transformed into one of the most live and most intimate subjects that one can study. The student is studying himself, his own peculiar habits and the motives behind conduct. He sees himself about to face the same problems and trials under which others have broken. He sees why they failed and so is guarded against similar failure.

It may be well to enumerate briefly some of the advantages we may hope to derive from the study of this subject.

1. *It will help us to understand ourselves and others.* It will enable us to see our own peculiarities in their true setting as well as to evaluate properly the peculiarities of others. Since our adjustment to others is largely an adjustment of peculiarities, this study will inevitably enable us to live in concord with a greater number of people. The greatest single cause of personal disharmony is a lack of understanding. Often we condemn others for their lack of appreciation and understanding of us when, if the truth were known, we do not know ourselves. To state that a study of abnormal psychology will enable us to understand ourselves more thoroughly does not imply that we should find in ourselves, to a major degree, all the queer things that we shall discuss. But when we see a trait exaggerated to such a degree that it becomes grotesque it will give us a sense of proportion better than any other discipline could do.

2. *It will give us a sympathetic understanding of those who are mentally ill.* Familiarity with the field of abnormal psychology will change a person's attitude from one of fear, abhorrence, and awe, to one of sympathetic appreciation. It will enable us to view mental disease with the same calmness that we view tuberculosis, cancer, or any other disease. Not

only will it change our emotional attitude but it will enable each one who studies it to exert his influence toward a rational development of methods of preventing mental disorders in future generations.

3. *It will throw light on normal psychology.* To the student of psychology the field of abnormal psychology is a gold mine. As the object of scientific study increases in complexity it becomes harder and harder to unravel the mysteries of its functioning. The only way to understand it is to dissect it, to study it a small part at a time and then to synthesize the knowledge thus gained. The normal human being is without doubt the most complex problem that science ever attempted to understand and, to add to the difficulty of study, he cannot be dissected as can an ordinary object of investigation.¹

As we have indicated (Article 25) an abnormal individual furnishes us with an already prepared laboratory situation. The derangement has severed certain normal relationships and we have a truly experimental setting for our study. The first task of the laboratory is to isolate some factor for study. In the abnormal individual we have a trait already isolated and exaggerated for us to observe. Furthermore, we have the possibility of controlled modification. The patient wants treatment and every bit of treatment can be done as scientifically as any laboratory experiment. Abnormal psychology is the laboratory for the experimental study of normal psychology.²

4. *It has value for various professions.* In all those professions that involve human relationships the study of abnormal psychology is becoming more and more essential.

(a) THE PHYSICIAN. The physician certainly needs the functional view of human nature. He is surrounded with such a strong tendency to regard the human being from the anatomical angle that he needs the psychological background, and especially the background of abnormal psychology, to

¹ E. E. Southard, "The Problems of Teaching and Research Contrasted," *Amer. Jour. of Psychol.*, 1912, 23, p. 231.

² Adolph Meyer, "Pathopsychology and Psychopathology," *Psychol. Bull.*, 1912, 9, p. 132.

keep him properly balanced. The physician has been too prone in the past to minimize the importance of mental ailments, to dismiss them with a superior shrug and to say, "There is nothing wrong with you. It is all mental." As though the fact that it was mental were of little moment! Mental suffering is much more poignant and much more significant in the life of an individual than a mere pain in some portion of his anatomy. Physicians are beginning to realize the significance of this fact.

(b) PROFESSIONS DEALING WITH PERSONAL AND SOCIAL ILLS. Pastors, social workers, nurses, judges, lawyers, police, and all individuals who have to deal with the failures of persons need to know abnormal psychology. It will teach them better than any other study the significance of various peculiarities in their relations to human struggles and failures. Those in these professions may argue that they deal only with normal persons, but this is not the case. It has been found that the ones most in need of the services of those in the social professions are those who deviate more or less from the normal. Our great trouble has been that we have gone on the assumption that all those who need help are normal, and we have thrown away a lot of energy because it has been misdirected. For example, take the case of the man we described at the beginning of this chapter. Preachers could remonstrate with him for drinking, social workers could bring him home when he went on a spree, nurses could restore him when he was wrecked from driving when drunk, the police could arrest him, the judge sentence him, and lawyers plead for or against him: but to what end so long as he was driven on to continue his debauchery by a mental conflict?

(c) PROFESSIONS DEPENDING UPON INFLUENCING PEOPLE. Furthermore, the business man, the executive, the politician, and, indeed, any person who needs to bring others to his way of thinking or doing should know something about abnormal psychology. With such knowledge work will be made easier and more pleasant for he will know that differences in people are natural and interesting facts and will use these differences

as a guide for his policies. An understanding interest in the peculiarities of people will add zest to any social profession.

(d) **TEACHERS.** The teacher who has an adequate understanding of unusual individuals will find her work taking on a fascination she never dreamed it could have so long as it was a mere following of well-planned routine teaching methods. A little adroit handling will transform an apparently vicious child into a loyal supporter. The worst problems that the teacher confronts are not the result of the fact that some child is intractable, but are due to the fact that she is ignorant of how to make him want to conform to her wishes. Certainly, a knowledge of why people are different will give her the key to many of her worst problems.

PROJECTS FOR FURTHER STUDY

1. Make a study of superstitions that are in vogue today. Select those that have some bearing upon our attitude toward mental disorders and analyze their possible influence.
2. What types of healing are practiced in this country? Which are considered legitimate and which are not? Upon what basis can you distinguish the genuine practices from the fraudulent?
3. What agencies are there in your vicinity for the care of the mentally diseased? Make a study of the procedure necessary to have a mentally deranged person committed to an institution. Can you outline a better method of procedure?
4. Visit a criminal or psychopathic court and give your impressions of the mental soundness of the different persons who are tried. Try to describe the factors upon which you base your impressions.
5. Visit a social agency and study the individuals who apply for help. Do any of them appear to you to need mental help? Why do you think so?
6. Go through an issue of a metropolitan daily and select the news items that you think report events that had their basis in personal abnormalities.

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CHAPTER II

DISORDERS OF SENSATION

Human behavior is a unified thing, but its study must be accomplished through detailed analysis. In this chapter we shall begin with an analysis of sensory disorders, keeping in mind the fact that a sensory disorder in itself is not so significant as the effect of such a disturbance upon the rest of the personality. Most significant are visual, auditory and cutaneous sensations, and these will therefore be given the greatest consideration. Each sense field will be studied first in reference to possible specific defects; later the influence of these upon the rest of the personality will be considered.

31. A deaf boy who had perfect ears. All of us value our senses so highly that it is hard to realize that a person could give up the use of his eyes or his ears without being forced to do so by a direct physical injury to the sense organ. That a mental conflict, a central disturbance of a complex sort, can result in the loss of the use of a sense organ that is organically intact is shown by the following case.

A colored boy, apparently about twelve years of age, was found by the police wandering near one of the south side parks in Chicago. He said that his name was Frank Coleman but was unable to tell where he lived or how he came to the place where he was found. He was taken to the detention home, where unsuccessful efforts were made to locate his home.

One morning, shortly after the beginning of his residence at the detention home, he appeared unable to speak or hear. He made signs indicating that someone had grabbed him by the throat and that as a result he was unable to use his voice. He could not hear what was said to him, but managed to understand a little

through signs that were made and through watching the lips of the speaker. His writing was so poor that this means offered little help. He understood simple things that were written but his replies were mostly unintelligible.

For four weeks he remained mute (unable to talk), except for two instances when he was heard to utter sounds. One was when he was made to scrub a floor and the other was when he wanted a cigarette. That his deafness was not absolute was shown by the fact that he winked whenever a loud sound was made behind him. He also showed signs of sorrow when his mother was mentioned by a person whom he could not see.

At first an attempt was made to force him to speak by frightening him with an electric current that was harmless but decidedly unpleasant. All such attempts only served to make him more and more resistive, a condition in which all suggestions or requests met with immediate opposition. Finally, he was made to understand that he would be put to sleep and thus be made to talk. He was placed upon an operating table¹ and ether administered. As he became unconscious he yelled, "I'll talk if you let me go." He was then given a little more ether and when in a deep sleep was silent. As he started to return to consciousness he talked again. More ether was given and he again went into a deep sleep. For a second time he was permitted to come to consciousness and just as he was in a half waking and half sleeping state he talked again. When he came fully to consciousness he was again mute.

This experiment proved that he could talk. In addition he had acquired an ability to mumble which carried over into the conscious state. He was told what had happened, that he had talked and that it was known that he could hear. Gradually he began to talk rationally and in about twenty-four hours was hearing and responding normally.

He now gave his real name, informed the authorities that his home was in Birmingham, and that he had run away from an orphanage in that city. This information proved to be correct.

The explanation of this case will be apparent as we study the different forms that sensory disorders take and the way in which our intake of sensory impressions is controlled by our central nervous system. It represents a typical problem calling for a psychological explanation, but such an explanation is

¹ This may seem like rather drastic treatment, but the application of such forceful methods are resorted to for the patient's good and in the kindest spirit.

only possible when we are familiar with the forms that organic sensory disturbances may take.

This boy's stubborn silence and refusal to talk is but an exaggeration of what every teacher is likely to meet in her ordinary class-room work. The recovery of this boy indicates that such conditions may be remedied, but it likewise shows that mere force simply strengthens stubbornness. The teacher must discover the motive for resistance, and then deal with the motive rather than with the stubbornness itself if she expects to cope successfully with such problems. Illustrations of extreme cases are of value in that they throw into relief the type of problem which operates in a lesser degree in mild cases.

32. Limitations of the sensory mechanism. Our sense organs are the gateways to our nervous systems. A gateway is designed to keep out unwelcome guests and this function is evident in that our sense organs are designed to admit only stimuli of a certain sort and range. Our ears are sensitive to physical vibrations within the range of about 16 to 40,000 vibrations per second. Any physical vibrations outside this range cannot be received. Our eyes respond to ether vibrations ranging from 380,000 billions to 770,000 billions per second. Sense organs in our skin admit mechanical contact from sources ranging from a slow touch to objects vibrating at about 2500 per second. These limitations indicate to us that there are sounds, lights and a vast number of other activities going on about us which we do not receive as sensations and which consequently have no direct meaning for us. They are not admitted through our sense organs because we are not equipped to receive them. We must interpret our universe by means of stimuli within these relatively narrow ranges. This shows pretty clearly the first great task of the sense organs, namely to keep out certain ranges of energy.

The fact that we cannot see or hear events is not evidence that they do not exist. It is quite possible, even likely, that the universe is filled with beautiful music and wonderful productions coming from ether vibrations of which we are

totally ignorant because of the limitations of our sense organs. We recognize this very clearly in the case of a blind or deaf person who is debarred from the experiences that a normal person has. If there might be someone who could take in the entire range of physical energy in the universe, the plight of the normal human being would be even more pathetic from his viewpoint than that of the deaf and blind person appears to us.

33. Transformation of stimuli into sensations. A second function of the sense organs is to change acceptable stimuli into a form that will enable them to affect our behavior and in this way actually to become a part of our personalities. Sound waves, light waves, heat, contact, and chemical stimuli of taste and odor must all be transformed into a common form of energy, namely, nervous energy, before they can be coördinated. It is this coördination of all such external impressions with the resulting effect upon the human being receiving them, that leads to the constant change of character and personality which we continually experience and which we see changing the lives of persons around us. As these various forms of external energy are transformed into nervous energy the central nervous system, the great central station of each individual, acts as the coördinating factor in the complex process of adjustment. No stimulus can be considered in isolation but only in its relation to the rest of the personality. If the sense organs work perfectly this transformation of the stimulus into nervous energy follows fixed laws, if they are disordered then the stimuli are distorted and the effect upon the personality of the recipient is modified in line with such distortion. If a child sees a blurred page of printing before him he is not affected the same way as the child who sees it very clearly.

Hence we may have variations in function all along the line from the reception of a stimulus to its coördination with other factors in the personality. The sense organ may be inadequate to receive the impressions that they should receive. They may not transform the stimuli properly, may distort

them in some bizarre fashion. Finally, the impressions may not fit into the coördinating mechanism due either to some inadequacy or to some resistance to proper reception and integration. Illustrations of these various types of disturbance will follow.

In our discussion of the various sensory disorders to follow, we will divide them into organic and functional. The organic are those that can be traced directly to some disorder of the sensory mechanism. The functional are those that are due to some errors in adjustment. These are not mutually exclusive, to be sure, but our study will be made clearer by considering them separately.

VI. DEFECTS OF THE VISUAL APPARATUS

Our discussion of the defects of the visual apparatus will embrace a study of the defects in the refracting media of the eye, defects of the eye muscles, and of other common physical defects of the eye.

34. Disorders of the refracting media. Disorders of the refracting media are familiar to all and offer no serious psychological problem if recognized, because almost all such defects may be remedied by the use of artificial lenses. If such errors are not corrected serious problems may result. Many a teacher has tried in vain to teach some child to read, and has even gone so far as to consider him feeble-minded because he has not progressed, when the real trouble has been that he has not been able to see clearly the printed page before him.

1. *Myopia or nearsightedness.* In this condition either the lens has too much curvature or the eyeball is too long so that the image comes to a focus in front of the retina. Such a condition may be corrected by a concave lens placed in front of the eye. See Figure 2.

2. *Hyperopia (or hypermetropia) or farsightedness.* This condition is just the reverse of myopia. Either the lens is too flat or the distance from the lens to the retina is too short so

that the image is focused behind the retina. Such a condition is remedied by a convex lens. See Figure 3.

3. *Astigmatism.* In a normal eye the surface of the three main refracting media, the cornea and the two surfaces of

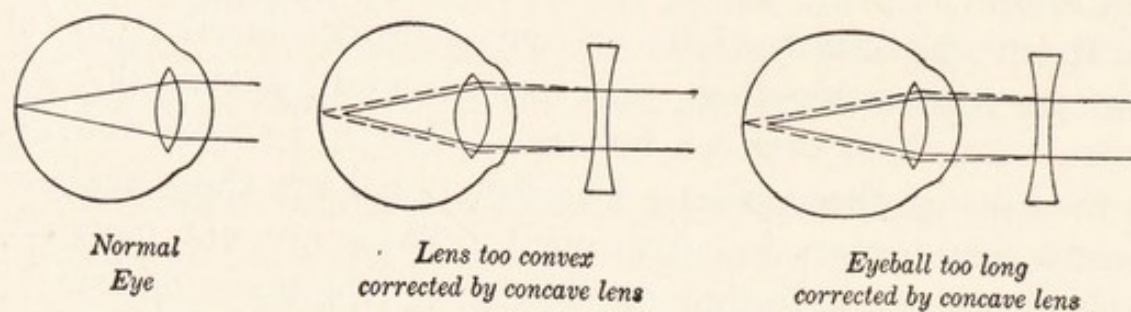


FIG. 2. NEARSIGHTED EYE COMPARED WITH NORMAL EYE

In the normal eye the parallel rays of light are focused in a single point on the retina. If the lens is too convex the rays are brought to a focus in front of the retina and the light is blurred when it strikes the retina. The same thing happens if the eyeball is too long. Such nearsightedness may be corrected by a concave lens. The dotted lines indicate how the rays are brought to a focus on the retina with the help of such a lens.

the lens, are sections of true spheres and hence refract equally along all meridians. Astigmatism is the name given when the refraction is different along different meridians, due to some defect. The effect of such unequal refraction is that

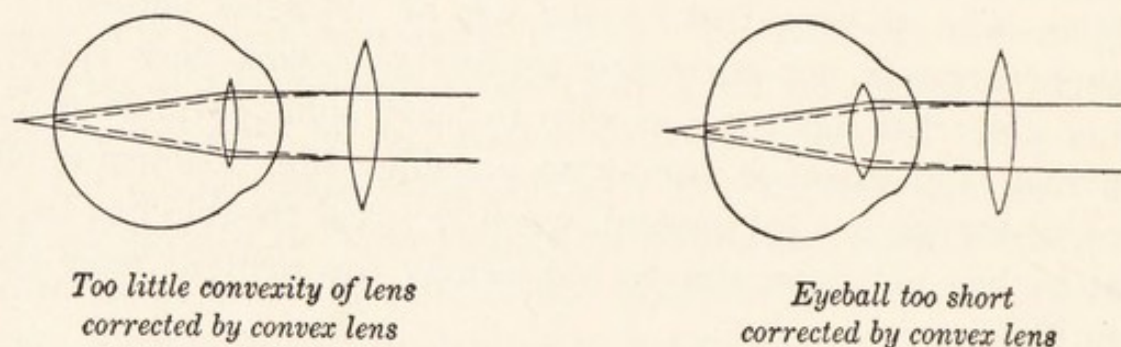


FIG. 3. FARSIGHTED EYE

If the lens lacks in convexity or if the eyeball is too short, parallel rays are focused behind the retina and dull vision results. This condition can be corrected by the use of an auxiliary convex lens which focuses the light on the retina as is indicated by the dotted line.

different meridians bring the image to a focus at different distances behind the lens. If the eye is accommodated to the refraction of one meridian the light rays entering through

other meridians will be blurred. Such a condition may be detected by means of the astigmatic chart shown in Figure 4. Since the different parts of the visual field are brought to a focus unequally the result is a tendency to shift the focus continually in an attempt to get clear vision. Hence the person with astigmatism is likely to appear "shifty-eyed" and will suffer considerable discomfort from eye strain.

Astigmatism, if not too marked or irregular, may be corrected by a lens which corrects the refracting error and makes all meridians refract equally.

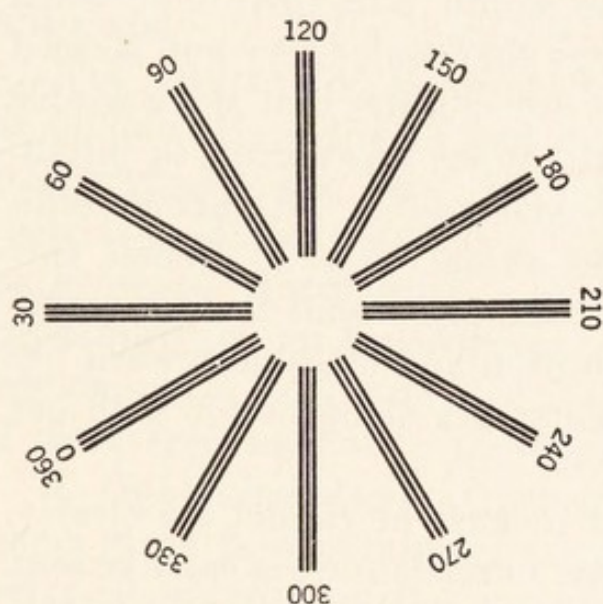


FIG. 4. ASTIGMATIC CHART

If the eye is focused upon the space in the center all the lines, radiating in different directions, should appear equally black. Should certain ones appear gray, instead of black, astigmatism is indicated.

For example, suppose that the vertical meridian has the greatest curvature, a condition which is very common. Such a condition might be corrected by using a cylindrical lens so placed as to increase the horizontal refraction of the eye.

4. *Presbyopia, or old sightedness.* Presbyopia is due to a gradual failure of the accommodation apparatus to function due to increasing rigidity of the lens with old age. The lens, instead of adjusting as it should, remains flat, the

point of clear vision recedes and unless corrected with a convex lens, the vision for near objects becomes indistinct.

If defects of the refracting media are corrected in time no serious consequences result. Failure to correct them may lead to more serious conditions. Near and far sighted conditions cause the person to attempt to adjust by increased efforts to adjust the accommodation apparatus. The continued strain of such prolonged effort will produce fatigue, headache, and irritation. Some cases of failure to read, so-called nervous

fatigue and indigestion, and emotional irritability have markedly improved with a correction of refractive defects. The eyes are our most important distance receptors and imperfect eyes may have a widespread effect on one's personality.

The secondary results from visual defects are often very far reaching. Recently a girl was brought to our clinic with the report that she was doing very poor work in school, that she had developed a very ugly disposition when her teachers tried to help her, and recently had learned to do little mean things to the other girls. She would pull their hair when they were off guard, trip them as they walked by and seemed to take a vicious delight in any discomfiture that she was able to cause. Examination showed that she was normal in intelligence but that she was a very poor reader. It further indicated that she had a marked visual defect. When this was corrected by proper glasses the girl began at once to improve in her reading, her disposition and attitude toward her teachers changed, and she began to get along better with her playmates.

A child may shuffle his feet because he cannot see clearly. He may mumble his words when he reads for the same reason. Certainly, one who has a vague image of what is before him is not likely to be so quick and energetic in his movements as one who sees perfectly. Poor vision is not back of all school problems, but no teacher should be blind to the complex possibilities that might be built upon this source of trouble.

35. Disorders of the eye muscles. 1. *Nystagmus*. Nystagmus is an oscillation, or rapidly alternating sidewise movement, of the eyeball. In certain circumstances it is a normal phenomenon. Two normal situations which will produce nystagmus are observing passing objects and suddenly stopping after having been whirled around. Oscillation of the eye in response to passing objects is due to successive fixations of the eye. That following whirling is due to the reflex response from stimulation of the semicircular canals.¹ Absence of

¹ The semicircular canals are located in the inner ear. In each ear there are three of these placed in different planes and are filled with

nystagmus under such circumstances is evidence of some abnormal condition. Thus if a man has had his semicircular canals destroyed by an inner ear infection, or by some other disease, or if the nervous pathways connecting the canals with the nervous centers are injured, nystagmus will not result from whirling. Such an individual will be at a loss to maintain position or balance without the aid of vision or contact of some sort. He would make a poor aviator because he would be unable to determine accurately his position while in the air. Nystagmus may also be produced by irrigations of the ear alternately by hot and cold water.

The presence of abnormal nystagmus may be determined as follows: Have the subject follow an object as you move it well around to one side. If, during the movement of the eye, there is a decided oscillation it is probably indicative of some pathological disturbance. Such a symptom indicates the probability of an involvement of the cerebro-spinal nervous system, not a local muscular disorder. It is not common, but if discovered suggests a thorough medical examination.

2. *Ophthalmoplegia* (Of-thal'-mo-pleg"-i-a). This is the name given to a paralysis of certain eye muscles. When the external muscles of the eyeball, i.e., those supplied by the third, fourth, and sixth cranial nerves, are paralyzed it is called external ophthalmoplegia. When the muscles of the iris and pupil are paralyzed it is called internal ophthalmoplegia. Both of these conditions in chronic form imply a disease of the central nervous system. The most frequent causes are syphilis and chronic alcoholism. The result of such a disorder is that the person sees double.

To be sure, the teacher is not supposed to be able to examine a child and make a diagnosis as to the exact nature of a visual disorder, but she should have some notion as to the significance of such disturbances so that she can refer fluid. When movement of the head of any sort is executed, the inertia of this fluid causes it to move through the canals and to stimulate hair cells located where the canals are united in a common chamber. Sensations arising from these stimulations enable the person to maintain position and balance.

any case of this sort to the proper authority for complete examination. Teachers have been too prone either to regard with scorn a child who has a "shifty" or peculiar eye, or to look upon him with pity. Either attitude should be avoided and instead of such an emotional reaction, the teacher should make a rigorous attempt to see that the child gets the advantage of all the help which medical science may have to offer him. Many a child has been regarded and treated as dishonest (and probably eventually made dishonest because of such treatment), because he would not look the teacher "straight in the eye," when he had a visual disability which made it impossible for him to do so.

36. Other defects in the visual apparatus. 1. *Imperfections in the vitreous humor and lens.* Normally the lens and the vitreous humor contain opaque objects which throw shadows on the retina. They may appear as simple spheres or as groups of beads or other queer shapes. They are called *muscae volitantes* (floating flies) because they seem to move about. The reason for this movement is that when a shadow falls on the retina the tendency is to fixate on it by bringing it upon the fovea, the central point of clearest vision, by an appropriate eye movement. Obviously it is impossible to turn the eyes so as to make the shadow from a spot in the vitreous humor fall upon the fovea unless it is directly between the lens and the fovea. Consequently, one gets the impression from the movement made in an attempt to fixate on it that the spot or other queer form is moving.

Helmholtz has described an experiment to emphasize the presence of these *muscae volitantes*. The method is illustrated in Figure 5. In this figure, *b* is a candle flame placed nearer to the eye than the anterior focal distance, that is, less than 15 mm. from the eye. The lens *a* is of short focus and brings the light from the candle to a focus at the small opening in the dark screen *c*. The eye is placed just behind this opening and is illuminated by the rays from the small bright image of the flame at that spot. The shadows are seen projected upon the illuminated surface of the glass lens.

2. *Scotomata*. Scotoma means a blind spot. Each person normally has a blind spot in each eye where the optic nerve enters. Pathological scotomata may be found in the same manner that one discovers the normal blind spot. Move a small piece of paper across different parts of the visual field while the subject looks straight ahead, one eye being closed. The paper will disappear when the light rays from it fall on the blind spot. Unless these become very pronounced they are not noticed by the subject. In general, scotomata may be due to diseases of the optic nerve, diseases of the retina, tobacco or alcohol poisoning, multiple sclerosis, neuritis, or migraine.

3. *Color blindness*. Color blindness may be partial, red-green color blindness, or complete. Various other combinations may be found also. Except in the case of certain drug poisoning it is hereditary and has little significance for those aspects of psychology which deal with an understanding of character and personality.

4. *Amaurosis or blindness*. When blindness is of one eye it is called unilateral amaurosis, when of both eyes it is called bilateral amaurosis. It is usually due to atrophy of the optic nerve or to disease of the retina. As we shall soon learn there is a condition which simulates amaurosis which is purely functional in nature.

5. *Hemianopsia*. Hemianopsia (half vision) is absence of half the field of vision of each eye. The nature of the different forms of hemianopsia can best be understood by reference to the way in which the optic fibers decussate at the optic

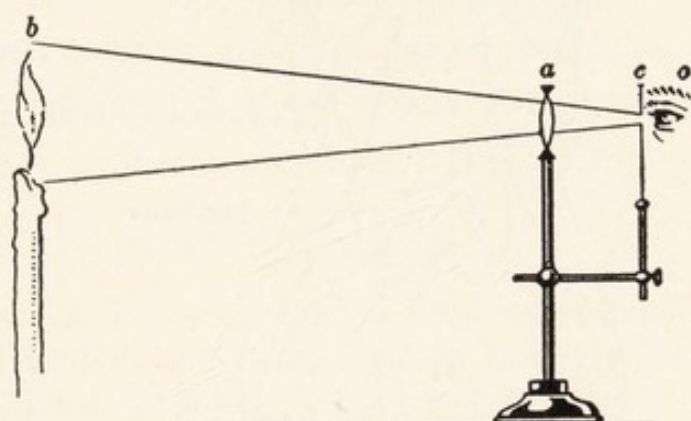


FIG. 5. HELMHOLTZ'S METHOD OF SHOWING DEFECTS IN REFRACTING MEDIA OF EYE

a. short focus lens; b. candle light; c. a screen with a pinhole; o. the observer. Any imperfections in the lens or vitreous humor will be seen projected on the surface of the glass lens in the form of beads, spheres, and other forms, singly or in groups.

6. *Hemianopsia*. Hemianopsia (half vision) is absence of half the field of vision of each eye. The nature of the different forms of hemianopsia can best be understood by reference to the way in which the optic fibers decussate at the optic

chiasma (meaning crossing). This is shown in Figure 6. Fibers from the nasal half of each retina cross and go to the opposite side of the brain. Fibers from the temporal half of each retina do not cross but go to the cortex on the same side of the body. There is not positive evidence that the division is symmetrical as it would appear from the illustration, but in general they divide as illustrated.

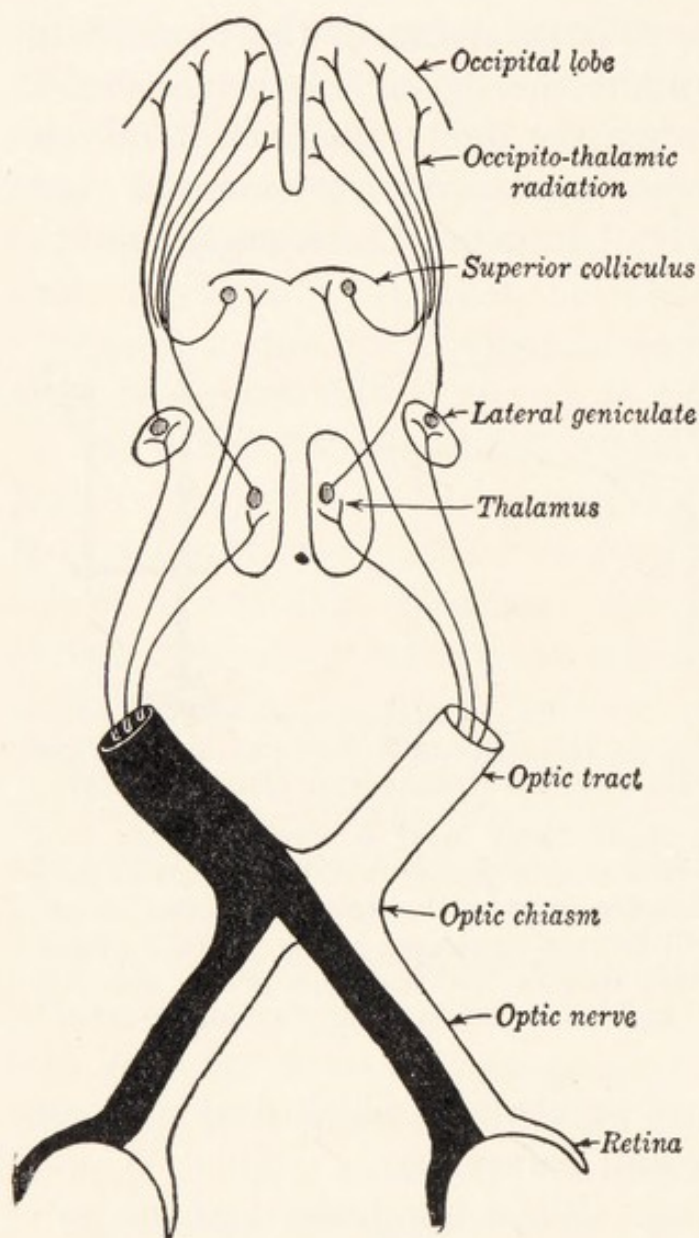


FIG. 6

Diagram indicating the general course of the fibers of the optic nerves and the bilateral connection between cortex and retina. (From W. H. Howell, "Physiology," W. B. Saunders Company.)

This being the case, if the optic nerve is injured the place of injury would largely determine the sort of defect that would result. Destruction between the chiasma and one eye would cause unilateral amaurosis. Destruction between the chiasma and the brain would affect both eyes. If the fibers from the right side of the cortex (black in the illustration) are destroyed, a blindness would result in the right half of each retina. Destruction of the fibers from the left side of the

cortex before they reached the chiasma would result in blindness of the left (white) half of each retina.

The different forms of hemianopsia are:

(a) **HOMONYMOUS.** Affecting the corresponding halves of the two eyes. The two conditions described in the preceding paragraph are illustrations of homonymous hemianopsia.

(b) **HETERONYMOUS.** Affecting non-corresponding halves of the two eyes.

(1) **Bitemporal heteronymous.** Blindness of the outer half of the two eyes.

(2) **Binasal heteronymous.** Blindness of the inner half of the two eyes.

To cause heteronymous hemianopsia the lesion must be at the optic chiasma itself, because it must affect both crossed and uncrossed fibers.

VII. FUNCTIONAL DEFECTS OF VISION

The visual defects in Section VI can be tested by neurological methods combined with optical tests and can in most cases be traced to a definite organic origin. There are other visual disorders that do not fit in with our knowledge of visual phenomena. They are called functional disorders because there is no apparent lesion of the nervous system or defect in the visual apparatus sufficient to account for the trouble. They are errors of adjustment between the incoming stimuli and the rest of the personality. In many cases, the history of the disorder throws light on its nature.

37. Functional blindness. Let us review the evidence that goes to indicate that blindness of this class may be due to some personality adjustment.

1. *The onset of this condition is often of the most unusual sort.* Janet¹ tells of an incident where a man as the result of a most trivial injury—having a greasy rag strike him on the face—became blind and remained so for four years. In another case a woman was struck in the face with some soapy water while working in a laundry. Her face was slightly burned but none of the water penetrated her eyes. In spite of this she became completely blind for two years.

¹ Pierre Janet, "The Major Symptoms of Hysteria," 1913, Macmillan, p. 186.

2. *Recovery is in a mysterious manner.* The fact that blindness comes under such unusual circumstances would not be convincing evidence that there was no organic lesion (no actual injury to nervous tissue) were it not for the fact that sight returns in just as mysterious a manner. It is this type of blindness that lends itself to miraculous cures. The two cases just cited recovered spontaneously. Janet gives an illustration of how vision fluctuates without reason:

“A woman of twenty-seven has the following singular habit; while reading, she sees, as it were, a red flash of lightning which illuminates the room; she shuts her eyes and, when she opens them again, she sees no more. Once this accident lasted twelve days, another time seven, another eight. Her sight comes back suddenly, just as it disappears.”¹

What is cured is not a definite organic lesion but something deeper in the psychological mechanism of the victim. We must understand that seeing is not simply the function of the eye with its nerves to the cortex. It is a function of the whole personality, using the optic nerves and visual apparatus as factors in a complete integration. It is obvious when one becomes blind with no disturbance of the optic apparatus or its connections, and when the vision returns as abruptly, that one must look to the rest of the personality for the explanation. This is more rational than to insist that the blindness was due to a physical disorder and that the cure was the working of a miracle.

3. *The reflexes are normal.* (See Article 168, p. 273.) Another bit of evidence that can be used to determine whether blindness happens to be organic or functional is the condition of the reflexes. This is particularly important when we do not have the history of an irrational onset or of previous mysterious recoveries. In true blindness the pupillary reflexes should be disturbed. In functional blindness they can readily be elicited.

4. *Under certain circumstances they do use their vision.* Patients with functional blindness have been known to walk

¹ *Ibid.*, p. 187.

in sleepwalking episodes and avoid obstacles in a manner that would be impossible without the use of sight. The same thing has been noticed when such patients were under extreme emotional stress. Even under ordinary conditions they give evidence of using their visual powers. Janet¹ quotes F. Jolly² as having made the following comment about children having complete functional amaurosis.

"These children, who seem to see no light, avoid obstacles put, without their knowledge, in their way, and yet they are not led by the touch . . . they do not look like the really blind . . . there must be here some kind of perception."

38. Functional unilateral blindness. A common way for one functionally to lose part of his vision is to become blind in one eye. This is likely to be much more common than complete blindness. It is much more easily proved to be functional than complete blindness.

One outstanding difference between a real unilateral blindness and a functional blindness is that in the real blindness the patient is not likely to complain about his trouble and often he goes for a long time not knowing that he is blind in one eye, while in a functional type he is likely to appear very much disturbed about it. Quite a number of cases have been found where a child was blind in one eye for years without discovering it. In our ordinary life we may be using one eye almost exclusively and not be conscious that we are doing so. Few of us use the two eyes to the same extent but we cannot tell, except by a special test, whether this is the condition with us. This fact makes the complaints of the person with unilateral blindness appear exaggerated.

The way to ascertain that it is a functional blindness is to demonstrate that under certain circumstances the subject does use the supposedly disabled eye. Of course such a test is

¹ Pierre Janet, "The Mental State of Hystericals," 1901, G. P. Putnam's Sons, p. 498.

² F. Jolly, "Ueber Hysteria bei Kindern," Berliner Klin. Wochenschr., 1892, No. 34, p. 4.

warranted only when no organic cause can be discovered for the blindness.

One method of proving that the subject does use his blind eye is by means of the letters of Snellen. This test is conducted as follows: On a dark background are pasted letters, some blue and some red. The red letters alone would have no significance and the blue ones alone would have none, together they would have meaning. For example, suppose we had the red letters **O T W S E N** and the blue letters **N R H E T R**. Separately they mean nothing: spaced alternately they spell **NORTHWESTERN**. To the eyes of

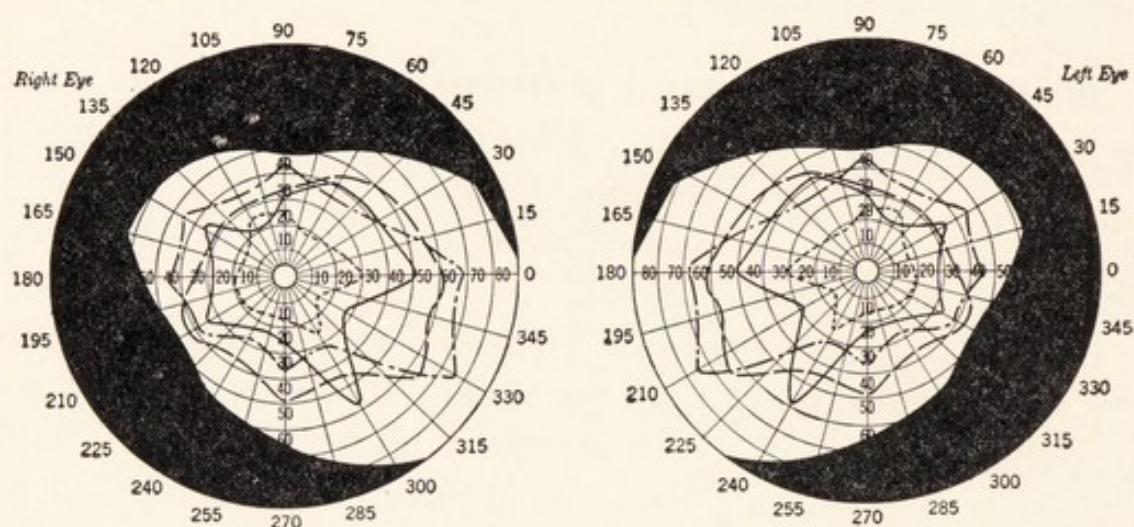


FIG. 7. COLOR ZONES OF THE RETINA

The two spheres represent the retina of the two eyes. The shaded portions do not function. The different fields are indicated by the various boundary lines. In concentric narrowing of the visual field only the extreme central portion functions. ——— limits of red zone; - - - - - limits of green zone; — — — — — limits of blue zone; — — — — — limits of yellow zone.

the subject are applied glasses. One glass is of the same hue as the red letters and the other glass is of the same hue as the blue letters. After the glasses are placed he is shown the test card. With one eye he sees only the red letters and with the other eye he can see only the blue letters. When asked what he sees he should see only meaningless letters if he is blind in one eye. The group that he sees will indicate in which eye he is blind. If he sees all the letters and reads the word **NORTHWESTERN** it is clear that he is using both eyes.

Blindness of this sort is not so common as it once was. At one time functional visual disorders were looked upon as definite evidence of hysteria and physicians would take suspects and examine them in great detail for unilateral blindness as well as some of the other visual disorders that we shall study presently. Such examinations would actually suggest disorders to the patients and they would forthwith develop them. Physicians today are not making so much of these symptoms as diagnostic criteria and hence fewer cases are found. The significance of functional unilateral blindness will become clearer when we come to study hysteria.

39. Narrowing of the visual field. One of the most peculiar forms that functional disorders of vision may take is the concentric narrowing of the field of vision. In Figure 7 are shown the areas of the retinae of the two eyes that function in normal vision. In certain patients the only part of the retina that seems to function when the eyes are tested with a perimeter (illustrated in Figure 8) is the fovea and the area immediately surrounding the fovea.

When the eye is found to be perfect from a physical and organic standpoint, how can this be explained? It has been pointed out that patients who upon test have a narrowed field

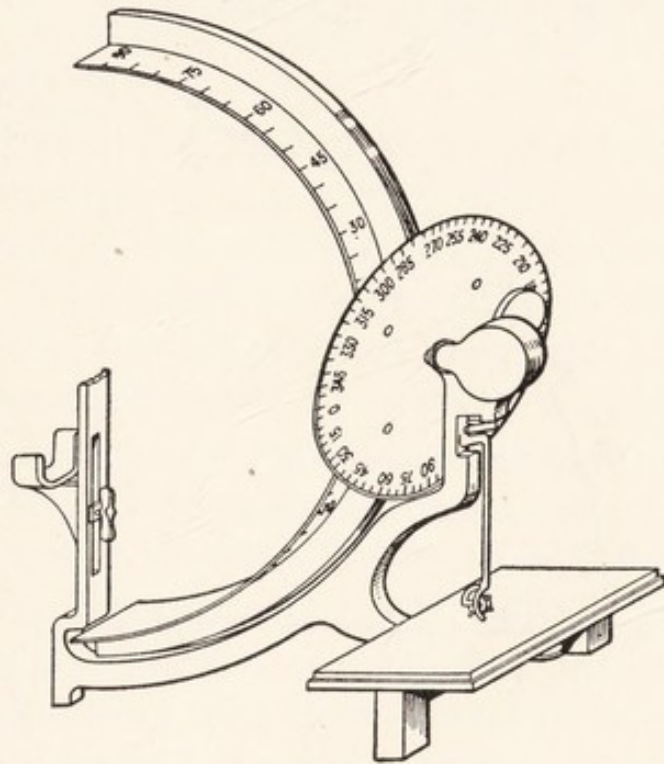


FIG. 8. PERIMETER

The semicircular bar may be placed in any meridian. A given object is then moved along the bar from without in until it is just perceived. The angular distance at which this occurs is marked off on the corresponding meridian on the chart seen at the right of the figure. The eye examined gazes over the top of the vertical rod at the left at a fixed point in the middle of the semicircular bar. (From W. H. Howell, "Physiology," W. B. Saunders Company.)

of vision can run, play ball, and make coördinated movements with their arms, all of which require peripheral vision. These patients do not realize that in so doing they are contradicting the results of the careful tests made with the perimeter. It can be shown in such cases that the subject can and does use the periphery of his retinae under certain circumstances. When tested in the laboratory, when he is convincing others

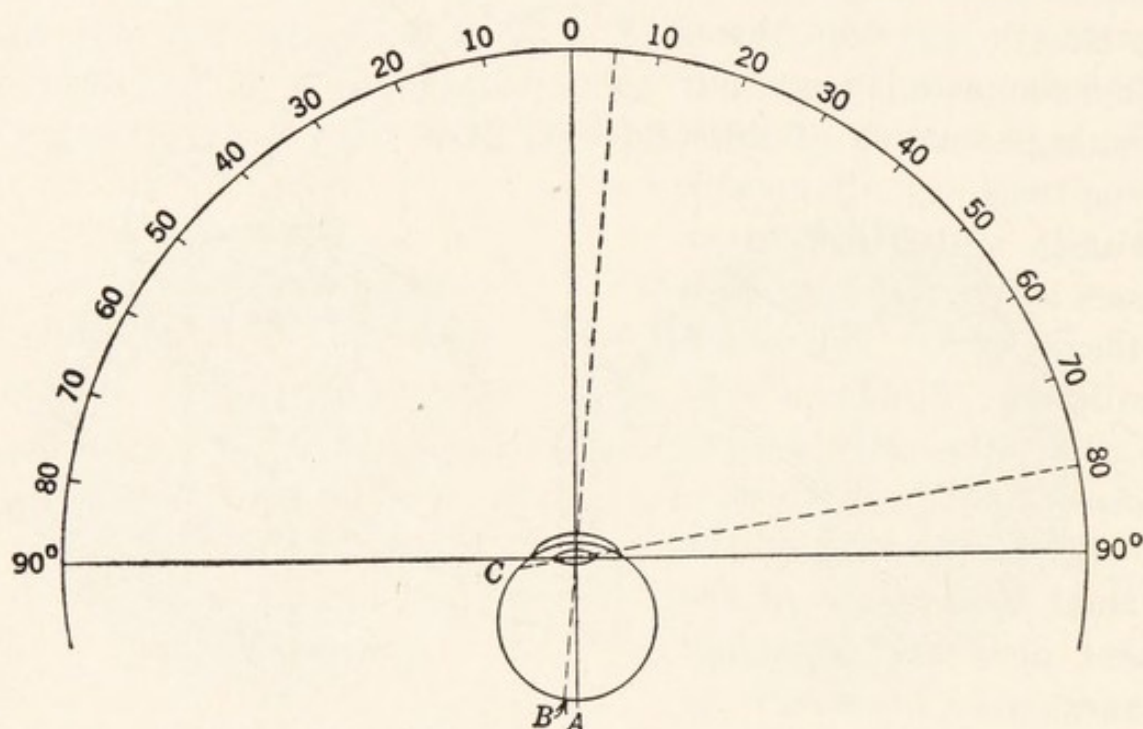


FIG. 9. DIAGRAM OF NARROWING OF VISUAL FIELD

If the eye is focused so that a ray of light from 0 will fall on the fovea at *A*, a beam from five degrees from 0 will fall on the retina at *B*. Only a very small part of the retina will be involved in such a sensory impression. A beam from eighty degrees will fall on the retina at *C*. Vision is less distinct as we go from *A* toward *C* but the normal person uses more than the small part surrounding the fovea as is indicated in Figure 7.

of his deficiency, the peripheral areas do not function. When the use of the peripheral vision becomes of vital importance for his welfare he does make use of these areas. If the reader doubts the utility of peripheral vision in playing ball let him apply Janet's test. Place in front of the eyes a cardboard pierced with two holes so that he can see through one hole with each eye. This limits vision to the fovea. With this cardboard in front of the eyes, try to catch a ball.

Janet¹ gives a case illustrating a patient with narrowed visual field responding to a peripheral stimulus.

“A young boy had violent crises of terror caused by a fire, and it was enough to show him a small flame for the fit to begin again. His visual field was reduced to five degrees and he seemed to see absolutely nothing outside of it. I showed that I could provoke his fit by merely making him fix his eyes on the central point of the perimeter and then approaching a lighted match to the eightieth degree.” See Figure 9.

If a teacher finds any evidence of functional visual defects she is very likely to interpret it as due to the child's perversity, and proceeds to punish him. Such a procedure only aggravates the difficulty. Functional disorders do have the appearance of being motivated by stubbornness and disobedience, but even such manifestations should be carefully studied before any action is taken and the efforts be directed toward a removal of the cause of the difficulty and not the end result. If the child appears not to wish to see, the teacher will not improve his vision by forcing him to hold certain objects, a reader for example, before his eyes and commanding him to see. She must find why he does not wish to see, discover some means to make him wish to see and the difficulty will be at an end.

VIII. AUDITORY SENSATIONS

In the auditory realm we find individuals with a decrease in acuity, some with increased acuity and others with numerous types of auditory distortions. We may find persons who cannot hear although their auditory organs are in perfect condition. Probably the most significant fact that we shall discover in this connection is the widespread effect that a minor hearing defect may have upon the rest of the personality.

40. Decrease in auditory acuity. 1. *Organic deafness.* Deafness, either complete or partial, is usually of a definitely organic nature and has only an indirect relation to abnormal phenomena. It may be caused by a disturbance of the audi-

¹ *Loc. cit.*, 198.

tory mechanism, of the auditory nerve, or of the brain center for audition. Disturbance of the auditory mechanism is not so serious as are the defects of the visual apparatus because in modern civilization we use our eyes more than we do our ears. Certain indirect effects of deafness are serious influences on the development of personality traits. These will be considered presently.

2. *Functional deafness.* There is a type of deafness where the hearing mechanism is intact but despite this the person does not hear. These cases, just as we found in visual defects of the same type, are due to some personal factor and are often of a complex nature.

Where the nature of the trouble is in doubt the first thing to do is to determine by some means whether or not the person does hear auditory stimuli. This can be done by producing a sudden loud sound near the ear of the subject in such a manner that he cannot observe the source of the sound. Such a sound will cause a winking reflex or some other involuntary reaction in a normal person. If this reaction occurs it proves beyond question that the patient has some sound sense. The case cited on page 33 illustrates this type of disturbance.

41. Increased auditory acuity. Some persons seem to have increased sensitivity for hearing. They will give a violent response to a mild sound and if subjected to continued noise will become very much disturbed. This is seldom a real hyperacuity.¹ It is usually no more than an attitude of irritation toward certain sounds. There are great differences in auditory acuity but the only effects of increased sensitivity are a great advantage for the possessor. Consequently, when one complains of sensitivity to sounds, it indicates an emotional disturbance rather than an auditory one. Persons so afflicted jump and start at the slightest sound and often shut their ears with cotton.

A prominent psychologist confesses that he is extremely sensitive to the hooting of an owl. He has a summer cottage

¹ The prefix *hyper* signifies an increase of, hence auditory hyperacuity means unusual sensitivity to sounds.

in a lonely woods where such hooting is rather common, but he has been unable to rid himself of this extreme sensitivity. On several occasions when on his way to get water at a nearby spring he was surprised by an owl hoot and each time ran wildly back to the cottage without the water. Other noises much more intense do not disturb him. This peculiar reaction he traces to the fact that he was cared for as a child by a negro mammy who effectively induced him to go to bed at sundown by telling him weird stories, prominently featuring how owls carried away little boys. The fear thus established has clung to this man, he reasons about it, tells himself that it is foolish, but, nevertheless, when an owl hoots he still jumps.

42. Qualitative changes in audition. These have been termed akoasms and consist of a continual buzzing in the ears, roaring or explosive sounds. At times they are the after-effects of excess stimulation of the ears. Such conditions may prevail during a Fourth of July celebration, loud cannonading or the operations of a manufacturing plant. These will usually subside with changed conditions. Their only serious aspect from our point of view is the possibility that the subject may perceive them as coming from the outside world, read meaning into them, and try to explain them. This would be the case if he adds to them, or believes that they are voices from the spirit world or from some other mysterious source.

43. The suspicions of the deaf. It is a very common thing for people to whisper in the presence of a deaf person when they do not want the deaf person to hear. The afflicted one senses the situation and wonders what it is all about. He tends to feel that the whisperings are of a personal sort. Too often they are. This feeling makes him irritable and suspicious. If, in addition, he finds that things are not going to his liking, it is very easy to interpret his misfortunes as due to the intrigues of his friends. Did he not see them whispering about him? He feels that he cannot trust them and as a result grows suspicious and more and more seclusive. In this way deafness may be one causal factor in the develop-

ment of false ideas of persecution. The significance of these will be discussed when we consider delusions.

44. Mental deficiency through auditory deprivation. It is very difficult to give an accurate test of auditory acuity to young children and for this reason many of them have an unrecognized partial hearing defect. Such children learn to respond to sounds; but, not hearing them distinctly, they make false responses or make them upon cues other than auditory. They watch the lips, movements of the hands of the speaker, and similar signs. When such a child fails to respond properly it is likely to be interpreted as disobedience or intellectual dullness. We realize that if this continues over a period of years the child loses a number of things that he should be getting, which he might get were his condition understood. When he does hear indistinctly and his wrong response is met with scolding, he tends to be more and more careful (which to the observer is seen as increased slowness) about responding at all and this gives more ground for regarding him as dull.

Recently in the Psychological Clinic at Northwestern University a child was examined whose main difficulty was doubtlessly a hearing deprivation. If we spoke to him in an ordinary speaking voice he was very likely to respond, but we noticed that he often misinterpreted what we said. He never asked us to repeat, but either was unresponsive or made some chance attempt to do as requested. We found that in mechanical activities, the type of performances he would learn by actual experience, he was normal. In academic achievements he was retarded. Investigation showed that none of his teachers had believed him deficient in hearing and in his present room he was in the back seat because he was larger than the other boys of his grade.

Certain obvious changes were needed to help this boy's condition. He should be placed in the front seat and the teacher made to realize that she should go to special pains to make him hear distinctly. He should be encouraged to ask people to repeat what was said when he did not hear, for it is obvious that he had been taught not to interrupt and ask questions. Finally, there is a possibility that his hearing acuity might be improved by an artificial amplifier.

We have long recognized the importance of correcting visual defects with lenses but have been slow in perfecting aids for our ears. Several types of sound amplifiers are now being marketed.

IX. CUTANEOUS SENSATIONS

Cutaneous sensibility is the result of combined impressions from a number of sense organs. After a brief study of the disorders of the cutaneous senses which can be traced to organic defect we shall take up the study of functional anesthetics, which has been and still is one of the most baffling problems of modern abnormal psychology.

45. Components of cutaneous sensibility. A careful test of the sensibility of the skin will show that there are four distinct senses with end organs in the skin. They are touch, heat, cold and pain. Exploration shows that these are located in distinct "spots" and that the impressions arising from their stimulation are of a specific nature. For example, a stimulation of a heat spot by any sort of stimulus will give rise to a sensation of heat. With more or less qualification this may be said of the others.

The way in which these distinct peripheral impressions combine is still a subject of controversy. The researches of Rivers and Head¹ have been disputed by those of Boring.² Both groups of investigators studied this question by experimenting upon the effect of severing portions of the peripheral nerves upon subjectively observed sensations. In brief, the theory of Rivers and Head is that impulses from the periphery may be grouped into two distinct classes, epicritic and protopathic, and possibly a third, deep. These will be studied in the next paragraph. When the fibers from these sources enter the spinal roots they are organized in such a way that this distinction is lost and they are combined so as to give rise to the sensations of pain, heat, cold, and touch.

¹ *Brain*, 1905, p. 99, and 1908, p. 323. Also Head, "Studies in Neurology," 1920.

² *Quarterly Journal of Exp. Psychology*, 1916, 10, p. 1.

46. Types of cutaneous sensibility. 1. *Epicritic sensibility.* This includes the sensations of light touch, light pain, and mild differences of heat and cold from stimuli applied directly to the skin. A coarse test for determining the integrity of light touch is to stimulate the skin in the gentlest possible way with a camel's hair brush or a piece of soft cotton. Epicritic pain can be tested by light touches with a pin point. To test superficial heat and cold sense, test tubes partly filled with warm and cold water can be applied to the skin.

It is epicritic sensibility that gives us the fine sense of cutaneous localization. This varies greatly on different portions of the body, and is commonly tested by determining the distance two points must be separated to be felt as two. It may also be roughly tested by moving a fine object, such as a hair, in some direction over the skin and asking the subject to report the direction and extent of movement.

2. *Protopathic sensibility.* This is the name applied to acute pain and extreme stimulations of the heat and cold type. It is the kind of sensibility found in the skin and viscera when subjected to violent stimulation. Localization by means of this sense is very inaccurate. Its integrity can be tested by a rather quick jab of a sterilized pin point or by the application of test tubes containing quite hot and ice cold water.

3. *Deep sensibility.* The stimuli of sensations of deep sensibility probably are pressure upon specific end organs located in the muscles and joints. In everyday life these are universally combined with impressions from the epicritical and protopathic senses.

While, in the normal subject, we can distinguish four distinct cutaneous senses, namely touch, heat, cold and pain; and while, by means of operative experimentation, we may distinguish three components of cutaneous sensibility, namely epicritic, protopathic and deep; in actual experience we know nothing of these distinctions but we undergo a great variety of diverse combinations. This study should enable us to abandon

the idea that touch sensations are simple in nature. A recognition of their complexity will, at least, give us an expectation that disorders in this field will be of a complex sort. We will not need to call an area of peculiar lack of sensibility upon the skin a "devil's claw" as did our forefathers; the complexity of the mechanism is sufficient to explain such a phenomenon.

47. Kinesthetic sensibility. The kinesthetic sense or the sense of movement and position is probably a combination of the three cutaneous senses just enumerated. The end organs comprise those in the skin itself together with those in the muscles, joints, and perhaps the tendons. All these combine in actual experience and give rise to sensations of position and movement.

The loss of the kinesthetic sense results in an inability to sense the impressions which ordinarily enter into the interpretation of position or movement. For example, if the subject had lost the kinesthetic sensibility of his arm he would find difficulty in carrying food to his mouth while his eyes were closed. Nor would he be able to fasten his back collar-button without the aid of a mirror, for he would need vision in order to enable him to make accurate movements.

In some such conditions the motor impulses to the affected member may be intact but the failure to receive sensations during the movements lead to gross errors. An illustration of this is the so-called tabetic gait.¹ In *tabes dorsalis* the dorsal or sensory part of the spinal cord is involved so that the sensory impulses from the legs are lost or distorted. A person afflicted with this disease has the strength to walk, in fact, it appears as though his muscles were too strong. In taking a step, he kicks out too far and then has to bring his foot back to the proper position on the floor. This is due to the lack of controlling inhibition that naturally results from muscle and skin sensations. To walk at all, the tabetic has

¹ The tabetic gait is the gait that characterizes a person with *tabes dorsalis*, a disease in which the sensory tracts in the dorsal part of the spinal cord are destroyed.

to check up on the movement of his legs with the help of a cane or by watching them.

48. Tests of the kinesthetic sense. Tests of the integrity of the kinesthetic sense are designed to determine how accurately the subject can recognize various positions and movements of the arms, fingers and legs with the eyes closed.

1. Ask the subject to bring his index finger to within an inch of his nose and then stop without touching the nose.

2. Grasp one hand of the subject and move it to a different position. Then ask the subject quickly to touch it with the free hand. If the deep sense is lost he is likely to reach in the wrong direction with the second hand.

3. Place the hand or foot in an awkward or unusual position and ask the subject to imitate the position with the other hand or foot.

4. Test the ability to discriminate weight by placing different weights with the same surface contact on the hand of the subject.

5. The ability to recognize the form and consistency of solid objects placed in the hands is called stereognosis. (From the Greek word *stereos*, meaning *solid*, and *gnosis*, meaning *knowing*.) Such recognition includes a perception of size, weight, space, and character of the surface of the object. To carry out the test for this successfully, place various articles of diverse character in the subject's hands, such as a key, inkstand, lid, pin, eraser, button, a coin, and pencil. Without seeing them he must be able to distinguish and describe them. The absence of this ability is known as astereognosis.

X. FUNCTIONAL ANESTHESIAS

In functional cutaneous anesthetics (loss of sensibility) the same general principles hold as in functional deafness and blindness. Some specific characteristics of functional cutaneous anesthesia deserve special consideration. Functional disorders, it will be remembered, are those where function is impaired while the organism is intact.

49. Functional anesthetics conform to popular conceptions of functional units. The ordinary conceptions of cu-

taneous sensibility do not at all correspond to the anatomical and physiological findings, and for this reason disorders of these senses due to purely mental causes have been of great interest to psychology. The fact that scientists are not agreed on the precise workings of the cutaneous sensations enables us to understand why popular conceptions do not conform to the physiology and anatomy of the nervous system. No matter how we may try to analyze cutaneous sensations into their components, whether we emphasize the facts of "punctate sensibility" as discovered by psychologists or the facts of epicritic and protopathic senses as set forth by physiologists, in actual experience we only know them in their intricate combinations. In experience we do not analyze, we synthesize into functional units. When we grasp a hammer we do not analyze the sensations into muscular strain, heat, cold, pressure, and pain sensations. We combine all these into a unit and naïvely say we feel the hammer in our hand. The hand is the functional unit. If, with our eyes closed, we cannot distinguish a pencil from a knife, or a dime from a strawberry, it would appear to us to be an anesthesia of the hand and not of any certain nerve or combination of them.

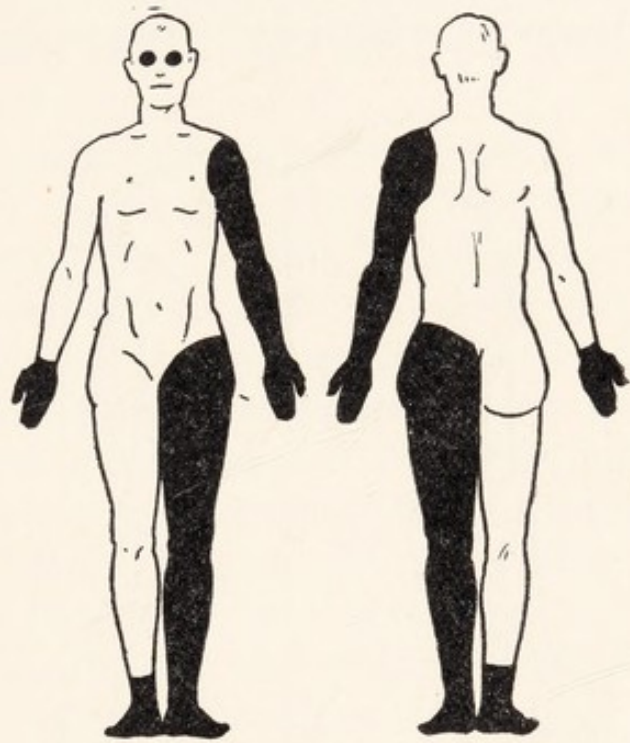


FIG. 10. SOME TYPES OF FUNCTIONAL ANESTHESIAS

The shaded areas indicate some of the areas of the body that become anesthetic in functional units. The nerve supply to any one of these areas is complex and does not correspond to the part affected. If there were actual injury of a nerve or nerves the affected area would not correspond to the common conception of a leg, foot, arm, hand or eye as illustrated but to the distribution of the nerve or nerves.

It takes several nerves to supply the cutaneous impressions

for the hand or the foot. If all these were impaired the lack of sensibility would extend up the leg or arm and follow the anatomical distribution of the nerve. In functional anesthesia this does not appear to be the case. The anesthesia stops abruptly where the hand stops, namely at the wrist, or where the foot stops, at the ankle. Consequently functional anesthetics have been given the name of the unit they represent,

such as glove anesthesia or shoe anesthesia.

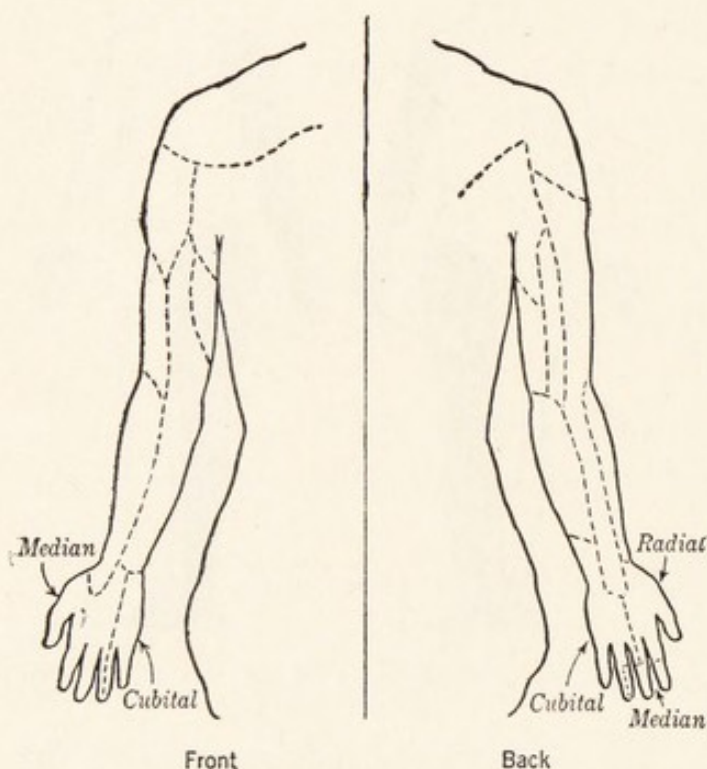


FIG. 11. DISTRIBUTION OF NERVES TO HAND

The areas supplied by the three nerves to the hand, the media, radial and cubital are very irregular. If any of these were injured the area of disturbance should correspond to the areas supplied. It would be impossible to have an area corresponding to the "hand" as shown in Figure 10 from an actual injury of these nerves.

Figure 10 shows the types of anesthetics that may be found in some patients that do not correspond to the anatomical distribution of the nerves. The patient loses sensibility in his foot, leg, hand, arm, or eyes as the case may be. The incompatibility of such a disorder with the anatomical distribution is illustrated by Figure 11 where the areas supplied by the various nerves to the hand are outlined.

From a physiological point of view it is impossible to account for a disorder of this sort. The explanation must be found in some sort of psychological mechanism.

50. Functional anesthetics may be induced by suggestion. Charcot held to the view that cutaneous anesthesia was one of the distinguishing characteristics of hysteria. This view gained such a following that it was customary to examine

every hysteria suspect for anesthetic spots, or areas on the body lacking cutaneous sensibility. Strangely enough they usually were found in such patients. It might be of interest to note in passing that the presence of anesthetic spots was one of the distinguishing marks of a witch. They were called "devil's claws," and were considered conclusive proof, while this superstition was prevalent, that a witch had been found and she was dealt with accordingly.

Charcot outlined three distinguishing characteristics of such anesthetics. First, they were rarely, if ever, recognized spontaneously by the patient. The patient would present himself with some other complaint and the physician, suspecting hysteria, would make an examination for anesthetic spots and usually find them, although the patient had never known that he possessed them. His second criteria was that they never caused the patient any inconvenience, and his third that they conformed to the notions of anatomy that we have already described. It was Charcot's first principle that made physicians hunt for anesthetics and evidence has accumulated that it is this hunting which brings on the symptom. The examination itself suggests the symptom to the patient and he forthwith acquires it.

The anesthesia may jump from the right hand to the left and then back again. A patient may have an anesthesia of an arm which will, with no apparent reason, disappear and in its place will develop an anesthesia of the leg. A person totally anesthetic may under certain circumstances gain total sensibility. Certainly such changes cannot occur if the anesthesia is based on a disturbance of the sensory mechanism.

The hypothesis that the physician suggests the symptom was put forward by Herbert Page¹ in 1891. This hypothesis was later tested by Babinski² by a careful examination of a hundred consecutive hysterical cases in which he was very

¹ Herbert Page, "Railway Injuries," 1891.

² Reference to this work is made by Arthur F. Hurst, "The Psychology of the Special Senses and their Functional Disorders," 1920, Oxford University Press, pp. 7-8.

careful to avoid the possibility of suggesting anesthetics. He failed to find any disturbance in tactile, pain, thermal, muscular, and stereognostic senses. He concluded that Charcot's anesthesia was not recognized by the patient and did not cause him any inconvenience, simply because it was not present until it had been unconsciously suggested by the physician in the course of his examination.

Babinski's observations have been confirmed by other workers. His sweeping conclusions that there is no such thing as functional anesthesia probably goes too far in that he ignored the possibility of a residual anesthesia when there has been an actual organic lesion which has disappeared. It is quite probable that the patient could accept the suggestion afforded by an illness and retain the symptom (the anesthesia) when the injury was cured just as readily as he could accept the suggestion of the physician. The type of person who will manifest a functional symptom is prone to take suggestions, but these suggestions can be gained from any source whatever and need not come from any verbal suggestion or from any outside source at all.

51. A third characteristic of functional anesthetics is that they are variable in character. If one has an anesthesia of one hand due to an organic lesion it is not likely that in a few moments such an anesthesia will shift to the other hand, to the foot or to some other part of the body. Nor will it disappear entirely for a time only to recur upon occasion. And yet this variability is quite characteristic of a functional anesthesia.

The conditions under which it will change in form or location are very numerous. We shall cite a few important ones.

1. *Hysteric episodes or fits will modify it.* In some cases the extent of the anesthesia will increase before the fit, in others it will disappear. During a fit the anesthesia will become different, sometimes it disappears entirely only to return after the episode has passed.

2. *It may disappear during natural sleep.*

3. *Certain drugs may affect it.* Sometimes a patient having a widespread anesthesia will regain total sensibility while drunk. A dose of chloroform may cause it to vanish. Similar results have been produced by morphine, cannabis indica (hashish) and other drugs.

4. *Suggestion in any form may modify it.* The application of electricity, metal plates, the laying on of hands and any such thing as may appeal to the imagination of the patient may serve to change the location of the anesthesia or cause it to disappear entirely. Janet¹ gives a striking illustration of this sort.

“Several years ago, we made the following observation of a patient . . . who presented a state of total anesthesia. We used to treat her legs with electricity, and noticed the strong muscular contractions she experienced at each contact of the negative electrode, when all at once we saw that the two wires which fastened the plugs to the apparatus had dropped. For a long time we had thus been applying electricity with mere pieces of wood. We continued without fastening the wires to the ends, and the contractions were all the greater by the simple contact of the plug.”

52. Functional anesthetics are not consistent in their appearance. This characteristic is important in distinguishing a true functional disorder from malingering. When one is malingering he is usually clever enough to be consistent, to the extent of his information, about the thing he is pretending to suffer. The patient with a functional disorder is likely to be painfully naïve in the way in which he can be tricked.

This inconsistency appears in some experiments reported by Janet.² He proposed to a patient to verify her anesthesia. Her eyes were concealed behind a screen and she was told to answer “yes” when she felt the touch of the testing instrument and “no” when she did not feel it. Although all rhythm was avoided in giving the stimulations and although the stimuli did not alternate regularly between the anesthetic areas

¹ Pierre Panet, “Major Symptoms of Hysteria,” copyright 1913. by The Macmillan Company, p. 169. Reprinted by permission.

² *Loc. cit.*, p. 169.

and the good areas she always said "yes" when the sensitive areas were touched and "no" when the insensitive areas were touched.

The same characteristic can be demonstrated with deafness or with functional auditory anesthesia.

The following incident happened in the Psychological Clinic at Northwestern University with a boy from the fourth grade who had a functional deafness. He was shown a large crystal ball in an attempt to discover whether he was suggestible. He immediately showed great fear of the ball and covered his eyes so that he could not see it. It was then placed on his head. At first he paid no attention to it although he knew that it was against his head, but continued to sit with his hands over his eyes. We then said to him, "You do not need to look at it, if it touches you it will affect you just the same." Immediately he showed great fear of having the ball touch him and fought to get away from it. If he had not heard our verbal suggestion he would not have changed his attitude toward it so suddenly and violently. Yet the next moment when we tried to talk to him he could not hear.

XI. OTHER SENSORY FIELDS

Olfactory, gustatory, and organic sensations may be disturbed because of some physical disorder or because of some mental maladjustment. In each case it is essential to make a thorough study of the nature of the complaint. If it seems to be organic, the subject should be examined by a competent physician. If such an examination indicates a normal physical condition, the teacher or examiner should search for some functional factor that might account for the complaint.

53. Olfactory sensations. The loss of the ability to smell is not very disturbing to the ordinary individual. When it does occur in connection with mental disorders it is likely to be centrally determined. The individual fails to appreciate odors of a certain sort, not because of an organic defect, but because of an emotional antagonism for the odor or for something for which the odor stands. Testing the ability to smell various odors may consequently throw some light on disorders other than strictly sensory. Increased sensitivity to certain odors may have similar significance.

54. Gustatory sensations. Still less important in connection with mental disorders are gustatory sensations. What appears as a gustatory difficulty is usually an emotional reaction to some specific kind of food or to some food in general. If one does lack gustatory impression he usually says little about it. If he is hyperacute, that is oversensitive, in this respect he becomes critical about his foods. But what is usually observed in connection with carelessness in eating or in fastidiousness is not due to taste sensations but to emotional attitudes.

55. Organic sensations. Mental patients often complain of a great variety of queer sensations originating in all parts of their bodies and give very strange descriptions of them. It is usually found that these are not sensations in any real sense but are referred to the part designated due to some other disturbance of the mental processes. The various disturbances that really occur in organic sensations, if we exclude these referred sensations, are usually the result of some definite diseases which have little relation to mental disturbances. What the student must do in connection with the various queer pains and aches and bizarre sensations that may be described by a patient is to search for the cause in some phase of the mental life of the individual. This should be preceded, however, by a critical physical examination to eliminate the possibility of disease.

XII. GENERAL CONSIDERATIONS

56. Some important considerations. Our study of sensation disorders illustrates several considerations which should be clearly recognized and kept in mind throughout. Their emphasis and application to the various problems will render the whole subject-matter much clearer.

1. *The cause of a disturbance cannot be inferred directly by a study of the symptom alone.* The other phases of the individual's personality must be understood before we can know the whole meaning of the symptom.

2. *A simple disorder, such as that of a simple sensory disturbance, has lines of influence extending to different aspects of the individual.* For example, the obvious effect of a visual defect is that the person cannot see perfectly. Failure to see correctly will influence and change one's perception or interpretation of what he does see. Misinterpretation may affect his emotional life and lead to a profound disturbance in this field. He may develop a queer facial expression in his attempt to see and this in turn affects his social relations—people may avoid him because of his appearance. A partial failure in vision may interfere with his intellectual development and he may appear non-intelligent as a result. Such chains of connection might be built up indefinitely. Let us continually keep in mind that, while we are studying little fragments of the mental life in isolation, the influences of these sections are far reaching.

3. *In correcting a defect the procedure should be to correct the obvious and easily corrected defects first.* If a person has a visual defect that can easily be remedied by lenses, this should be done by all means although he may have some glaring and serious defect whose relation to vision is not apparent. Sometimes there is a relation when it is not easily seen. Such a simple procedure is not the end, however. We must study the individual as a living whole and treatment should be directed toward helping him to be a complete man. Keeping this last consideration in mind we shall find ourselves treating the man and not the symptom.

57. Educational significance of sensory disorders. Sensory disturbances, even those of a minor sort, may have a profound effect upon the personality of the one suffering from them. The teacher should be continually on the lookout for such a possibility when she meets with any peculiarity in a child. This scarcely means that she should be an expert in the examination or correction of sensory defects, but she should know enough about them to enable her to refer any case which appears to the proper expert for careful examination. There really is no excuse for a child to go for years with a

handicap that might be corrected, yet it has been found that this is often the case. The teacher should also remember that, even where physical examination proves that no defect exists, the child may have a functional defect which must be corrected by educational methods rather than medical treatment. This offers the alert teacher an opportunity to render service of inestimable value.

IMPORTANT TECHNICAL WORDS

- akoasm.** A ringing or buzzing sensation in the ears.
- amaurosis.** A loss of sight without any perceptible external change in the eye.
- anesthesia.** A loss of sensibility.
- astereognosis.** Loss of ability to recognize the form of objects by touch.
- astigmatism.** A defect of a lens in consequence of which the rays of light from one point are not brought to a single focal point.
- epicritic sensibility.** Ability to sense mild tactile stimuli.
- fovea.** A central depression at the middle back part of the eyeball at the point of clearest vision.
- gustatory.** Pertaining to the sense of taste.
- hemianopsia.** Blindness in one-half of the visual field.
- hyperopia.** Farsighted. A synonym is hypermetropia.
- kinesthetic.** Pertaining to the sense of muscular movement.
- muscae volitantes.** "Floating flies." Used to designate the sensory impressions resulting from defects in refracting media of the eyes.
- myopia.** Near-sighted.
- nystagmus.** A rapid involuntary oscillation of the eyeballs.
- olfactory.** Pertaining to the sense of smell.
- ophthalmoplegia.** The loss of function of certain of the eye muscles.
- optic chiasma.** The place where certain of the optic fibers cross to the opposite side of the body.
- peripheral vision.** Vision resulting from sensations of parts of the retina not directly behind the pupil.
- presbyopia.** The vision which results from the rigidity of the lens which accompanies old age.
- protopathic sensibility.** Ability to sense vigorous tactile stimuli.
- reflex.** An immediate, definite response to a sensory stimulation.
- refracting media.** The parts of the eye which bend the light rays so as to bring them to a proper focus.

retina. The sensitive membrane of the eye which transforms light into nervous energy.

scotoma. Dark spot. Singular for scotomata.

vitreous humor. The clear colorless transparent jelly which fills the large posterior chamber of the eye.

PROJECTS FOR FURTHER STUDY

1. Familiarize yourself with the tests used by opticians for testing visual defects. If there is not a set in your laboratory or school, visit the establishment of a local optician and have him explain the apparatus he uses.
2. Try the experiment described by Helmholtz to discover *muscae volitantes* in your eyes.
3. Map out some person's visual field with a perimeter. A simple one can easily be made. After you have the normal field, see whether it can be modified by different attitudes on the part of your subject. Have him lose himself in reverie and note the result. Get him to do some problems, recite a poem or converse with you, and note the result. Try the effects of suggestion.
4. Try the various tests for kinesthetic sensations and see how reliable they are.
5. Let one of your number try to feign some sensory disorder and let the rest try to catch him by means of sensory tests.

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CHAPTER III

DISORDERS OF PERCEPTION

Perceptions are interpreted sensory experiences. Since subjective factors play a large rôle in such interpretation, great variations are found in individual perceptions and no sharp line can be drawn between a normal and an abnormal perception. We shall study the processes involved in normal perception and follow this with an analysis of the ways in which interpretations become distorted as well as the reasons for such distortion. We shall find that the grossest distortions are merely exaggerations of the types of interpretation that are found in normal perceptions.

58. Illustration of disordered perception. "In regard to the voice I hear talking to me all the time, it was through my investigating spiritualism and watching and listening for what I could hear in the evenings after reading the newspaper that it commenced. One evening it began to talk to me, telling me some funny stories, and it kept that up for a week, when one Saturday evening it hypnotized me as I sat in my chair, and I went to bed that night and was in bed until Monday, hypnotized, I suppose, for I was seeing pictures of all kinds all the time until I got up to go to work Monday morning. He has been talking to me ever since. He says he is the devil from hell and he is going to take me to hell as soon as he gets ready. He makes me speak words as if he has my tongue in his control when he is talking to me; but if I talk to any person, I have control. He makes me smell different things and he will tell me about it at the same time. It feels as if there is a flea or bug on my eye, nose, or throat, or any place, and he will say to me, 'Brush that bug off.' He bothers my eyes, so that I cannot see right at times, and he bothers my stomach at night, saying, 'I'll fix your stomach for you so you cannot eat.' Three weeks ago, he shook my brain

like you would a handkerchief, saying to me, 'See what I am doing to you, I'll fix this block of yours.' He talks to me all day and night, waking me at night to tell me what he made me dream. He makes my head hurt in the back and it feels hot, and he says it will be worse later on with me. 'John,' he says, 'you never will have another minute's peace as long as you live, and when you die it will be worse. I came here to worry you and I am going to play with you, like a cat does with a mouse, and when I get tired of you, I am going to kill you. That is, I am going to make you kill yourself, but I am going to make you kill someone else first.' ''¹

XIII. NORMAL PERCEPTION

Our mental life involves a stream or sequence of perceptions. If these are largely in line with the stimuli giving rise to them, are balanced and consistent, we are normal in this respect. If they deviate from usual or logical interpretations our outlook becomes warped and twisted. Abnormal perceptions can be understood only when we know the way in which normal perceptions operate. Consequently, it is essential that we first get a clear conception of the nature of the normal perceptual process.

59. Nature of perception. The sensory impressions from every experience or combination of experiences are carried through the afferent pathways to the central nervous system and there they are coördinated and unified into the complex experiences that we call perceptions. This coördination and unification is what we know as meaning, hence we can define a perception as the immediate interpretation of our sensory experiences. Not only does such interpretation depend upon the sensory stimulus but upon previous stimuli that have affected the organism, the way that the organism has reacted to these previous experiences, and stimuli acting upon other sensory organs at the same time. We cannot experience any sense impression without interpretation and the interpretation of every individual is likely to be different from that of his fellows because none of us have had exactly the same experiential background.

¹ Edward E. Mayer, "A Case Illustrating So-called Demon Possession," *Jour. of Abnormal Psychol.*, 1911, 6, 265-266.

“When we see, hear, feel, smell, or taste anything it fits itself into what has already been learned. Suppose you turn your eyes toward an orange lying on a table, what sensations reach you? You get a visual impression of a colored circle, but you say the orange is round and solid, not flat. You know that because you have learned it before. Hence, when a stimulus strikes our sense organs it is a cue which we immediately interpret in terms of our past experience. We do not need to go up to the orange, pick it up and feel it, taste it, smell it, and tear it to pieces to interpret it as an orange. Our lives would be a tedious bore if we had to keep repeating these processes all the time. We save time by accepting the cue for the whole thing.

“This immediate interpretation of a sense impression is called a perception. When you say, ‘I perceive an orange,’ you mean that you have a few impressions which act as cues and to these you add your past experiences and interpret these cues as evidence that an orange is present. Sometimes we become so sure of our cues that we think that we are experiencing the whole thing, sometimes our cues are not certain and so we doubt what this thing is that we are experiencing. Sometimes we interpret our cues differently from another person next to us and so we see the universe in a different manner from him. All these things are perfectly natural, however. We should not chide ourselves because we cannot interpret every experience at once; nor should we worry because someone else gets an interpretation different from ours. It is because we make mistakes in interpretation and because we differ from others that we learn. These differences are the most valuable experiences that we can have.”¹

We allow a wide range of possible interpretations to our fellows before we regard them as queer. A sound to me may indicate a burglar, to my comrade a mouse. These differences are normal. When one’s interpretations are unusual, tenaciously held, and are clearly not in line with those of others in the same situation, there is evidently some radical difference in the mental processes of the one who makes the the unusual interpretation. It is these radical differences that will receive our attention.

The manner in which one interprets is not only dependent on past experience but his present interpretation colors his

¹ John J. B. Morgan and A. R. Gilliland, “An Introduction to Psychology,” Macmillan, 1927, pp. 147-148.

future perceptions. So that he who begins to perceive things differently soon forms the habit of perceiving them uniquely as time goes on unless something comes in to balance his unusual tendencies. The different factors that influence perception are so numerous that they invade every portion of life itself. In one sense the whole of abnormal psychology may be considered an elaboration of the psychology of perception. Nevertheless, there are certain disorders that are more directly related to perception than are others, and it is these that we shall consider under the category of perceptual disorders.

60. Genetic basis of perception. An understanding of the disorders of perception is possible only when we keep clearly before us the developmental background of perception. The human organism at birth is very plastic, capable of being modified by every experience. The particular form that the experience takes gives it a specific meaning which lends color to later interpretations. For example, two children may have their first experience of a cat. In many elements the experience may be the same but it is not likely to be identical. In order to emphasize our point let us illustrate some of the differences that might exist in such a situation. In one instance the cat might be gentle. The mother might be present. The cat might purr when the child touches it. The father might laugh and say "nice kitty." Hence to this child kitty means pleasant experiences such as a full stomach, the presence of the mother, approval of the father and pleasurable tactile (touch) impressions. Another child experiencing cat may be alone, hungry, and have his attempts to stroke the cat rewarded with a scratch. To this child cat does not mean anything at all pleasant.

Suppose, following these experiences, each child is visited by a woman having red hair, a long nose and wearing a fur coat. The first child, taken in this woman's arms will probably respond favorably to the fur, perhaps stroking it, and will on the whole be pleased with the whole situation. As the woman is a part of the total situation the child will like

the woman as well as the fur. The second child will probably not act in the same manner when the woman attempts to take her. If she does not respond favorably this will in turn modify the woman's reaction to the child. Suppose that she tries to make the child like her by repeated attempts to take her in her arms. This might develop quite a scene involving the mother and others in the room and end in a decided irritation with the woman. As a result of this hypothetical set of circumstances it can be seen that the first child has been taught by experience to like red-haired women with long noses and the second has been taught to avoid such women.

Later situations may tend to balance these early ones but they in turn are leaving an impress just as the early ones did. This illustrates the principle that what we perceive is the result of what we have experienced. Cat does not have the same significance to these two persons and probably never will have. And while this illustration may seem to the beginning student as somewhat bizarre and perhaps far-fetched, the sober fact is that in all probability likes and dislikes with all their subtle influences are formed by some such mechanism as suggested by the illustration.

We do not have to recall the experiences which make up the groundwork upon which we perceive. Some of them may be so trivial or vague in their significance that it would be difficult to describe them with accurate detail. For this reason we cannot hope to trace out all the incidents which go to make up individualistic tendencies in perceptual interpretation. We often hear such questions as: "Why do I like red when John hates it?" "Why do I have a fear of cats when Mary adores them?" "Why does the sight of spinach nauseate me?" These questions cannot be answered in a simple manner but this does not make such dispositions fortuitous. Meanings are built from numerous experiences and have extremely intricate relations with other meanings.

While our own experiences tend to make us interpret our sensations in terms of their meaning, we have a constant safeguard against too personal interpretations—our observation

of the reactions of others to similar situations. This social check serves to restrain us from becoming too individualistic. If we hate a cat and all the people around us love cats, this is an experience that must be assimilated and the result is that our antagonistic attitude toward cats is modified. In this way we are constantly helped to keep a balance. The normal man is different from others in his perceptions of situations but he is not too different. If we persist in taking our own interpretations when they run counter to those of others, we are rightly regarded as peculiar.

61. Contribution of various senses to perception. Another aid in interpretation and a safeguard against misinterpretation is the coöperation of the different senses. We have seen how this mechanism operates in the development of the kinesthetic sense. (*See Article 47.*) Here the different sensations of touch, pain, heat, cold, and those from the muscles and joints, all combine to give us accurate sensations of movement and position. In a similar, but more elaborate form, the sensations of vision, audition, taste, smell, cutaneous and organic sensations combine to give each experience meaning. The different senses work together so intimately that at times we are unable to distinguish which one gives us the sensory cue for our perception. It is possible to get a sense impression through one sense and interpret it immediately in terms of another sense. A passage from Woodworth illustrates this:

"We look out of the window and 'see it is wet today,' though wetness is something to be felt rather than seen; having previously observed how wet ground looks, we now respond promptly to the visual appearance by knowing the indicated state of affairs. In the same way, we say that we 'hear the street car,' though a street car, we must admit, is not essentially a noise. Strictly speaking, what we hear is a noise, but we respond to the noise by perceiving the presence of the car. Responding to a stimulus presented to one sense by perceiving a fact which could only be directly presented to another sense is exemplified also by such common expressions as that the stone 'looks heavy,' or that the bell 'sounds cracked.'"¹

¹ R. S. Woodworth, "Psychology," Holt. So important is it for the reader to understand the nature of perceptions that he is advised

XIV. SYNESTHESIA ¹

When a sensation is interpreted immediately in terms of a sensation from a different sense organ from the one stimulated, it is called synesthesia. The most common form of this is colored-hearing. A tone gives rise to a clear and vivid color. It does not remind the subject of a color, it is not like a color, but actually is perceived as a color.

62. Nature of synesthesia. A perceptual interpretation of a sensory impression from one sense organ in terms of a sensation of a different sort seems natural in the illustrations we have given. In actual experience we know that a cracked bell will sound as we hear it, a street car will make the noise that we hear, and the ground when it is wet will have the appearance that we now see. The connections between the visual impression of the bell and the sound, between the appearance of the street car and the sound it makes, and between the feeling of wetness and the appearance of the ground when it is wet, all are gained through experiences which we can verify at any time.

When these connections are obscure, hard to explain, and are constant, they are called synesthesias. "For the *full* development of synesthesias a strong tendency of a certain kind of association is requisite,—a tendency to form associations between corresponding members of two homologous (i.e., parallel or proportionate) series."² Those who report the experiences which have given rise to this concept state that when a sense impression is received in one field they perceive it as in another field with just as much clearness as though presented to the second sense. Furthermore, graded differences in the stimulus are perceived as graded differences in

to re-read Section XIII and if the nature of the process is not clear, to consult any good psychology text upon this subject, such as, R. S. Woodworth, "Psychology," Holt, Chapter 17; Arthur I. Gates, "Elementary Psychology," Macmillan, Chapter 13; Howard C. Warren, "Human Psychology," Houghton Mifflin, Chapter 12.

¹ Pronounced: sin'es-the'si-a.

² Charles S. Myers, "A Case of Synesthesia," *Brit. Jour. of Psychol.*, 1911, 4, p. 238.

the second sense, although the correlation is by no means perfect.

The most common form of synesthesia is that in which a sound stimulus gives rise to a simultaneous sensation of a definite color or light. Sensations of color have also been reported to accompany sensations of taste, smell, pain, pressure, or temperature. There have been rare instances where subjects have reported the experience of a sound sensation when presented with a light stimulus; others have reported smells and tastes when presented with a sensation from another field. Quite commonly an elementary sensation results from hearing a spoken word.

63. Examples of synesthesia. Myers reports a subject who experienced very definite color sensations when tones of different pitch were sounded. Below are given the colors that accompanied the tones of the approximate vibration rate designated:

	<i>Vibrations per second</i>	<i>Color seen</i>
Very low tone	65	Dark brown
	150 to 200	Orange or reddish orange
Low C on piano	256	Brown
	300	Brown to vermilion or pink
	400	Brownish pink
Upper C on piano	500	Rosy brown, brown or pink, becoming blue
	600	Rich dark blue
	700	Mixed pink and blue, lilac
	800	Light blue
	900	Light blue
	1,000	Very light blue
	1,200	Blue shading off to gray
Upper singing range	1,300	Thinnish blue
	3,000	Greenish tinge in blue
	4,000 to 12,000	Green
	above 12,000	Colorless gray

This subject reported that he had never experienced a black sound and could not imagine a sound producing a sensation of black.

Pierce¹ reports the following synesthetic phenomena:

The word *parlor* represented to one patient honey on bread; *loud*, a boiled new potato; *grin*, French toast or fried bread. The nonsense syllable *zaf* had a meat flavor, salty, hard, like corned beef; *hes* represented small particles like mince meat; *dep* is roast beef well done. With this same subject, sounds produced the following sensations:

	<i>Vibrations</i>	<i>Sensation produced</i>
	256	As though warm air resting on tongue
	512	Warm, clear, sweet
Chord A ₂ -E ₁	26.7-40	Like toast soaked in hot water
Chord E ₁ -F	40 _x -85.3	Sweet, rather strong, like licorice
Chord F-g	85.3-192	Mild, gravy-like
Chord g-e ⁴	192-2048	Banana, smooth, slippery
Chord e ⁴ -e ⁵	2048-4096	Thin, insipid

It will be noticed that these reports are in many instances not elementary sensations but are associations. This fact should be borne in mind when considering the theories of synesthesia to be taken up presently.

64. Theories of synesthesia. The relationship that occurs when we "hear a street car" or "see a wet street" can be explained on the basis of past experience. If when we get an auditory impression we visualize a street car it seems natural because the two have been connected in experience. Can synesthesia be explained in the same way? This is probably the most widely accepted explanation. Several objections have been advanced to this explanation. Let us see whether this theory can stand in the face of these objections.

The first is that synesthesias are constant while a perceptual connection is more subject to change. Bleuler² examined some cases of synesthesia after a period of from thirteen to fifteen years and found that the same connections existed, although it was a little more difficult to elicit them. As a counter argument perceptual connections which are of a dif-

¹ Pierce, *Am. Jour. Psychol.*, 1907, 18, pp. 341-352.

² Eugen Bleuler, *Zt. f. Psychol.*, 1913, 65, 16.

ferent order have been found to exist just as long. If I had been on a desert island for fifteen years and had never in all that time heard the noise of a street car I would probably not forget how one sounded. When one rattled by my hotel window after my return to civilization I could say very easily, "I hear a street car." Therefore the argument that synesthesias persist for long periods does not prove they are unlearned.

A second argument advanced against the theory that synesthesias are learned is that the subjects have had no experiences to explain the connections, consequently they must be due to some cause outside the experience of the individual. To explain such an apparently unlearned connection some writers¹ have assumed that the connection or association must be hereditary. This explanation seems more fanciful than real, and has very little evidence to support it. In some cases synesthesia has been found in more than one member of a family but the connections were not the same in such instances. If the bond were inherited it should be the same. Myers² found that in a family where several members had synesthesia they did not agree on the color attached to a given sound. The indefinite nature of some of the connections cited argues against anything so definite as an hereditary association.

If synesthesias are not innate (inborn) and if the subject has had no conscious experience adequate to provide the connections, how shall we explain them? Wells³ bridges the gap by explaining them as the result of unconscious associations. He says:

"It is a growing conception that a great deal of 'higher mental process' goes on in the mind of which the main personality is as little aware as it is of many normal organic processes (such as digestion, blood circulation, etc.). This thought, below the level

¹ Bleuler, *ibid.*; Calkins, *Am. Jour. Psychol.*, 1895, 7, 97; Lowie, *Am. Jour. Sociol.*, 1915, 31, 217-229.

² Charles S. Myers, *Brit. Jour. of Psychol.*, 1911, 4, 228-238.

³ F. L. Wells, "Symbolism and Synesthesia," *Amer. Jour. Insan.*, 1919, 75, 488.

of awareness, consists, like the thought of which we are aware, in the association and elaboration of experiences. But, whereas the thought of awareness is, in the normal mind, mainly governed by the logic of experience, that below the level of awareness is quite free from these restrictions. . . . In this way, associations and symbolisms are formed which are not present to the conscious level of the mind."

This indicates that a connection or association may develop without clear awareness on the part of the learner. There is another element which seems to have an important bearing on these connections and that is, an affective (emotional) connection usually is seen to exist between the components. Many of the connections are of the following type: bitter is brown, vanilla is green, a hollow pain is blue, a shooting pain is white, a scraping sound may set our teeth on edge. A high pitch is spoken of as sharp and piercing because both a high tone and a sharp object have an unpleasant affective (emotional) value. The association, through an unconscious affect, is sufficient to explain the illogical and permanent nature of the synesthetic connection.

65. Synesthesias as a school problem. The study of synesthesias should indicate to the teacher that many interpretations are made by her pupils which on the surface may appear strange; these are not purposely taught by her, but they have as strong and permanent an influence on the child's interpretation of his environment as anything which is brought out specifically in the course of study. Because some of these may not be common is no indication that they should be interfered with. In many cases they may be enriching to the child who has them. Should a marked case be found, the child should not be made to feel that he is queer, but the difference should be utilized for the child's benefit. The teacher does not hold up a boy for ridicule if he happens to be taller than any other person in the class, she teaches him how to make use of his height. The same principle holds with mental peculiarities. If they can possibly be utilized they should be developed. If they appear to be harmful, then some better quality should be developed in the place of the undesirable

one. Synesthesias are not harmful unless they are carried to great extremes.

XV. SYMBOLISM

Many of the subtler things in life are expressed not directly, but in the form of symbols which serve a double purpose: to make the situation more striking, and to take away some of the undesirable elements that might be present. The use of symbols is especially frequent in various forms of mental disorder, so the student of human nature needs to know the nature and purpose of symbolism in order to interpret conduct. At the same time he must learn not to place too much confidence upon his interpretation of symbols lest he violate facts.

66. Nature and use of symbols. A symbol is something that stands for something else and serves either to represent it or bring to mind one or more of its qualities. The basis for the symbolic relationship is the perceptual experience of the individual. We respond to a situation as a whole. When, later, one part of the situation is presented we react to this part in somewhat the same manner that we previously reacted to the whole. We take the part as a cue. Life is filled with such symbolic relationships. Language is largely based on this principle. A man's name stands for his whole personality. A flag stands for the nation and all that the nation represents. Sometimes the symbolism becomes more abstract—white stands for purity, a mountain peak for achievement.

"The oak suggests sturdiness, ruggedness, and strength of character. It has *limbs*, *trunk*, and *heart*. A fellow citizen of rugged character, dependability, and strength of purpose is said to possess a *heart of oak*. Spring foliage represents inexperience (verdancy); brown and yellow, decay (the sere and yellow leaf). Stone is a symbol of hardness, and there are correspondingly *hearts of flint*. The ascent of a river and the exploration of a cave are begun from the *mouth*."¹

From these illustrations it is apparent that the symbol is a simple way of expressing relationship or comparison by

¹ C. B. Burr, "Practical Psychology and Psychiatry," F. A. Davis, 1921, pp. 58-61.

substituting one thing for another. These symbols are usually based on experiences that are common to all, so there is in the human race a fair degree of uniformity in the use of symbols. They are used because meaning becomes more striking when made concrete than when expressed in abstraction. The reason for this is that abstraction deprives the concept of the affective value inhering in specific experiences, and to give our statements or thinking perceptual value invests them with the affects that accompany sensory experiences.

The following bit of verse illustrates this:

Mother calls me Willie;
Sister calls me Will;
Father calls me William;
But the fellows call me Bill.

Here Willie is a symbol of affection, Will a symbol of primness, William a symbol of sternness and Bill a symbol of friendship. But the symbolic expression is much more striking than the abstract expression would be.

67. Emotions concealed by symbols. Specific perceptual situations often have powerful emotional values, both pleasant and unpleasant. Symbols often serve the purpose of covering unpleasant feelings or affects, and for this reason when we wish to refer to an unpleasant situation we use a symbol which effectively covers the undesirable elements. Language and symbols conceal as well as elucidate.

Much of the speech and conduct of mentally unadjusted individuals, both children and adults, is of the symbolic sort and can be understood only when it is clearly recognized that it is designed to cover some painful personal situation. Often the patient himself does not realize the nature of this significance and his use of such symbols cannot be attributed to a conscious attempt to conceal. He covers that which is shameful to him just as naturally as we cover our bodies with clothing.

68. Symbolic interpretation of perceptual disorders. When we come to study hallucinations, delusions, and bizarre

conduct we shall be better able to see the significance of these various forms of abnormal life if we are not blinded by accepting too literally what the patient says and does. We must learn to see what the words and conduct symbolize. A word of warning needs to be sounded here, however. We have found that the student, learning the significance of symbolism wishes to secure a key by means of which he can translate the conduct of the abnormal person much as he translates a passage of a foreign language by means of a dictionary. No dictionary of the meaning of symbols is adequate for this purpose. The meaning has to be derived from the context—the experience and life of the patient. For example, when a boy creates a disturbance in the classroom the teacher should not be too quick to interpret it as a pernicious act, it may symbolize his urge to obtain recognition which has been denied him. When a person hears a voice calling him vile names it may represent a striving to be different in character from that implied by the vile name. When one gives his life to the reformation of others it may symbolize a striving to be what the reformer tries to make of others, coupled with a fear that he might not be able to excel in this respect. Such symbolic interpretation should always be carried out with the aim of getting a true understanding of human motivation and not with an attitude of disparaging criticism.

Our discussion has shown us that symbols are used when the ideas they represent are highly emotional in nature. The symbol may hide the undesirable features of the idea, express it in a beautiful way, and thus offer a highly pleasing substitute for what might be a distasteful acknowledgment of the real nature of the idea. We have shown that the associations upon which symbolism develops are perceptual experiences rather than the result of inheritance. In so far as the experiences of people are the same, we may hope to find a common meaning in symbols for different persons. But we have also indicated that no two persons have identical experiences and so symbols will differ in significance with different individuals.

XVI. ILLUSIONS

An illusion is an inexact or inaccurate perception of an actual sense impression. Illusions are experienced by all individuals and hence cannot be considered abnormal. Nevertheless, a study of illusions is of value to us because such a study will help us to understand the errors of perception of a more profound nature.

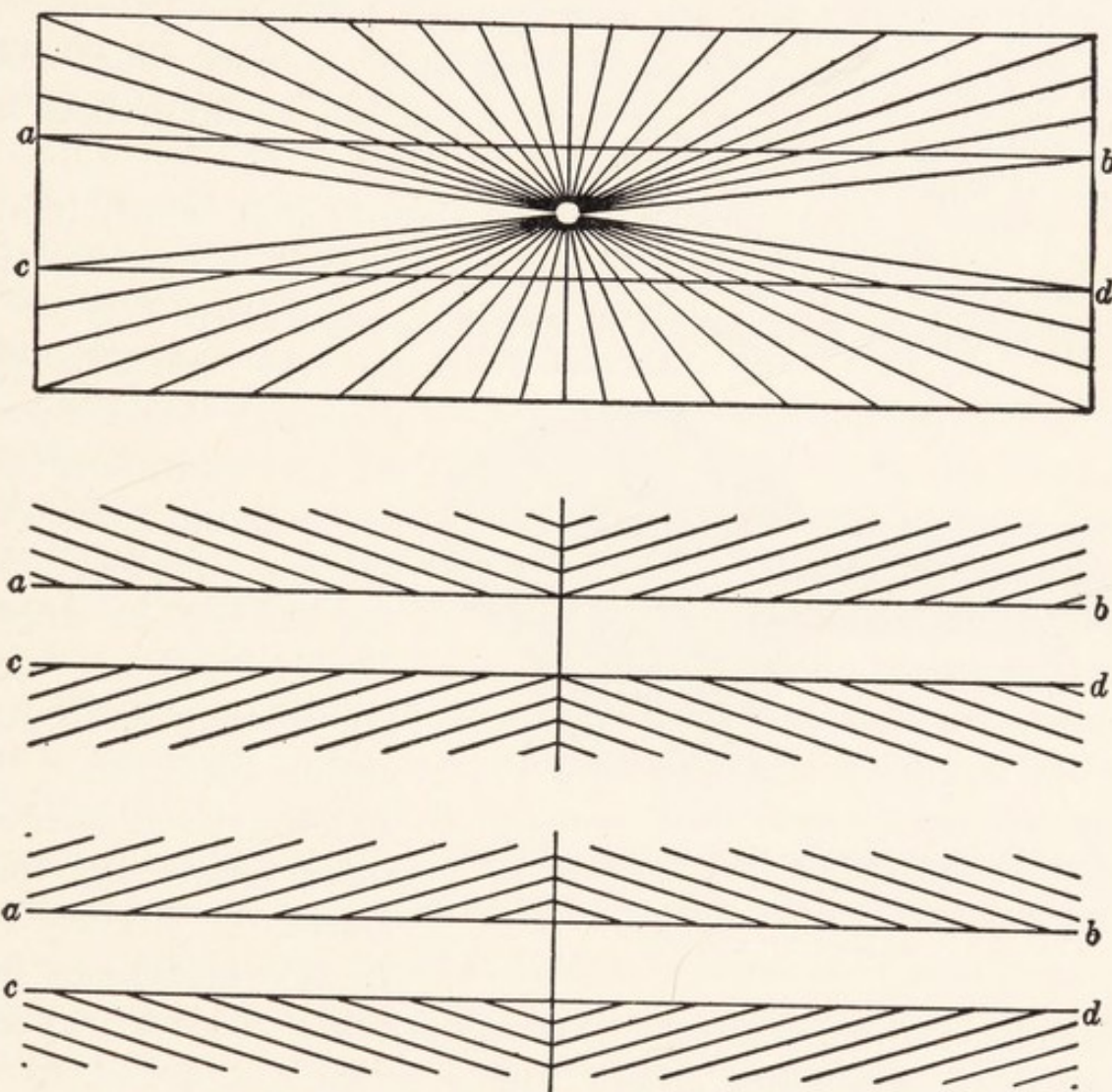


FIG. 12. ILLUSION BASED ON OBJECTIVE STIMULUS

Place a ruler on the horizontal lines and you will find that they are not curved as they appear to be. The intersection of the angular lines gives the horizontal lines an apparent direction different from what they would were the angular lines not present. (From Ladd and Woodworth, "Physiological Psychology," Charles Scribner's Sons.)

69. Nature of illusions. An illusion, being an inexact or inaccurate perception of an actual sense impression, can be understood only by noting how this misinterpretation takes

place. From a study of perceptions we have found that a sense impression is a cue which is immediately interpreted by the person receiving the impression. The manner in which this cue is interpreted depends upon a number of factors.

1. *The objective stimulus.* Where the misinterpretation is based almost entirely upon the nature of the objective stimulus and is universally misinterpreted, we have an objective illusion. Such an illusion is illustrated in Figure 12. There are a large number of illusions of this objective type. All normal persons experience them regardless of differences in mental makeup.

2. *The subjective factors.* A second factor which influences our interpretation of sensory material is expectation. This is largely determined by previous experiences and often

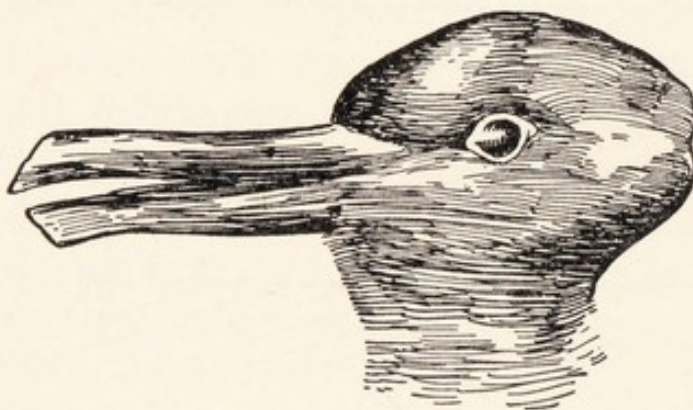


FIG. 13. JASTROW'S RABBIT-DUCK FIGURE
One may interpret this picture either as a rabbit or a duck.

by the immediately preceding experiences. Such interpretations are individualistic but are not unusual and can readily be duplicated by any one having the same set of preceding conditions. A simple type of such interpretation is illustrated in Figure 13.

In this ambiguous figure one can be predisposed to see a duck or a rabbit by expecting to see one or the other. Tell a person you are about to show him a duck and he will see the duck. Tell him you will show him a rabbit and he will be likely to see a rabbit when you exhibit the figure. Expectation becomes more important in those instances where one hears a noise and is sure it is a burglar, where one sees a shadow and interprets it as a pursuer. In the latter type of experience the subjective factor dominates and we have a subjective illusion. We add our own pet idea to normal experience and get an illusion.

70. Correction of illusions. How can we determine whether our perception is correct or whether we are experiencing an illusion? There are three checks that we are constantly applying to verify the accuracy of our sense perceptions.

1. *The test of different senses.* The first is the check we get from other senses. If we see a shadow in the woods and feel sure that it is a man we can test our visual impression (provided we have the courage to do so) by feeling to determine whether a man is there or whether it really is a shadow. If an artist draws a dog so realistically that we think it is a dog we can correct our visual impression by touching the supposed dog with our hand. Should we find only a flat surface we know that it is an illusion. We have interpreted the picture of a dog as a live animal.

2. *The test of experiment.* We can experiment to test the verity of our sense impressions. For example, in the illusion in Figure 12, it would be rather difficult to test our perception by other senses than vision. We can perform a little experiment to determine the facts. If we apply a ruler, whose edge we have tested and know to be straight, to the horizontal line we can prove satisfactorily that it is straight and not curved as it appeared to be. Or we can cover all the figure except the horizontal line and if this makes the line appear straight we can assume that our impression was influenced by the presence of the radiating lines.

3. *The test of social judgment.* However important we may consider our own interpretations, we want them to be as nearly true to the objective situation as possible, and when all others agree in seeing a thing in a different light from us, we should admit that our interpretation is wrong. Where our personal bias is not very strong we readily do this, but as bias becomes stronger this is more difficult to accomplish. We must remember, however, that social judgment does not prove the truth of any proposition. Often in the history of the race great masses of persons have been wrong. But it is only in the presence of strong objective evidence that social

judgment can be discarded in favor of an individualistic interpretation.

The relative influence of the different checks may be illustrated by a simple example. When driving along a concrete road a level stretch of pavement may, in the sunshine, appear to be covered with water. This illusion is very realistic. How can we apply our three tests to discover the truth? Were you told by your companions that this was an illusion you would question your perceptions. If all the cars coming over this section showed not the least sign of being splashed you would have an indirect bit of evidence. Should you drive on and see the road from another angle you will feel sure that you were deceived when the illusion disappears. If this does not convince you it is possible to check up by stopping the car and feeling the pavement with your hand. It would be a queer individual who required this final test. Such an example indicates that the test of different senses (actually feeling the pavement) is most convincing to us; the experimental test (driving over the place that appeared wet) is next in importance; and the social test (the report of associates) is the least convincing.

Illusions afford an illustration of an important fact for abnormal psychology, namely that misinterpretation is in itself not a serious matter. Nobody is perturbed when he finds that he has experienced an illusion. He laughs at his experience, tries it on others, laughs at them and is content. Everyone has a right to his own interpretation and teachers should not try to fit all children into the same mold. It is when one adheres to his misinterpretation in spite of contradictory evidence that he is on the way to serious difficulty.

We have seen that subjective illusions are determined by the attitude of expectation on the part of the individual. As the subjective factors increase in strength we may have more and more striking and bizarre illusions. When one adheres to an obviously wrong interpretation it must mean that he wants to believe his error. At the final extreme the central factors may be so strong that the individual has a perceptual

experience without any external impression at all, or his misinterpretation of the external impression may be so gross that there is practically no relationship between the objective situation and his interpretation. When this happens we have what psychologists have chosen to call an hallucination.

XVII. HALLUCINATIONS

After we have examined the nature of false perceptions (hallucinations) we shall study the different forms that occur; the ways in which they develop; and finally the different factors that should be considered in an attempt to explain their psychological background.

71. Characteristics of hallucinations. We have led up to hallucinations from illusions to show that there is no sharp line of distinction between them. When the subjective emotional element is so strong that it is the determining factor, we have the setting for hallucinatory experiences.

1. *Hallucinations are individual interpretations.* Hallucinations are interpretations in terms of the subject's personal set (bias or preference). Sometimes this set is a natural result of the circumstances. This is the case in the following hallucination:

"Suspicious were entertained . . . of a woman who was supposed to have poisoned her newly-born infant. The coffin was exhumed, and the Procurator-fiscal, who attended with the medical men to examine the body, declared that he already perceived the odor of decomposition, which made him feel faint, and in consequence he withdrew. But on opening the coffin, it was found to be empty; and it was afterwards ascertained that no child had been born, and consequently no murder committed."¹

In this case it would have been a natural thing to expect an odor and there may have been an olfactory stimulus from the freshly moved earth. A perfectly natural anticipation determined the olfactory hallucination.

¹ W. B. Carpenter, "Mental Psychology," D. Appleton & Company, 1874, p. 158.

In other cases the subjective element takes a more dominant part in the hallucination. Sully¹ quotes the following incident from Tuke:

"A lady, whose imagination had been dwelling on the subject of drinking fountains, 'thought she saw in a road a newly erected fountain, and even distinguished an inscription upon it, namely, 'If any man thirst, let him come unto Me, and drink.' She afterwards found that what she had actually seen was only a few scattered stones.' "

These cases illustrate the fact that hallucinations are purely individual interpretations. They can only be understood when we know something of the personal setting. To the observer they are irrational, but when we know the mental background of the subject they are not so absurd as they seemed.

2. *The hallucination is real to the subject.* He is convinced that he is actually perceiving the thing as he interprets it. It is objective to him. The patient will state: "These voices seem to me just as distinct as your voice, and if I regard your words as actual, so I must the other words which come to me. I do not know where they come from but I hear them just as I hear your voice." There are all degrees of objectivity in various cases. The degree of belief in the reality of the "vision" or "voice" can be elicited from the patient by questioning him as to the details. If they are purely objective the patient will be able to tell the color of the hair and eyes of the person he sees, the dress he wears and the way he acts. He will tell you whose voice it is, what it is saying and the way in which it speaks. A boy who is expecting his mother to call may be convinced that he hears her, although she is not close by, and will obey as though she had actually spoken to him.

3. *The one who has an hallucination responds to it as though it were a real perception.* Here again there may be varying degrees but the patient who has a vivid hallucination

¹ James Sully, "Illusions," Kegan Paul, 1895, p. 110.

will respond just as he would to an objective stimulus. "A patient . . . often heard in the evening and at night the voice of her father, who was dead, calling her to him in heaven, and thereupon she would run to the window, and, looking up to heaven, would talk aloud to him for hours at a time."¹

72. Hallucinations in different sensory fields. Hallucinations may be confined largely to one sense field or may involve several sense fields at once. The most common are in the auditory and visual fields. For the sake of clearness it may be well to survey the characteristics of the hallucinations for the following sensory fields: auditory, visual, taste, smell, pain and kinesthetic.

73. Auditory hallucinations. The simplest type of auditory hallucinations may be merely simple clangs, sounds of cracking, buzzing, and other similar noises. In some instances there may be a physiological basis for these noises (i.e., some disorder of the sense organ or nerve pathway), but nevertheless, they may form the groundwork for the development of more complex hallucinations. The subject may, for example, interpret these noises as the workings of some malignant influence brought to disturb him. One young man said that as soon as he tried to add a column of figures his persecutors contrived to make noises in his ears so as to confuse him. The result was that he lost in efficiency and was eventually discharged. It is possible that elementary sounds were interpreted by this young man as words and incorrect numbers. Even a buzz or a hum may resemble a word form. In corroboration of this it has been found that cases of auditory hallucination have been accompanied by ear diseases and that the hallucinations were alleviated with a treatment of the local ailment. This should not lead to over-emphasis of the organic factors, for in the great majority of cases no such element has been found.

Complex auditory hallucinations often take the form of attack and defense voices. The subject hears himself called

¹ Gustav Störing, "Mental Pathology," Swan Sonnenschein, 1907, p. 20.

vile names, he is told to do vicious acts. One person said that the voices were trying to make him do away with himself. They would say to him, "Look, he is going to throw himself in front of that truck. No, he did not do that, he thinks he will escape but he cannot for he will jump in front of that street car. He is too big a coward. He knows too much for us to let him live but he will never get a chance to tell." In other cases the voices may come to the defense of the victim, "She is a virtuous girl. We will protect her from that vile man."

Again the voices may speak directly to the person instead of about him. One individual when asked a question would pause before replying. When asked why she paused she stated that she always waited for the voice to tell her what to say. After a pause she would answer the examiner's question, but the answer was always dictated to her. Criminal acts have been blamed on the fact that the victim did what the voice told him to do. In one instance where a man confessed he had slain a whole family by cutting them with an axe, he said that a voice told him, "Take up the axe. Enter and slay. Take up the axe. Enter and slay."

The voices may come from various sources. Sometimes they come from within the patient's body—the chest, the abdomen, the throat, the ears, or almost any other part. Again they will come from the outside. The source may be in a neighboring room and the patient then hears them through the wall. Or he may explain that they are transmitted to him by means of radio, telephone connections, or by mental telepathy. If accompanied by visual hallucinations the patient may state that the person speaking is right there talking to him just as really as the examiner himself.

The following is a document written by a patient in his attempt to describe his experiences:

"The voices came from the corners of the room, from the earth in the garden, from the cellar below, from the murmur of flowing water, from the feet of human beings (first from my uncle's feet as he walked up the parsonage stairs), from the walls.

There were purring spinning-wheel voices and humming-top voices, there were trumpet-like voices, there were dull hollow voices; there were voices sounding like the tone of the objects from which they proceeded. Voices came from the ticking of the clock's pendulum in the maid's room, from the drawing of the fire in the stove, from the ringing of the door-bell. Here I have been in this ward for two years and a half, and almost every day and every hour of the day I hear voices about me, sometimes sounding from the wind, sometimes from footsteps, sometimes from rattling dishes, from the rustling trees, or from the wheels of passing trains and vehicles. I hear the voices only if I attend to them, but hear them I do. The voices are words and tell me one story or another, just as if they were not thoughts in my head, but were recounting past deeds—yet only when I think of them. The whole day through they keep on telling truly my daily history of head and heart.”¹

As evidence that the voices come from an outside source the subject may state that the language is of the most vile obscene type, language that he himself never used. Since it is not the language that he uses it must be from some other personality.

Sometimes the patient has an inkling that his hallucinations are in some way connected with his own mental processes. He complains that the voices express his thoughts before he has a chance to think them himself. This process of having one's thoughts anticipated and expressed aloud to him is called “*Gedankenlautwerden*.” Some patients complain that they never get a chance to think for themselves. It is always done for them and the thought given to them. If they attempt to read, the voices will read in advance to them; if they attempt to speak they will hear their thoughts uttered before they have an opportunity to speak. This close relationship between thinking and the voices is illustrated by the statement of one patient. “Evil thoughts are always coming into my mind to be uttered; I can repress them, but then I hear them uttered in my left ear or my head.”² Another patient says that

¹ Gustav Störing, “Mental Pathology,” Swan Sonnenschein, 1907, p. 27.

² Gustav Störing, “Mental Pathology,” Swan Sonnenschein, 1907, p. 29.

"thinking hurts him, for he cannot think for himself. Whenever he begins to think, all his thoughts are dictated to him. He is at pains to change the train of thought, but again his thinking is done for him. . . . In church he not infrequently hears a voice singing, anticipating what the choir sings. . . . If he walks down the street and sees, say, a sign, the voice reads out to him whatever is on it, the surname of some tailor or shoemaker, or the like. He affirms it is not he that reads, for sometimes he is not thinking of the sign at all, and yet the voice reads out to him what is on it. If he sees an acquaintance in the distance, the voice calls out to him, 'Look, there goes so and so,' usually before he begins to think of the person. Occasionally, though he has not the least intention of noticing the passers-by, the voice compels him to attend to them by its remarks about them."¹

In other cases the voice is not so clear as these illustrations indicate. The patient will tell you that he does not hear definite words but rather that he has a vague impression that he should not have done so and so. It is more like the soundless "voice of conscience" which keeps troubling him. This is likely to be an accompaniment of certain forms of depression. The patient will state that something is telling him that he should not have acted as he did. What this something is he cannot specifically state. Hence, it is sometimes hard to determine whether the patient is actually hearing a voice or whether he is merely expressing a vague self-accusation to the accompaniment of his emotional condition.

74. Visual hallucinations. The simpler types of visual hallucinations may take the form of flashes of light, fiery pillars, rainbows or colored forms. In complex form they are usually visions of writing, human figures, animals and other complex visual objects. The following case illustrates a visual hallucination combined with an auditory hallucination and at the same time gives some of the background leading up to the hallucinatory experience.

¹ Störring, *loc. cit.*, p. 30.

"This patient was a very cultured lady, a widow. On her husband's death she had to adapt herself to her altered circumstances, and having little knowledge of business she fell into debt, and borrowed money from a cousin to whom she had shown much kindness in earlier days. When she failed to repay the money this cousin began to pester her for it roughly, and was for ever saying to her, "When are you going to get me the money? If you don't bring it now, I'll tell your son' (who helped to support her). Her worries ended in . . . an attempt at suicide which led to her internment in an asylum. The third day after her arrival she began to have hallucinations. 'Does he come in here too, the brazen fellow?' Asked whom she meant, she replied, 'My cousin—he wants his money. He is saying, "When are you going to get me the money?"' 'Where is he?' 'There by the cupboard; don't you see him? Surely you must see him. Do you want to make me out a fool? I am not crazy. Look, he's winking at me to say nothing about him and his villainy, the rascal. But I'm just going to tell it all. There! now he's putting his tongue out at me. I can't look at him any longer. I only hope he'll do me no harm.' As soon as she turned her gaze away from the spot where the figure appeared she saw it no more, that is, it did not follow the movements of her eyes. It appeared to her 'by the cupboard,' more precisely as coming out from behind it. She was afraid her cousin might have followed her and hidden himself, and might suddenly spring out of his lair. If any one came between her and the spot where she localized the figure, so as to hide it from her, its localization changed, and she saw her cousin looking over the other person's shoulder."¹

Here the hallucination is obviously a projection of the fears of the patient.

The ability to visualize doubtlessly varies greatly in normal persons. It is possible for some normal persons to possess a high degree of proficiency in this respect and they delight in playing with visual pictures. The playful use of visual hallucinations with an appreciation of their unreality is shown in the experiences reported below.

"I exercise no control over them, as I have repeatedly endeavored to recall the sights but without success; again, when I least expect them they appear, though never until after having retired. In character they are panoramic, one scene appearing

¹ Störring, *loc. cit.*, p. 33.

for a few seconds, to be followed a moment later by a vision entirely different. I regard their development with great interest and enjoyment. At times when others have been in my rooms I have been pleased to entertain them with descriptions of these visions as they appeared one by one. Though my eyes are closed, I know I am fully awake, else how could I describe the sights accurately at the time and furthermore have the power of recalling them long after? . . . As to the subjects of these visions: They are sceneries from nature of various kinds, streets where I see rows of houses mostly of dark brown sandstone and of stately architecture, handsome rooms with beautiful furnishings and hangings, all of gorgeous hue and wondrous design."¹

Visions are probably more likely to have religious or mystical significance than are other types of hallucination. Patients will see messages written on the wall telling them what to do. One patient received a message to marry the woman who lived in the apartment above him. He interpreted this as a divine message which he was in duty bound to attempt to obey. He could not tell the exact words of the message but he described it as having been written on the wall. In other cases the exact words may be seen.

75. Hallucinations of taste and smell. Most of these are of an unpleasant nature. The patient complains of fetid odors, that the atmosphere is stifling, filled with stench from urine or faeces, fumes of sulphur, smoke or poison gas. Usually the source of these is not given but at times they are referred to the patient's own person. He feels that he is rotting and giving rise to the odor that offends him. Having such an undesirable connotation they are likely to be concealed. One of our patients concealed for three months the fact that she had such hallucinations. At the end of that time she confessed that during all that period she had been oppressed with malodorous emanations from her own body.

Hallucinations of taste are difficult to distinguish from delusions. The patient will complain of poison in his food. Whether this is due to a definite hallucination of a gustatory sort or to a false belief is often hard to ascertain. Hallucinations of taste do play a prominent role in certain abnormali-

¹ N. S. Yawger, "Hypnagogic Hallucinations with Cases Illustrating these Sane Manifestations," *Jour. of Abnormal Psychol.*, 1918, 13, p. 74.

ties in spite of this difficulty of clearly distinguishing them.

76. Hallucinations of pain. Patients may describe sensations which they speak of as stabs, darts, electric shocks or queer unpleasant feelings of various sorts. In many cases it is doubtful whether these are real. Their truth is belied by the fact that the patient seems perfectly happy at the same time that he is complaining. The following story illustrates a case where the pain was certainly not real and yet gave the impression to the observer that it was distinctly so. It was no doubt real to the patient.

“A butcher was brought into the shop of . . . a druggist, from the market place opposite, laboring under a terrible accident. The man, on trying to hook-up a heavy piece of meat above his head, slipped, and the sharp hook penetrated his arm, so that he himself was suspended. On being examined, he was pale, almost pulseless, and expressed himself as suffering acute agony. The arm could not be moved without causing excessive pain; and in cutting off the sleeve, he frequently cried out; yet when the arm was exposed, it was found to be quite uninjured, the hook having only traversed the sleeve of his coat.”¹

77. Kinesthetic hallucinations. One form of kinesthetic hallucination is called levitation. The subject feels that he is being moved from place to place when no movement has occurred. Usually such hallucinations are rather vague and indistinct, occurring most often when the subject is in a half sleeping condition. The commonest reports of levitation are not hallucinations in the true sense but are illusions produced by dimly perceived stimuli. The type of levitation produced in spiritualistic seances is of this sort.

In another form of kinesthetic hallucination the individual does not feel transported *in toto* but states that part of his body is being manipulated and that he is forced to move. He says that his hand is being made to wave or to write or to do untoward acts. He says that he is being made to walk when, as a matter of fact, he is standing still.

Sometimes these take the form of verbal hallucinations, that is, the patient has a feeling that he is talking when he

¹ William B. Carpenter, “Mental Physiology,” D. Appleton & Company, 1874, p. 158.

is perfectly quiet. Mutism may result from this condition. The patient thinks he has answered a question or has spoken to the examiner when he has not uttered a sound.

78. Development of hallucinations. Where the hallucination is the by-product of some organic disease process it may appear suddenly and in completely developed form, and may in turn disappear just as quickly. In chronic cases it is often found that the hallucinations develop gradually and it is from these that we can get some inkling as to the nature of their growth and as to the reason why they take such firm hold upon the individual.

In the first stages of development the subject usually knows that the perception is not real. Its presence leaves him bewildered or questioning and leads him to investigate the source of the experience which he cannot understand. In the early stages they can often be shown to be simply radical misinterpretations of sense perceptions. The following example illustrates this:

“As he was having a sweat-bath, he heard a melodious noise of drops of water falling into bowls, and through them he caught the sound of girls’ voices, two different voices, speaking fast and low, and mocking at him, saying: ‘There he sits; see, how he puffs.’ He asked the bath-attendant who it was speaking, and to convince him that he was in error the attendant turned off a tap. Thereupon the splashing of water ceased, and with it the voices, only to begin again as soon as the tap was once more turned on.”¹

From this stage the form that the development takes is largely in the attitude of the patient toward them. They cease to be flashes of light or queer sounds that he is interpreting. To him they now are filled with significance—they become real perceptions. This stage usually develops because they fit in with the emotional attitudes of the patient. To interpret them as true perceptions is more satisfying to him than to become convinced that they are not real. If a girl is longing to see her departed mother it is more satisfying to

¹ Gustav Störring, “Mental Pathology,” Swan Sonnenschein, 1907, p. 26.

believe the vision really was her mother than to convince herself that it was a misinterpretation. They become real because the subject wants them to become real. Even the vile hallucinations can be explained as fitting in with the desires of the patient. It is much more acceptable to believe that the vile things are from some outside source than to believe that they come from one's own mental processes. Even in this stage the subject may have some doubt as to their reality. He still is somewhat mystified by his experiences but is not so emphatic in his conviction as to their absurdity.

In the final stage the subject takes them at their face value. He believes in them just as sincerely as he believes any sensory experience and acts on them with even greater abandon than he will respond to normal sensory experience. They are now not only real experiences, but they fit in with his affective life to such an extent that they gain the preference as determiners of conduct.

79. Chart of perceptual disorders. The following schematic arrangement indicates the principal characteristics of

	ILLUSIONS	SIMPLE HALLUCINATIONS	ABNORMAL HALLUCINATIONS
Incidence	Common to all persons	Uncommon	Rare
Interpretation dependent upon	Objective stimulus	Objective stimulus and individual factors	Subjective factors almost exclusively
Emotional interest in the experience by subject	Amusement	Slight or fleeting personal interest	Strong and permanent personal interest
Attitude of subject	Believes in objective facts	Bewilderment	Belief in hallucination
Subject's insight	Complete understanding	Partial	None

erroneous sense perceptions in their three stages, illusions, simple normal hallucinations and abnormal hallucinations.

80. Explanation of hallucinations. From our description of hallucinations of various types it has been seen that they are produced by a variety of conditions capable of modifying the interpretation of our sensory experiences. Such factors are not simple or limited in scope. Hence it is folly to attempt to explain all hallucinations by the same mental or physiological mechanism. It may be that in one patient we find the operation of several different factors or in others the reasons may appear relatively simple. With this preliminary warning against a tendency to over-simplification let us review the most important causes of hallucinations.

81. Peripheral or accidental factors. The most important factors in the development of hallucinations lie in the personality of the patient. These are given an opportunity to function through the objective circumstances. The latter are accidental circumstances which provide the soil in which the personality elements germinate.

1. *Fatigue.* We are all familiar with the buzzing in our ears at the close of a Fourth of July celebration or some other occasion where there has been a vast amount of noise. We may get a somewhat similar situation in the visual field, where these after effects are called after-images. We become so accustomed to these that we customarily ignore them. Most persons do not know that after-images exist and it takes an unusual interest in them in order to see them. Excessive development of sensory after effects furnish a fertile background for the development of more serious sensory disturbances.

General fatigue probably makes one who is already subject to hallucinations less able to resist the tendency, but as a direct causal factor it is of relatively slight importance.

2. *Drugs.* There are a number of drugs which tend to develop hallucinations. A few of the most important will be considered.

(a) **ALCOHOL.** Alcoholic hallucinosis is supposed to be

characterized by auditory hallucinations of a peculiar character. Bleuler¹ says:

“In most patients it is a case of the voices of several or many people not present who discuss the patient in a dramatically elaborate dialogue; that is, they discuss him in the third person; much more rarely do they speak to him. These voices threaten him, remind him of his sins, scold him, make plans as to how they will catch him and perhaps torment and torture his family also. Some egg the other on, or some of them side with the patient, try to defend him and save him. In very acute cases the connection is usually less organized; in place of more quiet scenes there is a confusion of voices. Sometimes the voices are rhythmic, partly synchronous with the pulse, and partly with an external sound, e.g., the ticking of a watch, as ‘You are a fool, you are a fool,’ or they take the form of rhymes and satiric verses about the patient. Frequently the patients hear their own thoughts or answers to them, or one ascertains what they are doing or criticizes their actions. Besides, especially in the beginning, one seldom fails to note sounds, such as buzzing, snapping of gun triggers, striking of rifle bullets, cracking, and sounds of horses’ hoofs, all of which is related to the patient.”

(b) COCAINE. The hallucinations that characterize cocaineism are those of sight and touch in the form of “small mites and parasites, which the patients sometimes want to demonstrate to us through a microscope under the impression that they have made a great discovery.”²

(c) CANNABIS INDICA. The effect of cannabis indica (hashish) depends largely upon the individual. It is supposed to produce very vivid visual hallucinations of an erotic or amorous character. In some persons this is not the case. The person loses control of the sequence of thought processes and for this reason it has been supposed that the type of hallucinations that it causes may be taken as an index of the personality make-up of the individual. Not enough has been done with this drug to form any definite conclusions. It is mentioned to show the contrast in effect to those of alcohol and cocaine.

¹ Eugen Bleuler, “Textbook of Psychiatry,” copyright 1924, by The Macmillan Company, p. 341. Reprinted by permission.

² Bleuler, *loc. cit.*, p. 359.

The latter two seem to have their dominant effect on the peripheral sensory nerves. The hallucinations that result are the attempt to interpret these unusual sensory impressions. In the former the effect seems to be located more in the central nervous system.

3. *Disease.* (a) FEVER DELIRIA. In the milder forms of deliria the patient may have hallucinations of sight and hearing which usually fit into their actual environment. A mother will see her little children beside her bed. A lover will see his sweetheart bending over him or speaking to him. Or, a person may have a fearful type and see his collectors endeavoring to make him pay his bills. In a deeper stage of delirium the patient may lose all contact with his environment, be entirely confused and his hallucinations end in excessive emotional outbursts.

(b) DELIRIUM TREMENS. In delirium tremens the patient may have hallucinations in all spheres but the most characteristic are those of sight and touch. The hallucinations of sight are usually numerous, small and very active objects such as mice, snakes and insects or animals that "do not exist." They never see one animal for there are always present great numbers. They are always extremely active and when they take complete control, everything is interpreted in terms of the hallucinatory system. They will "take the window for the door, the stairs for the street, and consequently are in danger of falling; instead of the wall of the room they see the open field, bump their heads and get a mortal meningeal¹ hemorrhage."² Hallucinations of the other senses have these same characteristics of extreme activity and multiplicity. The strangeness of the hallucinations suggests that the main contributing factor is a stimulation and distortion of the functioning of all the sense organs. The difference between these and the febrile type, where the difficulty is largely due to hyperaemia of the cerebral cortex, is apparent.

¹ Meningeal is an adjective form of meninges, the name for the membranes that cover the brain.

² Bleuler, *loc. cit.*, p. 330.

82. Central factors. Our interpretation of sense impressions does not depend wholly upon the nature of the stimulus, how it is changed by the sense organ, or on the other incidental factors that have been indicated, but largely upon central or personality factors.

1. *The projection of images.* The projection of central impression in the form of an hallucination has been experimentally demonstrated. Sidis¹ reports the following experiment:

“A subject of mine . . . falls into a deep state of hypnosis. When in this state his hand is made anaesthetic by post-hypnotic suggestions; it is then suggested to him that objects put into his anaesthetic hand will be seen by him on a screen. When he wakes up, his hand is anaesthetic even to the most painful stimuli. The anaesthetic hand is then put behind a screen and another screen is kept in front of his eyes. When objects are put into the subject's anaesthetic hand, he has visual hallucinations of them. Thus, if half a dollar is put into his anaesthetic hand, no matter how lightly, he sees it on the screen first as a circle on a flat surface, then the visual hallucination is gathering more solidity and reality, more details are gradually emerging, and finally it begins to look like a solid half dollar.”

Various hallucinations may be produced by hypnosis. The subject can be made to take a pair of imaginary scissors and cut an imaginary string. He can be told that there is a bug on the back of one hand and will thereupon brush off the imaginary bug. He can be made to eat imaginary soup from an imaginary dish with an imaginary spoon. He can be made to lift an imaginary hat to an imaginary lady. All these can be aroused by the mere verbal suggestion of the hypnotist. All this is evidence that it is possible to have perceptual experiences as a projection of a central set or readiness to perceive them.

If this can be done when some outsider gives the suggestion it is not difficult to understand how, if the subject has enough

¹ Boris Sidis and Simon P. Goodhart, “Multiple Personality,” D. Appleton & Company, 1919, p. 259.

of a desire to see, hear, or experience a certain thing, he may unwittingly suggest to himself that he is experiencing it.

2. *Emotions as a cause of hallucinations.* An intense emotion of any sort may be the source of an hallucinatory experience. Probably the most important emotions to give rise to hallucinations are wishes, fears, and love. Many examples can be found of each of these and all three may be found in combination.

Varendonek¹ gives an illustration showing how a wish can be transformed into an hallucination:

"We were playing auction bridge, and in a certain game I had expected to win four tricks with my partner. When the game was over, one of my opponents said, 'You have three tricks.' I protested, and pointing to the cards, that were neatly arranged in packets of four in front of me on the table, I replied: 'I beg your pardon, we have four and you have lost.' I really perceived four, but after a short discussion I counted them four at a time and found that I was wrong: I had hallucinated four. It was my strong desire, my preoccupation, that caused this optical hallucination."

As is the case with this normal hallucination so it is with many abnormal ones. The form of the hallucination often gives a symbolical picture of the wishes of the subject.

In the same way fears can be the basis of such experiences. When Brutus became very anxious about the battle which was to be the critical point of his career, he had a vision of Caesar, who promised to meet him at Philippi. Surely this vision was prompted by his fear.

Hallucinations may be a projection of love impulses. A woman shortly after losing her husband by death saw him appear to her one night and call her endearing names. Being a woman of insight she understood that this was merely a projection of her own thoughts and the vision was not repeated.

3. *Hallucinations as defense mechanisms.* Emotions in themselves are not an adequate cause for hallucinations. If

¹ J. Varendonek, "The Psychology of Day-dreams," copyright 1921, by The Macmillan Company, p. 339. Reprinted by permission.

they were, all of us would be continually beset with hallucinations. It is only as the emotions express a situation of internal maladjustment that they give rise to these bizarre experiences. From this point of view the objective and peripheral factors that we have enumerated can be regarded as conditions which permit the emotional stresses to gain expression.

The things that are most likely to cause such internal maladjustment are related to our struggle to live up to the ideals that we set for ourselves. Since a number of our ideals are centered around morality, many hallucinations can be interpreted as a symbolical representation of the struggle that the subject is having to be good.

One patient, a woman of about thirty-five, said that she was constantly hearing two voices. One told her that she was a good woman and said many nice things about her. This voice came from a man who told her he was from heaven and who was dressed in a white robe. The other voice told her to do bad things and assured her that she was bad anyway. This came from a man in a black robe with a curly mustache and pointed beard who informed her that he was a bad man. This was doubtless a projection of the struggle that she was having with herself: the visions and voices represented symbolically two parts of her nature.

Most persons have a struggle between the good and bad parts of their personality but recognize this conflict in its true light. Others project this conflict and describe it as a conflict between forces outside themselves, they merely being witnesses of the struggle between the two forces. Hence, hallucinations can be regarded as defense reactions, a scheme to defend one's personal ideals. The early stages of such a development would be a frank recognition of the struggle: "Wouldn't it be fun to do that thing even if it is bad? No, I must not do it." The next stage is: "Something tells me to do that and something tells me not to do it." The final stage is where the patient sits by as an auditor and hears the voices struggling between themselves.

The reason for such a development is that it is much easier

to admit that some outside influence or individual is bad than to admit that one has a bad tendency himself.

83. Treatment for hallucinations. Of course if the hallucination is primarily the result of intoxication, a disease, or some physiological factor, the remedy lies in the correction of such a condition. Even if a personality factor does enter into such hallucinations the treatment would not be in a personality adjustment but in an organic adjustment. If, however, during a delirium or other hallucinatory episode the individual showed that he was severely maladjusted, such information should be used after recovery from the hallucinations as a guide in helping the person to make a better adjustment.

Where the hallucination is obviously based on an attempt to defend the ego from an unpleasant conflict, where it is a projection of the wishes, fears or erotic impulses of the subject, treatment has to be directed toward a better form of defense. This means that the pathway traveled in the development of the hallucination must be retraced and the patient led to admit that the thing portrayed symbolically in the hallucination is a part of his own ego. This is a difficult thing to do. It is often possible to get the patient to go so far as to acknowledge that the hallucination *might* be a projection of his impulses, but he will qualify this with the statement that it is not.

If the patient's ideals are so high that he feels that "as a man thinketh in his heart so is he" he will be loth to give up his hallucinatory defense and admit that he has undesirable impulses. He must be taught that all persons have impulses which are not according to the highest ideals, that conduct is the criterion of virtue and not thoughts. The strong man is the one who has impulses which he restrains not the one who has no impulses that need restraint.

A figurative expression of the philosophy that such a patient needs is this, "A man cannot prevent the birds from flying above his head but he is not forced to permit them to make nests in his hair."

84. Outline for examination of hallucinatory experiences.

No adequate formal test has been devised to discover the presence of hallucinations, much less to determine their strength. Consequently the only method of examination is by conversation designed to lead the subject to acknowledge his experience. A teacher or untrained person should not try to make a complete examination but refer a suspect to a specialist. The trained examiner must be very tactful in leading up to this subject or his patient will be placed on guard and deny their presence. Results are frequently obtained by taking for granted that he has such experiences and he will respond unwittingly. Instead of asking him whether he hears "voices" or sees "visions" ask him some such questions to begin with as, "What do they say to you?" "What do the visions look like?"

Enough information should be obtained to fill in the different sections of the following outline:

I. General description

1. Are they clear or vague? Described in great detail or not?
2. Do they come quickly or slowly, fade rapidly or linger?
3. Are they colored more by objective or personal factors?

II. In what sensory fields are they found?

1. Visual
2. Auditory
3. Gustatory
4. Olfactory
5. Pain
6. Cutaneous
7. Kinesthetic
8. Organic

III. Permanent or transient?

1. Are they always present? How frequently and continuously?
2. Under what conditions do they come?

IV. Texture

1. Are they simple in form, such as flashes of light, simple sounds, etc.?

2. Complex, such as human figures, animals, etc.?
3. Is their manifestation simple or do they carry out complete dramas?
4. Bizarre or otherwise?

V. Point of reference

1. In the patient himself—his mind, head, heart, or other parts.
2. Outside world—other persons, spirit world, friends, enemies.

VI. Attitude toward them by patient

1. Does he see their queerness?
2. Does he believe in them and is he motivated by them?
3. Does he try to explain them—saying that they come through wireless, mental telepathy, etc.?
4. Does he believe in them so literally as to think they require no explanation?

VII. Probable meaning in terms of the patient's personality

1. If they are symbolical, what do they symbolize?
2. Are they defense mechanisms? If so, find the nature of the conflict in which they were generated.
3. If projections, find the nature and mechanism of projection.

VIII. History of development

1. Did they come gradually, as an unfolding of the patient's personality?
2. Circumstances surrounding their development, such as disease, drugs, emotional crises, and the like.

85. Summary of chapter. Perceptions, as the interpretation of sensations, are based upon the previous experience of the individual, hence both normal and abnormal perceptions are subjects for individual study. The way in which the sensations from different sense organs unite is well illustrated by the phenomenon of synesthesia as well as by the more complex development of meaning found in symbolism.

The mildest degree of perceptual error is found in illusions where a combination of objective and subjective factors produce a misinterpretation which is usually easily corrected. The more marked types of disorder, known as hallucinations,

are developed where the subjective and especially the emotional factors dominate to such an extent that there may be a perception with no objective stimulus.

The thing that should be emphasized in our study of hallucinations is that they portray in a large measure the inner life of the one subject to them. When a person has a great crisis come into his life an hallucination may appear as a projection of that crisis and should not be taken too seriously. Every normal person is entitled to a few hallucinations without thereby being regarded as unusual. They are largely the projection of emotional stresses, and it is the unusual person who, at one time or another, does not have emotional crises. Most people hide the fact that they have had any hallucinations because they fear they will be regarded with disfavor should they make the disclosure. If a teacher finds such a condition in her pupils she should not become panic stricken and rush the child off for an examination, as this might accentuate the crisis. If she is wise and tactful she could ascertain the cause of the emotional disturbance and help the child to adjust his difficulties and thus avoid repeated occurrences.

IMPORTANT TECHNICAL WORDS

affect. A feeling or emotion.

affective. Emotional.

afferent fibers. Fibers which carry impulses from the sense organs to the nerve centers. Sensory fibers.

correlation. A mutual or reciprocal relation.

delusion. An error of belief.

genetic. Pertaining to the mode of production or development.

hallucination. Perception of objects with no reality or where the perception is such a gross misinterpretation as to have little or no apparent relation to the objective stimulus.

illusion. A perception which fails to give the true nature of the object perceived.

innate. Inborn. Innate should be distinguished from inherited.

The latter refers to what is transmitted through the germ plasm.

symbol. That which stands for something else and serves either to represent it or bring to mind one or more of its qualities.

synesthesia. A perceptual interpretation of a sensory impression

from one sense organ in terms of a sensation of a different sort, as when sounds are perceived as having characteristic colors.

PROJECTS FOR FURTHER STUDY

1. Make a survey of the class or some other group of persons to discover one who has experienced synesthesia. If you find such a person, make an intensive study of all its manifestations.
2. Throughout a single day keep a list of all the uses of symbols that you can observe. See which member of the class can collect the largest number of examples. You will probably be amazed at the frequency with which they occur.
3. Most persons have had at least one hallucination in their lives. See if you can get them to tell you about it.
4. If possible, visit some institution and have the superintendent demonstrate to you cases exhibiting the different forms of hallucination.

REFERENCES

- Gustav Störring, "Mental Pathology," Swan Sonnenschein, pp. 19-59.
- James Sully, "Illusions," Kegan Paul, pp. 19-126.

CHAPTER IV

DISORDERS OF ASSOCIATION

Associations are to mental life what highways, railroads, foot-paths, and other means of passage are to geography; but the associations are so vastly more intricate, that disordered travel is consequently much more imminent. We must learn the principles governing this associational system in mental life, the different factors which lead to traffic jams, wrecks, and strayings. How to analyze the situations we find, and what to do to make the whole process more consistent and worth while, is of primary importance. Not only is a knowledge of the associative system essential, but an understanding of the motivation that leads an individual to pursue one pathway and to avoid others, is necessary if we are to understand the associational life of an individual.

86. Illustration of rambling associations. "Nothing could be more copious than his (Coleridge's) talk; and, furthermore, it was always virtually or literally of the nature of a monologue; suffering no interruption, however relevant; hastily putting aside all foreign additions, annotations, or most ingenuous desires for elucidation, as well-meant superfluities which would never do. Besides, it was talk not flowing any whither like a river, but spreading every whither in inextricable currents and regurgitations like a lake or sea. . . . So that, most times, you felt logically lost, swamped, near to drowning, in this tide of ingenious vocables, spreading out boundless as if to submerge the world. . . . 'Excellent talker, very—if you let him start from no premises, and come to no conclusion.' " "1 "Charles Lamb's story of his having cut off the button by which Coleridge was holding him one morning,

¹ William B. Carpenter, "Mental Physiology," D. Appleton & Company, 1874, pp. 269-270.

when he was going in to London by the Enfield stage; of his leaving Coleridge in full talk, with the button in one hand, and sawing the air with the other; and of his finding him discoursing in exactly the same attitude when he came back to Enfield in the afternoon,—is, of course, a ludicrous exaggeration; but it conveys, like other ‘myths,’ a true idea of the degree in which Coleridge was habitually ‘possessed’ by the train of thought that happened to be passing through his mind at the time.”¹

Thinking involves the selection and coördination of associations according to some definite controlling principle so that we get somewhere. Some question should be answered, some problem solved, or some goal reached. Coleridge’s talk illustrates what happens when no control is exercised as to the selection of associations, an ineffectual rambling which serves no useful purpose save to enable the listener to know Coleridge better. It illustrates a form of what we shall later call free association.

XVIII. NORMAL ASSOCIATIONS

Before we take up unusual associations we shall review the nature of associations, the different forms that they take—reverie, phantasy, classification, and problem solving,—following which we shall consider the nature of the control which makes associations of value.

87. Nature of associations. By association in mental life we mean simply a relationship. For example, in our school work we associate the name of Washington with a certain historical character, Mississippi with a definite set of geographical facts, two with a number sequence and good with moral values. Such a relationship implies a neural connection. Hence, wherever such a linking exists there is the possibility of association. It is the vast interlacing of neural elements that makes a rich associational life in man possible. The process of association means the activity which involves passage across these connections.² In order to orient ourselves

¹ *Ibid.*, p. 268.

² The nervous elements which make associations possible are literally millions in number in each individual. The various possibilities of inter-

so that our study of abnormalities in this field may be clear, it may be profitable to indicate certain salient facts regarding association.

1. *One impulse may arouse a number of others.* The one selected is determined by:

(a) The closeness of the connection as determined either by inherited mechanisms or previous experience of the individual. Learning may establish so close a connection that "two plus two" inevitably is followed by the association "four."

(b) Other things going on at the same time, and other impressions being received that may create a tendency for a certain connection to predominate. If Mary is present the word "girl" may lead to the association "Mary"; if Jane is present, "girl" may bring the association "Jane."

(c) A strong emotion may cause a certain connection to function that under other circumstances would not be potent in competition with other connections. If you have recently been frightened by a burglar, "noise" may make you think of burglar, while in calmer moments it might lead to such a thought as "street-car" or "machine shop."

2. *There is a continuity of association processes.* Evidence indicates that there is never a cessation of mental processes except in complete stupor.

(a) This continuity is not necessarily a logical continuity. Often it is anything but logical. It follows the line of least neural resistance. When we make the statement, "I cannot think," it usually means that the line of least resistance is going against what we consider logical trends in spite of our attempts to the contrary.

(b) Sometimes the succession may involve succession of a few elements in a continuous round, but this is no more a stopping of associations than where there is a wide variation.

connection are so vast that we can conceive of practically no limitations upon the variety of connections that may be established. Furthermore, activity at any one moment is not confined to a few, but great numbers are functioning in different connections at the same time.

3. *Every experience has some influence on the trend of future associations.* In a literal sense we are continually changing. Every experience makes us different from what we were before.

(a) Recent experiences have a preference, but this advantage in turn wanes in the presence of newer ones. The residual effect is never lost.

(b) Repetition of an associational connection gives such an association added strength.

(c) Vividness of an experience makes the connections involved stronger than weak or colorless experiences. Seeing an elephant at the circus impresses a child much more than the humdrum reading about an elephant from a dry school-book.

88. Utilization of associations. Under differing circumstances the way in which different connections are utilized varies. The distinction between the different forms that we shall mention is not clear and sharp, but is rather a shaded process wherein each form grades off into the others by imperceptible degrees. If you will examine your own mental processes you will find that each of the following forms has its place in your associational activity.

1. *Reverie.* Where the different connections are permitted to act in accordance with their strength we get a *free association*, a progression unhampered by conventions or personal ideals from one mental process or element to the next. It is quite probable that our associations are never free from control in a strict sense, but such freedom is approached in the condition which we know as reverie, or daydreaming. The man who spends hours lying in the shade of a tree, doing nothing, usually lets his associations roam where they will. In the dreams of sleep it is likely that the associations are even more free, but there is certain evidence to show that even in sleep the associations are under partial control.

2. *Phantasy.* In reverie the associations usually adhere to combinations that have occurred in the experience of the individual. In phantasy the associations occur in new com-

binations. Where there is no adherence either to experience or logical relationship in these combinations, the effects are often bizarre. Where there is some relationship it is given the name imagination. Where the imagination has the possibility of leading to something of value we call it constructive or productive imagination. Sometimes phantasy expresses combinations that one would like to see in reality, in which case we have wish phantasies or what is usually called "building air castles."

3. *Classification.* In classification the associations are selected and an attempt is made to arrange them according to some relationship, either apparent or real. This arrangement makes them appear to be logically related. Where one allows his mind to roam anywhere it will, he is indulging in reverie. Where he centers it on some specific topic, such as how he will feel when he makes his speech as valedictorian of his class, he is indulging in phantasy. When it comes to the planning of such a speech, reverie and phantasy must be abandoned in favor of some rational classification of associations or he will not have much of a speech to make.

4. *Problem solving.* When one is placed in a situation where he does not know what to do he is likely to begin one act, stop before it is completed, begin another, stop again and begin another or repeat the first, and so on until a satisfactory solution is reached. This partial reaction to various solutions results in a tension, which is a preparation to do any one of several different things. The solution consists in simply having the action completed whether it was an intentional completion or not. For example, the other day a woman came into an elevated train, and, although there were plenty of seats, she could not make up her mind where to sit. She looked first at one seat and then at another, made a movement as if to sit in one and then a movement as if to sit in the other. Finally, the train gave a lurch and threw her suddenly into the seat nearest to her. Whereupon she sighed with relief and appeared to be happy.

A problem may range anywhere from a simple question

to a state of extreme tension because the individual does not know how he should act at the particular moment. The condition common to all degrees is a state of tension, the relief from which is considered a solution. When in such a state of tension the individual weighs every possible connection as to its bearing on the relief of the tension. In some cases the tension may be highly distasteful to the individual, in others there is a thrill connected with the tension as well as with the resulting relief when the proper solution or associative connection is found. Reasoning is the habit of directing associations according to the problem solving method.

89. Inhibition of associations. Uncontrolled association means that all connections are equally free to conduct currents, and that the pathways actually chosen are the results of the free interplay of the different factors that tend to give the chosen ones preference over the others. Controlled thinking is largely the blocking of certain connections which is technically called *inhibition*.¹ The essential element in controlled thought is inhibition.

Thinking is largely a trial and error process. The problem is at hand with its resultant tension. Which path shall the associations take? One can but try. If the connection tried is not the proper one the result will be increased tension. If it has a favorable bearing on the problem the tension will be relieved. Increased tension results in some manner, which is as yet unexplained, in a resistance against the use of the unsuccessful connection when the problem for which it proved unsuccessful is at hand. So inhibition, or the blocking off of

¹ The theory of nervous organization that is most widely held is called the neurone theory. It accounts for the various facts of association by assuming that the nerve units have a great number of possible connections with other units, but that there are varying degrees of ease of passage of nerve impulses over these different possible connections. Anything which increases the resistance between elements makes it harder for a nerve impulse to pass in that direction, anything which decreases the resistance makes it easier for impulses to pass that way. The former are called inhibitions, the latter facilitations. For an elaborate discussion of this subject, the reader is referred to Charles Sherrington, "The Integrative Action of the Nervous System," Yale, 1906.

irrelevant and non-successful connections, is the basis of thinking.

Other situations causing tension may also have the effect of blocking connections when there is no logical problem issue at hand. The teacher who has made her pupils angry cannot expect them to do good work. If a strong emotional stimulus is present, those connections which tend to increase the undesirable tensions related to this emotion are inhibited and this inhibition has been found to be more potent than those connected with logical thought. For this reason, a connection which under ordinary circumstances would be open and successful from a logical point of view may be blocked or inhibited because of some emotional factor of another sort. An auditor once said he could not follow the arguments of a certain lecturer because he knew too much about the lecturer's private life. This has led some persons to infer that inhibition was an undesirable thing from a psychological point of view. This certainly is not the case. Inhibitions properly placed are the means by which mental life becomes orderly. Remove them and we have mere free association or reverie. When we understand that emotional inhibitions may govern the sequence of associations rather than the logical problem at hand we shall not place undue emphasis upon the integrity of our logical processes.

This introductory statement as to the nature of the normal association process should clear the way for our understanding of unusual forms of associative activity as they appear in the classroom, in everyday life, in industry, and in all other phases of human activity. Let us keep clearly in mind the fact that we cannot understand mental behavior by attempting to follow one isolated idea through a series of forms. Associations do not occur in isolation but are always a part of an intricate mass of other associations which both influence others and receive influences as well. We must abstract segments for the purpose of analysis, but we must continually remind ourselves that such segments do not appear in isolation in real life.

XIX. TYPES OF ABNORMAL ASSOCIATIONS

An analogy may help us to get clearly before us the objectives of this section. We may study vehicular traffic conditions by (1) road conditions—the effects of unserviceable and broken roads upon traffic, by (2) different possible routings and connections, and by (3) trends in travel, such as tours, conventions, etc. In our study we shall consider (1) disordered conditions of the neural connections which interfere with normal associations, which conditions give rise to aphasias, (2) peculiar associations or unusual routings of associations, and (3) peculiar constellations or trends in associations.

90. Aphasias. Aphasia is derived from the Greek *a*, a privative and *phasis*, derived from *phemi*, speak. The word aphasia, therefore, means *without speech*. The word has been extended in meaning so that it does not refer simply to vocal speech but to the speech function as a whole. The speech function depends upon the proper reception of sense impressions and the motor expression of speech. Consequently, we may have two main types of aphasia, motor and sensory. Since vision and audition are the two most important senses involved in the reception of speech stimuli, sensory aphasia can be further subdivided into auditory and visual sensory aphasia. Speech may be expressed vocally or in writing so we can further subdivide motor aphasia into motor speech aphasia and motor writing aphasia. It is possible for various types of disturbance to be present which interfere with the associations between these main sensory and motor functions, and which can be described only in terms of their influences on the sensory and motor processes. Hence, in studying aphasia our task is to get an accurate picture of the nature of the disturbance so that we can infer the location and nature of the lesion (injury) which is the cause of the aphasia.

From our brief outline of the association process it is evident that there must be an elaborate connection apparatus. The center for these connections is primarily the brain, although there are numbers of association or connecting neurones

in the spinal cord. The incoming sense fibers from the different senses must be connected before the motor fibers can receive the impulses leading to response. Thus we can divide all nervous fibers into three types; the sensory, the association, and the motor. It is with gross disturbances of the association pathways that we are now concerned.

Figure 14 gives a schematic representation of the nature of these connections. An auditory stimulus through connec-

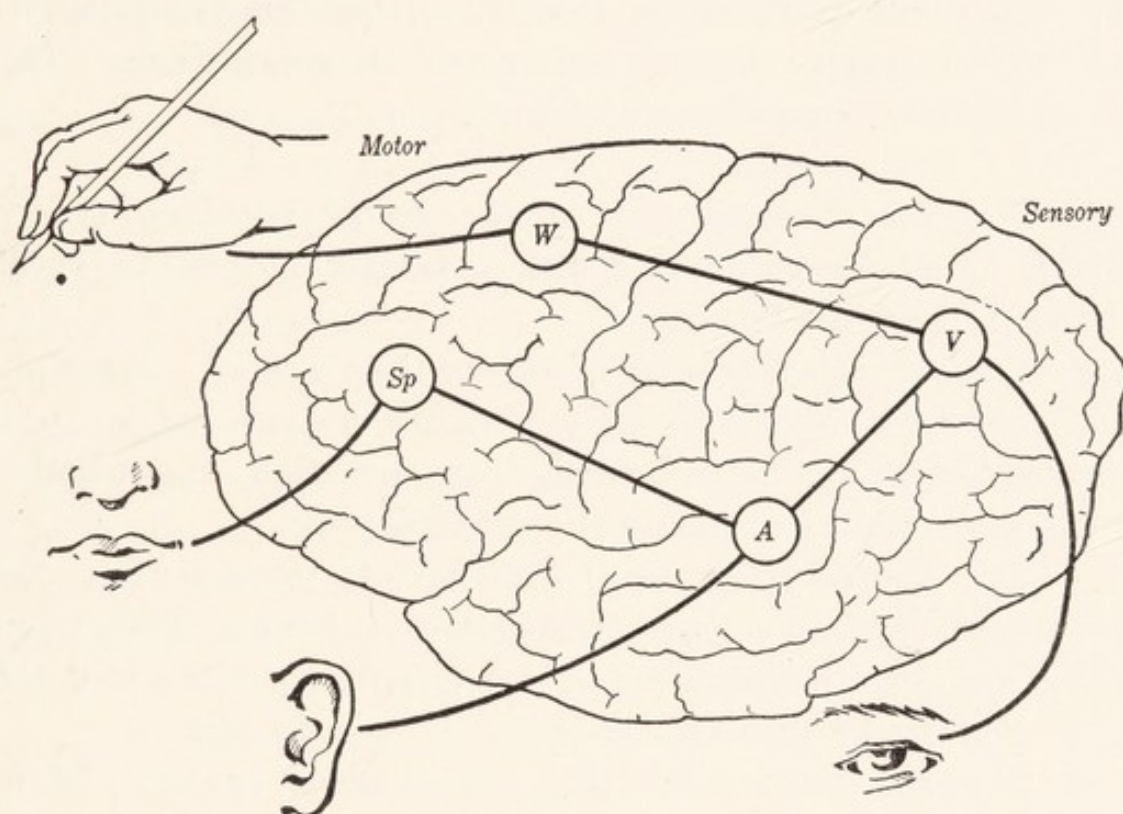


FIG. 14. DIAGRAM OF CENTRAL SENSORY CONNECTIONS

Any interference in the free activity of any of the pathways will cause disturbance. The nature of the disorder will vary with the particular pathway that is injured.

tions to the speech and writing centers may cause either a speech or a writing reaction or both in combination. A visual stimulus may likewise cause a vocal or writing reaction. Further, the connections between the auditory and visual centers enable the subject to translate a visual impression into auditory terms or an auditory impression into visual terms. Lesions may disturb any of these centers or the pathways between them. It should be stated here that the injury is

usually not a simple one. Most of them are the result of vascular lesions which permit a blood clot to interfere with the normal functioning. Sometimes the clot is severe enough and prolonged enough to cause a permanent deterioration, at other times the lesion is a temporary one and disturbance of function is restored with the absorption of the blood clot.

91. How to test for organic aphasia. In order to examine the aphasic and determine the nature of the lesion it is necessary to give an examination that will determine the integrity or lack of integrity of each center and its connections. This should be done somewhat as follows:

1. *Test for the integrity of the motor speaking center.* This is done by examining the patient's ability to speak coherently and intelligibly.

2. *Test for the integrity of the writing center.* Have the patient write. Note carefully whether he can write spontaneously, whether he can write from dictation, and whether he can copy what he sees on the printed page.

3. *Test for the integrity of the auditory word center.* See whether the patient comprehends what he hears. Direct him to perform certain simple acts. Ask simple questions to determine whether he understands what is said to him.

4. *Test the integrity of the visual word center.* Write simple questions and note his replies. Show him simple written directions and see whether he can execute them.

5. *Test for connections between the auditory and writing centers.* Determine the integrity of the connections between the auditory center and the writing center by dictating to the patient and have him write what is dictated to him.

6. *Test for the connections between the auditory and speech centers.* See whether the subject can repeat what is dictated to him.

7. *Test for the connections between the visual and the speech centers.* Have the patient read a passage. If this can be done correctly the pathway from the visual to the speech center is intact.

8. *Test for the connections between the visual and writing centers.* If the patient can copy a passage it indicates the integrity of the visual writing connections.

By reference to Figure 14 the significance of the different tests can be studied. At times it may be difficult to make a precise localization, but it is possible to tell whether a particular center is primarily involved or the pathways between them.

92. Some of the more important organic aphasias. Various terms have been used to designate the different forms of aphasia. We shall enumerate the most important of these.

1. *Auditory aphasia.* If the auditory center is injured the subject will not be able to understand what he hears. Furthermore, he will not know what he himself says. A man's speech is controlled by his auditory perception of what he himself is saying. If he cannot understand what he is saying his speech is likely to be a jumble. He is able to talk but he talks a meaningless jargon and does not know that he is talking nonsense. He will be able to read and can answer your written questions by writing. In trying to read or answer vocally, however, he flounders miserably. He may talk vociferously in his attempt to make you understand and will be amazed that you do not understand.

2. *Alexia.* This is the name for visual aphasia. If the visual area is impaired, the subject can hear, understand, and answer by speech what is asked of him but he cannot comprehend printed matter and cannot answer by writing because he cannot critically read what he writes. He may write automatically but if he does so he cannot read what he has written.

3. *Motor aphasia.* This is due to a lesion of the speech center. The patient can speak words but his speech is a jargon. He knows that what he has said is nonsense but he cannot correct it.

4. *Agraphia.* This is the name applied to the inability to write and is due to a lesion of the motor writing center.

In most instances the lesions are not simple in nature and

one may get a combination of these forms. The important thing is to keep in mind the general scheme of connections and analyze carefully the significance of the different tests that one makes.

93. Reëducation of aphasic individuals. In some instances the aphasic may be re-educated and the lost functions recovered, at least partially. The writer had occasion to study the possibility of re-education in a case of aphasia from an injury in the recent war. This patient probably had the visual center intact, for he could distinguish different objects that were shown to him. He would pick up a screw-driver and apply it to a screw head and operate it. Therefore, the motor fibers were intact. He could not write what he heard although he could copy what he saw. Nor could he understand what was said to him. When asked to pick up a screw-driver he had no notion of what was spoken to him. He could not answer a question, and always responded with the nonsense word "sariat." He did not know that he was talking nonsense and would repeat this word over and over apparently thinking that he spoke coherently. On occasion, however, he would speak a consistent sentence but he did not know that he was talking coherently when he did so. Central control of speech was intact as shown by his automatic speech. Evidently, then, the main lesion was of the auditory center.

An attempt was made to teach him to understand auditory impressions. Twelve objects that he recognized and could use were placed before him. The names of these objects were printed, one name on a card. The article was indicated, the printed card shown, and the experimenter spoke the name. He was made to attempt to repeat it. He at first would simply say, "sariat." By a great amount of effort he finally chanced to say the correct word instead of "sariat." Then he learned to pick the right ones when they were named. Finally, he was enabled to write the name when it was spoken to him. His control came back very gradually and unless his attention was focused very definitely he would break through with his old word, "sariat."

The fact that he could be taught at all indicates the possibility of re-educating an aphasic. What happens, of course, we do not know. One hypothesis is that other pathways may be taught to take over the function of those that have been destroyed. If this is so, it points to the wonderful adaptability of the nervous system. Naturally, if the lesion is too widespread, such training would be inordinately difficult if not impossible.

94. Simulation of aphasia. One may also encounter a functional aphasia, a condition which simulates the organic type but which is based upon no organic disorder, nor injury of the nervous system. A case of this sort was being studied at the same time that the organic case just described was being trained. In this instance it was impossible to get a consistent series of tests. Furthermore, the functional case made a recovery in a very mysterious manner. His speech returned almost overnight, which we have already seen (Article 37) is a characteristic of a functional disorder.

95. Peculiarities of associative activity. We shall consider in turn six different types of peculiarities of associative activity, namely: 1. dearth of ideas, 2. retardation, 3. blocking, 4. flight of ideas, 5. circumstantiality, and 6. incoherence.

1. *Dearth of associations.* There are four types of persons who may manifest a dearth of associations; the uneducated child, the ament, the dement, and the overspecialized person. We shall consider each of these in turn.

(a) A child, not having had so many experiences or so much educational training as an adult, cannot be expected to have as rich associations. A city child, never having seen a cow, cannot be expected to have a wealth of ideas connected with such a word. A country child who has never seen a city, cannot be expected to show rich associations when the word apartment is mentioned. A child has, nevertheless, the possibility of developing associations by means of experience. His dearth of associations is normally surmounted.

(b) The ament is the child who is born with insufficient mentality. If a child does not have a sufficient number of

neurones which are capable of functioning he certainly cannot form elaborate connectional systems.

(c) The demented person is one who, having established numerous associations, suffers from some sort of deterioration of nervous substance so that the connections are destroyed. The history of the dement distinguishes him from the other types. He shows a normal development with a subsequent deterioration.

(d) Overspecialized persons may also have a dearth of ideas. Their poverty is not likely to be so pronounced as that of the other three forms, but they may show an appalling ignorance of the simplest things about life. True, when permitted to dwell on their hobby their associations are numerous, but once off that track they are as helpless as a child. In the study of mental cases it is possible to find those who from some strong emotional bias become highly specialized to all practical purposes. Their emotional attitude prevents them from dwelling on anything not related to their particular emotional set. The associational life is designed to coördinate the different phases of life and a person is misusing his powers when he permits an emotion or a hobby to narrow his associational life to the extent that he becomes infantile in realms other than his chosen one. How often a clever business man shows implicit faith in some fake labeled "scientific"! How often the professional man makes poor investments!

Poverty of speech or other limitation of associations does not always imply a poverty of associations, and so in examining a subject one should not too quickly assume that there is a real dearth. Two conditions are especially prone to give a false impression of dearth of ideas. The individual may have learned to withdraw into himself when difficulties arise. As he becomes more and more seclusive he expresses fewer and fewer ideas and the onlooker is likely to conclude that he has none. In these cases tests have shown such a conclusion to be unwarranted. He has ideas in great plenty but he hides them from the observer. Another type of case which gives this notion is that of a severe depression. Some individuals

get into such severe conditions of emotional depression that they are in an apparent stupor and their only output is a few incoherent noises or words.

2. *Retardation.* Two types of retardation may be distinguished; executive retardation and initial retardation. Executive retardation results when it requires an unusually long time for the succeeding associations to find expression. We can not be sure that slow expression of ideas means slow thought processes, but in extreme cases it is pretty evident that the person is thinking slowly as well as responding slowly.

A concomitant of this is the symptom known as initial retardation. This means that one waits an unduly long time before beginning to respond to a question or other stimulus. Of course, on being asked a question, one may ponder upon various replies before beginning to respond. This certainly is not a slowing up of association processes; indeed, one's mental life may be extremely active in such a situation. One may be doing the wise thing to deliberate before replying. But, if you were asked your name, and after waiting sixty or ninety seconds were to reply calmly, "John," one would assume with some justification that you had slow associations. Hence, either initial or executive retardation may be the result of clever and active deliberation, or it may be the result of extreme slowness of thought. Only the relating circumstances will indicate which is present.

When a child is slow to respond it may be because he is emotionally disturbed, because he is doing some real thinking, or because he is dull and has nothing to reply. A mere slow response is not enough evidence upon which to base a conclusion as to which factor is operating, and it has frequently happened that a teacher has told a child he was dull simply because he did not respond quite so quickly as she thought he should.

3. *Blocking.* Blocking, on superficial observation, might seem to resemble retardation, but it should be carefully distinguished. In retardation, the subject, if given time, will give a response. It may take a long time and you may begin

to think that he has lost your question, but eventually he will give a reply which is likely to be logical and sensible. In blocking, on the other hand, the subject may or may not begin to respond; but he will stop suddenly and no amount of coaxing on your part or seeming effort on his part will get him over the obstacle. For example, you ask a person of this sort where he is going. He begins to answer, "I am——" and then stops, seemingly unable to go on. You try to prompt him by asking "Yes, you are what?" He may even begin again and get as far as "I am——" and stop again. A block is an insurmountable inhibition against the expression of an idea.

In general it may be stated that blocking is a characteristic of the thinking difficulty of an introvert (page 386) (one who tends to turn into himself) while retardation is characteristic of the thinking difficulty of an extrovert (one who tends to orient himself to his environment). This distinction should not be taken too literally, but as a clue it has considerable value.

There are various degrees of blocking. It begins with an extremely mild tendency and increases with any inclination to avoid meeting the difficulties of reality. The teacher should be alert for this symptom in its mild forms, for when far advanced it is hard to cope with. It often begins as a sort of evasion, then appears as a lack of candor, and finally as a sheer refusal to respond. The causes of these mild forms vary with each case, but one may look for such things as fear of ridicule, shame for something the child has done, an attempt to keep some secret, or even such a trivial thing as the fact that the teacher has been too impatient in demanding an immediate response to her questions.

For example, a perfectly normal boy was asked a question. He began to reply, but when half through his answer the teacher snapped: "I did not ask you that, now answer my question." Whereupon the boy closed his lips tightly and could not be made to say a word. The situation was aggravated by the teacher attempting for a long time to make

him respond. Trivial as this may sound, it is virtually training in blocking.

4. *Flight of ideas.* No matter how irrelevant our internal associations may be to the external situation, when we speak we usually exercise inhibitions to such an extent that our expressions are somewhat logical and related to the situation. What is called a flight of ideas is indicated by the subject's unusual distractibility, a tendency to jump from one line of thought to another, and an apparent inability to keep sight of the topic in mind. This condition is due to a lack of normal inhibition. The slightest irrelevant stimulus will change the trend of associations. Such a reaction is common in little children because they have not learned to control their associations. A teacher will be explaining with great earnestness some problem or telling a story when the little boy will interrupt with such a statement as, "My, your hair is pretty," or "How did you get that scar on your neck?" or "Are you going to the baseball game Saturday?"

The following example was taken from the production of a patient showing flight of ideas:

"Question, 'Who is the president of the United States?' 'I am the president, I am the ex-president of the United States, I have been a recent president. Just at present I was present, president of many towns in China, Japan and Europe and Pennsylvania. When you are president you are the head of all, you are the head of every one of those, you have a big head, you are the smartest man in the world. I do testify and all scientists of the whole world. The highest court of doctoring, of practicing, I am a titled lady by birth of royal blood of rose blood (pointing to another patient), he has black blood, yellow blood, he is no man, a woman, a woe-man, etc.!' The stimulus word ¹ 'key' elicited the following: 'Oh you can have all the keys you want, they broke into the store and found peas, what's the use of keys, policeman, watchman, dogs, dog shows, the spaniel was the best dog this year, he is Spanish you know, Morro Castle what a big key they have (refers to a visit to Cuba) Sampson, Schley, he drowned them all in the bay, gay, New York bay, Broadway, the White Way, etc.' " ²

¹ The use of stimulus words to elicit associational responses is explained in Article 101.

² Eugen Bleuler, "Textbook of Psychiatry," Copyright, 1924, by The Macmillan Company, p. 72. Reprinted by permission.

5. *Circumstantiality or impartial redintegration.*¹ Circumstantiality is characteristic of the person who lacks ability to classify his associations and to choose relevant ones in the expression of thought sequences. As the term impartial redintegration implies it is often the exact reproduction of sequences as they occurred in the previous life of the individual. Ask such a person a question and he will give you an answer, but will incorporate in his answer numerous irrelevant details which seem to him to be essential to the answer but which to the hearer are annoying non-related items. In ordinary parlance this is characteristic of a "one-tracked" mind. The original experience seems to have followed one single path and the only way to revive a part of it is to travel the whole course as it was originally produced.

An illustration of circumstantiality with elements of flight of ideas is typified by the character of Miss Bates in Miss Austin's "Emma."²

"'But where could *you* hear it?' cried Miss Bates. 'Where could you possibly hear it, Mr. Knightly? For it is not five minutes since I received Mrs. Cole's note—no, it cannot be more than five—or at least ten—for I had got my bonnet and spencer on, just ready to come out—I was only gone down to speak to Patty again about the pork—Jane was standing in the passage—were you not, Jane?—for my mother was so afraid that we had not any salting-pan large enough. So I said I would go down and see, and Jane said: "Shall I go down instead? for I think you have a little cold, and Patty has been washing the kitchen." 'Oh, my dear,' said I—well, and just then came the note. A Miss Hawkins—that's all I know—a Miss Hawkins, of Bath. But, Mr. Knightly, how could you possibly have heard it? for the very moment Mr. Cole told Mrs. Cole of it, she sat down and wrote to me. A Miss Hawkins——' "

To train a child to avoid circumstantiality, teach him to

¹ *Redintegrate* literally means *to restore to a perfect state or to renew*. In relation to memory it means the exact recall of an experience. Impartial redintegration means that the different elements of the experience are not evaluated or classified in any way, but are recalled with equal emphasis upon trivial and important elements.

² Cited by William James, "Psychology," Henry Holt & Co., 1908, p. 261.

evaluate the various things that he is taught and to distinguish coördinate and subordinate relationships. We tend too much to stuff children with unrelated facts rather than teach them values and relations. Most children are taught that Washington spent a hard winter at Valley Forge, but fail to get the significant fact that, if he had not, with his men, bravely faced this situation, American history would have been different. When you give children facts, teach them to ask, "Well, what of it?" even if you cannot always answer them.

6. *Incoherence*. Incoherence is the name used to describe a sequence of associations that to the listener have no relationship. The sentences are often stated clearly enough but the meaning is unintelligible. Where the condition is at its worst the sentences are a meaningless jumble—they are a veritable "word-hash."¹ This is an example:

"I am going to marry in June and build a bungalow. It's going to have heavy upholstery. It is going to be a mammoth bungalow. I am going to build a large bungalow on wire wheels. A large bungalow with wire wheels and mahogany top and many, many—mahogany top with wire wheels—Ford coupe with wire wheels. I am going to build a bungalow with, and buy a Ford coupe with white wire wheels and two dozen eggs and many other things too. This bungalow will not be of solid granite but of stone works. In the year 1492 Columbus discovered America and in the year 77 the same thing happened to me. It was on the fourth of February and they say the thing will have white wire wheels and a solid granite top. Bungalow will have wire wheels and a solid granite top. With white wire wheels, twenty-four dozen and ninety-two thousand, and seventy-four dozen coupes. It will not be of granite but of twenty-four dozen eggs. In the year 1492 Columbus discovered America."²

¹ The expression *Salade de mots*, coined by Forel, has been widely adopted by psychiatrists. At the conclusion of a course in abnormal psychology, one of the writer's students made the comment that the one objectionable thing in the course was the desecration of the word "salad," which its application to extreme incoherence entailed. We believe "word-hash" is more suitable. A salad implies a carefully planned combination of ingredients. According to the recipe of the negro chef, "hash" is not planned, it just accumulates. This is what happens in extreme incoherence.

² John J. B. Morgan, "The Psychology of the Unadjusted School Child," Copyright 1924, by The Macmillan Company, pp. 130-131. printed by permission.

The listener to such a production should be warned against the tendency to assume that there is no meaning in what a patient says if it sounds unintelligible. The most bizarre associations may have meaning for the one who utters them although they are the sheerest nonsense for the listener. Did you ever listen to a person carrying on a telephone conversation? Wasn't it the sheerest nonsense as far as the part you heard was concerned? You do not understand the significance of his remarks but you do not for that reason assume that he is talking nonsense. So, when you consider that what the patient is saying probably only expresses a small portion of what is going on in his central nervous system it is well not to be too quick to decide that his mental processes are disorderly.

The great significance of incoherence—with the exception of the kind that is caused by a gross disturbance of the nervous system—is that the person manifesting it is more concerned with his own problems than he is in impressing others that his mind is working in an orderly manner. Language is the vehicle used to convey ideas to others. When one is incoherent he is not successful in conveying his message to others. The examiner needs to determine why. If there is an organic disturbance the person is likely to try vigorously to be understood. When there is no organic disturbance the indifference becomes manifest.

We have considered six types of peculiarity of associative activity. These are: 1. Dearth of ideas, 2. retardation, 3. blocking, 4. flight of ideas, 5. circumstantiality, and 6. incoherence. We have given extreme instances of each of these types so as to make clear the distinctions between them. All of these forms exist in very mild degrees as well as in the extreme manifestations. There has been too great a tendency to ignore the milder deviations from the normal, to wait until the extreme manifestations appear and then to observe in amazement the queer antics that a person can perform in his mental life. The time to do remedial work in this connection is undoubtedly when the tendency is beginning. There is no

other time when the teacher needs more to be on her guard, for it is she who teaches the child many of his associative habits and unless care is taken she may train him in some of the six directions indicated.

96. Abnormal association constellations. Mental processes are influenced not only by the sequence of associations but by the way in which the different associations become grouped and related. A great portion of the efforts of education are directed toward creating rational groupings, but in spite of all the educational control we all tend to form irrational groups, which have just as vital an influence upon our thinking as do the rational groups. In presenting the different types of constellations we do not wish to give the impression that they are rigidly fixed. They are continually changing and for this reason the presence of a peculiar constellation or grouping of associations is not a serious matter unless it becomes so established that the owner will not permit it to be modified. When we refuse to permit changes in our association constellations we are in the group known as "old fogies" regardless of our actual chronological age.

1. *Perseveration.* When a response has once been given if this same response tends to be repeated to other stimuli we have what has been called perseveration. In mild form this symptom may be the result of a persistent attitude or emotion. A more serious form is likely to occur where there is a coarse brain lesion and is usually a sign of definite deterioration. Suppose you ask a person with this symptom, "How old are you?" He may reply, "Forty-four." Whether the reply is correct or not is not important in this connection. The conversation may be continued as follows: "What day of the month is it?" "Forty-four." "When did you come here?" "Forty-four." "How many children have you?" "Forty-four." "How much do you weigh?" "Forty-four." This may be continued indefinitely until you ask some question that is far removed from any number relations, such as, "What is your name?" It can be seen that the main characteristic of perseveration is for a motor expression of some verbal

report to persist. Perseveration of a mild form may occur in arithmetical study. It can be broken up by diversification of practice.

2. *Stereotypy*. In stereotypy the actual motor expression may vary but all the verbal expressions hinge around some central theme in a very mechanical manner. An example of the production of a patient with stereotypy is the following:

"I am a dry goods merchant and I want to go to town and work in my mother's dry goods store. Give me my hat, my coat and my gob-sticks, for I am going to go to town and work in my mother's dry goods store. I am a dry goods merchant and I work in my mother's dry goods store. Open that door and let me go to town and work in my mother's dry goods store." This would be kept up for hours at a time with slight variations. If you would try to interrupt, you would not be very successful. For instance, suppose you would say, "Well, ———, you look pretty well this morning, are you feeling fine?" You would probably get the reply, "I am feeling fine, for I am a dry goods merchant and I am going to go to town and work in my mother's dry goods store."

If there is a tendency toward stereotypy it is very likely to crop out in the continual reproduction of the central idea in themes and other school work. It can be remedied by insisting on a diversity of topics and varied treatments of topics. Stereotypy is often begun because the individual is too lazy to do anything different from what he has done. When the author was in the grades it was the custom every Friday to have each member of the class recite a "memory gem." It was a very beautiful custom to the teacher but a terrible bore to the pupils. We solved the problem by repeating the easiest one we could find. The prize gem was "Hitch your wagon to a star," until the teacher was forced to bar it from the list of eligibles.

3. *Simple persistent ideas*. Persistent ideas is the term used to describe the tendency for certain associations with slight affective value to recur repeatedly. An air from a light opera, a popular song, a bit of verse are illustrations of this. In these cases it is doubtless the lilt, the swing or the rhyme of the persistent idea that gives it enough affective value to

make it persist. One finds such things bubbling out in moments of relaxation or when busy with some task of a monotonous character. One that occurs to the author is a song that was a favorite over the radio at one time:

Where you work a John?
On the Delaware Lackawan.
What a you do a John?
I push, I push, I push.
What a you push a John?
I push, I push a da truck.
Where do you push a John?
On the Delaware Lackawan.

4. *Fixed ideas.* The term fixed idea is used to designate those associations which tend to persist to a greater degree than simple persistent ideas, but which are so moderate that they are neither undesirable nor regarded as pathological but which harmonize with the other mental associations and ideals of the individual. One recognizes the tendency of such ideas to persist but is not usually disturbed thereby. Sometimes the fixed ideas are a direct result of some immediately preceding experience and the fixation may then wear off in time. In other cases the fixed idea becomes a definite part of the person's makeup and plays a large part in determining his reactions to different situations. Ambitions are fixed ideas of this latter sort. Hence, a fixed idea may be a spur to conduct which is to the advantage of the individual.

The zeal with which Charles Sumner opposed slavery illustrates how zealously one can champion a cause once the idea of its importance becomes fixed. "When Sumner was asked whether he had ever looked at the other side of slavery, he replied, 'There is no other side.'"¹

On the other hand a person may have a fixed idea of undesirable affective value, such as the idea that some particular individual dislikes him. If such an impression takes too strong a grip upon the person, especially if it goes beyond the

¹ Edgar Swift, "Psychology and the Day's Work," Scribner, 1919, p. 66.

realm of reasonable truth, it can no longer be classed as a fixed idea. It then becomes a delusion, a type of disorder that will be considered in the following chapter.

5. *Obsessions.* An obsession is an idea which has an undesirable affective tone, which the possessor recognizes as abnormal in strength, which he tries to banish, but which persists until the sufferer develops a feeling of subjection to it. One complaining of an obsession will tell you that he knows that the thing is foolish, that he has tried to get rid of it, but that it persists in dominating his thinking.

The term obsession has been very loosely used in the literature. With some writers it has been synonymous with a phobia, or abnormal fear. Some have identified it with a compulsion which is an irresistible tendency to perform some act. We believe it would make for clearness if the term phobia were used exclusively for the persistent fear, compulsion for the irresistible act and obsession for the persistent association as just defined. To be sure, they often go together. For example, suppose a person has the idea persistently present that his hands are dirty. If, in spite of repeated washings, the idea kept recurring to the extent that it interfered with his work and annoyed him it would be an obsession. If he had the fear that they were dirty and constantly guarded them against contamination this would be a phobia, a fear of contamination. If he had an irresistible impulse to wash them continually this would be a hand washing compulsion. Now, a person might have all three but the three terms describe three aspects of his condition and it is possible to have one or more in different combinations.

Some obsessions take the form of continual propounding of abstruse or absurd questions. "Who am I?" "Why has a chair four legs?" "What existed before the creation of the world?" "Where is the end of the universe?" "Is there a God?" "What is mind?" These questions keep obtruding themselves to such an extent that the sufferer cannot do any rational thinking or any fruitful work. His problem is not how to answer them but how to get rid of them.

XX. SIGNIFICANCE OF ABNORMAL ASSOCIATIONS

Thus far we have confined ourselves to an objective description of unusual association groups. When we examine the flow of associations we can determine whether the individual has a dearth of ideas, whether he manifests retardation, blocking, flight of ideas, circumstantiality or incoherence. When we examine the constellations of associations we can state whether he has perseveration, stereotypy, simple persistent ideas, fixed ideas, or obsessions. But these descriptions, essential as they are, tell us nothing of the reasons why associations should take these peculiar forms. We now wish to proceed to an analytical study to see whether these have a definite meaning in relation to the personality of our subject, and what remedial and preventive measures might be applied.

97. Neurological explanation. The neurological explanation would trace all abnormal associations to some organic disturbance of the nervous mechanism. If a disease organism causes deterioration of portions of the nerve substance this will obviously interfere with the normal functioning of the nervous system. The prime work of the nervous system is to carry messages and hence, if the pathways are broken or otherwise interfered with, disordered associations will result. There is no gainsaying this, and some types of association disturbance can be traced directly to such causal factors.

There are two arguments against referring all such disorders to an organic background. The first is that there may be profound disturbances of association processes with no neural lesion sufficient to account for them. This is answerable by the statement that the lesion might be there without our being able to discover it. This might be a strong argument were it not for the second main objection against too great an emphasis on the neurological explanation, which is based upon the fact that, in experiments where large portions of the nervous tissue have been destroyed, the disturbances of association processes have been disappointingly small. Furthermore, after extirpation of portions of the cortex in animals (Lashley and Franz) re-education has been surprisingly easy to accomplish. For example, after removing enough of the

motor area from the cortex to cause a paralysis of one paw, monkeys were trained to use the paralyzed paw with as great efficiency as before the operation. Indeed, re-education is a much more hopeful process in cases of organic disturbance¹ than the re-education of one with an obsession or fixed idea unless the latter are approached from the functional viewpoint. In studying the cause of organic disturbances of association the examiner endeavors to discover why certain pathways have been broken. The peculiar output is always regarded as the result of disturbance of conduction. In studying the cause of functional disorders of association the emphasis is placed on the reason for the peculiar constellations of association that exist. How did they come to be grouped as they are? Why do they connect up in the peculiar manner that they do?

98. Psychoanalytic explanation of association disorders. Investigation of peculiar association constellations has shown that these are largely determined by affective factors. We have already indicated that associations are not solely dependent upon the conditions of recency, frequency, or vividness but upon the emotional tone of the component elements. This is true in normal associations but in abnormal ones the affective element comes to play a more and more important part.

99. The complex. The fact that emotions can play a prominent part in the linkage of association pathways has led to the formation of the theory of the complex. A complex may be defined as a constellation of associations around an emotional core. If a man dotes on taking pictures he has a photography complex; a baseball fan may be said to have a baseball complex. Such a simple definition as this would be well to adhere to.

Hart² is largely responsible for the broad conception of

¹ Shepherd I. Franz, "Nervous and Mental Re-education," Macmillan, 1924.

² Bernard Hart, "Psychology of Insanity," Cambridge University Press, 1921, pp. 58-76.

complex as implied in our definition. He defines it as any "system of emotionally toned ideas." This includes any grouping from such a normal and mildly toned constellation as is ordinarily described as a sentiment, to such an exaggerated grouping as is found in an obsession. Furthermore, the possessor of a complex may be aware of its presence or may be totally unconscious of its existence.

Another view is that complexes are bound up with emotions that are of an unpleasant sort, often highly undesirable, while other emotional constellations are of the pleasant variety. If this distinction is to be maintained it becomes a very undesirable thing to have a complex. But how are we to determine whether a complex is wholly undesirable or not? It often happens that it partakes of both qualities.

For this reason it seems best to take Hart's broad conception and let a complex represent any emotionally toned grouping of associations whether they are pleasant or unpleasant, conscious or unconscious. If we do this a complex has no mysterious aura but can be looked upon as the functioning of definite psychological processes.

100. The development of a complex. A complex is based on the simple principle that the elements or parts of any experience with strong affective background are bound together more strongly than those without such affective support. Let us give a simple illustration of how this operates. Castor oil has an unpleasant taste and any boy who is forced to take it has a strong emotional reaction. This reaction is not directed solely toward the castor oil but comes to embrace anything related to it. For example: A mother, in order to mitigate the unpleasant taste, gave her son a dose of this noxious substance in orange juice. The next day she prepared some orange juice for her boy and was surprised when he refused to drink it, for he had always been very fond of it. When asked the reason for his refusal he said that it tasted like castor oil. This is the mechanism of the conditioned reflex, but whereas most conditioned reflexes take several experiences to fix them, it took only one experience to form the

connection between orange juice and castor oil because of the affective factor. Some time later this same boy informed his mother that he disliked a certain cosmetic she used because, he insisted, it smelled like castor oil. In other words, this boy had a castor oil complex which made him link together all things that had any associative relation to the medicine he so thoroughly hated. Furthermore, it is possible for such an antipathy to influence the child in ways that he does not so clearly recognize. Later in life he may find himself disliking some person or thing with no apparent cause, but in reality because they in some way relate themselves to this castor oil complex.

This simple illustration shows the mechanism whereby the complex operates but gives a very inadequate conception of the scope of affective determination of associative trends. We have few experiences that do not have an affective component and, when we consider that the elements of each experience are conditioned by the affect as well as by simple temporal and spatial relationships, we can see why our associations follow emotional patterns rather than logical ones.

The emotional factors furnish us the key for the understanding of all the peculiarities of association that we have described. To observe that one association follows another in a peculiar manner or that associations group themselves in peculiar combinations gives us only part of the picture. The vital element is the emotional part that binds them together. Much of the study of associations has, for this reason, been centered in the discovery of the emotional factor which lies behind the associative activity. How these emotions are unearthed will be described in the following section.

XXI. METHODS OF STUDYING ASSOCIATIONS

The method to be pursued in analyzing associations, in the light of what has preceded, is to unearth the emotional element that binds some associations together and keeps others apart, rather than to discover logical relationships. The recognition of the importance of the affective determination of association relationships has led to a technique designed

to bring out the significant emotional attitudes in the individual. A pioneer in this field was Jung. Following his work, a method has come into popular favor which is known as "free association." Various procedures have developed from this method, but they are all based on the general principle that a study of the way in which different ideas are related in the individual will throw light on some basic factors in that person's personality.

101. The discrete stimulus method. Two varieties of the discrete stimulus method have been used. The first, the one used by Jung himself, consists of an analytical study of the significance of the individual associations. The second is the statistical method developed by Rosanoff. We shall take up these two in turn.

1. *Jung's analytical method.* Jung used a list of one hundred stimulus words¹ chosen and arranged in such a manner as to strike most of the common emotions. The method is about as follows: The subject is told to answer each word with the first word that comes to his mind. The examiner records the response as well as the time required for the response to each word. If the stimulus word is not connected with an emotional complex in the individual he will be able to respond quickly with some other word, usually a word which has become related to the stimulus word through experience. For example, common reactions are:

<i>Stimulus word</i>	<i>Reaction</i>
table	chair
window	room
head	hair
bread	eat
grass	green

Various types of response have been regarded by Jung as indicative that the stimulus has aroused an emotional response. Most normal persons in a test with one hundred words show some of these reactions to some of the words. Too many

¹ Jung's list of words were in German. English equivalents may be found in the following sources: C. G. Jung, "The Association Method," *Amer. Jour. of Psychol.*, 1910, 21, 220; and "Analytical Psychology," Moffat Yard Co., 1916, pp. 94-5.

unusual reactions indicate an unstable person. Further, an analysis of the specific unusual reactions may give some sort of indication concerning the complex or complexes that are disturbing elements. The reactions that are supposed to be complex indicators are as follows:

(a) **DELAYED REACTION.** A delayed reaction to a stimulus word indicates that a complex has been touched. Jung ascribes the failure to respond to an emotional blocking. The subject is disturbed just as he would be in an actual situation where he was emotionally upset. A person who is excited cannot think, not because he is incapable of thinking, but because the excitement interferes. The subject may give various explanations for this delay; that he does not know anything to answer or that too many ideas come to his mind and he can not choose. The reason assigned by the subject is of indifferent value. The real reason is the emotion.

For example, a girl, given the stimulus word "health," delayed a long time and finally responded "strong." The pause, being regarded as significant, led to inquiry as to the girl's attitude toward health and it was found that she was very much concerned with this idea. Her aunt had tried to impress upon her for years that she was not strong, an impression she had fought with great zest. The pause in reaction had touched off a very delicate emotional situation.

(b) **MULTIPLE RESPONSE.** A response, not with one word, but with many words shows inability to control reactions because of their affective value. Some examples of this type of response are:

<i>Stimulus</i>	<i>Response</i>
to quarrel	angry—different things—I always quarrel at home
to marry	how can you marry?—reunion—union
plum	to eat—to pluck—what do you mean by it?—is it symbolic?
to sin	this idea is quite strange to me, I do not recognize it
finger	hand—not only hand but also foot—a joint—member—extremity
white	color—everything possible—light

The assumption here is that the stimulus word gets the subject excited. He responds quickly with a word which he fears may give the experimenter some clue as to his excitement so he attempts to cover his confusion with other responses. We are all familiar with the way persons chatter to cover their confusion.

(c) PERSONAL REACTIONS. To give a personal response to an objective stimulus shows a tendency to extend the ego which is quite a characteristic response when a complex has been tapped. The following illustrate personal responses:

<i>Stimulus</i>	<i>Response</i>
to dance	love it
luck	don't believe in it
money	poor, wish I had some

(d) REPETITION OF THE STIMULUS WORD. When we hear a difficult question we are likely to repeat it in a puzzled manner better to grasp it before replying. Repetition of the stimulus word in the association experiment is supposed to indicate that the word struck some complex and that the repetition is a defense, a pause to get poise before a response is made. Closely related to this is the tendency to hear the word incorrectly or to give it some interpretation different from the obvious or usual one.

(e) PERSEVERATION. In some tests it may be observed that the same response appears to the most varied stimulus words. This indicates that there is a dominant complex which many irrelevant words set off. For example, in the list of one hundred words one of the writer's patients gave the response *long* ten times and to stimulus words not at all logically related to the word *long*. Further investigation showed that the word *long* was related to her difficulty. She had worked for a *long* time to save money to build a home in the country. When they had begun to build after this *long* period of waiting they had lost their money. Now they would have another *long* siege before they could again hope to build. But she was getting old and it would not be *long* before she would be too

old to enjoy a home. This theme occupied all her thinking. Is it any wonder that "long" should crop out in an association test?

(f) **SUPERFICIAL ASSOCIATIONS.** When a stimulus word strikes a complex the subject may defend himself by responding with a superficial association, that is, a chance response which obviously has little or no associational relationship. For example, the subject may name anything that is in sight, such as:

<i>Stimulus</i>	<i>Response</i>
head	wall
green	paper
water	window
to sing	sill
dead	pane
long	glass

Here the subject is obviously selecting in advance a response which he gives regardless of the stimulus word. A somewhat more complex type of superficial reaction is to give a word which rhymes with the stimulus, such as:

<i>Stimulus</i>	<i>Response</i>
head	bed
green	bean
to pay	say
to cook	book
cold	bold

(g) **NO RESPONSE.** Probably as significant as any of the complex indicators is the failure to respond at all. When the patient will wait a number of minutes and finally say that he cannot think of a thing, it is pretty good evidence that a definite emotional blocking has been encountered.

(h) **FAILURE OF REPRODUCTION.** It is common practice to go through the entire list of one hundred words a second time in order to determine the number of responses that are different on the second trial. Jung¹ contends that when a response

¹ C. G. Jung, "Analytical Psychology," Moffat, Yard & Co., 1916, p. 117.

is different on the second trial it indicates that an emotionally accentuated complex has been touched. A person very easily forgets what he has said under an emotional stress and is even apt to contradict a statement so made. It is on this fact that the efficacy of cross examination depends. He states that in his experiments a normal person has not more than twenty percent of different responses on the reproduction test while abnormal persons have from twenty to forty percent.

(i) **ACCESSORY EMOTIONAL REACTIONS.** If the subject stammers, blushes, clears his throat, sighs, weeps, laughs, acts surprised, or evinces an emotional reaction of any sort, one can feel sure that he has touched off a complex. The meaning of the particular emotional reaction is not usually apparent, however, and one should use care in drawing an inference from such concomitant emotional reactions.

Jung's method is primarily analytical and the information secured from the administration of the test is used to throw light upon the nature and significance of the different complexes that the test uncovers. It must be recognized in such work that the normal person has a number of complexes and that it is very likely that these will be tapped by such a test. What the test does is to indicate whether or not the person has an unusually large number and furnishes a lead for further investigation. The adequate use of this method requires considerable skill. The novice should beware of hasty generalizations from a few responses.

2. *Rosanoff's frequency index.* A second method of applying the discrete method of association was developed by Kent and Rosanoff. They gave a list of one hundred stimulus words to 1000 subjects, tabulating the responses of these subjects. The frequency tables based upon this experiment indicate which are common reactions and which are uncommon. Jung's method had been one of analysis. Rosanoff's method was empirical, that is, it was the experimental rather than the analytical study of the responses. The latter gives a much more valid means of evaluating responses. We can argue from subjective analysis that a certain response is the most

common but the empirical method gives the final justification to our reasoning. Kent and Rosanoff¹ have published tables giving all the responses that were made to each word together with the number of times that each response was given.

The manner in which these tables are used is as follows: Give the entire 100 words to your subject, making a record of all the responses. By reference to the published tables find the frequency index for each response and total them. For example, suppose that to the word "table" the subject responds "chair." If you look up "chair" in the frequency table you will find that it was given by 267 persons out of the thousand. If to the second stimulus word, "dark," the subject responds "black," you will find that this response was given by 76 persons in the thousand. Do the same with the rest of the 100 words. By adding the index numbers for the entire hundred words you will get an index figure which will furnish an adequate basis for individual comparison. The final figure can be made into a decimal expressing percentage by placing a decimal point four digits from the right. The analytical method of Jung can be used in conjunction with this method but the Rosanoff method gives a means of comparison that the analytical method will not give.

102. The continuous stimulus method. This method is sometimes called the chain association method. The subject is given a certain stimulus and is told to respond with the first idea that comes to his mind, and then to continue to use each response as a stimulus for the succeeding response. For example, the subject may be instructed to begin with "table" and give the first word that tables suggests, and then without interruption give the next word that comes and the next, and so on indefinitely. A series of chain associations to table might be: chair—wood—forest—green—grass—soft—bed—cover—warm—cold—snow—sled—Christmas—etc.

Even a normal person will not proceed very far with such

¹ G. Kent and A. J. Rosanoff, "A Study of Association in Insanity," *Amer. Jour. of Insanity*, 1910, 67, 48-96; A. J. Rosanoff, "Manual of Psychiatry."

a chain association series until he comes to a block. He cannot think of anything else to say. This blocking is supposed to indicate the presence of an emotion. In other words, the chain of associations has finally connected with some complex of an undesirable sort and the inability to give any response indicates that the subject has built up a resistance or an inhibition against permitting the complex to come to the focus of attention. If this emotional block is pronounced enough the individual will be altogether unable to proceed and the examiner must get him to make a fresh start with a new stimulus. It is quite likely that a subject will eventually strike a complex of some sort no matter from what stimulus he starts. In many cases the emotional resistance has not strength enough to produce a complete block and the subject, after hesitation, can proceed until he strikes another emotionally toned idea. If the trend of associations assumes a new direction from this hesitation, the pause is just as significant as a complete block. It is only when the inhibition is very pronounced that the subject comes to a complete standstill.

By this process the subject may make diverse approaches to a certain complex which is giving him trouble, coming to an abrupt stop at each approach. If this is continued it is possible that eventually the inhibition will be overcome and the complex brought to attention. In this way the subject may learn about associations in his mental life which he previously did not consciously recognize.

This method has another advantage. It shows the experimenter the types of ideas which are related in the life of the subject. If from all sorts of stimulus words the responses wander off into religious realms the examiner knows that the person is largely occupied with religion. Politics, sports, love, business, scandal, or a host of other interests easily become manifest by the use of this method.

From a description of the continuous free association method it may appear as though it would be an easy performance, but it is extremely difficult. In all our associational

life, whether we are following these processes silently or aloud, we have learned to exert certain controls or inhibitions. We repress certain associations and welcome others. The success of the free association method depends upon relaxation and the uncontrolled succession of associations. If the subject cannot relax, the associations will not come freely. But when one is using this method he should not be so much concerned whether or not the subject is giving a free series as that he observes the nature of and associations related to the blocks. The fact that he stops and the direction which his associations take from these stops are significant. Mere speed and seeming freedom in giving associations may not be the important factor. It is possible for a person to be very glib in associations in a certain field in order to keep from getting into associations of an embarrassing or unpleasant character.

This fact was strikingly brought out by one of the author's patients. We had been using free association methods with this young man for weeks in an endeavor to unearth the root of his difficulty. He would start from any stimulus word and give an almost uninterrupted chain of associations which, with the ordinary mortal, would be connected with all sorts of emotional disturbances. He seemed to have absolutely no emotional responses to any of these and his symptoms did not disappear. We knew that in spite of this seeming disclosure of crude and even vile associations that they were not connected with his trouble. In fact, we became suspicious that he was making his associations obscene in order to cover up the significant ones, as a defense reaction.

Consequently, we connected a galvanometer to his wrists in order to ascertain when he did have an emotional reaction. The galvanometer¹ was in an adjoining room and an assistant gave us a silent signal when the galvanometer registered. He glibly gave his customary train of associations, but there was no movement of the galvanometer. After continuing for ten

¹ With any emotional change in the subject, a sensitive galvanometer, connected with electrodes on the subject's body, will indicate a change in electric potential.

minutes he suddenly stopped, as though weary, whereupon the galvanometer began to register violently. Then he said, "What are you trying to do to me?" From this point he wandered off in another direction, talking about the possibility of one person influencing another. Whenever he talked about personal influence he gave an emotional reaction, as shown by the galvanometer. This was a line of associations that had not come forward as significant before, but now proved to be very significant for his case. He had been disturbed by a fear of being unduly influenced by others and this proved to be the root of his trouble. All his previous obscene associations had simply served to conceal the really significant ones.

While the chain association is presumed to arrive at some emotionally toned complex no matter what the point of origin, the subject is more likely to arrive at a block more quickly if he is started from something that is fairly certain to have a relationship to his dominant complexes. For this reason it has been the custom of examiners to start subjects with what they think is a significant stimulus. For example, they will take some element from the dream life and get the patient to associate from there. Or, they will begin with some word which has evidently embarrassed the patient. A common method is to combine the discrete stimulus method with the chain association method somewhat as follows. After the list of 100 words has been given by the discrete stimulus method the examiner gathers together all the words which fell into the category of complex indicators. The subject is then given these words as stimuli for the continuous association method.

103. The Rorschach test. The Rorschach test¹ is a special development of the ink-blot test. The ordinary ink-blot test has not yielded very significant results heretofore. Rorschach, some years ago, developed a series of ink-blots which have been more successful than those previously used. The blots were made as follows: Some blots of ink were made upon a

¹ Hermann Rorschach, "Psychodiagnostik, Arbeiten sur angewandten Psychiatrie," 1921, Bd. 2.

sheet of paper and this was folded and the blots pressed out between the two sides of the sheet. When the sheet was opened the result was a symmetrical figure. He chose ten blots made in this manner that were relatively simple, that fulfilled the conditions of space rhythm, and which could be interpreted as a picture and not as a mere blot. The first picture of the series was made of black ink only, the second and third had red as well as black ink. The fourth, fifth, sixth and seventh had black ink only. The eighth, ninth and tenth had red, yellow, green and blue as well as black ink. A typical ink



FIG. 15.

Symmetrical inkblots similar to those used by Rorschach.

blot of this sort, although not one of the R o r s c h a c h series, is shown in Figure 15.

The method of administering this test is as follows: The subject receives the card in his own hand and the experimenter or examiner says: "What can this be?" The subject may turn and twist the card at his discretion. He holds it in his own hand and so is free to move it to arm's length or close to his eyes. He is not permitted to place it down and walk off to a distance to get a distant view of it.

The great value of this means of eliciting free associations is that it provides a standard situation which can be duplicated with all subjects while at the same time it leaves a great degree of spontaneity to the subject. He does not feel under constraint and therefore he is more likely to give free associations than he is to word stimuli. Words always have a conventional value. These ink blots do not possess conventional significance, which is no doubt an advantage in eliciting free associations.

Another advantage of the Rorschach test is that the subject does not suspect your real motive in giving the test. Not

being on his guard he is more likely to be spontaneous in his responses and thus give reactions that will be of great diagnostic significance. The test may be given to children, uneducated and psychopathic patients, as well as to relatively normal subjects.

The present method of interpreting replies to the Rorschach test is wholly qualitative. The responses are classified under four categories. The first is the whole-part classification, determined by whether the subject responds to the whole picture, a part or to a small detail or some unusual part. The second is the form-color classification, determined by whether he responds mainly to the form or the color or whether he gives a kinesthetic response; that is, a response that reads movement into the picture. The third is the clear-vague classification, whether his response is a clear-cut interpretation or whether it is a far-fetched one, that is, one in which bizarre meanings are introduced. The fourth is the content classification, whether he interprets it as an animal, man, landscape, etc.

This test is still in the experimental stages, but when adequate norms have been obtained it promises to be of even greater value than the word association method of examining.

XXII. IMPORTANCE OF ASSOCIATION STUDY

104. Associations as factors in personality analysis. A complete knowledge of the association processes of an individual would constitute a thorough understanding of his personality. A person develops by relating parts of his experience to other parts and integrating them into a unified whole. This growth goes on as long as the individual lives, and is so intricate that we cannot hope to understand the various groupings in a single individual in their entirety. But the complexity of the task need not discourage us. As we study an individual we shall find that certain definite constellations of ideas, or complexes, stand out and dominate the situation more than other less potent constellations.

The purpose of attempting to understand the association connections and the application of the methods described in

this chapter are to determine which complexes dominate the person. Knowing this, we often have the key to the understanding of his personality.

There is one phase of the study of association which we have tried to emphasize throughout this discussion and which should be repeated in closing. This is the relatively modern emphasis that has been placed upon the affective factors in the associational processes. To study only logical relationships between associations will prove sterile. We must look for the uniting affective factor. It is for this reason that the study of complexes has assumed such an important part in analytical psychology. The important thing about a complex is not that ideas are related and combined in the forms that we find, but that certain emotions have been prominent in these combinations. Human nature cannot be understood if we neglect the emotional elements.

105. A caution. The student should be warned against making a fetish of the term complex. Its importance has led to a tendency to refer to it as though it were some mysterious thing which gained entrance to the individual and operated through him. There is nothing in the complex that is foreign to the personality of the one possessing it. It is simply a term to indicate that, due to certain experiences, the component associations have become very closely knit together and are held together by some dominant emotion. They are formed just as any bond is formed—by learning, by experience. Finally, the main distinction between a bond knit together by an affective tie and one formed by the ordinary laws of learning, such as learning that two plus two equals four, is that the number of repetitions necessary to form the affective connection is much fewer than the number required for forming the non-affective bond.

This also indicates another point which follows naturally. If we wish to change the complexes of an individual this can be done only by an emotional reconditioning. We cannot reason away an affective bond. We must substitute a more potent affective bond in place of the one we wish to change.

The whole question of emotional conditioning is in a very undeveloped stage. We have been accustomed so to emphasize intellectual conditioning that we have failed to appreciate the affective connections. The beginnings of understanding of these latter conditionings are leading to very fruitful results not only in the realm of abnormal but normal psychology as well. Since the place where this emotional education must be done is the school, it follows that progress in this most important field lies in the training of teachers to meet this aspect of child training.

IMPORTANT TECHNICAL WORDS

- agraphia.** Loss of ability to express ideas by written signs.
alexia. Inability to understand written or printed symbols.
aphasia. Loss of the use or understanding of language, the vocal organs remaining intact.
blocking. An impassable break in the chain of associations.
circumstantiality. A type of associational sequence where the main trend is continually interrupted by irrelevant and inconsequential details.
complex. A constellation of associations around a common emotional core.
compulsion. An irresistible impulse to perform some specific act.
extravert. One whose mental life, interests, and activities are largely determined by other persons and objective circumstances.
facilitation. Increased ease in the performance of a mental process.
free association. The unhampered sequence of associations.
incoherence. A sequence of associations that have no apparent relationship.
inhibition. Restraint imposed upon some mental process.
introvert. One whose mental life, interests, and activities are largely centered around himself.
neurological. Pertaining to the nervous system.
neurone. The unit of the nervous system. The nerve cell with its branches.
obsession. An obtrusive, unwelcome, and unreasonably persistent idea.
perseveration. The tendency of a response, once given, to be repeated as a response to succeeding irrelevant stimuli.
phobia. An abnormal fear.

redintegrate. Used in relation to memory to indicate the exact uncritical recall of an experience.

retardation. A slowing of the associational processes.

stereotypy. The tendency of associations to center around some central theme to the exclusion of rational sequences.

synapse. The functional connection between nerve endings.

PROJECTS FOR FURTHER STUDY

1. Study the associations of some abnormal individual and classify his reactions into the categories that you have learned in this chapter. Try to study the meaning of his associations and give a description of his personality from this analysis.
2. Make some ink-blots to resemble the blots used in the Rorschach test and use these with some members of the class to study the different reactions that are made to these ink-blots.
3. If you can get access to an aphasic individual, try the different tests and describe the exact nature of his aphasia. If you cannot find an aphasic subject, let one member of the class feign a specific type of aphasia and give him the tests. This will demonstrate the difficulty involved in feigning an intricate organic disorder. It will also test your skill in applying the tests.

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CHAPTER V

DELUSIONS

Errors in judgment are universal, but such errors do not account for the persistence with which certain false beliefs are maintained by those upon whom they gain control. The various types of false beliefs or delusions that are found will be described in this chapter, the course and content of such delusions will be studied. We shall learn that the explanation of delusions is not found in the rational processes of the deluded person. The cause lies in some emotional factor and the rational processes are **used** by the individual as a screen to cover the true nature of his trouble.

XXIII. NATURE OF DELUSIONS

106. **An example of delusions.** "An unmarried woman of fifty-two, while working in a certain establishment, met casually a man who paid little attention to her. Some time after their meeting she was convinced that the man was following her. She says that one evening as she was standing on the street she saw this man going by with the chief of police and heard him ask the chief whether he might follow her. Since that time, she declares, he has done everything in his power to ruin her reputation, following her from town to town and annoying her in every way. As soon as this man arrives on the scene she notices a 'change in the atmosphere'—people have no more to do with her. This idea has taken such root in her mind that she will talk about nothing but this pursuit. Working in league with the man, she says, is a woman for whom she (the patient) worked at one time. The pursuers travel in automobiles, changing from one make to another in order to fool the patient. The reason given by the patient for this pursuit is that the woman pursuer is in love with the man and is afraid that the man is also interested in the pa-

tient; so she makes him follow the patient and torment her. She follows the trail to witness the torture and so assure herself that the man cares only for her and not for the patient. Here is a queer distortion of rational processes. It started from the patient's hidden desire that the man should follow her. This desire she dared not admit to herself, so she expressed it as a fear that she was being followed by him. This fear she changed to an actual affirmation. Her wish to be pursued by the man is gratified by the idea that the entire time of these two people is taken up in a vain chase after her."¹

107. Importance of emotions in delusional development.

The dictionary defines a delusion as a persistent belief of what has no existence in fact. Now, why should one persistently believe what is not true? Two factors are involved in belief, an intellectual factor and an emotional one. Are both to blame in the formation of a delusion? The answer to this question will determine our method of dealing with delusions in our efforts to correct them.

It is quite conceivable that, through intellectual methods, through trial and error, one may come to a false judgment. It may happen that under peculiar circumstances, acting upon the basis of this false judgment, the person experiences satisfaction and may thereby have an emotional bias in favor of his false judgment. It is emotional preference for a judgment that makes belief and belief is independent of the correctness of the judgment. It is the *preference* for a false judgment that makes the delusion.

But will this false judgment persist? It may and perhaps will persist as long as the person is satisfied with it. But if situations arise in which the individual is constrained to change an erroneous belief and he persists in maintaining the delusion, surely the reason for failure to change in spite of influences that favor change must be an unusually strong emotional bias. We shall find that the tendency of delusions to persist is based on an affective bias. The essential cause of delusions is therefore the emotional and not the judgment factor.

¹ John J. B. Morgan, "The Psychology of the Unadjusted School Child," Macmillan, 1924, pp. 182-183. Reprinted by permission.

Delusions are errors of belief and not errors of reason. The rational processes play a large part in their external appearance and tend to mislead the observer. With this word of introduction and caution in reference to the matter of interpretations we shall consider the description of the different forms that delusions may take and then will discuss in detail their interpretation and significance.

XXIV. DESCRIPTION OF DELUSIONS

In general organization, delusions vary from those that sound true to those that have very little evidence of verity. Upon hearing a patient recite a tale in line with the former type the hearer is constrained to believe the truth of his story and it is only through contradictory evidence that the story is found to be fictitious. From this extreme we have all degrees to the type that appears upon the very surface to be unsound.

108. Systematized delusions. In systematized delusions the affective element is kept well in the background. All facts are coördinated and woven into the whole scheme in a perfectly logical fashion. Evidence is carefully weighed and a clever lawyer would have difficulty in finding any weak spot in the story.

The plausibility is shown by the following story told by a deluded individual. He was a fine-appearing young man of about twenty-five years of age. He came to this country when about fourteen years of age and secured employment as a gardener for a wealthy family. Everything went well until he was about twenty-two years old. At that time he states that a wealthy married woman, who lived near to the place where he worked, became enamored of him. He confesses that he was lured by her into several secret meetings. He wrote to her and says that she wrote several letters to him, which he destroyed. He asserted that the woman then became tired of him and wanted to get rid of him. In order to save her name she told scandalous tales about him. He, in retaliation for her supposed maltreatment, wrote to a number of the woman's relatives, including her husband, de-

fending himself. These letters were shown to the woman who denied any relationship or knowledge of the man and he was consequently taken into custody and eventually placed in an institution.

This certainly is a plausible story and one might easily be led to believe it. The woman denied that she had ever had any meetings with the man, that she had ever written any letters to him. The situation resolved itself to a balance of one person's word against another's. The thing that indicates that the man's story might be a delusion is his lack of discretion. On a mere suspicion he wrote to the woman's husband and relatives. Later he showed the same lack of judgment. After the first hearing of the case he had been acquitted and the matter dropped. But he continued to write letters and to tell everybody he saw about the situation from his point of view. This continuation of indiscreet letter writing and talking is what led to his commitment. It can be seen that there are possibilities of truth on both sides of such a story and some may be inclined to take the side of the patient. Indiscretion is very slender evidence upon which to base an adverse decision.

We can imagine some reader becoming perturbed by this case. What if this man should have been innocent? Why should he be committed to an institution until it is proved that he is deluded? Maybe the woman is a clever liar. In answer to such a question we may say that people are not committed because they are deluded. Hundreds of people who are in active life have delusions of one sort or another. Some are maltreated but learn to adjust to maltreatment. A man (or a woman) is placed in custody because he is a social menace—he is likely to cause injury to himself or others. This man was confined not because it was believed implicitly that he was in error in his beliefs but because he could not learn the lesson that we all must learn—we must live in peace with others even if they are not so perfect as they might be.

109. Unsystematized delusions. This type of delusion has a lesser degree of internal consistency. The clever listener

can find flaws which indicate to him that the story is at least partly fiction. A good test comes when the listener begins to argue with the deluded person. The one with the systematized delusion will defend himself, and do it well, at every point. He cannot be trapped by logic or debate. The one with the unsystematized delusion may also attempt to defend his delusion but he is less capable in doing so, and when caught in a trap is likely to shrug his shoulders with indifference. If you do not believe his story he cannot help it, it is true and that ends it. The following is a typical delusion of this type: After the first question the patient gave all the rest of this story without question or interruption. Her statements are given exactly as she uttered them. Question: "How did you get into this hospital?"

"I went to the police woman about some talk going on around about me. It started in St. Paul and I went to the county attorney about it. He did not want to be bothered about it, he thought I was just trying to make trouble so I went to the police woman. I think they are in together, because I couldn't get any help from her, so I attempted to come here to get some work at the telephone company. In the train I noticed that two men kept watching me as though they had orders to watch me. They thought that they could keep me from getting a position here. They told the telephone company. I was staying nights with my girl friend, her husband was working and she was pregnant and he called up. I was going to a candy shop to apply for a job. This policeman standing on the corner started nagging at me, because I was downtown and the man I went with sells moonshine and he has been living with a bad woman and when I came out of the candy store he started nagging at me. I wanted to go back to the store and I had forgotten the name of the place and the street and so I had to go by the corner again where the policeman was. When I passed him again I was afraid he was going to say something and he shouted, 'Go on home' like that to me. I began to cross the street and there was no traffic coming so I got across and I wanted to take the street car to get out of the way because he made me feel so bad but when the street car came the conductor would not let me get on. He said he wasn't taking passengers. The policeman was watching me and I had to cross the street again. Then when I came to the train from Minneapolis there were two policemen in the mail train that kept watch on me.

They have been watching me since December 8th (it was then the latter part of January). When I go into the stores the clerks say to each other, 'She is not any crazier than I am.' They talk about the girl with the green coat. (The patient was dressed in green.) When I was in church one time I heard them talk about the girl with the green coat. Everyone is talking about me, something about being crazy. I asked everybody but could not find out why they all talked about me. It all happened when I first crossed the street. I smiled at the officer so he would not think I had anything against him or have it in for him. He shouted, 'You're crazy.' That made me feel bad."

It is evident that the delusion of this patient is centered around a dominant affect. So wrapped up is she in this, that her story is somewhat incoherent and she wanders off to logically unrelated items. It is probable that all these things are part of the emotional situation back of her trouble. Her concern is to tell all about it rather than to convince the hearer that her story is logically sound.

110. Irrational delusions. In this type no attempt is made to relate the different parts of the story. The patient will tell disconnected incidents and make little attempt to relate them to any central scheme. For example, a patient is sure that his enemies are trying to poison him. How does he know? He proceeds to give evidence, as: "See that steam coming around the corner of the building. That is poison gas that they are producing and sending out so that it will come into my window and poison me." (The steam is from an exhaust pipe in the heating system of the hospital.)

It can be seen that the main distinction between this and the previous type is that the former delusions, although disconnected, are not impossibilities. In the latter case the delusions are absurd and the explanations preposterous. However, there are no sharp distinctions between the different types, they all shade off into each other.

111. Bizarre delusions. These present the extreme of irrationality. They come only in cases of serious mental deterioration. The output from such patients is wholly ridiculous. A patient will tell you that he is worth millions

of dollars, no trillions, and trillions of dollars. Can he sing? He has a voice that will charm millions. When he sings everybody in the universe can hear him and stops to listen. If you are not careful he will begin to demonstrate his stentorian skill. Has he any children? Thousands of them. So it goes in any field you strike. His productions are most fantastic and bizarre, and he is usually exhibited to visitors of the institution where he is kept. The following is a transcript from the statements of such a patient:

“What brought you here?” “I was just sitting there with the officials of the universities and the senators and all the farmers’ associations of all nations. I was there communicating with them all. They all drifted to my corpse and I explained to them what they wanted to know. I translated things for them. I told them how to run their locomotives so that they can save coal. This compressed air tightens up the valves so the men can breathe easier. Coke and waste will come to an end but air will never come to an end. To operate, they get water and compressed air and put it into a fire box so it can form steam in the boiler. This makes air pressure, and it works and then they use it in cooking pressure. All the senators were there and President Coolidge and George Brittain and William the Great and the President of France. All of them in the same clique. Then two officers walked into the lobby and escorted me to the Chicago Avenue police station and they let me talk to the judge.”

We have instanced a number of delusions as they appear in psychopathic patients because in such cases the nature of the delusions stands out in bold relief. It must not be supposed for an instant that such extreme delusions spring forth fully developed. They probably begin in minor forms as the child develops. The teacher, if she attempts to understand the meaning of mental conditions, can often detect such tendencies in her pupils. The thing for her to keep in mind is that a delusion is not corrected by argument. Logical errors are not the real foundation of delusions. She must discover why the child wants to believe the thing he upholds with emotional fervor and deal with the desire rather than with the logical fallacies that are involved.

XXV. COURSE OF DELUSIONS

Classified according to the historical point of view we may distinguish two types of delusions: transient delusions and permanent delusions.

112. Transient delusions. Transient delusions are most common in connection with emotional disturbances and may be of two general types: the elated type and the depressed variety.

In elated emotional conditions the patient may have delusions of grandeur or overestimation. The transient type of grandeur delusions never assume the bizarre form but are usually an exaggeration of what might by a stretch of the imagination become an actuality. Some may claim that they are some noble personage, that they have supernatural strength or are very wise. They impress the hearer as the expression of normal daydreams. The person expresses as a fact what most people at one time or another wish were true. Others may have delusions of identification. That is, they will greet every stranger as a friend or relative, calling him by name and treating him as though he were that person. A stranger may enter the room and an elated patient will rush up to him saying, "Oh, Cousin Jack, when did you come? I am so glad to see you."

In emotional depressions the delusions follow the character of the mood. Subjects may have delusions of economic, bodily, or spiritual failure. If they believe that they are poor it does no good to show them their bank balance. You are merely trying to be kind to them, they know the truth in spite of your kindness. If they tell you that they are bad it does no good to argue with them that they are not. They will not listen to your arguments. In all these despairing beliefs they are passive and this passivity is a distinguishing mark of the transient or benign delusions. If they take their delusions so seriously that they act on them and fight against those who are the supposed cause of the conditions one has pretty good reason to believe that the delusions are not transient.

113. Permanent delusions. The most pernicious type of delusion is the one which begins slowly and grows progressively more pronounced. The most common type of permanent delusion is the delusion of persecution. The patient at first shows only a tendency to be suspicious of the motives and behavior of others. He then begins to interpret their actions as directed against his welfare, that is, he gets delusions of reference. A typical illustration of a delusion of reference is where the person thinks, when he sees two people conversing, that they are talking about him. His attitude of suspicion finally takes such hold of him that it occupies the major part of his thinking and his time is largely taken up with fighting his imaginary enemies. Hence, the delusional expression is simply the unfolding of the personality of the person with a suspicious attitude. Such a thoroughgoing delusion cannot be temporary and the only way to check it is by a complete re-education.

Since such delusions spring from a mild suspicion of the motives of others, such re-education must mean the discovery of the cause of suspicion on the part of the patient. In many cases it can be found that this suspicion begins with a failure of some sort on the part of the patient. The acknowledgment of such failure, especially if it be the failure to measure up to some moral ideal, is so painful that the patient defends himself by the belief that he would be successful were it not for the machinations of his enemies. The operations of this process will be taken up in detail in a later section of this chapter.

XXVI. CONTENT OF DELUSIONS

Almost anything that comes within the range of human experience may be incorporated as a part of the content of delusions. This is so true that one who studies abnormal persons can expect continued surprise in the way of delusional stories told by the patients. There is enough uniformity in some general trends to enable us to classify them as to content, but it must be clearly understood that these classes are by no means mutually exclusive. All degrees and combinations exist.

114. Delusions of self-accusation. Delusions of self-accusation or delusions of sin are likely to be accompaniments of emotional depression, especially the depressions coming on at the menopause or period of change of life. These individuals look back upon their past life and bring up some event that has long been buried and exalt it as the cause of their ruin. As an instance of this type of delusion we may cite the case of a man who was brought to the hospital after he had attempted to kill his wife and himself. The officers were called just in time to prevent this double tragedy. He was perfectly rational in every respect except on the subject of his sinfulness. He had been a mail-carrier for thirty-six years, had a son of seventeen and was seemingly well adjusted when this delusion took possession of him. To show the influence of this delusion upon his thinking we will repeat a conversation held with him:

DOCTOR: What is the trouble with you?

PATIENT: My trouble? It is terrible. I have been a bad man.

DOCTOR: What is going to happen to you when you die?

PATIENT: I don't think I know. I hope the Lord will forgive me.

I am afraid. I am afraid. (This was accompanied with groans.)

DOCTOR: What will happen to you then if you die?

PATIENT: I suppose I will be condemned.

DOCTOR: Do you feel condemned now?

PATIENT: I do. I feel that my sins are so that they will never be forgiven.

DOCTOR: What would you say if I said we will turn you into prison for the rest of your life? Do you think that would be just?

PATIENT: I think it would be hard but I suppose it would be just.

DOCTOR: How about hanging you? Do you think that would be adequate punishment?

PATIENT: Well, that would be hard but I think I deserve it.

DOCTOR: What is this terrible sin that you deserve to be hanged for or thrown into jail for the rest of your life and that will never be forgiven?

PATIENT: I was an immoral man.

DOCTOR: How long ago was that?

PATIENT: Thirty-six or forty years.

DOCTOR: Was it that long ago?

PATIENT: Yes, I did not realize it was so long ago till just now.

DOCTOR: You have been good since then, haven't you?

PATIENT: Yes, absolutely.

With sighs and groans this man tells that he has done a terrible thing, believes that he is condemned in this life, is not going to be forgiven in the next life and will be condemned to eternal punishment. But when you question him, you find that the thing about which he is sorrowful happened thirty-six or forty years ago, and for all the intervening years he has been living a perfectly happy life, not worrying about his sins. Now after all these years he revives this thing and attempts to commit suicide.

It is pretty evident that the story of the sin and the emphasis placed upon it is an attempt to explain his emotional depression. We should not assume that the sin caused the depression. If the latter were the case he would not postpone his sorrow for forty years. In many such cases the sin that is brought forward is not even true. If there is no specific misdeed that can be remembered such patients may say that they are to be condemned because they failed to do something that they should have done. Since these delusions are not an outgrowth of the personality of the patient but are seemingly an extraneous growth they are likely to be transient. They tend to disappear with recovery from the depression.

115. Nihilistic delusions. These delusions may take the form of a general negation of all things. Nothing exists, the world is all a vapor, there is no God, the patient himself does not exist, he has no feeling, no life, no name, he is not a man, his stomach is gone, and so on. One patient said that she was dead. Asked who this was who was talking to the doctor she replied that was just a phantom of her real self, which was dead and did not exist. She said that her talking or eating was an illusion. When asked how she knew that she did not exist she said that there was no feeling in her being, and that when she talked it was like a machine in which one might place a penny and have sounds produced mechanically. She stated that she had no fear of anything, no love for anything

or anybody. Death could not come to her because she had no life.

In many cases such delusions may accompany profound deterioration but this woman was intelligent and passed a superior intelligence examination. We cannot be sure as to the background of this woman's delusion but a plausible hypothesis is that her emotional life had been an offense to her and that she escaped from the unpleasant task of acknowledging such a condition by an avowal that she had no feelings or even any existence.

116. Hypochondriacal delusions. The term hypochondriacal means a lack of the feeling of well being. A patient with a delusion of this sort is continually complaining of all sorts of illnesses, pains, and aches which the most casual examination will convince us is all a fiction. They complain of queer sensations, dizziness, debility and pernicious diseases. Usually they do not try to restrict their complaints to any logical group of symptoms but have all the symptoms that one might suggest to them. Their organs are wasting away, they know that they cannot recover. They may attempt to give a rational cause for their trouble, usually blaming it on some sort of excess, often of a sexual sort. The fact that they are in fine physical condition and eat heartily, has no bearing on their complaints. They can be made to complain of any disease by the mere mention of it. Such persons are abnormally concerned with analyzing their organic condition, and hence, the hypochondriasis may be interpreted as excessive remorse for having failed to live as they should. They probably exaggerate their feelings of remorse so as to strengthen their determination not to repeat these acts.

117. Delusions of persecution. Delusions of persecution are probably the most common variety. Westphal¹ gives a very good description of how these delusions may grow:

"Just as a sane person on first wearing a new uniform, let us say, or on receiving a title, feels as if the fact must be known to every stranger he meets in the street—feels as if they are all

¹ Quoted by Störring, "Mental Pathology," pp. 214-215.

noticing the change in him, and regarding him with curiosity, admiration, or envy—so too the paranoic (a person whose main symptom consists of delusions of persecution) thinks that everyone must be struck by the change which he feels is taking place in himself. It does not take long before their behavior towards him does really seem different from what it used to be; they look at him queerly, they are always watching him, and so on. He 'projects' the alteration of his self into the world about him. Thus the specific mark of paranoic delusions will consist in the belief that other people are taking unusual notice of one. Now even a sane person does not as a rule like other people to exhibit over-much curiosity about him. Far more will it be unpleasant to one in a morbid condition to have others always watching him. He will come to imagine a background of hostility behind this unusual attention, and so his delusions of being watched turn into delusions of injury or persecution."

This sensitiveness to the regard of others furnishes the soil in which delusions of persecution grow but there must be something more than the mere feeling that one is being watched. What is it that gives people the feeling that the glances of others have a sinister significance? Why do they take this as evidence that they are being injured by these same persons? It is quite likely that their interpretation is an attempt to explain their failure in some particular, to account for their frustrated wishes, their being overcome by the things they dread. These people, the ones they think are watching them, they believe also cognizant of their weaknesses. They assume that all these outsiders are vitally interested in them and are watching their failures with secret glee. In other words, these patients are too conceited to admit that they themselves have failed. Their failure is due to the machinations of their persecutors. In this way they avoid the unpleasant feelings that come with an admission of defeat. It is much easier to blame others than to accept the onus of one's own failure.

118. Delusions of grandeur. Some delusions of grandeur take the most bizarre and senseless form. At one time these were regarded as a distinguishing symptom of paresis, a disease in which the main trouble is a gross deterioration of

the brain substance. Today such delusions are quite commonly ascribed to an overcompensation for a growing weakness, usually of mental powers. Where mental weakness sets in with an individual who has been very efficient and capable, especially where the deterioration has gone so far that he fails to see things in their true proportions, the patient finds it a most satisfying procedure to assume that he is a great individual. The pyramiding of delusions of the most absurd sort is built up to compensate for the increasing spread of the destructive process.

Where there is little or no intellectual deterioration delusions of grandeur take the form of distortion of the wish to be great. Instead of these subjects saying they would like to be a certain great individual they state that they are that person. "Fish stories" and other tales of personal exploits so common with young people, and some older ones, are of this order. A common form that this distortion may take is the delusion of inventive genius. Sometimes the ideas of such persons are by no means bad, sometimes they are rather childish.

Delusions of noble ancestry are also common. These are built upon the dream of childhood—the wish that one had been born of noble parents. A careful study shows that a rather large number of persons have at one time or another had a feeling that perhaps their parents are not their real ones. If this is so perhaps they came from nobler stock, perhaps from a royal family. Wouldn't it be great if that were the case! Then they begin to look for evidence and all too often seem to find it. Their dispositions, appearances, tastes are so different from their parents. They must come from different stock! Finally they convince themselves that they do. Once started on this line, to be descended from ordinary mortals does not satisfy, they are of divine origin, they are sons of God. Almost every hospital has its group of Messiahs, Napoleons, Lincolns, and prophets. An interesting feature of these delusions is that these noble personages will scrub the floor or do any other menial work to which they are

assigned with very little protest. Ask them how it can be that Napoleon is scrubbing the floor they will reply with an indifferent shrug that the poor benighted souls about them do not recognize their greatness. Strangely enough everybody sees through the delusion but the patient himself.

XXVII. ANALYSIS OF DELUSIONS

We have defined delusions as false beliefs and have described the most characteristic forms that these may take. In order to learn the significance of delusions, it is necessary for us to understand how beliefs are formed and the causes which lead to the adoption of and the adherence to false beliefs. As a background for such analysis, we must understand the nature and relationship of judgment, belief, doubt, and rationalization.

119. Nature of judgment. We have seen (Article 60) how associations become related through experience. From these relationships the individual draws deductions, new combinations of associations which we call judgments.

A judgment is a central process which corresponds to an actual trial of a situation in the motor realm. A motor problem gives rise to muscular tensions and unrest, until, by dint of various attempts at solution, a correct response is made. This correct response brings relief from the problem tension and the person relaxes. Somewhat the same condition holds in the solution of a mental problem, the difference being that one can image various solutions without bringing them to actual test. The mental correlate of a successful solution is termed a judgment. Judgment involves release from the strain of the problem situation. The affect, emotion, of satisfaction takes the place of the strain affect.¹

If there is something lacking in the perceptual material upon which a motor trial is built, if the perceptual materials have not been properly coördinated, or if the motor trial does not fit the situation, then the strain increases with continued trials. The same thing happens when the mental processes do

¹ For elaboration of this point, see John Dewey, "How We Think."

not lead to a correct judgment. It is well to keep in mind the similarity between an erroneous judgment and an erroneous act. The final test of whether a judgment is true or false is by trial, so judgment may be considered as a trial held in abeyance. Hence with the normal person a judgment is merely a theory, a hypothesis, formulated to fit things as he has perceived them.

120. Nature of belief. Whether a judgment is correct or incorrect can be decided by testing it. If a judgment has been put to trial and has been found to lead to a successful solution of the problem which it was designed to solve it leads to an affective bias in favor of that judgment. If, at a later time, we confront a somewhat similar situation it becomes much easier to arrive at a judgment similar to the previous successful one. In the second situation conditions may have changed so that this judgment may prove to be erroneous, but our affective bias tends to make us favor it in spite of the fact that an unbiased judgment would give preference to another.

This analysis shows that two factors are involved in belief: the experiences that the person has had which provide the basis for judgment, and the emotional relief that comes with the acceptance of the judgment. An error in belief can consequently be based on (1) an error in judgment or (2) an error in emotional bias. If an error in belief is based largely on erroneous experiences then correction should come with different experiences. The correction is a rational one. If the error is based in large part on the affective factor then the correction cannot be made by rational processes alone but must be accomplished by correcting the affective processes. White¹ has characterized a pathological delusion as (1) evidently not true to facts, highly improbable, even manifestly impossible to the extent of being bizarre, (2) not subject to correction by appeal to reason and (3) out of harmony with the individual's education and environment. This definition

¹ William A. White, "Outlines of Psychiatry," Washington, 1926, p. 82.

implies that in pathological delusions the affective error is the significant element.

Certainly, if one can persist in believing a thing which evidently is not true to facts, which experience or reason cannot correct and which is out of harmony with the rest of his life and thinking, the subject must adhere to this belief because of an emotional bias. It is probable that there is an emotional bias back of every belief, but when the affect takes complete control there is the possibility, even probability, of a pathological delusion.

Belief may come as a welcome relief from mental turmoil. To withhold judgment means that one must remain in a condition of strain prepared for the different possibilities that may result. Such tension to some persons is highly distasteful. They long for the time or circumstance when they can be relieved from uncertainty. Belief comes as such a relief. Having accepted a solution they resist its change or modification because this would involve another struggle. Life is filled with devices to avoid mental struggle: we search for advice, tips, hunches, anything that will relieve us from the strain of deciding for ourselves, and when finally we make up our minds, we often do it with a vengeance. We try to convince ourselves that we have made the best choice and will not be moved from it.

121. The psychology of doubt. Doubt is the affective tension a person experiences when he is undecided as to the solution of some problem. As a rule doubts are transient and give way to the affect of belief when one has come to some sort of decision. Under certain circumstances the attitude of doubt may be prolonged. The scientific attitude is an illustration. The scientist endeavors to refrain from believing in his hypotheses, he tries to keep the different possible solutions before him with equal force and gives up his doubt only when he has accumulated enough experimental evidence to give him reasonable certainty.

Doubt comes with especial force when one has had a cherished belief overthrown. This is strikingly true if the de-

stroyed belief was in the integrity of some friend, in some moral principle, or political faith. If such a crisis is strong enough it may make the subject of such an experience avoid adopting again a belief in the particular sphere in which the doubt arose. For example, if one has had faith in a political party and then finds that it is filled with corruption he will hesitate a long time before he puts his confidence in it or any other party. When a person becomes cynical and makes the statement that all girls are false, one can be pretty sure that the subject's faith has been shaken by some incident or incidents involving a particular girl.

If a person has experienced more pain by believing than by doubting he will tend to be a doubter. If doubting gives him discomfort and he is relieved by belief he will adhere to his beliefs. Thus it can be seen that the important thing is not the truth or the error in the situation, it is the personal satisfaction that one gets by maintaining either affect.

122. Rationalization. But a person cannot boldly tell his fellows that he believes or doubts because it pleases him to do so. Such a confession would bring forth derision and cause humiliation. He must defend his position. He must give a reason for the belief, or the doubt, that is in him. Such justification Jones¹ has called rationalization. Rationalization consists in giving an acceptable reason for conduct or for one's attitudes. It is such an important factor in the development of abnormalities of belief that it deserves some detailed consideration.²

Most of us have been taught to hold reason in high regard and to disparage affective motivation. From early childhood we are taught that to say we have done a thing because we wanted to do so is inadequate. A child comes to school tardy. The teacher demands an excuse. If the child were to tell the truth it might be something on this order, "I am tardy

¹ Ernest Jones, "Papers on Psychoanalysis," Baillière, Tindall & Cox, 1918, pp. 8-15.

² See John J. B. Morgan, "The Unadjusted School Child," Macmillan, 1924, Chap. 12.

because I hate school and loitered so as to delay my arrival." Such a clear statement of the truth would be immediately denounced as impudent. The child must give an excuse. So he is forced to invent some such lie as, "We had late breakfast." "The clock was wrong." These are acceptable because they have the appearance of rationality.

Such reasons are usually not downright lies. They are a distortion of emphasis, giving too much weight to unimportant causal factors. Each thought or act is not the product of one cause, many different circumstances unite to bring about any particular action or attitude. For a person to search out and list all these causes is well-nigh impossible. Consequently, which one deserves the most weight is an unanswerable question. Why should he not bring forth the element which places his conduct in the most desirable light? Most rationalizations, far from being falsehoods, are simply a false emphasis upon the causal factors which meet with the greatest personal or social approval. Since reason is exalted and emotion degraded one learns that if he wishes to gain the good will of his fellows he must emphasize those factors that sound rational.

For all our conduct and all our attitudes we can usually give an acceptable explanation. The outsider, seeing our behavior from a different angle, can usually find some explanation different from our own. If the outsider dislikes us he can find a motive that is rather degrading, while we are convinced that our motivation was of the noblest type. The truth is that both sets of motives actuate us. What, then, is the significance of rationalization? It lies in the fact that when we begin to fear that we have been motivated too much by selfish or ignoble impulses we tend to place greater stress on the noble motives so that we may avoid reproach. If we are accused of acting from unseemly motives we are likely to become very vehement in arguing that we were actuated by the meritorious ones.

It can be shown pretty clearly that most reasoning has some affective background and hence comes under our defini-

tion of rationalization. Formal logic and mathematical reasoning attempt to get rid of the affective factors by reducing all the steps in the reasoning process into abstract symbols which in themselves have not enough personal relationship to have much affect. Cold logic and mathematical formulae are hard, dry things to most persons as is evidenced by the reactions of the students to such studies. But even these formulae can be filled with affective relationships and so partake of the characteristics of rationalization. If a scientist is bent on proving a certain hypothesis the mathematics and logic used in the effort become alive with meaning, and if he is not careful he is likely to be biased by his zeal for his theory.

If a person takes himself too seriously and uses logic and reason to defend himself in some weakness which is extremely vital to his self-esteem, then reason ceases to be a game. And herein lies the danger. He stakes his all on the validity and superiority of his logic just as the gambler stakes his all on the horse he chooses to win. He must win or he is lost. This changes the entire situation. One who gets too serious in using his reason thereby becomes a poor sport in the game of reasoning. His technique becomes distorted, he does not play fairly. Abnormal delusions are based on this process of faulty reason backed by too great a desire for certain things to be true.

Rationalization serves an additional purpose. It distracts the attention of outsiders from the cause of the affect behind the reasoning to the reasoning process itself. Thus the rationalizer escapes with unsuspected motives. The motive that actuates the small boy in his search for reasons why he should not go to the store for a loaf of bread may but scantily cover the fact that he does not want to go. But even so it is remarkable how well he succeeds in giving the impression that he is only too willing to go but these other things make it well-nigh impossible. It is raining, his shoes leak, and his rubbers have holes in them. Besides he has just recovered from a cold and he does not want to catch another. How long does the clever boy have to keep up this barrage of excuses until

his mother gives in? She is diverted from the fact that he does not want to go and begins to weigh the force of his arguments. She fails to realize that by reason he can make the weakest case look worthy.

This mother, instead of listening to the arguments, would get to the root of the thing much more quickly by saying to herself, "Now, Johnny does not want to go to the store. That is evident from his search for reasons why he should not go. How can I make him want to go?" By following this method the chances are in her favor. She can outwit him by finding some way to make him want to go and all his arguments will cease. As a matter of fact she should have set the stage so that he would have wanted to go in the first place and then the boy would not have been tempted to search for his arguments. Any competent lawyer knows this. The reasoning of lawyers often is a battle of wits and does not serve the purpose of getting the guilty person punished or setting the innocent one free.

Now all this has application to the individual who has errors of belief. He wants to believe a certain thing. He must believe it for the sake of his personal mental peace and harmony. He dares not tell his friends or himself that he wants to believe the thing but must make it appear rational. Consequently, he hunts for reasons with the same motivation that the boy hunts for reasons why he should not go to the store. He succeeds in diverting the attention of himself and others from the real motive to the consideration of the validity of his arguments and thus he escapes. In this we have the pith of delusions as such. To cure a delusion we must make the individual want to believe something else just as the mother makes the boy want to go to the store. The one who is handling a case of delusion does not succeed in changing these by argument any more than the mother will succeed in reasoning with the small boy.

123. Delusions as defense mechanisms. The reader who has carefully studied the foregoing discussion of judgment, belief, doubt and rationalization will see that delusions are

fundamentally defense mechanisms. The individual always has a personal interest in maintaining the belief set forth. Whatever other factors may enter into the causal complex, this affective background is always present and should be considered of prime importance in understanding the nature of the delusion.

The primary consideration is the fact that the subject has some belief that he is concerned to maintain. Actuated by this desire he will reach out and grasp anything that happens to be at hand and bend it to serve his purpose. If reason happens to be effective he will use reason. He will support his reason with any factor that the immediate situation suggests. The particular features of his situation which he grasps are but incidents in his main endeavor and should never be exalted to the position of prime cause. Let us revert to our illustration of the boy evading the errand to the store to see how one grasps for material to support his beliefs. We understand in the case of the boy that the central thing is the desire to shirk the errand. His arguments are endeavors to support this central desire. He gropes wildly about to find some excuse and chances upon the fact that his rubbers have holes in them. This gives him a good basis of support, but none of us would be foolish enough to believe that the holes in the rubbers are the cause of his rationalizations. We know that to provide him with a sound pair of rubbers will not make him want to go to the store. It would simply force him to find some other argument, some other excuse.

To be diverted to the content of a delusion is just as useless. Remove the foundation from the argument of the deluded person and he will either glibly get another argument or tell you he believes the delusions nevertheless. The subject wants you to attend to the thing he is arguing about so you will not see his purpose for arguing. He wants you to attend to his supposed persecutors so you will not pay too much attention to him. He wants you to examine him for the fictitious bodily disease so that you will not pay too much attention to his mental affairs. His delusion is a defense

mechanism, do not let him outwit you with it. Remember what we said in our introduction about symptoms being signposts. The delusion is a symptom pointing to some distorted affect, and, as an indicator of this affect, it is of value. But if all you see is the delusion, you lose sight of the fact that it is indicative of a desire that the patient is attempting to conceal. When you lose sight of the basic condition and are diverted to the delusion itself you are not only blinding yourself but you are tempting the patient to adhere with greater energy to his delusion.

XXVIII. THE MATERIAL OF DELUSIONS

124. Mental deterioration as a factor in delusions. An individual who has had normal intellectual powers and who, because of deterioration brought on by some disease, old age, or other cause, finds his ability to solve the ordinary problems of life waning, will grasp anything that will make his waning powers look less weak. Consequently in diseases causing cerebral degeneration such as chronic alcoholism, senile deterioration, and paresis, delusions play a large part in the symptom picture. It is quite likely that these same persons without the stress caused by the loss of mental powers would never have been deluded. At the same time others who have the same diseases do not show the same delusions. The disease therefore appears to be an important contributing cause in that it supplies a background upon which the person may build a secondary defense. The type of defense that he builds, whether it be a delusion or some other symptom, depends upon the personality of the individual. The delusions do not come full grown with the organic disease. They grow from necessity. Faced with a difficulty and the necessity of developing some sort of defense in coping with his weakness, the patient is open to suggestions as to the plan to be adopted. When one is inferior it is natural for him to brag in order to cover it. Delusions of grandeur are naturally suggested to those suffering from deterioration.

125. Somatic material for delusions. Often the delusions are concerned with the individual's own body. He believes that he has no stomach, no heart, that his vital organs are displaced, that he has some disease such as tuberculosis or a cancer. The question to be asked in any such delusion is why the person came to give such overvaluation to the particular part of the body or the disease selected.

An illustration will make this clear. A certain patient had the delusion that he had a sarcoma (cancer) and that as a result he would die in six weeks. He was examined by all the specialists available and no trace or evidence could be found to substantiate his ideas. In spite of this lack of substantiating professional evidence he adhered to his belief most tenaciously. All attempts to determine the cause of his strange emphasis on this fictitious malady failed until it was discovered that he had a very dear friend who had died of a sarcoma. The true explanation came to light when this patient expressed the opinion that the cause of this sarcoma was a sexual perversion. It seems that the patient and the man who had died of the sarcoma were both victims of this perversion. He believed that his friend had died of the sarcoma because of the perversion. Since he had the same perversion the same fate was ahead of him. By treating the perversion the sarcoma delusion disappeared automatically.

126. Environmental material. The term *allopsychic* has been used to designate delusions which refer primarily to the influence of other persons or things upon the patient. We have given a number of illustrations where the patient sees in the attitude of others or in the arrangement of events, designs upon his own personal integrity or welfare. In these cases it is the self that is at the basis of the delusion. The external events are used as a defense of their own attitudes. One should not be diverted by the discovery that the delusional tendency is *allopsychic*. The only object of verifying the truth or falsity of the patient's statements is to discover whether one is dealing with fact or fancy. If fancy, the procedure is not to attempt to convince the patient by

logic that he is wrong but to discover why he wants to believe that the environment is distorted.

XXIX. CORRECTION OF DELUSIONS

127. Delusions may be corrected by re-education of the emotions. We have stressed the affective factor of delusions because it is on this basis alone that they can be treated. Usually, when a patient is discovered who has definite delusions his case is regarded as hopeless. This hopelessness is due largely to the manner in which such persons have been treated. When a person is discovered who is deluded what happens? An argument is begun. We try to reason with him. Failing in that we say that his reasoning ability is faulty. This is not the true situation. His reasoning is too good, he has found that by this means he can best defend himself. It is our method which is wrong.

Let us cite a case to show how a different approach may be effective. A young man had the persistent belief that he was being persecuted by a secret organization. He gave the name of the organization and indicated certain individuals who were involved in the persecution. He cited details of events as evidence of the truth of his statements which on the face of them were absurd. According to his statements the purpose of this persecution was to get him out of the way. He knew some of their secrets and they were afraid of him. They did not dare to kill him so they were trying to drive him to suicide. He stated that they continually gave him suggestions to kill himself. One instance of their methods was as follows: He was eating at a lunch counter when a man, a woman and child came in and sat at the counter next to him. The boy had no sooner seated himself than he said to his father, "Father, what does suicide mean?" "It means a person kills himself." "Why should a person kill himself, father?" "When things get too hot for him he gets out of it by killing himself." Our patient concludes: "Isn't that definite evidence that they are trying to get me to commit suicide? They are going to make it so hot for me that I will

be forced to kill myself to get out from under it." He is convinced that this conversation is definite evidence of the working of this gang. They prompted these people to carry on this dialogue in order to suggest to him that he had better end it all by killing himself. This is only a fragment of similar evidence that this young man brought forth in favor of his contention. He talked two hours on this subject without interruption.

This young man had told his story to a number of persons, psychologists, psychiatrists, and personal friends. He stated that they had all with one accord argued with him, had told him that it was all in his imagination and had advised him to forget it. But their arguing and advice had simply accentuated his delusion.

✓ We listened attentively to his story and agreed all the way through. Such agreement is suggested as the first step in the treatment of such a case. He is building up a rational argument and he needs you to oppose him in order to strengthen that defense. Agree with him and you rob him of all his ammunition. He wants to believe something and he has mustered all these arguments to reinforce his belief. He is the rational type of person or he would not have selected this type of defense. Agree with him and he has no further use for his arguments. Such agreement has two additional advantages. It makes him feel that you are his friend, whereas he regards most persons as potential enemies. In addition it gives you an opportunity to probe further into the affective elements in the situation.

In this particular case we agreed that the patient had been persecuted, that his enemies were scoundrels who should be punished. (As a matter of fact the organization he accused was a very influential and highly moral group.) We agreed to befriend him in any way we could, to help him to overcome his enemies. Having established this partnership we naturally proceeded to discuss plans. He wanted to use force and destroy them. Since the organization was a strong one we pointed out the impossibility of any such procedure. We told

him that brains were more powerful than force and that we should use strategy rather than violence.

How could we use strategy? We pointed out that there are two ways of dealing with enemies. One is to destroy them and the other is to protect himself so that they cannot hurt him, one is the offensive method and the other the defensive. When the odds are so strongly against one as they were in this case an adequate defense was the best method. We should add here that in all this we did not argue with him. We simply discussed the matter with him and made it appear as though he were doing the planning. It sounds simple to tell, but it was a tedious process which took days to consummate.

In order to show him the logic of defense, we drew up various analogies. From the point of view of formal logic analogies are weak arguments, but when you are dealing with a belief they are most forceful. One analogy was that of fighting disease. There are different disease organisms about us and in us trying to encompass our destruction. While with sufficient knowledge and force it might be wise to try to kill all these organisms, science had found that to develop individual immunity was a better and easier plan for an individual to use. Why not develop an immunity to the attacks of this organization? To make it a little more concrete and nearer the present situation, we brought up the same logic about thieves. In order to protect our property it might seem to be necessary for each of us to become detectives and take no rest until every dishonest person was behind the bars. But it was much better to develop individual immunity against theft by locks and other devices designed to protect our property.

Finally we agreed (the two partners in this strategy) on the immunity program. But how was he to develop immunity? We told him that immunity to a disease was established by placing some of the poison from the disease organism into our systems. Our bodies then reacted against this poison so that we became strong enough to destroy it or cast it off. When

the foreign organism then came around we were not affected by it. So he must take some of the poison from his persecutors into his system and learn to react to that poison so that he would not be affected by it. The way to do this was to accept some of the ideas that these persons were throwing at him as though they were his own, treat them as a part of himself, and react to them as though they were his own ideas.

For example, the idea of suicide should be accepted and he should adjust to it as though it came from within instead of from without. Suppose he thought of committing suicide himself, what would he do about it? He would probably decide that it was not the best thing to do. So we discussed the idea of suicide, looked it all over until it no longer had the terror for him that it had held. He was developing immunity to the idea of suicide. Now if they suggested it to him it would have no terrors for him. The different elements of the delusion we took up in the same way. We treated them all as though they were his own ideas and got him used to looking at them. The reader must remember that delusions are actually projections of the patient's ideas but we did not tell the patient so. We were merely pretending they might be so as to develop immunity. Each item had to be taken up in great detail and he had to discuss what he would think and do if the idea had come from himself.

After this had been thoroughly ingrained he was ready for the last step. After all what did it matter where the ideas originated? If they came from within he would adjust to them in the manner we had discussed, why should he do any differently if they came from without? Besides if they did come from without, when they got into his nervous system they were a part of him and he had to adjust to them as though they were his own. We explained that when a sound wave struck his ear it was transformed into a nerve current and he had to adjust to that nerve current, whether he liked it or not. Whether the sound waves came from friends or enemies was not the important thing just as long as we knew how to adjust to them. If you hear a swear word you must

accept it as an incoming current and adjust to it in some way. You do not have to like it but there is no point in getting panicky about it. This all seemed to come as a great revelation to him. "I never thought of it in that way before."

This man was afraid of certain possibilities in himself. He projected these fears and believed that they were the results of suggestions of his enemies. He wanted to believe this. The only alternative was to believe that he had ignoble impulses. To try to convince him that he had would have been folly. His affective barrier was up against just this thing. But by a round-about way we finally succeeded in getting him to admit that they were his own mental processes and he handled them as any normal person handles the undesirable impulses that he has.

Of course all delusions cannot be treated in this manner. Such treatment depends upon the integrity of the intellectual process. If there is cerebral deterioration you have no background upon which to build any new adjustment. But we are convinced that if the above technique is used, many cases now regarded as hopeless could be helped.

IMPORTANT TECHNICAL WORDS

affective. Emotional.

defense mechanism. A mental process or activity adopted to protect one in the case of a mental conflict.

delusion. A false belief.

hypochondriacal. Abnormal anxiety regarding the state of one's health.

nihilistic delusion. A false idea that the individual has no existence.

paranoia. A mental disorder characterized by delusions of persecution.

rationalization. The use of reason to support an idea or conduct which is emotionally determined.

somatic. Pertaining to the body.

PROJECTS FOR FURTHER STUDY

1. The deluded person provides a most interesting study. If at all possible, you should at some time visit an institution

for mental disorders and hear the patients expound some of their beliefs. You should try to have different types of delusion demonstrated to you so that you can get a clear notion of the characteristics of each. When you have this opportunity, do not listen to the delusion as so much queer chatter, but try to understand the significance of the beliefs that are expressed. Endeavor to determine the affect that lies behind the delusion.

2. Note the different instances where people try to win you to their belief. This may be in different realms; they may try to sell you something, they may want you to join their organization, they may wish you to do them a favor, or they may be gossiping about some other person. Analyze their presentation. Do they try to impress you more with their logic or with their zeal? Note your reactions. Do you respond because of a logical analysis or because the person strikes some favorable affect?
3. Listen to persons in various arguments. Why is it that in some of them the contestants are very composed, while in others they get very heated? Try to determine the motivation back of the arguments on each side. When you get into discussions, watch your own affective responses and learn to recognize what such reactions indicate.
4. People differ greatly in their tendency to use "reason." Develop some means of distinguishing them in this particular. When you have selected two persons who tend to use "reason," try two methods of changing their point of view. It is better to select some subject for discussion where the stakes are not too serious. Argue with the first one, and note how far you succeed in changing his view. Try to change the views of the second one by the method outlined in the last part of the chapter. Which method is more successful?

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CHAPTER VI

ABNORMALITIES OF MEMORY

Since memory disorders cover a very wide range of peculiarities, it is important to become acquainted with the different forms that they may take, and to understand the relation of each to the total memory process. We shall find that not all memory deviations are due to a definite organic disturbance, but may be remedied by dealing with other aspects of the mental life. The analysis of memory disorders is made relatively easy because of definite methods that have been devised for testing memory. These methods will be described at the close of the chapter.

128. An example of functional loss of memory. "The subject of this case was a young woman of robust constitution and good health, who accidentally fell into a river and was nearly drowned. She remained insensible for six hours after the immersion; but recovered so far as to be able to give some account of the accident and her subsequent feelings, though she continued far from well. Ten days subsequently, however, she was seized with a fit of complete stupor, which lasted for four hours; at the end of which time she opened her eyes, but did not seem to recognize any of her friends around her; and she appeared to be utterly deprived of the senses of hearing, taste, and smell, as well as of the power of speech. . . . Her only medium of communication with the external world was through the senses of sight and touch. . . . She had no notion that she was at home, not the least knowledge of anything about her; she did not even know her own mother, who attended upon her with the most unwearied assiduity and kindness. . . . Her appetite was good; but having neither taste nor smell, she ate alike indifferently whatever she was fed with, and took nauseous medicines as readily as delicious viands. . . . She swallowed food when it was put into her mouth, but

she made no spontaneous effort to feed herself with the spoon. . . . After her mother had conveyed the spoon a few times to her mouth . . . the patient continued the operation. It appears, however, to have been necessary to repeat this lesson on every occasion; showing the complete absence of memory for any idea, even one so simple and so immediately connected with the supply of bodily wants. . . .

"One of her first acts on recovering from the fit, had been to busy herself in picking the bed-clothes; and as soon as she was able to sit up and be dressed, she continued the habit by incessantly picking some portion of her dress. She seemed to want an occupation for her fingers, and accordingly part of an old straw bonnet was given to her, which she pulled into pieces of great minuteness. She was afterwards bountifully supplied with roses. She picked off the leaves, and then tore them into the smallest particles imaginable. A few days subsequently, she began forming upon the table, out of these minute particles, rude figures of roses and other common garden-flowers. She had never received any instructions in drawing. Roses not being so plentiful in London, waste paper and a pair of scissors were put into her hands; and for some days she found an occupation in cutting the paper into shreds, and more particularly the shapes used in patchwork. At length she was supplied with proper materials for patchwork; and after some initiatory instruction, she took to her needle and to this employment in good earnest. She now laboured incessantly at patchwork from morning till night, and on Sundays and week-days, for she knew no difference of days; nor could she be made to comprehend the difference. She had no remembrance from day to day of what she had been doing on the previous day, and so every morning commenced *de novo*. Whatever she began, that she continued to work at while daylight lasted; manifesting no uneasiness for anything to eat or drink, taking not the slightest heed of anything which was going on around her, but intent only on her patchwork. . . .

"The first ideas derived from her former experience, that seemed to be awakened within her, were connected with two subjects which had naturally made a strong impression upon her; namely, her fall into the river, and a love affair. . . . She gradually took an interest in looking at pictures or prints, more especially of flowers, trees, and animals. When, however, she was shown a landscape in which there was a river, or the view of a troubled sea, she became intensely excited and violently agitated; and one of her fits of spasmodic rigidity and insensibility immediately followed. . . . So great was her feeling of dread or fright

associated with water, that the mere sight of it in motion, its mere running from one vessel to another, made her shudder and tremble; and in the act of washing her hands, they were merely placed in water. . . . From an early stage of her illness, she had derived obvious pleasure from the proximity of a young man to whom she had been attached; he was evidently an object of interest when nothing else would arouse her; and nothing seemed to give her so much pleasure as his presence. He came regularly every evening to see her, and she as regularly looked for his coming. At a time when she did not remember from one hour to another what she was doing, she would look anxiously for the opening of the door about the time he was accustomed to pay her a visit; and if he came not, she was fidgety and fretful throughout the evening. When by her removal into the country she lost sight of him for some time, she became unhappy and irritable, manifested no pleasure in anything, and suffered very frequently from fits of spasmodic rigidity and insensibility. When, on the other hand, he remained constantly near her, she improved in bodily health. . . .

“The mode of recovery of this patient was quite as remarkable as anything in her history. Her health and bodily strength seemed completely re-established, her vocabulary was being extended, and her mental capacity was improving; when she became aware that her lover was paying attention to another woman. . . . On one occasion her feeling (of jealousy) was so strongly excited, that she fell down in a fit of insensibility, which resembled her first attack in duration and severity. . . . When the insensibility passed off, she was no longer spell-bound. The veil of oblivion was withdrawn; and as if awakening from a sleep of twelve months’ duration, she found herself surrounded by her grandfather, grandmother, and their familiar friends and acquaintances, in the old house in Shoreham. She awoke in the possession of her natural faculties and former knowledge; but without the slightest remembrance of anything which had taken place in the year’s interval, from the invasion of the first fit up to the present time. She spoke, but she heard not; she was still deaf, but being able to read and write as formerly, she was no longer cut off from communication with others. From this time she rapidly improved, but for some time continued deaf. She soon perfectly understood by the motion of the lips what her mother said; they conversed with facility and quickness together, but she did not understand the language of the lips of a stranger. She was completely unaware of the change in her lover’s affections, which had taken place in her state of ‘second consciousness’; and a painful ex-

planation was necessary. This, however, she bore very well; and she has since recovered her previous bodily and mental health."¹

In the foregoing we have a good example of active or functional forgetting of the most violent type. Later in the chapter the probable mental mechanisms at work will be explained. It goes without saying that the reader will have but rare occasion to observe such violent cases, but understanding such extremes will enable us better to penetrate the many types of forgetting which do concern us and which we frequently meet. The same mental mechanisms which operate in the extreme cases are often at work in less violent forms.

XXX. NATURE OF MEMORY

Memory disorders can be understood only when we acquire a clear conception of the nature of the memory process. Memories are not concrete objects, but are simply expressions of changes that have taken place in the nervous organization through experience.

129. Definition of memory. In a general sense any modification of the organism from experience may be considered memory. Since the whole of psychology is a study of such modifications, memory is fundamental to all our study. Popular usage does not give this broad meaning to memory—it limits it to those experiences which can be recalled. Many incidents which we do not recall have left their mark upon us. When we learned to walk, if we are to judge from our observations of children during this process, we undoubtedly stumbled and fell many times. We cannot remember when we tried to walk nor the particular falling incidents, but such experiences left their traces upon our personalities. Forgotten as are the trials, errors, and successes of our learning to walk, nevertheless our present ability to walk is largely the result of the residual effect of these forgotten incidents.

¹ William B. Carpenter, "Mental Physiology," D. Appleton & Company, 1874, pp. 460-465.

Between the things or incidents that we can recall and those that we forget, there is no sharp distinction; and as we shall shortly discover some things that seem to have been totally forgotten may be recalled under certain circumstances. Consequently, the limitation of memory to what can be recalled, although this conforms to popular usage, gets us into severe difficulty in our thinking, if this is to be critical and competent. It is probably better to accept the broader conception of memory, as any permanent modification in our neural makeup brought about by experience.

130. Permanence of memory traces. How permanent are the modifications caused by experience? Some thinkers, notably the psychoanalysts, make the claim that every experience leaves its permanent impress. The reason some impressions seem to fade is because they become so overlaid with other experiences that they are relatively inaccessible, and only under favorable circumstances may they be brought back. Another group of psychologists presents the theory that the passage of a nerve current leaves the synapse in a modified condition but that this modification gradually grows less marked until it may disappear altogether.

The former view is based on evidence procured from individuals who have been able to recall with great detail incidents which apparently had been totally forgotten. Such evidence does not prove that, even in these recalled incidents, there has not been some weakening. But these cases of unusual recall do show that we have been too prone to emphasize the factor of time as dominant in determining the strength of a memory trace, and consequently we have had to search for other factors to explain losses of memory than the weakening of neural bonds.

On the other hand, experiments with rote memory, notably with nonsense syllables, have shown pretty conclusively that a simple connection does lose its force if not practiced. Because the associations between these nonsense syllables is not of a very intimate sort, they have furnished a good medium to study the way in which connections fade out with time.

Probably the best position to take in the face of these two sets of data is to recognize the truth of both positions. Such an acceptance would lead to a statement somewhat as follows: With the passage of time memory traces do deteriorate, and if never very strong and if not exercised they may fade into insignificance; but where an impression has been well fixed it is quite likely that the weakening of time never serves completely to efface it. If we accept this statement it will prevent us from confusing the seeming loss of a once vivid experience with the loss of weak connections such as are involved in the poorly learned list of nonsense syllables.

131. Memory a complete process. The study of memory is the study of a process which may be divided for convenience into three phases. The first is the study of the effect of the original experience—how it is registered upon the nervous mechanism. The second is the conservation or retention of that experience and its combinations with other modifications. The third is its reproduction or effect on later behavior of the individual. The terms usually applied to these three phases are learning, retention, and recall. Functionally the three are neither separate nor distinct, but are logical distinctions to help us in our thinking.

If we keep in mind the fact that memory is the complete process we shall never be misled into the notion that memories are entities stored away somewhere, later to be picked out as one would select a book from a shelf. A memory is simply some modification which makes us respond in a different manner from the way in which we would have responded had we never had the experience. For example, suppose a boy in strolling across a field is confronted by a bull and is violently thrown over the fence by the animal. He will probably never again have the complete indifference to the bovine species he once had. This modification operates automatically on future occasions and he does not have to isolate this one incident and hold it before himself the next time he has to cross a field occupied by a bull. He may even fail to reproduce the details of the early incident but still show a different reaction to the

animal. How many persons can recall all the experiences by means of which they learned to protect themselves against falling? Yet we all show the effects of this learning.

132. Conscious and unconscious memories. The facts just cited have led to the distinction between conscious and unconscious memories. If we run from a bull without the faintest recall of the incident whereby we learned to fear him it is called an unconscious memory. We have been changed by the experience but do not recall it consciously. Should we be able to recall the incident, it becomes a conscious memory. This distinction is not one which divides memories but merely indicates a temporary condition. A memory which at one time is not conscious may become conscious; and again, a conscious experience may for a time become unconscious. The important consideration is that mere fading from consciousness does not destroy the influence of the memory.

Most of the peculiarities of memory are concerned with the manner in which memories pass from conscious to unconscious and vice versa. An understanding of the principles underlying these transitions will take us far toward the analysis of a great many perplexing mental problems.

This brief discussion of the nature of memory does not touch the many important problems involved in its study, such as how facts may be most economically learned, how memory is related to other phases of intellectual ability, and how memory may be improved. Our problem is to understand why memory takes the peculiar turns that we shall discover, and so with this brief description of the memory process we shall study the various types of memory peculiarities that we find.

XXXI. FORMS OF MEMORY PECULIARITIES

The following forms of memory peculiarities will be discussed:

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| 1. Exaggerated memory | 4. Functional forgetting |
| 2. Memory losses | 5. Disorders of recognition |
| 3. Peculiarities of recall | 6. Retrospective falsification |

133. Exaggerated memory. Exaggerated memory is called hypermnesia and may be found in two forms. The

first form, or general hypermnesia, is unselective and affects all memories more or less indiscriminately. The second form, or specific hypermnesia, is the peculiar¹ exaggeration of a specific group of memories.

1. *General hypermnesia.* Emotional stress, fever, or some similar condition may lead to a condition of general hypermnesia. In periods of fever, memory may be so stimulated that the patient recalls innumerable details not ordinarily recalled and with a rapidity that is astonishing. Under great emotional stress individuals have reported that their whole life has passed in review before them like a flood. According to the evidence produced, the time occupied for these extensive memories has been so brief that the succession of events would have to follow each other with lightning speed or else the patient has an exaggerated notion of the amount of material that he did recall. The latter is probably true.

The emotional stress that produces general hypermnesia must be not only very intense but of a nature to involve the whole personality of the individual. Such have been the occasions when a person is expecting to die, in times of flood, famine, fire, or just before battle. Teachers may observe this when some great excitement prevails in the school. The children will seem impelled to relate in great detail irrelevant incidents to the disruption of school discipline. It is quite likely that under such circumstances the emotional strain removes the ordinary inhibitions which have controlled the free flow of associations and that the person thus has an unusual number of associations appearing in a very indiscriminate and fleeting manner. If we keep in mind that such exaggerated recall is a regular accompaniment of great emotional excitement we shall not be so intolerant when these effusions take place.

2. *Specific hypermnesia.* Cases of specific hypermnesia are rare, so rare, indeed, that we cannot be sure that the incidents cited are true in all details. We read¹ that persons,

¹ E. J. Swift, "Psychology and the Day's Work," Scribner, 1919, pp. 204-5.

under emotional stress or in illness, have been able to recite Latin, Greek, and Hebrew which they incidentally heard when children. The details of these accounts are so vague that one is inclined to doubt their verity. No such cases have been reported with adequate control to verify them.

134. Memory losses. Memory losses, or amnesias as they are called, take a great many forms which overlap in a most intricate fashion. The two main divisions that we shall indicate are made for convenience and should not be considered as definite cleavages. They certainly are not mutually exclusive.

1. *Amnesia of impression.* There are various reasons why a person may fail to retain impressions.

(a) INADEQUATE PERCEPTION. Where the individual is wrapped in some internal mental conflict he fails to take in properly the things that are presented to him. Consequently, no definite impression is made and he exhibits a memory lack. In a mild form this occurs where attention is centered on something of profound interest for the moment. For example, a child may seemingly be rehearsing his multiplication table when his interest is upon a football game which he plans to attend. In such a case the mechanical recital makes very little impression and it may seem that the child has a memory lack. In more profound cases the person may be brooding to such an extent that he is totally oblivious to what is going on. Give such a person a memory test and he will fail miserably. Under other conditions with proper attention and interest on the subject-matter, the same individual will show normal ability to fixate the material presented. One should, consequently, avoid the conclusion that a person has a real memory deficiency when no check is made upon the attitude of the person toward the material presented to him.

Many disappointments in school progress are due to amnesia of impression. The student spends the requisite number of hours in study but with his interest centered in something quite remote from the subject-matter at hand. The teacher should be able to discern the difference between the boy who

has a book before him but is thinking about some outside matter and the boy who is absorbed in the subject-matter of the lesson. Too many teachers think they have accomplished something when they can keep the student quiet with a book in front of him, whereas they are teaching him the bad habit of failing to take in and assimilate what stimulates the sense organs. The same bad result is obtained when parents take their children to some lecture or entertainment which is far beyond them and force them to sit quietly and "listen."

(b) MENTAL DEFICIENCY. A second cause of amnesia of impression is mental deficiency. Tests indicate that certain individuals are so lacking in ability to retain an impression that we can only assume that they lack something in the neural apparatus that is requisite for retention. They seem to possess such a degree of fluidity that no lasting impression is made—no more than if we move a stick through water. Intellectual competence requires two things: the ability to be modified by an impression and the ability to retain some of that modification. We should not be too eager to assume that a person lacks ability to retain the effect of impressions, but once such a fact is established it is useless to attempt to make him memorize by artificial methods. The sensible thing to do in such a case is to limit the number of things he is to be taught. If a teacher is patient she can teach such a child a few things, but if she tries to teach him too much he learns nothing. The important thing is to make a wise selection of what should be taught to such a person. As a general thing it is better to teach concrete tasks than abstract principles.

(c) DEMENTIA. A similar situation exists when there is an organic disease which has caused neural deterioration. This type can readily be distinguished from the previous type, amentia, by the fact that in the patient's previous history he was able to retain and that he has later lost this ability. Senile deterioration is an example of this type of loss. In profound cases these persons retain impressions from early childhood but cannot fixate recent events. For example, you may tell a senile woman that her husband is dead. She will

respond to this information with an adequate emotional reaction but in a few minutes, however, she will have forgotten all about it. She does not even remember that you told her of her bereavement. This may be repeated over and over with the same results. We should get along much better with old people were we more tolerant of their failing memories. They are often inclined to misplace articles and then accuse others of stealing them. When we become irritated by such accusations we merely demonstrate our lack of understanding.

2. *Amnesia of reproduction.* Having learned how memory losses may result from inadequate fixation of an impression, we come to a different form of amnesia, amnesia of reproduction, which embraces the loss of items that were once firmly fixed but which have been lost subsequent to such adequate fixation.

(a) LOSS WITH DISUSE. Studies of the curves of forgetting have shown that the loss of learned material is much more rapid immediately after learning and after this first period the loss is more and more slow so that there is usually a residual effect which persists indefinitely. The actual loss is determined by (1) the importance of the material to the individual and (2) by the plasticity of the individual. If the material is of affective value to the individual it is usually associated intimately with other material and so obtains continuous meaning. Retention losses are sure to grow in proportion to the degree of mechanical procedure used in the learning. If, when the material was learned, it was related to other phases of the mental life, it is more likely to gain significance and be retained. If the learning was simply by rote it has little significance and so the loss with disuse is sure to be much more pronounced.

(b) LOSS OF RETENTION WITH DETERIORATION. With organic deterioration of the nervous tissue the memory loss takes place in a very definite and significant manner. The more recently acquired memories disappear first and the earlier ones last. A person suffering with deterioration will be able to tell you in great detail the happenings of his child-

hood but will forget what happened in recent times, although the latter may be of much greater personal significance than the ones he recalls. Such a person will narrate boyhood tales to you and the next day begin the same series all over again, forgetting that he has told you before.

Knowing that the impressions of early childhood are the most enduring, we should render children the service of seeing that the things we teach them in childhood are the sort that they would do well to retain and use the rest of their lives. If we were taught the correct attitudes in childhood it would not be necessary to go through the period of unlearning and reconstruction we so often observe in adolescence and early adulthood. In view of the relative permanence of early memories it seems actually vicious to teach a young child things which it is known must be unlearned.

135. Peculiarities of recall. It may seem that forgetting is synonymous with the loss of retention but recent work has proved beyond a doubt that this is not the case. A memory trace may be very well established and yet the person be unable to recall. Forgetting has been very carefully studied in connection with mental pathology and the findings are of utmost significance. Recall involves not only that a memory trace shall have been formed but that the present circumstances be of a nature to bring it back to the foreground.

1. Emotional interference. A very potent factor in the modification of recall is emotional interference. Various things in life tend to block the recurrence of impressions. The study of forgetting caused by such blocks has led to the conclusion that we have already stated, that traces are made upon the nervous system and are retained although the subject may have difficulty in a conscious recollection of the events themselves. It is this phase of the problem of memory that offers the greatest interest to most individuals. Memory is not a process of storing up things, its charm lies in the ability to bring to the surface different experiences when they are most needed.

That recall is not in proportion to the strength of the

memory relationship has long been recognized. We select and choose what is recalled. In recent years the psychoanalysts have adduced evidence to show that this selecting process goes on without conscious control. The basis for this selection is usually set forth as a hedonistic (pleasure-pain) one. In other words the painful things are inhibited so that they cannot, except under unusual circumstances, be recalled.

The inhibition or repression of painful memories is regarded as a biological defense mechanism, whose function it is to guard us from painful experiences. This tendency to inhibit the unpleasant spreads to associations connected with the undesirable element so that trivial things of no affective importance in themselves are likely to be difficult to recall because their relationship to the inhibited element invests them with the same affective tone. This process of emotional interference will be found to explain the phenomenon of active forgetting which we are about to study.

Darwin recognized the selective nature of recall. In his autobiography he writes:

"I had, during many years, followed a golden rule, namely, that whenever a published fact, a new observation or thought came across me, which was opposed to my general results, to make a memorandum of it without fail and at once; for *I had found by experience that such facts and thoughts were far more apt to escape from the memory than favorable ones.*"¹

2. *Forgetting in everyday life.* Under the leadership of Freud there have been numerous reports of lapses of memory in everyday life. Some of these are rather bizarre and sketchily reported. Others indicate pretty clearly that recall is certainly a changeable thing, that one may apparently forget a thing and then with as little reason recall it very distinctly. From a study of these instances one is led to assume that emotional inhibitions play a very large part in determining lapses of memory. Certainly the associations are not lost when they can be revived at a later time.

¹ "Life of Charles Darwin," edited by Francis Darwin, 1902, p. 42.

The following incident shows how a minor lapse may indicate an emotional inhibition. A woman who had been married a little over a year came to a hospital for treatment. She was apparently quite depressed and lost in her broodings. When asked her name in the course of filling out the hospital blanks she replied that her name was A——. The clerk wrote down the name A—— while the patient watched him. “Now what is your first name?” she was then asked. She replied, “It is —— OH! my name is not A——, it is B——. A—— was my name before I was married.” According to the theory advanced to explain such a lapse there must have been some emotional situation which inhibited the giving of her married name in reply to the first question. Investigation showed that this woman was not happy in her married life, that she tended to go off into a dreamy state in which she imagined she was again an unmarried girl. Asked her name when in a period of such reverie, what more natural than to give the name fitting the period of her life where she preferred to be and where she wished that she now was?

Jones¹ makes some very pointed remarks in this connection:

“In my own life I have noted numerous instances of purposeful forgetting of appointments, particularly with patients. If a given patient is tedious and uninteresting, I am apt to forget that I have to see him at a certain hour, and if a doctor telephones to ask me whether I can see an interesting case at that hour, I am as likely as not to tell him that I shall be free then. . . . Often when I am busy I conveniently forget, and once I left a patient without her daily visit for nearly a week. The self-reproach one feels on recollecting the forgotten duty on these and similar occasions is indicative of the true significance of the occurrence. This significance is intuitively realized in the case of lovers. A man who has failed to appear at a rendezvous will seek in vain to be forgiven on the plea that he had forgotten about it—will, indeed, with this plea only increase the lady’s resentment. Even if he falls back on the customary psychological explanations, and describes how urgent business had filled his

¹ Ernest Jones, “Papers on Psychoanalysis,” Baillière, Tindall & Cox, 1918, pp. 44–45.

mind, he will only hear in reply: 'How curious that such things didn't happen last year! It only means that you think less of me.' "

The reader has probably had the experience of being unable to recall a familiar name in spite of intense effort to do so, only to find that at a later time, when he was making no effort to recall it, the name "popped" forth. The inhibiting emotion in such a case may not always be apparent but the fact that the name is recalled during relaxation indicates that an emotional element was present. It is often found that the name is similar to the name of a person that is disliked, or even that some irrelevant but unpleasant emotion blocked the recall.

These incidents, and they are as numerous as human experience itself, go to show that what we recall is selected. This selection is not always conscious but the inhibitions and facilitations work without our being aware of the fact and our associations are guided from one item to another in a way which is completely beyond our control. When we retrace our associations we can often see the cause of selection, and even when the cause is not apparent it is advantageous to assume that the same principles operate. The way in which these inhibitions function will become clearer when we study extreme cases of forgetting and recall induced by means of experimental procedures.

3. *Pathological forgetting.* There are cases where mental deterioration due to neural disease or decay causes a permanent memory loss. We have already considered these so we will now turn to another type of pathological forgetting. In some of these cases it may at first appear that there has been an organic loss, but the way in which the memory is recovered shows that the difficulty was not a loss of the memory trace but was an affective inhibition against recall.

Evidence for this view is furnished by the case of Irene as reported by Janet: ¹

¹ Pierre Janet, "Major Symptoms of Hysteria," Copyright 1913, by The Macmillan Company, pp. 29 and 37. Reprinted by permission.

Irene was a girl of twenty years, who was greatly disturbed by the long illness and death of her mother. Her mother had reached the last stage of tuberculosis, and lived alone in abject poverty with her daughter, in an attic. The girl watched her mother during sixty days and nights, working at her sewing machine to earn a few pennies to sustain their lives. When finally her mother did die, Irene became very much disturbed emotionally. She tried to revive the corpse, to call the breath back again. In her attempts at placing the limbs in an upright position, the mother's body fell to the floor, whereupon she went through the strain of lifting her back into bed, alone. Certainly, such experiences could not be forgotten in the ordinary course of things. Yet in a little while Irene seemed to have grown forgetful of her mother's death. She would say, "I know very well my mother must be dead, since I have been told so several times, since I see her no more, and since I am in mourning; but I really feel astonished at it all. When did she die? What did she die from? Was I not by her to take care of her? There is something I do not understand. Why, loving her as I did, do I not feel more sorrow for her death? I can't grieve; I feel as if her absence was nothing to me, as if she were travelling, and would soon come back." The same thing happened if you put to her questions about any of the events that happened during those two months before her mother's death. If you asked her about the illness, the mishaps, the nightly staying up, anxieties about money, the quarrels with her drunken father,—all these things seemed to have quite vanished from her mind.

What had happened to her? Had something happened to her nervous system to wipe away all traces of the horrible events she had experienced? Was she simply pretending she did not remember? Or, did she remember without being able to recall, due to some powerful inhibitions?

Some light is thrown on this question by a study of the crises (or fits) which she began to experience some time after her mother's death. These would last for hours at a time, and during them she would lose contact with her immediate surroundings and perform scenes with the skill of an actress. She would re-enact all the events that took place at her mother's death, as well as other unpleasant episodes in her life, all with the greatest detail. She would carry out with words and acts the different events, and when death finally came to her mother would prepare for her own suicide. She would discuss it aloud, seem to speak to her mother, and to receive advice from her. She fancied that she would try to be run over by a locomotive. She acted as though

she were on the way, and stretched herself out on the floor of the room, waiting with dread and impatience for death to come. She posed in true dramatic style waiting for the train to come. Finally, when it came she would utter a terrible shriek, and fall back motionless, as if she were dead. Then she would get up and begin acting over again one of the previous scenes. After a time the agitation seemed to die down and she came back to normal consciousness, took up her ordinary business, seemingly quite undisturbed about what had happened and with her concomitant loss of memory for the events she had so faithfully dramatized.

This case illustrates the affective blocking from recall of unpleasant incidents. Irene's experiences had been so horrible and her grief so great upon the death of her mother, that suicide seemed her only solution. Victory against the suicide could come only by blocking from consideration the things she could not endure. Hence she formed an inhibitory block which successfully prevented the recall of her unpleasant experiences. If they did break through they did so at the expense of her waking consciousness and she went into the crisis described. This seems reasonable proof that the forgetting was functional. It further indicates that a functional loss may, and probably usually does, involve memories that are extremely vivid. It was not a lack of interest that caused her to build up inhibitions against the recall of her mother's death, it was an excess of interest which was extremely painful. It will be noted that the loss of memory is not only for the event of her mother's death but for all the things that are related to the unpleasant incidents connected therewith. Any subsidiary event that becomes invested with the same emotion is likewise inhibited.

While the reader is not likely to encounter an extreme case of this kind, it sets forth in bold relief the processes involved so that its understanding will give insight into simpler problems of the same order.

4. *Experimental recall.* Under peculiar circumstances memories have been experimentally recovered which the patient did not know existed. Some of the means used for such

experimental recall have profound implications for abnormal psychology and will be discussed more fully later. We are introducing them at this point only to stress their bearing on memory. The reader should not get the impression that there is anything particularly mysterious in the processes themselves. They all have a psychological explanation. No matter by what means the memory is recovered the significance of the recall lies in the fact that memories may be buried, seemingly lost, but when brought to light are as clear and distinct as any recall could be.

(a) AUTOMATIC WRITING. The way in which this process operates is illustrated by an experiment described by Janet:¹

"If we question the patient in a direct manner, if we ask her to pronounce or even to write voluntarily the name of the house physician who takes care of her, we discover that she appears to make an effort, but declares herself incapable of writing the name. We have to proceed in another way. We step away from her and ask someone else to talk to her; she replies to this person's questions, seems to pay attention to what is said to her, and does not mind us any longer. We slip a pencil into her right hand and she takes it without turning round . . . and, while she continues talking with someone else, we make her a suggestion as if she were able to understand us: 'Write down,' we say to her, 'the name of the doctor of your ward.' We see the hand that holds the pencil begin to move and write, 'M. Lamy.' In the same way we ask her what is the matter with her left hand, and she writes without hesitation, 'I cut myself with some glass.' In a word, she will answer in this way all possible questions, and, in her writing thus obtained, will show us the recovery of all the remembrances which she seemed to have completely lost."

These writings are concerned with trivial things which one might answer absent-mindedly. Prince² gives an illustration where a memory that was deeply buried was brought to the surface in a similar manner:

"A patient who suffers from an intense fear or phobia of cats, particularly *white* cats, can recall no experience in her life which

¹ Pierre Janet, "Mental State of Hystericals," G. P. Putnam's Sons, 1901, pp. 99-100.

² Morton Prince, "The Unconscious," Copyright 1915, by The Macmillan Company, pp. 16-18. Reprinted by permission.

could have given rise to it. Yet when automatic writing is resorted to, the hand writes a detailed account of a fright into which she was thrown, when she was only five or six years of age, by a white kitten which had a fit while she was playing with it. . . . The hand wrote . . . 'I think I know about the cats. I can remember myself, a little child, playing on the floor with a kitten, and it began to run about the room and had a fit, I think, and it jumped on me, and I was alone, and I screamed and cried and called my mother, but no one came, and I was very much frightened. I do not believe I ever told anyone. It was a white kitten. It ran out of the room and after a bit I went on playing.' To test the extent of the conserved memories still further, the hand was asked to describe the furnishings of the room and the plan of the house. It wrote: 'There were two windows on the side of the room. The shades were gray, I think, with a border of grapes, or something of that color. The carpet was green or gray, with green figures. There was a large old-fashioned sofa between one window and the door which led into the dining-room. A book-case and desk-combination, you know. There was a mantle, I think, between the windows. It was the ground floor.'

"This same patient¹ 'had been vainly hunting for a bunch of keys which she had not seen or thought of for four months, having been in Europe. One day, soon after her return, while writing a letter to her son she was interrupted by her hand automatically and spontaneously writing the desired information. The letter to her son began as follows: "October 30, 19—. Dear Boy: I cannot find those keys—have hunted everywhere . . ." (Here the hand began to write the following, automatically.) "*O, I know—you put those keys in the little box where X's watch is.*" In explanation, this patient sent Prince the following letter: 'The keys were found in the box mentioned. I had hunted for them ever since coming home, October 4th. One key belonged to my box in the safety deposit vault and I had felt very troubled and anxious at not being able to find them. I have no recollection now of putting them where I found them.' "

(b) HYPNOSIS. Hypnosis has been used in two ways to recover memories. One method is to have the subject in the hypnotic state live over experiences of his past life and recall specific details. When this is done it is usually the case that, upon awaking from the hypnotic trance, the individual does not remember that he recalled these events during

¹ *Loc. cit.*, pp. 22-23.

the hypnosis and to his waking life the events are still unremembered. The second method is to suggest to the subject while under hypnosis that when he wakes he will recall certain events. If this suggestion is effective the result will be a recall which resembles ordinary recall in all particulars except that the latter was preceded by a suggestion.

The writer had a very instructive illustration of the former method. A woman of twenty years of age had agitated depressions. During her periods of disturbance she would become very much disturbed and on one occasion attempted suicide. By the ordinary methods of free association we were unable to get any factors which had any bearing on her trouble. She would give numerous complex indicators but on attempting to follow these to their ultimate associations she could not be made to coöperate. She did yield to hypnosis. Hence, in a hypnotic sleep we suggested to her that she was a girl again, just beginning school, then going through later and later stages. In all these periods she lived over varying incidents, one after another. Finally, she came to a scene when she was about eleven over which she became very much disturbed. She was on her way home alone one dark night when she was attacked by a burly man. She went through the whole scene of fighting off this ruffian, calling wildly for help and finally dropped down upon the floor in a stupor. When she recovered from this stupor she awoke from the hypnosis and had absolutely no memory of having portrayed this scene. It took much painful endeavor to get her to recall this scene consciously even after we knew of its existence.

The second type of memory recovery through suggestion in hypnosis is illustrated by a boy of nineteen years of age. He was a chronic stammerer of the very worst form. In attempting to say certain words his jaw would fly open and apparently lock. He would strain his whole body and go through the wildest contortions in his effort to say the word. Finally he would sigh deeply and give it up as a bad job, usually being forced to use some synonym to express his thought. This boy's stammering began at eight years of age.

At this time his mother had become insane and he had gone to live with his grandmother. The strange part was that, although he could narrate with the greatest detail events of his life from the time he began to stammer, he could recall not a single incident previous to that time. He was placed in a hypnotic sleep and while in this condition he was told that upon arriving home he would begin to recall the events of his early childhood. He was then awakened and sent home. The next day he came back and told us that recollections of his early life had come back to him like a torrent. The truth of this was corroborated by a host of incidents which he was able to tell us which fitted perfectly into his life story.

These cases seem to indicate that one may have his memories blocked off into compartments, so to speak. Under certain circumstances a group of experiences seem to have passed into oblivion. Change the conditions, such as placing the person in an induced sleep, and they come back. Break down by means of suggestion the partition which seems to block off these memories and they all come back perfectly intact. The following instance is somewhat similar. Here the person received no suggestion but went off into a trance spontaneously and produced hidden memories in this trance state.

This was a man of thirty-five who came to us with the complaint that he always broke down when on the point of succeeding in anything. He had given up a successful law practice in Pittsburgh because he had on several occasions broken down in court just as he was about to carry a trial to a successful conclusion. We had him narrate to us all the instances that he could where he had been successful. He did this with great detail but none of the stories that he told led to anything productive. Finally, one day he was telling us about his life during the war period when he was living in Jersey City. He had a government position and had to work late at night. He had been very successful in this work and felt very exultant about it. All at once he broke into his tale about as follows: "Oh, that reminds me of one night—OH! it is hot in here! Let me out quick, for I will faint

if you don't! Let me out! Let me out! I will faint!" We told him we would not let him out, that he could faint if he wanted to do so, but that he should go on and tell us about that night. He fell to the floor and lived through a scene of assault, screaming loudly, "Don't stick that knife in me! You can have my money but don't stab me." Then he went off into a coma for a few minutes after which he woke, gasped, and trembled from head to foot all covered with perspiration. "Gosh! I had not thought of that for years!" he exclaimed. Here while giving free associations the subject came up against a resistance against recalling this unpleasant episode. The resistance was so strong that when finally it did break through it led to a reproduction of the entire experience. The reproduction was in the form of a trance. In this case the patient recalled, upon waking from the trance, all that he had enacted before us as well as its significance. This explained his tendency to break when on the point of succeeding. On the night of his trouble he had been exulting about success and then he met with this assault. The thought of success was linked to assault so that the one brought up the other and he would break under the emotional stress, not recognizing its true source.

Another hypnotic phenomenon may be used to demonstrate that a memory may be blocked off or recovered experimentally. A person under hypnosis was given a glass of water and told that it was a glass of very hot milk. He was told first to blow it and then sip it very carefully. This he did, going through all the behavior of a person sipping a glass of hot liquid. When he awoke from the hypnosis he had no memory of having done anything of the sort. Placed back under hypnosis we asked him what he had done in the previous hypnosis and he remembered very well having sipped the hot milk. We told him that when he awoke this time he would remember the incident. True to our suggestion he did recall it.

(c) CRYSTAL GAZING. The crystal used in the experiment to be described has no mysterious power connected with it. Gazing into a crystal tends to help the individual to get away

from external distractions and favors a day dreaming condition. In this condition associations can flow freely and it is this fact that makes crystal gazing a good means to recover repressed memories.

Morton Prince¹ has used this method successfully with a patient whom he calls Miss X:

"A glass ball such as is commonly used not being at hand, an ordinary electric-light bulb, disconnected from the wires, was substituted. When Miss X, who had not been hypnotized, looked into the bulb, she saw and described a scene which had no place in her memory and hence had no meaning to her. Under hypnosis, she repeated the description of the occurrence, with the addition of further details, including its time and place. Afterward, on carefully going over the events of that period, she recalled the event. It was a trivial incident of too little importance for voluntary recall. At another time, disturbed because she had absent-mindedly torn up two ten-dollar bills and thrown the pieces away, she arose in her sleep, shortly after discovering her loss, and hid the remainder of her money under the table cloth. She also placed two books, a red and a green one, as she afterward found, over the place of its concealment. The next day, unable to find this money, she was greatly distressed, since it was all she had. She said nothing to Dr. Prince about her loss, but he meanwhile had learned of it while she was under the influence of hypnosis. Without disclosing his knowledge he handed her the electric bulb—she was not hypnotized at the time—told her to look into it, think of her money, and she would learn what had become of it. 'She looked into the globe and saw herself in bed in her room. She then saw herself get up, her eyes being closed, and walk up and down the room; then she saw herself going to the bureau drawer, taking out her money, going to the table, taking up the table cloth with the books, putting the money on the table, covering it with the cloth, and putting the red book and the green book on the top of it. . . . Miss X reported on her next visit that she had found the money where she had seen it in the globe.' "

It is evident from these experiments that recall does not depend solely upon the integrity of the memory traces produced

¹ "An Experimental Study of Vision," *Brain*, Vol. 21, p. 528. Quoted by Swift in "Psychology and the Day's Work," Charles Scribner's Sons, 1919, 208-209.

by the original experiences. These can exist in a very stable form and still the subject be unable to recall the incidents. When a person says, "I cannot remember" it may be that no memory exists, that he has suffered from a neural deterioration or that the recall has been interfered with by some other factor such as an emotional block against recall.

136. Grouping of functional amnesias. We have seen that in functional amnesias certain memories are blocked from recall by an affective inhibition. The groupings of these amnesias may take two forms which Janet¹ has called systematized and localized. The systematized amnesias are those where the forgotten ideas are related to a certain subject regardless of the period of time when they were experienced. The localized are those where a certain period of time in the patient's life is lost. We will discuss these in order.

1. *Systematized amnesias.* When discussing associations we found that certain groups were held together by an affective bond which we called (Article 99) a complex. In systematized amnesia these constellations are probably basic in determining the grouping of memories that are lost. They form a certain definite system and the whole system disappears or is recovered as a whole.

These amnesias impress the observer as definite avoidances of particular subjects. One patient of the author's could not remember a thing about his father. He could tell numerous incidents connected with his early life, would talk interminably about his mother during his childhood but could remember nothing about his father. After much labor, and by means that need not be described here, his memories came back. They were accompanied by very painful affects. He recalled that his father had been abusive to his mother, a thing which weighed heavily upon him. That this whole situation made a profound impression upon his young mind is evidenced by the story he told after these memories were recovered. One night after a scene at home he left the house, went to a stream near his home and sat beneath a bridge that crossed this

¹ Pierre Janet, "Mental State of Hystericals," Putnam, 1901, p. 79.

stream until late into the night, his mind filled with boyish fantasies of the things he would like to do to his father when he grew up.

These systematized amnesias may involve almost any group of associations. Patients will forget words relating to certain subjects of a highly emotional nature, definite motor habits will be lost, such as how to sew or how to make a bed. Some forget how to stand or walk while suffering no loss of ability. This latter symptom has been found so often that it has received the special appellation of *astasia-abasia*. When these patients are analyzed it is invariably found that the group of functions lost or the situations forgotten center around some emotionally toned situation which the person has experienced. It is an extension of the blocking described in the previous chapter.

2. *Localized amnesias*. In localized amnesias the loss is for a particular period of time. A typical illustration of this type is cited by Hart¹ from William James:

"On January 17th, 1887, the Rev. Ansel Bourne, an itinerant preacher, drew a considerable sum of money from a bank in Providence, and then entered a tram car. This is the last incident which he remembered. 'He did not return home that day, and nothing was heard of him for two months. . . . On the morning of March 14th, however, at Norristown, Pennsylvania, a man calling himself A. J. Brown, who had rented a small shop six weeks previously, stocked it with stationery, confectionery, fruit and small articles, and carried on his quiet trade without seeming to anyone unnatural or eccentric, woke up in a fright and called in the people of the house to tell him where he was. He said that his name was Ansel Bourne, that he knew nothing of shopkeeping, and that the last thing he remembered—it seemed only yesterday—was drawing the money from the bank in Providence.' "

Incidents similar to this are not uncommonly reported in our news columns.

We shall have further occasion to discuss this form of dissociation when we come to study double personalities. The

¹ Bernard Hart, "Psychology of Insanity," Cambridge Press, 1921, p. 49.

mechanism back of this form of localized amnesia is somewhat the same as the systematized, the difference being that in the localized form the troublesome scene cannot be blocked off without taking quite a large portion of the personality with it. When the distressing event is too closely knit with the concomitant circumstances the only way to forget it is to bar out everything that happened in the same chronological period in which they were experienced. If we keep before us this tendency of memories to group themselves, the study of minor forms of memory loss will be greatly simplified.

137. Disorders of recognition. Since recognition memory differs from other forms of memory its disorders are distinctive. These may take three forms; a feeling of familiarity in strange situations, a feeling of strangeness in a familiar situation, and disorientation.

1. *Feeling of familiarity in strange situations.* In a strange situation we may have the feeling, "This has happened before." This phenomenon has aroused great interest and has even been used to support the theory of reincarnation. If we come into a situation where we could not have been before in this present existence then it must be the memory that exists or has left its impress from some previous incarnation. Such a deduction is not warranted by the facts, and where sufficient investigation has been made a much more rational explanation is possible. Sometimes the whole situation may not have been experienced but there may be elements in it that give the feeling of familiarity. In other cases the individual may actually have visited the place under conditions that preclude accurate recall of other circumstances connected with the scene. An interesting illustration of the latter sort is given by Carpenter:¹

"Several years ago the Reverend S. Hansard, now rector of Bethnal Green, was doing clerical duty for a time at Hurstmonceaux, in Sussex; and while there he one day went over with a

¹ William B. Carpenter, "Principles of Mental Physiology," D. Appleton & Company, 1874, p. 431.

party of friends to Pevensey Castle, which he did not remember ever to have visited previously. As he approached the gateway, he became conscious of a very vivid impression of having seen it before; and he 'seemed to himself to see' not only the gateway itself, but donkeys beneath the arch, and people on the top of it. His conviction that he *must* have visited the Castle on some former occasion,—although he had neither the slightest remembrance of such a visit, nor any knowledge of having ever been in the neighbourhood previously to his residence at Hurstmonceaux,—made him enquire from his mother if she could throw any light on the matter. She at once informed him that being in that part of the country when he was about *eighteen months* old, she had gone over with a large party, and had taken him in the pannier of a donkey; that the elders of the party, having brought lunch with them, had eaten it on the roof of the gateway, where they would have been seen from below, whilst he had been left on the ground with the attendants and donkeys."

This is evidence that very early experiences leave their impress and, although the details may not be so vivid as to lead to definite recall, they do leave enough of a modification to lead to recognition.

2. *Feeling of strangeness in a familiar situation.* A converse situation is where a person has a feeling of strangeness when in a situation which he knows is a perfectly familiar one. This is not so common as the feeling of familiarity in a strange situation. When it does appear it is usually due to some change in the whole setting and we go about to discover what has caused the change. With this discovery the feeling of strangeness disappears.

This feeling of strangeness is sometimes closely related to certain types of obsession which we have already described. (Article 96, Paragraph 5.) The subject has a persistent feeling that all is unreal and he may feel such insistent questions as "Who am I? Am I real, or is all life a fiction? Everything seems so strange."

3. *Disorientation.* Associated with this feeling of strangeness, though probably resting on a different basis, is what is called disorientation. Orientation depends upon a number of mental processes. For a person to be oriented he must

have had adequate sensory impressions from his environment, he must have interpreted them properly and he must have related them in orderly fashion with other perceptions both past and present. This implies an adequate memory of previous experiences as well as associational integrity so that memory traces may be coördinated without undue distortion. Disorientation has received a great deal of emphasis from the clinical standpoint not because this concept is so illuminating but because it is easily tested and points the way to further analysis. It may be due to a number of factors such as apathy or delusional trends as well as to memory losses. Orientation is usually divided into three categories; orientation for time, places, and persons.

(a) TEMPORAL DISORIENTATION. One judges time by a perception of sequence of events and not by the time interval between events. Placed in a situation where the customary sequences are absent, and where in their place is substituted a monotonous sequence of meaningless events, one is likely to become at least partially disoriented for time. Such a situation obtains in an ocean voyage. One has to keep an accurate check or he will not know what day of the week it is. A prolonged camping trip or any other similar change in conditions may produce a partial temporal disorientation. When the disorientation is pronounced it may point to a more serious difficulty. If a patient tells you it is December 28, 1902, and always gives you the same date it is pretty evident that his intake of criteria for temporal events stopped for him at that time. If he has not the faintest idea what date it is, the season of the year, or any other temporal fact, he surely must be much deteriorated. Hence the degree of temporal orientation will give you a clue as to the integrity of certain basic mechanisms.

(b) SPATIAL DISORIENTATION. Orientation in relation to one's spatial environment means that one takes in and relates the different elements that go to make up one's notion of place. These are largely visual perceptions but those from other fields are involved to some extent. Anything that will

impair one's intake or which will interfere with his memory for such impressions will disturb orientation for place.

(c) **DISORIENTATION FOR PERSONS.** This may also be due to a memory defect and may range from a simple forgetting of some persons we have met to a complete forgetting of those we have known very well. For example, an individual with an advanced cerebral deterioration may not recognize his wife or his children with whom he has lived on good terms for years. In lesser degrees he may remember his relatives but may not recognize those whose acquaintance is of a more superficial sort.

It must be remembered that disorientation is a crude symptom and that it is significant only in that it points to a defect whose meaning may be studied. So many factors are involved besides memory that no conclusions should be drawn until one has discovered why the disorientation has been produced.

138. Retrospective falsification. One of the difficult things that we must all accomplish is to distinguish between what is real and what is the product of imagination in the realm of memory. We may have a dream and upon awaking feel the effects of the dream with such vividness that we believe it is real. In such a case we have to "pinch ourselves to see whether we are awake." Similarly when we wish a thing were of a certain description we are very apt to falsify the details upon recall. This is proverbially so in "fish stories." Here the wish that the fish had been large and that it had fought for a long time before we landed it, makes us involuntarily add details to the episode even though we are trying to recall the strict truth.

When for any reason our memory begins to fail us and events drop away we are prone to fill in the gaps thus produced with fictitious events in order to make a consistent story. This process is known as retrospective falsification. It occurs in old persons whose memories are deteriorating with senility. It is also likely to be prominent in those individuals who are dissatisfied with reality and who tend to let their

imaginings run riot. In some of these cases it is almost impossible to distinguish a deliberate lie from an involuntary substitution of a fantasy. For example, a woman, otherwise well balanced and apparently normal, told her husband that when she was a child she and an uncle wrote poetry together. As a result, she stated, this uncle became very fond of her. He later became very wealthy and had recently died and left the major portion of his estate to her. She told the husband that she was to go to England to help administer and eventually to take control of this fortune. The gullible husband, elated at his wife's good fortune, resigned his position and made all preparations for the wonderful journey, when he was brought to earth with a jolt upon learning that the whole story was the sheerest fabrication. Investigation showed that from early childhood this girl had been accustomed to weave just such fairy tales and act them out as though they were the truth.

The apparent good faith of the narrator should not be taken as evidence of the verity of his statements. Our wishes color all our narrations so that, in spite of our attempted adherence to the literal truth, we are prone to color our stories. The narrator should not be too severely blamed for these lapses from strict truth, but neither should the listener be too naïve in accepting everything he hears. Some historians would probably have been less willing to report as good evidence stories told to them long after the instances occurred, or as they have been passed down from generation to generation, if they had understood the significance of this tendency to falsify upon retrospect.

One should be courteous enough to listen attentively when a comrade tells of his exploits of long ago, but it is well to remember that one is not listening to history, but rather to some facts embellished by the wishes of the narrator.

XXXII. EXPLANATION OF MEMORY DISORDERS

In the presence of all this intricate jumble of peculiarities of memory, how can we arrive at any psychological explana-

tion? We may state at the outset that no simple explanation can be evolved to explain all forms and degrees. To attempt any such unifying principle would be absurd. When we remember that memory is a broad term used to indicate the residual effect of all human experiences, we shall understand that the disorders in this field are as manifold as human experience itself. In a number of types of memory disorder, the description of the peculiarity suggests its own explanation. In some the disorder appears so strange that we are left bewildered at the phenomenon. What we wish to do in this section is to present some aspects of various explanations which will give us a good working hypothesis of the processes involved.

139. Organic causes. The organic causes of memory defects are rather numerous. There is little doubt that hereditary factors play some part in memory defects. The degree of retentivity, that is, the capacity for retaining the effects of any modification, varies with individuals. Various accidents may occur which interfere with the memory processes or disease may change our capacity to remember, as well as destroy past memories. A child may have a birth injury, he may suffer from some disease which destroys part of his nerve substance. Such diseases as syphilis, meningitis, infantile paralysis, sleeping sickness, or tuberculosis (when the tubercle bacillus invades the brain substance) may have a disturbing effect. Again mal-nutrition, either of the foetus during gestation, or in early infancy may have a permanent degenerative effect on the nerve tissue. These are problems of medicine and not of psychology although the effects appear in any psychological study of the persons involved.

140. Functional causes. If organic causes were the only ones operative the discussions in this chapter would have been much briefer and would have appeared much simpler. It is because we have mental disturbances where there is no organic background that our interest is challenged. The question that we have to answer may be stated somewhat as follows: Granted that through experience a registration has been effected in the neural organization of the individual, why is it

that in certain circumstances this registration fails to manifest itself when in other circumstances it can be proved to exist? Why, when given apparently equal opportunity to remember two events, do we remember one and forget the other? Let us review some of the theories that have been advanced to answer these questions.

1. *The mental trauma theory.*¹ According to the trauma theory, a memory is forgotten because it has, through some mental shock, become invested with a highly unpleasant affect. A number of the illustrations that we have given show this factor, which is the phenomenon we have called active forgetting. The girl² who could not recall why she was afraid of cats had experienced a shock in playing with a cat when she was a small child. The fear of white cats remained but the incident upon which this factor was based was forgotten. There is no doubt that this explanation does fit a number of cases of pathological forgetting but there are other cases where no definite mental trauma has been present. In the experimental production of amnesia by hypnosis (Article 135, 4b) the traumatic theory cannot be operative. After awaking from the hypnosis the boy forgot that he had sipped a glass of cold water, thinking it was milk, but there was no mental shock of any kind connected with this forgetting. In many other cases of forgetting no trauma can be found, and in some it can be shown that none has existed in connection with the forgotten events.

Consequently, we may accept the mental trauma theory as a factor in some cases but we should not attempt to apply it to every case of forgetting.

2. *The lack of interest theory.* Another explanation for forgetting is that we fail to recall because we lack interest in the forgotten experience. The reasons why this interest is lacking are variously stated. In some cases it is because the things learned never had any direct relation to the important interests of the subject. This type of thing may be

¹ This theory has been favored by Janet.

² Article 135, 4 (a).

illustrated by such prosaic things as language paradigms, mathematical formulae, or what we had for lunch a week ago last Thursday. Another statement of this theory is to the effect that the forgotten thing may once have had interest but because of later incidents and more advanced experiences the interest in the forgotten item has waned. In other words later interests flood more remote ones to the extent that they are irrecoverable.

This explanation no doubt holds for some memories but we have given a number of illustrations where the forgotten things had the profoundest interest for the individual. Simple cases of forgetting may be explained by a lack of interest but surely in the remarkable types that greet us in the field of pathology this is an insufficient explanation. Even in the loss of simple events there is accumulating evidence that the interest theory has been overworked.

3. *The repression theory.* This theory is stated by Jones¹ as follows:

“There exist in the mind certain inhibiting forces, which tend to exclude from consciousness all mental processes the presence of which would evoke there, either directly or through association, a feeling of unpleasantness.” Jones adds, “It is, of course, evident that the efficacy of such forces is at best a relative one, for otherwise consciousness would never experience unpleasantness; but the thesis is maintained that, whenever this experience occurs, it is only because the action of the forces in question has first been neutralized by other tendencies and motives in the mind.”

The psychoanalysts have gone to great labor to apply this principle to all cases of forgetting. If the possibility of such an inhibiting force can be demonstrated the application to specific instances certainly gives a plausible explanation. It accounts for many kinds of forgetting from simple lapses to the most profound type. In applying the theory to minor lapses, those who expound this view have at times been constrained to use ingenious logic to show that there was some

¹ Ernest Jones, “Papers on Psychoanalysis,” Baillière, Tindall & Cox, 1918, p. 104.

unpleasant element connected with the forgotten element and where they have searched diligently enough they have usually been able to find such an affective factor.

The greatest objections to this theory have been leveled at its possible nature. What is this mysterious force which keeps unpleasant things from entering consciousness? Freud calls it a "censor" which gives to it an anthropomorphic twang. No such meaning was probably intended by Freud. As Jones¹ says, Freud probably used this term as an "expression covering the sum total of repressing forces." But what are these repressing forces which are "distributed, in a streaming fashion, throughout the whole mind"? We believe that most of the misunderstanding has arisen from the unfortunate selection of terms by these writers to designate what they observed in mental life. If approached from another angle it can be shown that the "repressions" of the psychoanalysts can be explained as the inhibitions of the physiologists.

4. *The theory of facilitation and inhibition.* Sherrington² has emphasized the fact that the great function of the central nervous system is to coördinate and integrate the workings of the entire organism. He has shown that the different units of a personality do not merely work together, they become united so intimately that they are a unit. In order that complete harmony may prevail it is essential that the parts of this unified organism work in different combinations at different times. When we raise an arm it is essential that certain muscles relax as the others contract. So it is with all our activity. One segment at one time plays an active rôle and at another passive one.

But the course of an organism is not always a simple, well-directed one. A person may receive stimuli to do a number of contradictory things at the same time. The actual response is the result of a balance between these varying stimuli. Some of them work together and some of them are of an opposing nature. If two stimuli naturally lead to the

¹ *Loc. cit.*, p. 105.

² "The Integrative Action of the Nervous System," Yale, 1906.

same end they are said to facilitate each other and if they are antagonistic they inhibit each other. Conduct, then, is a balance between facilitating and inhibiting influences.

Let us illustrate facilitation. When one hears a loud sound he tends to jump in self-protection. This is a native reaction. Again, if one touches a hot article he naturally starts, and jerks his hand away. Suppose, just as one touches a hot object some one shouts in his ear. The two stimuli will reinforce each other and he will pull back his hand with greater vigor than he would have done had the pain stimulus not been reinforced by the auditory stimulus.

Now let us illustrate the operation of inhibition. To indicate its elementary nature we shall show how it can be used on a spinal dog.¹ A spinal dog will support his body with his legs. If he is stimulated by an irritation on one side he will raise the paw on that side and scratch. If the other side is stimulated he will raise the other paw. If both sides are irritated at the same time the stimuli will inhibit each other. He cannot support his body and raise both hind legs at the same time. What happens? The dog compromises between the two acts. He may not react with either leg for a time, but finally will probably raise one leg or the other, or he may raise the two alternately.

Now, in this simple illustration of inhibition with the spinal dog we have a typical picture of repression. With one stimulus the leg was free to act. The second stimulus inhibited or repressed the free response of the first leg. In this case we do not need to invoke the operation of any "censor" or any "streaming inhibition." The two stimuli antagonized each other and the result had to be a compromise. If one stimulus had been much stronger the weak one would have been entirely repressed as far as any evident movement was concerned. Because they were nearly balanced we found the result to be a compromise.

¹ A spinal dog is one in which the spinal cord has been severed so that all responses are reflex in nature and released from the influence of the brain.

We believe that this is the mechanism of repression in mental life. All sorts of mental processes are proceeding simultaneously. Some of them are harmonious and coöperate in the final reaction. Some of them are naturally antagonistic, they simply cannot function together. In these latter instances we have a balance and resulting compromise or we have one factor favored and the other inhibited.

5. *Inhibitions the result of conditioned reflexes.* Facilitation and inhibitions may be used as an explanation of how competing elements operate in memory, but they do not explain how certain ones come to be favored. How do the repressed or inhibited memories happen to meet with such antagonism from the other phases of the subject's mental life? It is because of the previous experiences of the individual. If an experience has had unsatisfactory results for the individual the permanent trace of that experience has become connected with the unpleasant affect. The way in which this connection takes place has been explained by the mechanism of the conditioned reflex.¹ If a person has his hand on a piece of metal and it is shocked by an electric current, he will pull it away. If at the same time that he gets the shock he always hears a specific sound he will become "conditioned" so that he will pull his hand from the plate when he hears the sound, even if no shock has been received. By experience the two have become related so that the sound has the same effect as the electric shock originally had. The building up of inhibitions against memories can be explained in this same way. There is no spreading or streaming of inhibitions; they have been specifically directed by previous experiences.

If this explanation is accepted it can be understood how a trauma may build up a conditioned reaction and cause forgetting. The lack of interest theory may also be embodied in this explanation in that uninteresting memories have little stamina to overcome the strength of others of greater experiential importance. The repression theory is seen as an ob-

¹ William H. Burnham, "The Significance of the Conditioned Reflex in Mental Hygiene," *Mental Hygiene*, 1921, 4, pp. 673-706.

jective expression in anthropomorphic terminology of a physiological process broad enough to explain all cases of functional forgetting. Functional forgetting, in brief, comes about because the forgotten incidents have through experience become affectively or otherwise conditioned to such an extent that they are inhibited by other dominant mental processes.

XXXIII. EXAMINATION OF MEMORY

Some very definite memory tests have been standardized that may easily be applied. Such tests do not bring out all the facts about memory that we wish to know, and so must be supplemented by a general examination into some more general phases of recall than the tests involve.

141. Memory span. By memory span is meant the amount of material that a person can immediately reproduce after one hearing. The two types of material most commonly used are digits and sentences. They have been standardized¹ according to the average of the individual who is able to reproduce a given amount.

1. *Digits used to measure immediate memory.* In giving the digit test begin with the shortest series (three digits) and give the three of that series, the subject having an opportunity to repeat after each one of the series. Then go on with the four digits, etc. The memory span is considered as the greatest number of digits that he can repeat after one repetition. If one of the three in any level is correctly reproduced he is given credit for that level. The digits used are given below with the average age of the persons who can reproduce that number.

<i>Three years</i>	<i>Four years</i>	<i>Seven years</i>
641	4739	31759
352	2854	42835
837	7261	98176
<i>Ten years</i>	<i>Fourteen years</i>	<i>Eighteen years</i>
374859	2183439	72534896
521746	9728475	49853762
471952	4162593	83795482

¹ The digits and sentences here given are part of the Stanford revision of the Binet-Simon test.

2. *Sentences used to measure immediate memory.* The same general procedure is used with sentences as with digits.

Third year. One sentence of the three must be given correctly.

I have a little dog.

The dog runs after the cat.

In summer the sun is hot.

Fourth year. One of the three must be given correctly, or two with one error each.

The boy's name is John. He is a very good boy.

When the train passes you will hear the whistle blow.

We are going to have a good time in the country.

Sixth year. One of the three must be given correctly, or two with one error each.

We are having a fine time. We found a little mouse in the trap.

Walter had a fine time on his vacation. He went fishing every day.

We will go out for a long walk. Please give me my pretty straw hat.

Tenth year. One must be given correctly, or two with one error each.

The apple tree makes a cool pleasant shade on the ground where the children are playing.

It is nearly half-past one o'clock; the house is very quiet and the cat has gone to sleep.

In summer the days are very warm and fine; in winter it snows and I am cold.

Sixteenth year. One must be given absolutely correctly.

Walter likes very much to go on visits to his grandmother, because she always tells him many funny stories.

Yesterday I saw a pretty little dog in the street. It had curly brown hair, short legs, and a long tail.

142. Memory for recent events. This can be determined by questioning the subject about things which have happened recently that he should be able to recall. Questions such as the following should be asked: What time did you get up this morning? What did you have for breakfast? What

have you been doing today? Have you read the papers lately? Can you tell me anything that you read? Can you tell me anything that is happening that is of importance?

To determine orientation for time ask: What day of the week is this? What month? What day of the month? What year? When did you come here? How long have you been here? Is this morning or afternoon?

To determine orientation for place ask: Where are you now? How did you get here? Where were you before you came here? What city is this? What state? Point to the north.

To determine orientation for person ask: Did any one come with you when you came here? Who? Have any of your friends been to see you recently? Who? Do you know any of the people around here? Do you know their names?

143. Memory for remote events. Ask questions similar to the following: How old are you? Where were you born? Where did you go to school? What kind of school was it? Describe it to me. What kind of house did you live in? Where was it located? What was your mother's name before she was married? How many brothers and sisters have you? What are their names? Are they all living? If so, what are they doing? What work have you done? Are you married? Have you any children? If so, what are their names?

144. Peculiarities of memory. Some of the peculiarities of memory, the amnesias of the sort we have described, will not be apparent if one adheres too literally to routine memory tests. The examiner should be on the lookout for any inconsistencies in the story that the patient tells. He should watch for unusual blockings in the story or for any emotional reactions. If the patient tends to avoid narrating anything about a particular period of his life or some particular phase this should be followed by tactful questioning until the significance of such peculiarities is discovered.

145. Devices for recovering lost memories. In discussing experimental recall we describe the methods of automatic writing, crystal gazing, and hypnosis. Needless to say such

methods are not practicable for ordinary examinations. Many subjects will not coöperate in them and it requires time and patience to make them effective. Consequently it is necessary to have some other means to attempt to get at memories that do not come forth readily. Two such methods will be cited.

1. *Conversational free association.* The best method is conversational free association. By this is meant getting the patient to talk freely by making him feel at home, comfortable and relaxed. This will not happen if he feels that he is being grilled. More is secured by letting him ramble from one thing to another without interruption. The examiner simply shows sufficient interest to keep the patient going. When this method is pursued memories are much more likely to come to the surface than when the patient sits tense and strained trying to recall. This is an extension of the free association method described in the preceding chapter.

2. *The guessing device.* This device consists in getting the patient to recall a certain experience under the pretense that he is merely guessing. It will be found that such guesses are correct in a surprising number of instances. An illustration is given by Jones:¹

“Q. You say you can’t remember whether you are married or not. Now, suppose you had to guess whether you are or not, which would you say?

A. Well, if you put it that way, I should say I was married and have a baby, but I can’t remember anything about a wife or a baby.

Q. Not the wife’s name?

A. Not at all.

Q. What sort of name would you give her, if you had to fit her with one?

A. (Pause) I should think Annie; that comes easiest.

Q. And the baby?

A. Katie. (The correctness of both these answers was afterwards confirmed.)

Q. And your own name?

¹ Ernest Jones, “Papers on Psychoanalysis,” Baillière, Tindall & Cox, p. 428.

A. Whenever I think about my own name, the name Bert Wilson comes to my mind, but I am sure it is not mine. I can't remember my own name at all, except that I believe they call me Bert."

This last answer was correct. The patient's name was Richard Albert Williams and he was called Bert.

IMPORTANT TECHNICAL WORDS

amentia. An inherent lack of intellectual ability.

amnesia. Memory loss.

anthropomorphism. The ascription of human characteristics to things not human.

apathy. Emotional indifference.

conditioned reflex. A reflex which has been so modified by individual experience that it may be elicited by a stimulus which ordinarily would not give rise to it.

defense mechanism. A mental procedure which is adopted by an individual to rid himself of some undesirable mental conflict.

dementia. An acquired lack of intellectual ability.

facilitation. Increased ease in the performance of a mental process.

hedonism. The doctrine that pleasure is the chief good in life.

hypermnnesia. Exaggerated memory.

inhibition. Restraint imposed upon some mental process.

memory. Any permanent modification of our neural organization.

memory-span. The amount of material that a person can immediately reproduce after one impression.

nonsense syllables. Meaningless syllables used to test rote memory.

orientation. The adequate comprehension of one's status in relation to the environment.

recall. The conscious reinstatement of a past experience.

recognition. A perception of identity, not necessitating recall of incidents, establishing the feeling of familiarity.

repression. A check upon the free operation of a mental process.

retentivity. The capacity for retaining the effects of experiences.

trauma. An injury.

PROJECTS FOR FURTHER STUDY

1. Select from your own experience a number of instances where you forgot an important event. Try to determine by investigating all the affective elements and associations why you forgot each incident. Do they all, when adequately ex-

- plained, come under one type of explanatory theory? Show how they would have to be interpreted by each.
2. You have probably had the following experience. You have tried to recall something and after much futile effort have abandoned the task. Then some time later, when you were thinking of something else, the thing "popped" into your head. How do you explain such a thing?
 3. The next time you cannot recall a thing give up trying to recall, sit back and either close your eyes or gaze at a fixed point, letting your mind wander where it will. In many instances this will permit the thing to be recalled. What relation does such a performance have to the spontaneous recall in Project 2?
 4. Examine a subject with a marked memory disorder and describe the characteristics of his defect.
 5. Select some event which occurred some years ago and which has been recorded so that the facts may be verified. Try to write down all the incidents as they occurred, and then check with the written record. Can you account for the discrepancies?

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 Pierre Janet, "The Mental State of Hystericals," Putnam, Chap. 2.
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 Morton Prince, "The Unconscious," Macmillan, Chaps. 1 to 5.

CHAPTER VII

EMOTIONAL DISORDERS

A brief description of the way in which the autonomic nervous system functions will supply a background upon which we may build our study of abnormalities of the emotional life. We shall study emotional disorders by describing the extremes that we find in each of three groups; namely, joy and sorrow, anger and fear, and love and hate. This descriptive study will be followed by a sketch of the methods that have been used in the examination of emotions.

146. Illustration of an abnormal fear. "The patient was a young man, suffering from a mild neurosis. . . . Whenever he stood at the brink of a height he became afflicted with slight manifestations of morbid anxiety (dread, nervousness, giddiness, palpitation, tachycardia,¹ sweating, etc.) He experienced a definite fear of falling, or, to be more precise, a fear lest he might jump over, and would hastily draw back to a safer position or clutch on to any fixed object. . . . The symptom was always most severe when the edge overlooked deep water, such as from a quay or high deck aboard ship. The vicinity of any other man when he was near a dangerous edge made him afraid that the latter would throw him over; although he realized, of course, the unreasonableness of this fear, it caused such discomfort that it cost him a very considerable effort to walk or stand with another man in a position of this sort. The latter fear applied only to other men, not to women.

"Investigation of the patient's history brought to light the following relevant facts: He had had the phobia as long as he could remember, though it varied considerably in intensity from time to time. He recalled, with no special difficulty and merely

¹ *Tachycardia*, excessively rapid heart-beat.

by carefully searching his memory, a series of occurrences that deserve the name of psychical trauma,¹ and which seemed to have a direct bearing on the present symptoms inasmuch as they concerned situations that closely resembled those under which the symptom was manifested. Two of these were much more serious than the others, and were also the earliest in time. The memories² will be narrated in order, the first being of the most recent occurrence.

"This referred to an incident that occurred when the patient was ten years old. He was taken to a village concert by a grown-up friend, who, because the hall was crowded, made him sit on a window ledge some six feet above the stairs. He feared he might fall off, and, after he had endured the situation for about a half hour his fear became stronger than his embarrassment, and he asked his friend to lift him down. Clearly, however, the incident contained not so much a serious trauma in itself, as an occasion that was well adapted to bring the phobia into prominent evidence.

"The year previous to this, his father had taken him up in a tower about 200 feet high. When he reached the circular projecting balcony at the top, which though protected by a railing was quite open, his father laughed at his fears, and forced him to walk around the tower on the balcony. Completely terrified, he accomplished this, but the memory was still disagreeable.

"The third incident was one which had occurred when he was seven years old. At the end of the school playground was a wall, fifteen or twenty feet high, that divided it from lower ground on the side of the hill. One day a school-teacher (a young man) lifted him over this wall as a practical joke, and suspended him upside down by his ankles, playfully threatening all the while to let him drop. As may be imagined, this had caused in the boy a fit of abject terror, though it is worthy of note that it disappeared soon enough after he was safely back in the playground.

"The last of the series, and the only one that showed any dimness in the memory of it, dated back to the age of three.³ The patient seems to have been a fretful child, much given to crying, and on one occasion, when he had probably been more than usually troublesome, a visitor who was staying in the house, and whom the child had good reason to dread, picked him up in anger, car-

¹ *Psychical traumata* are mental injuries of a violent type.

² These memories throw light on the development of the fear.

³ All the dates could be definitely determined by extrinsic references, which need not be here detailed.

ried him outside, and held him over a high cask of water, into which he threatened to drop him unless he became quiet." ¹

Such illustrations as this show how an apparently irrational fear may be traced to a series of experiences which provide a rational explanation of the phobia.

XXXIV. THE AUTONOMIC NERVOUS SYSTEM

The researches of Gaskell ² and Langley, followed by such workers as Cannon ³ and Crile, ⁴ have shown that the emotional life is centered in the autonomic nervous system. Since this part of our nervous system operates on quite different principles from the central nervous system, it is necessary to know in a general way something about the differences between the two as well as their interrelations, if we mean to understand emotional disorders.

147. The pattern of the autonomic reflex. It is well first to get clearly in mind the difference between a skeletal reflex and an autonomic reflex. The two are illustrated in Figure 16. On the left side of the drawing is shown the typical skeletal reflex arc. The sensory impulse comes in through the sensory neurone to the synapse in the dorsal (rear) horn of the spinal column. Here it makes connection with an association neurone which carries it to the synapse in the ventral (front) horn of the spinal cord. The motor neurone then carries the impulse out to a motor organ or gland.

In the autonomic reflex the sensory impulse comes in the same manner to the synapse in the spinal column. Here it makes connection with a fiber which carries the impulse to the autonomic ganglion lying outside the spinal cord. From this ganglion the impulse is conducted to some smooth muscle or combination of smooth muscles in the body. The difference may be regarded as the substitution of the autonomic ganglion connection for the association connection.

¹ Ernest Jones, "Papers on Psychoanalysis," Baillière, Tindall and Cox, 1918, pp. 508-510.

² "The Involuntary Nervous System," Longmans, 1920.

³ "Bodily Changes in Pain, Hunger, Fear and Rage," Appleton, 1920.

⁴ "The Origin and Nature of the Emotions," Saunders, 1915.

Another difference between the two reflexes lies in the fact that in the skeletal reflex the impulses go only to striped muscles, while in the autonomic reflex the efferent impulses go only to smooth muscles. Finally, when a striped muscle, that is a skeletal muscle, is stimulated sensory receptors in the muscle carry other impulses back to the nerve centers in the cord. In the autonomic system all the impulses are efferent, that is, they go *from* the center out to the smooth muscles.

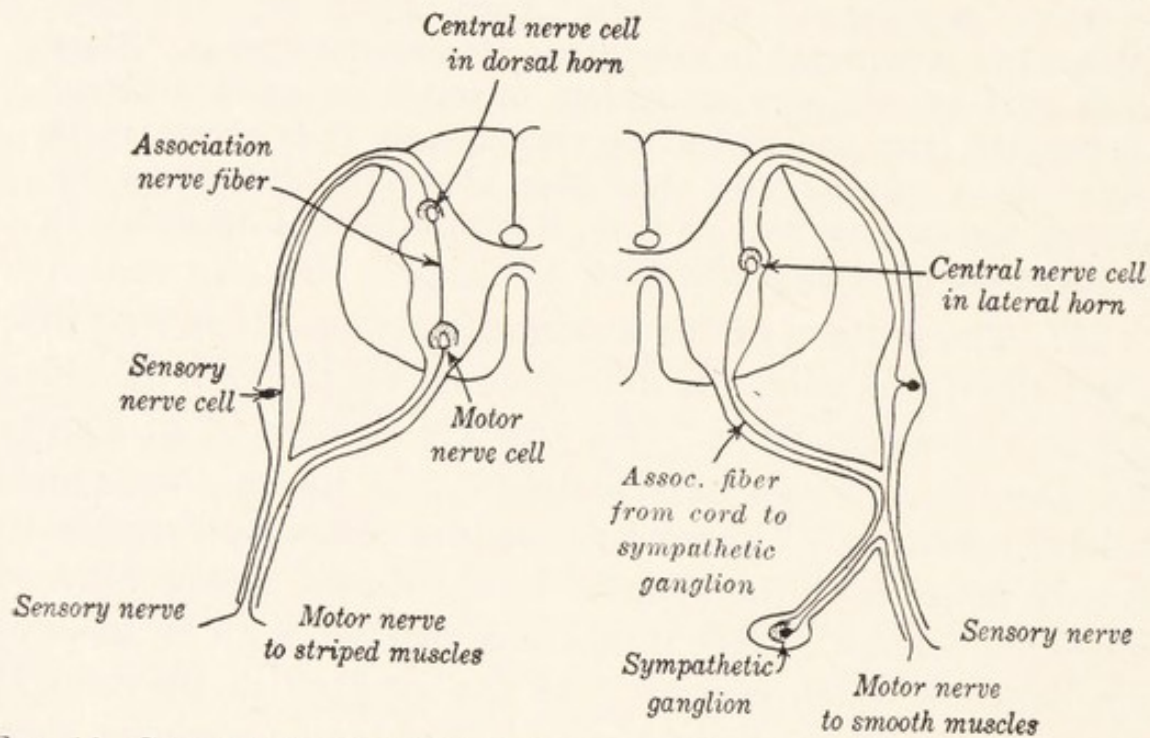


FIG. 16. SCHEMATIC ILLUSTRATION OF THE ORDINARY SKELETAL REFLEX (LEFT) AND THE AUTONOMIC REFLEX (RIGHT)

In the ordinary reflex the impulse comes through the sensory fiber to the center in the dorsal (rear) part of the cord, is transmitted by means of an association fiber to a motor cell and is carried out along the motor nerve to some muscle. In the autonomic reflex, sensory impulses come in through the dorsal (rear) horn to the lateral horn of the gray matter of the cord. An association fiber carries the impulse from here to the sympathetic ganglion where it makes connection with motor nerves which go to the smooth muscles of the body.

There are no afferent stimuli from the smooth muscles to the central nervous system.

148. The organization of the autonomic nervous system. In studying the operation of the autonomic nervous system it must be clearly recognized that one of its reflexes is just as much of an abstraction as is an ordinary reflex, devised

to enable us to understand the principles upon which the whole mechanism operates. In actual life a large number of such units operate together in a pattern combination. The nature of the autonomic patterns is quite different from the patterns in the central nervous system. Their general organization can be understood by a study of the whole autonomic structure. This is schematically illustrated in Figure 17.

The centers of the autonomic nervous system are located in ganglia which are wholly outside the spinal cord. In the trunk region these lie along either side of the spinal cord. In the head and pelvic region the ganglia are located near the organs which they control, sometimes wholly within the organ that they innervate. This latter is the case in the stomach and heart. The connections through these ganglia are so arranged that a number of organs widely distributed through the body are innervated by fibers originating in the same ganglia. The function of this plan is apparent. These diverse organs may be controlled from one center and hence made to operate harmoniously. Such unified control would not be so easily accomplished were a number of interposing mechanisms inserted and a separate control maintained for each organ.

There is a close connection by means of association fibers between the autonomic and the central nervous system. They are by no means functionally separate. A proper conception of the functions of the autonomic system depends upon keeping the fact of the interdependence of the autonomic and central nervous systems in mind.

149. Segmental division of the autonomic system. It is convenient for us to divide the autonomic nervous system into three sections. These divisions are provided as follows: Where the nerves pass out from the spinal cord to the arms and legs there is an interruption of the autonomic ganglia, thus providing natural breaks in the organization of the latter system. The part above the arms is called the cranial segment, that between the arms and legs is called the sympathetic or thoracico-lumbar segment, and the lower part is called

the sacral segment. Let us examine the function of these segments.

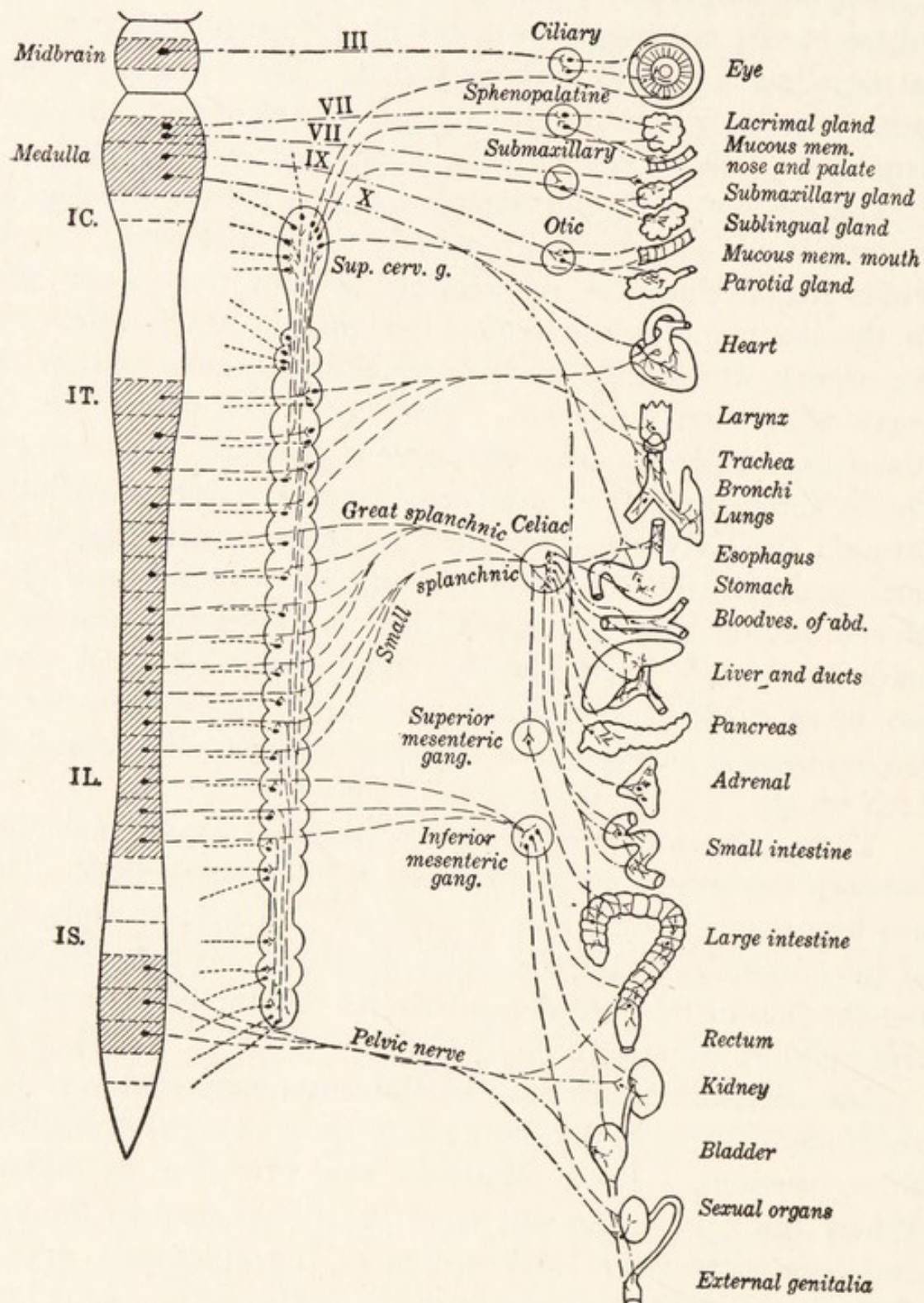


FIG. 17.

Schematic illustration of the autonomic nervous system. (From Gray's "Anatomy," Longmans.)

1. *Influence of different segments on specific organs.* The vast number of organs that are controlled by this system is illustrated in Figure 17. Fibers from the cranial segment go to the ciliary muscles of the eye, to the lacrimal (tear) glands, the salivary glands, the heart, lungs, stomach, the liver, the pancreas, and intestines. Fibers from the pelvic region go to the intestines, rectum, kidney, bladder, and sex organs. Those from the sympathetic segment go to the whole range. Where fibers from two segments of the autonomic system go to the same organ their effect is antagonistic. Where the cranial innervation causes excitation of an organ the sympathetic innervation of the same organ causes inhibition.¹

¹ This antagonistic action is shown in detail below:

<i>Effect of Cranial stimulation</i>	<i>Organ Involved</i>	<i>Effect of Sympathetic Stimulation</i>
Contraction	Pupil	Dilation
Secretion inhibited	Tear glands	Secretion stimulated
Secretion stimulated	Salivary glands	Secretion inhibited
Inhibited — hair lies flat	Smooth muscles around hair	Stimulated — hair stands up
Inhibited	Sweat glands	Stimulated
Beats more slowly	Heart	Beats more rapidly
Breathing slower	Lungs	Breathing faster
Inhibited	Larynx	Stimulated
Tonic condition maintained	Alimentary tract	Activity inhibited
Inhibited	Adrenals	Stimulated
<i>Effect of Sacral Stimulation</i>	<i>Organ Involved</i>	<i>Effect of Sympathetic Stimulation</i>
Contraction, with retention of excreta	Rectum	May cause inhibition upon violent stimulation, thus releasing excreta.
Contraction	Colon	Ditto
Contraction	Bladder	Ditto
Tonic condition	Sphincter muscle	May cause inhibition in case of great excitement
No effect	Internal sex organs	Stimulation
Engorgement of blood vessels	External genitalia	Constriction of blood vessels

2. *Antagonistic effect of segmental innervation.* The function of the three segments may be stated somewhat as follows: The cranial segment is a conserver of bodily resources. It stimulates the secretion of saliva and gastric juice, it keeps the whole alimentary tract in a condition of tonus so that it can perform its nutritive functions to the best advantage. At the same time it inhibits those reactions which customarily accompany excitement. It keeps the heart slowed to a proper pace, inhibits excessive respiration, inhibits the action of the adrenal glands, whose secretion is a stimulant to violent activity.

The sacral segment controls the contraction of the rectum, colon and bladder. These are in the nature of a simple reaction initiated by the stretching of the tonically contracted viscera (internal organs). In addition to these excrementary functions, the *nervi erigentes*, a separate part of the sacral system causes the engorgement of the external genitalia. This is likewise probably wholly a reflex function.

The sympathetic division is antagonistic to the function of both the sacral and cranial segments.¹ Its function is largely that of preparing the whole organism for an emergency. The digestive, excretory, and reproductive functions are inhibited and the body is prepared for activity. This is accomplished by the stimulation of those organs which participate principally in violent activity, namely the heart and lungs. The pupils dilate so that our most important distance receptors are prepared for any stimulus. In animals the hairs, feeling receptors, are made to stand erect. The blood vessels are engorged and the organism is ready to run or fight as the case may warrant. In addition to this, adrenal glands² are stimulated and pour out their secretion. This in turn furnishes another stimulant to violent activity. Cannon found that an animal could be stimulated to activity by

¹ According to Cannon.

² The adrenal glands, or suprarenal glands, as they are often called, are located above, or in front of, the kidneys or renal glands.

injecting adrenin (the active substance of this gland) into its blood stream.

What we have presented is Cannon's analysis of the function of the different segments of the autonomic system. While this has not been universally accepted it probably is nearer the truth than anything thus far presented. To sum up let us state briefly the most important considerations:

(1) "It is highly probable that the sympathetic division, because arranged for diffuse discharge, is likely to be brought into activity as a whole, whereas the sacral and cranial divisions, arranged for particular action on separate organs, may operate in parts."

(2) "Because antagonisms exist between the middle and either end division of the autonomic, affective states may be classified according to their expression in the mid- or an end-division and these states would be, like the nerves, antagonistic in character."

(3) Since the adrenal glands are innervated by autonomic fibers of the mid-division, and since adrenal secretion stimulates the same activities that are stimulated nervously by this division, it is possible that disturbances in the realm of the sympathetic, although initiated by nervous discharge, are automatically augmented and prolonged through chemical effects of the adrenal secretion.¹ In the blood the adrenal secretion is changed into blood sugar, thus supplying energy for the increased activity precipitated by the emotional excitement.

XXXV. THE FORMATION OF EMOTIONAL PATTERNS

The stimulation of the autonomic system is through the central nervous system. A stimulus coming either from the external receptors or from the association centers carries its impulse over into the autonomic, and certain patterns of response result which we have been accustomed to characterize as emotional reactions. The kind of emotion aroused by any specific

¹ Walter B. Cannon, "Bodily Changes in Pain, Hunger, Fear and Rage," Appleton, 1920.

stimulus is determined by (1) innate emotional patterns, (2) learned emotional reactions, and (3) spreading of emotional reactions.

150. Innate emotional patterns. Of utmost importance for the study of abnormal as well as normal psychology is the conclusion that most investigators in this field have reached, namely that very few specific emotional patterns exist at birth. We have the organization to acquire specific emotional reactions very quickly, but experience is required for their establishment. Innately we are equipped so that we are certain to manifest emotional reactions of some sort, but in what circumstances and in what manner they will manifest themselves are the product of our training. The following simple patterns may be found in young infants:

1. *Response to loud sounds.* A new-born baby will show increased respiration, increased heart beat, as well as violent skeletal reactions to a loud sound. This is pretty good evidence that a reaction pattern is existent at birth which enables such an auditory stimulus to cause such a response of the sympathetic segment.

2. *Rapid movement through space.* A stimulation of the sympathetic segment also results from rapid movement through space. This may be produced most easily by suddenly removing the support from under the child.

3. *Extreme restraint.* If the infant's arms and legs are tightly held so that he cannot move he will give an affective reaction similar to the anger of adults. He will breathe faster, struggle, and yell.

4. *An intense pain stimulus.* A child is not so sensitive to pain as an adult but if an acute pain is experienced he will show reactions indicative of an autonomic involvement.

5. *Hunger.* The most recent evidence is to the effect that hunger is caused by contractions of the stomach and intestines, a condition which exists in times of lack of food as well as under other artificial conditions. Such a condition of contraction will cause an affective response on the part of the child.

All the above conditions cause an active response on the part of the sympathetic segment. When there is nothing to cause such sympathetic excitement the child will show a tendency to calmness, due probably to the cranial segment inhibiting the sympathetic. His breathing will slow down, his heart will beat somewhat more slowly, he relaxes and goes off to sleep. There is no doubt that certain stimuli will add to this condition of calmness. If he is in a comfortable bed or in his mother's arms, thus getting pleasant tactile impressions, if the sounds that greet his ear are mild, if his stomach is full, if he is free to move as he will; then the sympathetic system ceases to function actively. Watson has called this an innate love response, but it is quite likely that the love is a conditioned reaction, a secondary response to the thing that happens to conduce to his comfort, whether it be pillow, mother, or what not. If a child gains the habit of being soothed off to sleep by a soft shawl, a doll in his hands, or a pillow against his cheek, he will fail to calm down until his favored object is at hand. It is when the soothing thing is a person that this reaction becomes a response to personal attention. The reason that this is so often the case is because our comfort is usually determined by personal care.

151. The learning of emotional reactions. It is quite likely that the simplest activities have an emotional involvement. The relationship of the autonomic system to the central system is so close that it is hard to conceive how the two could well be separated even in the simplest neural activity. If this is clearly recognized it will rid us of the notion that intellectual and emotional activity are entities. It is not a question of central activity over against autonomic activity, but whether in the autonomic reactions the cranial, sympathetic or sacral segments are dominant.

While the patterns of emotional reactions are simple at birth, they soon become complex from the experiences that the child undergoes. For example, his fear reaction to a loud sound may become connected with other impressions. If he sees a bright light at the same time that he hears the loud

sound he learns to give the same affective reaction to the light that he did to the sound. It is probably in this manner that we become afraid of lightning. If the pleasurable response that comes from stroking a cat's fur is accompanied by a scratch from the cat's claw the original response is modified and a fear reaction replaces the pleasurable one. If, when in the calming environment of the dark, he is hurt in any way he is likely to connect pain with the dark and show an emotional response whenever it becomes dark. In fact, it is quite likely that the autonomic patterns comprise a large part of the child's early learning. It is this emotional conditioning that gives the child the personality traits that he begins to manifest so early.

152. The spreading of emotional reactions. Another significant thing about the formation of emotional patterns is the fact that as the stimulus giving rise to the autonomic stimulation becomes more intense, more and more of the autonomic system becomes involved. In other words, the emotional reaction beginning with a minor response may lead to a widespread emotional reaction. For example, suppose you hold a child so that he cannot move. His first reaction is not very intense, but let the restraint continue and he becomes violent in his struggle to free himself. If continued too long, he may go into a convulsion of rage. His face reddens, he screams louder and louder, he uses all the strength he possesses, and at the same time his digestive apparatus may become so disturbed that he will vomit. This will establish a pattern which may result in an extreme response to the slightest restraint on a future occasion. A reference to the organization of the central segment of the autonomic nervous system will make clear how this can be. From a few centers branches radiate to widespread areas which makes possible greater and greater responses as long as a stimulation of these centers is continued.

The intimate connection of emotional reactions to all phases of the personality indicates the tremendous importance that emotions play in the total personality integration. Any attempt to separate emotional from intellectual and motor ac-

tivity is destined to failure because it does violence to the facts. It is much more wholesome to recognize that our feeling life plays a dominant rôle than it is to build an artificial scheme of personality in which feelings are ignored or despised. There is no doubt that many of the disorders that we find are the direct result of a fear of our emotions, a fear that is engendered by an ignorance of the laws of emotional life. A more wholesome attitude is to admit frankly the vital importance of emotional life, to learn the laws which govern emotional education, and then to follow these laws in our emotional training. If our emotions get us into trouble it is because we do not understand them. Such trouble is not avoided by the determination to deny their existence. If a child has queer emotional reactions he needs training, not reproaches. Furthermore, what we know about emotions indicates that emotional training does not consist of inhibiting them, but of changing the undesirable pattern into a more desirable one.

XXXVI. JOY AND DEPRESSION

In the present state of our knowledge, it is not possible to relate the different emotions that we may observe in an individual to specific parts of the autonomic system, any more than it is possible to localize a reasoning process on a particular convolution of the cortex of the brain. A knowledge of the general mechanism of the autonomic system should, nevertheless, help us to understand how emotional abnormalities develop and function in this field. With the above brief outline as a foundation upon which to build, we shall take up the dominant emotions, and study the most significant abnormalities that they manifest. The emotions that we shall study are joy and sorrow, fear and anger, and love and hate.

153. Excessive joy. When the organism is functioning properly, when there is no pain or discomfort, when stimuli are readily and satisfactorily responded to, the individual has a general feeling of well-being. From what we have seen in the mechanism of the autonomic nervous system, we can assume that under such conditions the smooth muscles are work-

ing in harmony; the heart and lungs are not over stimulated, the alimentary tract is in a normal state of tonus and the skeletal musculature is receiving just enough stimulation to meet the present requirements. Joy and sorrow are the two emotions that we experience when we swing in either direction from this hypothetical state of balance. The normal person is continually shifting in this respect and his life is a succession of joys and sorrows. When the swings are extreme we have elation or depression.

1. *Elation*. Elation may be regarded as a normal response when it seems to the observer to be in keeping with the environmental situation in which the subject happens to be placed. If we have been struggling along for a living we may be in a fair emotional balance. Should the news come to us that we have inherited a vast fortune the balance is destroyed and we become extremely happy, at least for the time being. Soon other things come in to balance up things in spite of our good fortune and we return to a medium condition between joy and sorrow. Should a person go to the heights of elation with no apparent cause or remain in this state for an unduly long period it becomes an abnormal condition.

It is often difficult to decide whether an elation is normal or not. Whether the elation is the result of circumstances or whether we feel elated and then try to find a reason is not apparent in all cases. We have shown in an earlier chapter how a person can get a delusion to explain an emotional condition. Evidence points to the conclusion that our mood may in some instances be the result of physiological conditions and the cause that the subject brings forth is often a superficial attempt to explain the feeling. Regardless of the cause, the normal man is the one who responds to an emotional stimulus and then gets over the emotion. The abnormal one is the one who responds either inadequately to the stimulus or if he does respond goes to an extreme and then fails to get over it. Hence the only way we can judge whether an elation (or any other extreme emotional condition) is normal is

whether it appears rational. Since reasons may be fictitious, the difficulty of determining normality in this field is apparent.

2. *Euphoria*. The extreme of senseless elation is called euphoria. In this condition the patient is happy in circumstances that are ill calculated to make him so. Having eaten a meager meal he will say that it was the finest feast one ever tasted. With uproarious laughter he will tell you that the hospital is the finest hotel in the world. He is so filled with joy that he is simply unable to contain himself. Usually such a condition indicates intellectual deterioration. In other words the balancing influence of the cranial segment of the autonomic does not function. This segment should have an inhibitory influence on the sympathetic segment. When this fails to function properly the sympathetic segment runs riot.

154. Indifference. Indifferent behavior may be the result of several diverse conditions. It may be the result of satiety, the person being worn out as an aftermath of previous emotional experiences. One may have had some bitter experience and refuse to respond to the present as a means of defense against future disappointments. The teaching that emotions are degrading may have been taken so seriously that the subject assumes an air of artificial indifference. Or, the indifference may be the behavior of a person who is so lost in himself that he ignores ordinary environmental stimulation.

Far from being a sign of stability, emotional indifference is recognized by those who study unusual individuals as a symptom of serious import. It signifies pronounced inhibition. If a person has a queer emotional reaction it may be trained into a normal pattern. If the person is so inhibited that he makes no response, the inhibition must be overcome before reëducation can be accomplished.

155. Depression. Depression is the opposite of exaltation. When depressed the person has a feeling of unhappiness. When the circumstances seem to warrant such a feeling the condition is regarded as normal. When the feeling goes far beyond the condition of the individual or his surroundings it becomes morbid. Such persons will give themselves over

entirely to their depressed mood. They will sit for hours in the most profound dejection. If they can be made to express themselves they will tell you that they are most miserable, that they have nothing to live for, and wish to die. They may put their affects into action and commit suicide. Some persons actually enjoy their depressions, and others use such conduct to secure sympathy or to gain some end.

156. Swings of emotional exaltation and depression.

While on the surface these persons, whether exalted or depressed, seem to have no rational cause for their affective extremes it is usually found upon complete investigation that they do have a background for their emotional attitudes. Sometimes the condition is aggravated by a physiological cause. Toxic conditions, extreme exhaustion, or similar disturbances may contribute. But usually even with these as contributors, there may be found in the mental life of the patient an accumulation of circumstances which becomes too powerful, and the individual succumbs to its influence.

This accumulation results when normal immediate response to an emotional situation is inhibited. The individual gets no outlet until finally the response, when it does come, is out of proportion to the immediate precipitating factor. This is well illustrated in the following case: A girl who had built many visions of her married life learned at the age of seventeen, when she became the wife of a man ill suited to her, that her dreams would not be realized. She reacted quite violently to this situation and in a short time secured a divorce. Financial difficulties made her new position rather difficult and so she decided that she would cold-bloodedly marry a man in order to obtain financial support. She decided that she could restrain all her emotional life and live a matter-of-fact existence. Consequently, although she was extremely unhappy with this second husband she showed not the slightest sign of it until, after about three years of such a life, she suddenly went into a violent spell of elation (known as mania). She became vivacious and happy, quite the opposite of what she had been during her three unhappy years.

After a period of this abnormal joy she recovered and was able to talk rationally about the whole matter. She returned to her home, restrained again every expression of emotion for another period of three years and then went into another spell of elation. Her periods of wild euphoria may be regarded as the breaking-out of all her pent-up feelings. She restrained them as long as she could and when they got beyond her she would take respite in this flight from reality.

What we see in such a case is an increasingly violent condition of antagonism between two patterns of the autonomic nervous system, which the patient subjectively experiences as a pent-up emotion. When the tension between these two becomes too strong one side finally breaks down and the other gets complete control of the situation for the time being. Exaltation and depression, while apparently quite diverse in character, are seen to be very closely related reactions.

XXXVII. ANGER AND FEAR

Anger and fear, like joy and sorrow, we shall find, are perfectly normal reactions. It is only when they are out of proportion to the environmental conditions, or when one or the other becomes a pernicious habit, that they can be considered abnormal.

157. Anger. The stimulus to anger and the result of such stimulation is a preparation of the organism through the sympathetic segment of the autonomic nervous system for a fighting reaction. The mechanism to anger is a very strong and vital part of every human being and it is an abnormal individual who cannot be aroused to anger by an adequate stimulus. Training in this field should be directed toward providing an adequate and social outlet for these impulses rather than a futile attempt to repress them. There are several forms of abnormality of the response of anger.

1. *Apathy.* The apathetic individual is the one who does not respond to a stimulus of an emotional nature. You cannot make him angry, not because he is afraid, but because he does not care. You may maltreat him, stick him with a pin,

push him around,—but to none of these physical stimuli will he respond with anger. You may call him names, make unkind remarks to him and he will fail to give any response. This condition must be carefully distinguished from a depression. A depressed patient can be made to respond easily to an unpleasant stimulus, and one feels sympathetic toward him. But in the case of true apathy one is amazed at the indifference that is manifested. It sometimes appears as though the patient did not hear or understand what was being said or done, but it can easily be shown that he does appreciate the situation intellectually. It is a failure to respond emotionally. If you slap the face of a normal man he will be aroused in spite of himself. But such a slap will not get even a reflex response from the profoundly apathetic individual.

Since apathy indicates a complete dissociation from the surrounding environment, it is a most serious indication. For this reason, the first indications of such a condition should be corrected before they reached an advanced form. They are often overlooked because the beginnings of apathy may be mistaken for goodness. The boy who is irritated and as a result of such irritation works harder in order to give vent to it should never be mistaken for the boy who cannot be irritated.

2. *Irritability.* The irritable person is just the opposite of the apathetic. He will “fly off” on the slightest pretext. So ready is he to go into a rage that any situation can act as the final trigger to let loose a torrent of rage. He is the person whose anger responses are too extravagant for the stimuli presented.

The epileptic person is supposed to have irritability as a characteristic of his personality. Just why this is so has not been adequately explained. It is possible, however, that his disease causes a continual irritation of certain neural centers. The indefinite prolongation of such irritations may possibly act the same as a series of irritations from the external environment. These finally accumulate and cause the explosion.

Whether or not this is the explanation, it is well known that some epileptics have violent outbursts of anger which may lead them to all sorts of violent acts.

Since epilepsy is comparatively rare, only a few cases of irritability can be explained on this basis. One may be too inclined to avoid attempts to educate an irritable person and as a result only too eager to blame the condition on epilepsy. Most cases are the result of poor training. Two of the most common types of such irritability are described in the following two paragraphs: Temper tantrums and reaction against restraint.

3. *Temper tantrums.* In many cases this undue irritability is no more than a habit. A child may try various methods to obtain what he wants and in the process of trial and error finds that his mother yields more readily when he goes into a rage than at any other time. Consequently, when he wants something he goes into a tantrum and usually succeeds in gaining his ends. Such tantrums are quite common in children. One afternoon the author saw a mother and father walking past a movie house with their six-year-old daughter. As they walked by the box office the child began a violent scene. She cried loudly, threw her arms about, and the tears ran in torrents. The father talked to her and tried to comfort her. The mother petted her in vain. Finally, they turned and walked toward the box office. Immediately the child's face brightened, and as the three went into the movie house, the child was radiant with joy. Much of the irritability of adults is nothing more than this. They cover it with many clever disguises so that the motives are not so apparent as those of the child, but close analysis will reveal them.

While temper tantrums or inadequate control of one's anger responses are not always a method of "getting one's way," the skillful teacher will be sensitive to this possibility as she studies her pupils.

4. *Restraint and irritability.* It is well known that violent outbursts are the result of a prolonged period of restraint of anger in situations well calculated to bring an angry response.

What schoolboy has not teased his teacher, watching her get nearer and nearer the breaking point until finally she bursts forth with great violence? While we may have accumulations of pent-up emotions of any sort they are probably more common in the realm of anger than in other fields. Suppose we get up in the morning with the decision that, no matter what happens during this day, we will be sweet-tempered. In spite of our determination things may go wrong. We may stub our toe, lose our collar button, cut ourselves while shaving, be unable to find the caustic to stop the bleeding, get to breakfast late and discover that the toast is burned and the coffee cold, but through all this we keep cool and even-tempered. Then some trivial thing occurs and we unexpectedly have a violent outburst. Those around us cannot understand why we are so irritable. If they knew all the facts, the repressed anger impulses that have at last gained an outlet, they would not be surprised.

5. *Persistence of anger.* Some persons persist in an angry attitude for extremely long periods, a personal characteristic of which teachers and other social engineers should be cognizant. They may wait for years to obtain revenge for a wrong, whether real or fancied. Cases have been known where a person has spent years of his life having as his guiding star the impulse to wreak vengeance upon some individual. The story is told of a girl who was abused by a foster mother. She was later separated from this woman and lost all trace of her. She spent the major portion of her time and energy trying to find her. Finally, after twenty years she received information that the woman was in a city a thousand miles distant. She made the journey, found the woman, learned that she was the foster mother of her youth, and then killed her. In such cases one often finds delusions of persecution as an element in the situation. The original wrong may be real, but when the person gives himself up to his emotions of anger, the minor wrong may assume gigantic proportions and lead to acts of great violence. Persistent anger accompanied by a desire for malicious revenge is one

of the most dangerous of conditions, although it does not appear so bizarre and irrational as many other symptoms that we may find. If one has occasion to get angry it is better to give vent to it in some manner than to harbor it for some twenty years.

158. Fear. Fear is one of the most important symptoms that we have. In its place it is a valuable response. Out of place it is most destructive. Since today most fears are out of place, the mastery of our fears is extremely important.

1. *Relation of fear to anger.* Fear is the opposite of anger. Faced with a difficulty we may either fight or run. The difficulty may stimulate us to activity in two directions; we may fight should the similarity of the immediate situation to others, in which a fight has brought success, lead us to fight; or, if the situation is one which experience has taught us to shun, we will run.

Crile says:¹

“Anger and fear express opposite emotional states. Fear is the expression of a strong desire to escape from danger; anger, of a strong desire to attack physically and to vanquish opposition. . . . I believe that it can be shown that it is possible to elicit the emotion of fear only in the animals that utilize a motor mechanism in defense against danger or in escape from it.”

Fears are more likely to become pathological than are other emotions for a very simple reason. The way to keep an emotion from becoming pathological is to adjust at once to the situation giving rise to it. If we are stimulated to anger we usually make such an adjustment; we fight and either win or lose. If we lose we are sorrowful and are likely to admit it, if we win we are elated and express our elation. Such immediate adjustment prevents pathological developments. With fear the situation is entirely different. Fear means that we have not made an adequate adjustment: it means uncertainty. Even running from a difficulty is only a temporary adjustment with the normal man. It is a retreat

¹ “The Origin and Nature of the Emotions,” W. B. Saunders Company, 1915, p. 63.

to gather strength for another attempt at a more honorable solution. If we make no immediate adjustment or if we make an inadequate adjustment we are left in a state of tension which may easily become pathological.

Crile¹ states the condition of one in fear by a striking comparison: "An animal under the stimulus of fear may be likened to an automobile with the clutch thrown out but whose engine is racing at full speed. The gasoline is being consumed, the machinery is being worn, but the machine as a whole does not move, though the power of its engine may cause it to tremble." In fear the heart beats faster, the breathing is accelerated, the sweat glands and the adrenal glands are stimulated to greater activity, all the parts of the organism that are needed for a fight are put in order for violent activity. On the other hand the nutritive functions are inhibited. Fear should thus be an adjustment reaction, a preparation to fight or run. When it does not lead to either it is evident that such a violent upset can not persist for long periods without making trouble.

The passage from fear to anger is a very easy one to travel. While the two are apparently very different in their manifestations their cause is the same, namely a difficulty, and the two are merely different reactions to this common cause. The transition is a matter of common experience. For example, if while a man is walking along calmly, thinking of no danger, an automobile horn is sounded violently just behind him he will give a violent start. His first reaction will be one of fear. If, upon looking around he sees the leering grin of a driver who evidently has a perverted idea of a practical joke, he is very likely to become exceedingly angry and the anger is intense in proportion to the intensity of his first fear reaction. Such a reaction is beneficial, for if the anger had not come the person would have had a persistence of the fear reactions, or a feeling of shame at having behaved as he did.

2. *Anxiety.* Anxiety is a very important symptom in

¹ *Loc. cit.*, p. 61.

mental disorders. Jones¹ gives four reasons why he considers anxiety of profound significance. They are:

(1) "Morbid anxiety is the most frequent symptom in all psychopathology."

(2) "The intensity of distress it may give rise to is equalled by that of very few other forms of suffering."

(3) "Its understanding will lead to a comprehension of other mental disorders."

(4) "It is a disorder that in a great many cases obstinately resists treatment, unless this is based on a proper understanding of the pathology of it."

The anxious person is in a continual state of morbid dread. This dread attaches itself to everything that has a bearing on the life of the patient. He worries about his studies, his business, his finances, his relations with other people, his religion, his physical condition, his mental health, and even worries because of his anxiety. It is obvious from this that the apparent cause of the anxiety is not the thing about which he is worrying. If he is worrying about his grades, an assurance that he is receiving an *A* in every subject will only shift the worries to something else. We can preach contentment to such a person until we have exhausted all our energy, but such preachment does no good because we can solve his problems only by removing the underlying cause of the fear. The difficulty is that the fear is not specific in spite of the fact that he may worry about specific things. The expressions that we see are the effects and not the cause.

Of what is the anxious person afraid? The patient does not himself know. He sees the disproportion between his emotional reactions and the possible causes, but he cannot restrain his feelings in spite of this recognized discrepancy. The following picture is typical: A young man who has made excellent grades all through his college career is without apparent cause filled with worries. These worries are precipitated seemingly by the death of a friend of his in an accident. The friendship was not intimate, but he worries just the same.

¹ "Papers on Psychoanalysis," Baillière, 1918, p. 474.

If a person gets sick he wonders if he will get the disease and worries about that. Then he is perturbed because these fears are silly and wonders if his mind is all right. He argues with himself that it is normal, because otherwise he would not be able to get his school work so well as he does. He has not had any serious love affairs so this cannot be the trouble and since he has never had to consider finances this is not an issue. In short, he has nothing of a financial, religious, moral, health or love nature to worry him. All this he tells you in the same breath with the complaint that he is worrying. Free association tests elicited the fact that about the time his worries started he had been informed by a girl friend that her sister had become involved in some sexual difficulty. This caused a profound emotional disturbance, not because he was in love with the girl, or for any other apparent reason. It merely did. This incident was followed by a recurring dream to this effect: The most demure and most innocent girl he had known had been married some time previously. He dreamed that she came to him and told him that previous to her marriage she had given birth to two sons who were now in orphanages. She told the dreamer that she was afraid that her husband would find it out. The two circumstances of the dream and the incident of the girl who had become involved in difficulty, indicated that he was afraid of the moral stability of women. Other circumstances which we need not mention corroborated this interpretation. He was the only child in his family, was beginning to make his adjustments to the outside world, a difficult thing at best for an only child, when he was told the incident which shattered his faith in womanhood. This was the real background of his anxiety. What if he should marry a woman who was fickle?

But why did this take such a hold upon his imagination? Other persons hear such incidents without losing their sense of proportion or being filled with morbid anxieties about all sorts of trivial affairs. Such a reaction is usually found in individuals who have been so pampered and shielded that they

have not the confidence in themselves that less sheltered individuals have. The pampered baby has night terrors and anxiety spells when he is left alone by his mother. She must come and comfort him until he goes to sleep. He cannot be left alone without fear and trembling. As he grows older these manifestations may become less marked, but let some unusual circumstance accost him and he reverts to the childish impulse to run to his mother's arms or to some other shelter. He cannot face life's exigencies without a terrible dread of what might ensue. Anxiety is then, in short, a fear of one's ability to master the varying things with which he is confronted.

Morbid anxieties are very often related to the love life of the subject. The reason for this is rather apparent. If he is afraid of other circumstances in life he adopts the simple expedient of avoiding the dangerous situation. When it comes to avoiding the possibilities of love involvements he cannot so readily escape because his own impulses drive him into danger. He attempts the same expedient he has always used, that of avoiding the difficulty, but every suggestion of a love impulse within himself makes him afraid of his love life. This condition is especially aggravated if the patient has any perverse tendencies. These will be described later in this chapter.

3. *Phobias*. Abnormal fears of a specific object are called phobias. Since one may develop an abnormal fear of almost any object of experience, the number of phobias is very large. Students of abnormal phenomena have gone to a vast amount of trouble hunting for Greek names to apply to these fears. We will give a partial list¹ of these, not because the names are vitally important, but simply to indicate the wide range that these phobias may take.

(1) *Acrophobia*, fear of high places.

(2) *Agoraphobia*, fear of open places.

(3) *Algophobia*, fear of pain.

(4) *Anthropophobia*, fear of men or of some particular man.

¹ Bridges, "An Outline of Abnormal Psychology," Adams, 1925, pp. 82-83.

- (5) Astraphobia, fear of thunder or of other meteorological phenomena.
- (6) Botophobia, fear of cellars.
- (7) Claustrophobia, fear of closed places.
- (8) Ereutophobia or erythrophobia, fear of blushing.
- (9) Gynophobia, fear of women or of some particular woman.
- (10) Hematophobia, fear of blood.
- (11) Misophobia, fear of contamination.
- (12) Monophobia, fear of solitude.
- (13) Neophobia, fear of the new or unfamiliar.
- (14) Nyctophobia, fear of the darkness.
- (15) Ochlophobia, fear of crowds.
- (16) Pathophobia, fear of disease or of some particular disease.
- (17) Peccatiphobia, fear of sinning.
- (18) Phobophobia, fear of fear, fear that one will be afraid.
- (19) Taphephobia, fear of being buried alive.
- (20) Thanatophobia, fear of death.
- (21) Theophobia, fear of God.
- (22) Toxophobia, fear of poisons or of being poisoned.
- (23) Vokephobia, fear of returning home.
- (24) Zoophobia, fear of animals or of some particular animal.

Fears cover a tremendously wide range in human experience,¹ so wide indeed that one makes a mistake when he tries to explain them all in the same manner. We have seen that there are few things of which we are innately afraid, from which we naturally deduce that most of the fears that we find are the result of experiences of one sort or another. Investigation will enable us to unearth experiences well able to account for some of the fears that we find. In other instances our search for a reason is not so easily rewarded.

The illustration which we have given at the beginning of this chapter portrays a very intense fear that was built up by a series of experiences adequate to account for the phobia that manifested itself in later life. The fear is real because the patient has had good reason to be afraid of the thing that is involved in the fear.

A valuable rule to follow in our attempt to understand

¹ Other examples of specific fears may be found in Morgan, "The Psychology of the Unadjusted School Child," Macmillan, 1924, pp. 218-219.

the background of fears is to refrain from assuming that a person is afraid of nothing. It does no good to pass off a queer fear with the statement that it is all imagination. One is never afraid of nothing and the most irrational fear becomes rational when we learn the mechanism which gave it birth. To tell a person with a phobia to forget it is ridiculous. When we know the cause of a fear we can teach the person to become acquainted with the feared object. Such acquaintance will serve to banish the fear unless it is of something worthy of fear. One should continue to fear a wild animal which is free to attack him. Place the animal in a cage and the fear will vanish because we are protected. If we are afraid of some impulse in ourselves we must learn either to control the impulse or to protect ourselves from it in some manner. A discovery of the real cause will suggest the solution in each case.

XXXVIII. LOVE AND HATE

Love is without doubt the most complex emotion that human beings experience. It proceeds from simple beginnings, passes through various stages in the course of development, until at last it reaches the form that we find in some human adults. This whole pathway of development is subject to numerous deviations, so that love is behind most of the great human achievements, but is also capable of more perversions and abnormalities than any human emotion. We will first trace the stages of its development and then the nature of the various deviations from the normal will become clear. Hate, being closely allied to love, will be considered in this same section.

159. Development of love. 1. *Love of self.* Certain experiences or conditions of the new-born child produce pleasurable experiences and others produce unpleasant ones. For some reason which has not been explained the child attempts to maintain or cause a recurrence of the things that make for his satisfaction. About all we can say of this attempt to maintain such satisfaction is that it exists. Whether we call it a wish, an instinct, a reflex or libido matters little.

These are only names to indicate a thing that we have not been able to explain. This tendency is not unique in man. Any organism will tend to maintain situations which fit in with his normal functioning and will resist any disrupting condition.

These primitive conditions of satisfaction are probably present when the different parts of the organism are working in harmony; when the different segments of the autonomic are well balanced, when the heart and lungs are operating at a satisfactory rate, when the digestive tract is in a natural state of tonus and the sensory impressions are not too violent. When this balance is upset there is dissatisfaction and the organism reacts to this lack of balance by an attempt to bring back the condition of balance with its resultant satisfaction.

As far as we can determine this organic satisfaction is the basis of what we know as love. At first the child is the passive recipient of whatever comes and his satisfaction is the result of some set of circumstances in which he plays but an inactive rôle. At this period the satisfaction itself is the important thing. We may call this the self-love stage because he is wrapped in his own feelings with slight emphasis upon what brings those feelings into play. If he does learn what things bring the condition they have meaning only in terms of personal pleasure.

2. *Development of erogenous zones.* One of the things most closely related to the child's comfort is adequate ingestion of food. He is uncomfortable and unhappy when hungry, and is satisfied in taking food. The part of his sensory organism most concerned in eating is the mouth and so this part of his body is likely to become related to satisfaction. It becomes more sensitive than other parts. Other areas become connected with pleasure by association. If, when he is nursing, he rests his cheek on a soft shawl he is likely to connect impressions from such soft objects with satisfaction. Many a child thus develops a habit of not being in comfort until his cheek is placed against a soft object. Others tend to continue the pleasure of eating by sucking their thumb.

This is especially likely to be the case if the nursing is not continued long enough to produce complete satiety. The fact that the child is held by the mother during nursing makes him enjoy the experience of being held, and having learned this, he will show dissatisfaction until taken up by his mother. Rhythmic movements may be related to nursing so the child must be taken up and carried up and down the room or jolted up and down in a carriage. In other words he learns to love the things that contribute to his satisfaction. The sensory zones, or skin areas, that give rise to such satisfaction have been called erogenous zones.

3. *Autoerotism.* Having learned that certain conditions contribute to his satisfaction he may learn that by his own endeavors he can bring things to pass that will accentuate such satisfaction. Such attempts are known as autoerotic acts. If he places his thumb in his mouth he finds that he can produce satisfaction without the help of outside circumstances. He can do the same by bouncing himself up and down in his carriage or stroking certain parts of his body.

4. *Love for others.* In the same manner love for others is established. If the child finds that satisfaction comes from behavior of the mother, he includes her as part of his self-gratification. If it happens to be the nurse, father, sister, or brother who is most concerned they also are included in the circle. We love others in the first instance because they bring us satisfaction.

5. *Complex satisfactions.* The first satisfactions of the child are rather simple and are taken at their immediate value. As experiences grow in complexity the nature of satisfactions becomes more intricate and the child learns that if only immediate gratifications are considered he loses some later ones. Consequently, he learns to defer attempts at immediate gratification because he has found that such a sacrifice will bring greater satisfaction later on. If he eats all the candy in the box the pleasure of engorgement may be followed by the pain of a stomach ache. Such experiences teach him to maintain a proper balance between immediate

gratification and the postponement of satisfaction. Furthermore, he learns that if his only consideration of others is to obtain immediate satisfaction from their acts, they sometimes withdraw their favors. He makes temporary sacrifices to obtain their good will so that in the long run he will gain their favors. This leads to the virtue commonly known as altruism which is the bestowing of favors upon others without the expectation of an immediate return. Needless to say many persons never learn this. Many a person who has married and has raised a family, has never advanced beyond the stage of demanding immediate gratification for all favors bestowed. He usually gets less in his attempt to get all.

6. *Involvement of sex in love.* If a person has learned his lessons properly as he matures he finds upon reaching full maturity that a person of the other sex can contribute more to his happiness than is possible from any other form of personal relationship. After reaching this stage he learns the next lesson—that his happiness is augmented by the satisfaction he is able to contribute to the other person. He gains the most happiness by seeing the one of his choice supremely happy.

7. *Parental love.* The love development comes to a climax in parental love. If the father and mother get satisfaction only from what the child is able to contribute directly to them, these parents are still in the preadolescent stage. The real parent learns that he gains intense satisfaction from seeing the happiness that he is able to produce in the child. This last stage is still one of personal satisfaction but it is of quite a different sort from the primitive one of wanting immediate bodily comfort. What has happened is that great numbers of higher centers are involved and autonomic satisfaction is conditioned by the proper coördination of all these in the intricate network of influences that play upon his autonomic nervous system. The joy that the unselfish mother gets when she sees her child delighted with the toys that he has received for Christmas is more thrilling than the experience of the full stomach that made her happy as an infant.

Yet a true understanding of this latter satisfaction involves a knowledge of how it developed from the primitive form. If a mother does not arrive at this goal it is not because she lacks some mysterious instinct, it is because she has not adequately learned one of the most important lessons of life. Some never learn it. The pathway is full of pitfalls. Let us look at some of them.

160. Perversions of love. We have given the foregoing sketch of the development of love because it provides a basis for the understanding of maldevelopments. Each of the perversions that we shall describe can be looked upon as the formation of a specific pattern in the autonomic nervous system in combination with cerebrospinal patterns. In different stages of development such patterns may be regarded as normal for that period, but they should be transplanted by other and higher patterns. If an adult shows the predominance of any of these perverse patterns it is a sign either that he has not developed properly or that as a result of some difficulty he has abandoned the later acquirements and has reverted to some earlier pattern.

1. *Abnormal love of self.* Regarded from the developmental point of view, love of self may be considered as a persistence of the infantile stage. The person has never quite gotten away from absorption in his own satisfaction. This may take different forms, as a simple childish pleasure in organic satisfaction, or it may be a love of some of the more mature traits of the individual.

(a) **ABSORPTION IN INDIVIDUAL ORGANIC SATISFACTION.** Such an individual is taken up with a stimulation of the erogenous zones developed in infancy. He may have developed an oral sensibility, in which case stimulation of the oral zone is his main pleasure. This may take the form of thumb sucking, of course, but may be hidden in such things as nail biting, gum chewing, tobacco chewing, or smoking, or a continual manipulation of the lips. The author recently saw an old man in a public audience rubbing his mouth with his hands during the entire performance. When not confined to

a particular zone these individuals are concerned with physical comfort of one sort or another, they revel in their own sensory pleasure. They will prolong their bath for an hour, enjoy lying in bed with the same glee that an infant manifests. Physical comfort is their ideal.

(b) AUTOEROTISM. When absorption in one's own sensations takes a purely sexual form it leads to the habit of masturbation. The danger in this habit is not in the type of things that are presented in the scare literature of medical fakirs. These charlatans tell the victims of this habit that they will become insane or develop various diseases as a result of this practice. The danger from the habit lies in the fact that the victim is in an infantile stage. He never develops love because he is taken up with a crude and immediate physical gratification. A secondary danger is in the fact that he worries about his moral delinquency. Such worry may lead to all sorts of irrational fears which the individual cannot escape.

(c) NARCISSISM. This is a general term for self-love which may include the two previous forms but has also a wider extension. The narcissistic person loves not only his own physical satisfaction but his intellectual attainments, his appearance, and other personal qualities. If he has any affection for another it is for one who reflects his own personality. His love for others is a reflection of his love for himself. The term is derived from the name of a legendary character. According to Ovid, Narcissus was a youth of extraordinary beauty who refused all suitors. These rejected suitors prayed to Nemesis for vengeance which was accomplished in the following manner: Nemesis caused him to fall in love with his image which he saw reflected in a forest stream. Filled with this tenderness, he pined away in hopeless love beside the stream in which he had seen his image. A narcissist cannot love another except as his own traits are reflected, and since he cannot find another such individual he is doomed to disappointment.

2. *Persistence of childhood loves.* A child first naturally

loves the members of his own household. A persistent attachment for these individuals is normal providing it is supplemented by later loves. An abnormal attachment of a boy for his mother has been called an oedipus complex.¹ It is only when it persists to the exclusion of other attachments that it becomes dangerous. An analogous situation is where a girl forms too lasting an attachment for her father.

Writers have been prone to blame such attachments upon the child, but usually investigation shows that the mother or father is to blame as the parent fosters the attachment. These form the basis of most of the mother-in-law difficulties. A very illuminating example of this type of situation came to the attention of the author. A woman came with the request that we do something with her daughter-in-law to make her love her. Investigation of the situation from all angles revealed that the mother had been unhappy in her marital relations and had become excessively devoted to her only son. She had tried every ruse she knew to keep him from marrying, but in spite of this he did break away enough to do so. The mother then tried various tricks to break up the match,

¹ This term refers to the myth of Oedipus. Laius was warned that he was to die at the hands of his son. When his wife Jocasta bore him a son, the child was given to a faithful herdsman to expose on Mount Cithaeron. Ignorant of the prophecy, the man in pity gave the child to the shepherd of Polybus, King of Corinth, and that ruler, who was childless, reared him as his own son. The young man, Oedipus, becoming suspicious of his origin, due to the taunts of some drunken comrades, sought the oracle of Delphi, who informed him that he was doomed to slay his father and wed his mother. Horrified, Oedipus fled from Corinth, and shortly afterwards met Laius with his servants. They tried to force him from the road, and in the fight which followed he slew Laius and all his servants, not knowing the identity of his assailants. Going on to Thebes, he found this place harassed by a Sphinx, who propounded a riddle to every passer-by and devoured all who failed to solve it. The hand of Jocasta had been offered to anyone who solved the riddle. Oedipus solved the riddle, slew the Sphinx, and thereby won the hand of Jocasta, his mother. At first he prospered and had four children. After a time a pestilence came to Thebes and the oracle declared that the murderer of Laius was the cause and should be expelled from the country. Oedipus instituted an inquiry which resulted in his learning the truth. Jocasta hanged herself, and Oedipus put out his eyes.

a situation which the wife sensed and tried to stop. The boy at first naturally sided with the mother. The fact that the boy, when he saw the whole situation, was willing to move with his wife to another city, shows conclusively that in this case the mother was the one who fostered the attachment.

Some very complex situations may result from an unwise though innocent excess of affection of a mother for her son. A boy about eleven was brought to us with the complaint that he could not read. He was intelligent, had a vast amount of information, but could not read the first-grade primer. He had been given special reading drill in the schools for five years but all to no avail. We found that the mother and father had been separated from the time of the child's birth. The mother confessed that the boy had been her joy and comfort through all these hard years. She expressed a sincere desire that this relationship should continue. Her hope that it would continue was fortified by the boy's attitude. He had told her that he never would leave her, that when he got older they would adopt a baby and have a home of their own. To the mother this was a beautiful sentiment. Sensing his reading difficulty and fearing that he would be handicapped thereby, she had faithfully read to him through all the years. The mother was innocent of the effects of this excessive love, but when she was told of the significance of what she was doing, namely, that by reading for him she was robbing her boy of all incentive to read, she took steps to wean the boy from her. She refused to read to him, made him get some outside companionships, and learn to depend upon himself. This change in her attitude resulted in the boy's learning to read so rapidly that in a year he had mastered fifth-grade literature. The boy was enabled to acquire five years reading knowledge in one year, whereas before he had not acquired first-grade ability with five years of special drill.

If a child does get away from such an abnormal attachment he is very likely to select as a lover one who closely resembles the mother. Sometimes this resemblance is in superficial traits, occasionally it is in age. Recently the newspapers

printed an account of a boy of twenty marrying a woman of seventy. Probably this was a transfer of the mother attachment. It will be clear to the reader of these pages why often the first love of a boy is for a mature woman much older than himself.

3. *Persistent love for person of same sex.* When a child is first weaned away from his home he is likely to form attachments with his own sex. These are natural stepping stones to later development. He has to learn to get along with others where no sexual factors are involved before he can proceed to the more intricate relationships of the other sex. His persistence in homosexual relationships is either the result of fear of sexual relationships or due to the fact that he has met with reverses in his courting attempts and he has reverted to the simpler process of loving a member of his own sex.

(a) SEXUAL INVERSION. A sexual invert is one who takes on the characteristics of the other sex. In some instances there is a physical resemblance to the other sex which is known as *hermaphroditism*. Such a physical condition is likely to carry with it mental difficulties because of the added intricacy of adjustment involved in such a condition. In other cases the physical condition may not be pronounced enough to warrant the name of hermaphroditism, but there may be some physical similarities to the other sex. For example, a man may tend toward the skeletal framework of a woman; large pelvis, narrow shoulders, small bones, a feminine distribution of hair and a treble voice. On the other hand a woman may tend to have a masculine frame, hard muscles, a coarse voice, and a tendency to grow hair on the face. Such conditions are due to glandular disorders and their only significance for psychology is the mental difficulties that such conditions may produce.

In other cases there is no physical mixture of sex characteristics but the individual has tastes and interests of the other sex. The boy likes to sew, to do fancy work, to keep house, to use cosmetics and perfumes, to frequent afternoon tea and bridge parties, or has similar interests. The girl of

this type likes to wear masculine clothing, to engage in masculine activities, is apt to be rough in her behavior, in short is what we call a tom-boy. In many instances such a tendency to assume the secondary traits of the other sex is accompanied by a tendency to cultivate the loves of members of the same sex. The girl, having the characteristics of a boy, makes a bid for the love of other girls. The boy, having the characteristics of a girl, makes a bid for the affection of other boys. A love attachment between members of the same sex may not have the characteristics of inversion in either member, but this is often the case.

(b) HOMOSEXUALITY. Homosexuality means a love attachment of one person for another of the same sex. In some instances this is one-sided, in others it is mutual. The relationship may be only an interest in the personality and work of the other, it may be accompanied by the ordinary preliminary caresses of courtship or it may involve actual sexual behavior. The term *homosexuality* is usually used to embrace all degrees of this relationship.

Such attachments are often common where girls are isolated from male companionship or where men are kept from association with girls. Very wild *crushes* are often formed between girls in boarding schools but are by no means confined to such situations, for they can be found almost anywhere. Homosexual attachments are not quite so common among men but they are frequent enough to be easily observed. Most of such attachments are mere passing phases of development, and the subjects of them go on to heterosexual relationships. When, however, some peculiar attitude exists toward the other sex one may persist in a homosexual attachment. These relationships should consequently not be regarded in too superficial a light. They are a danger sign. The way to guide young people over them is to give them a wholesome attitude toward the whole sex relationship and to supplement this with a specific wholesome interest in particular members of the other sex. If we ignore the first manifestations of such attachments they may grow into deeper forms where they involve

not only companionship but physical factors as well. This serves to fix the tendencies more firmly than ever.

4. *Perverted attitude toward the other sex.* As we have seen the most common reason for a person's failure to make normal development in his sex life is that he has some abnormal attitude toward the other sex. The attitudes toward members of the other sex are therefore of basic importance in the understanding and treatment of any sexual perversion.

(a) FEAR. Society demands a certain amount of restraint and control of sexual impulses. We have found that this is to the interest of all concerned. In order to make these inhibitions effective it has been the custom from time immemorial to build fear barriers. The ancients had an intricate system of taboos relating to the sexual relationship, and while in this day our taboos do not have the bizarre form that they did in ancient times we have continued to use fear as a deterrent. The question has been raised as to whether such fear restraints should be abolished, and if so what inhibitions should be substituted. A great difference of opinion exists and this is not the place to venture an opinion. What we do find is that when fear is overemphasized it may lead to an inhibitory barrier which the individual later finds impossible to overcome.

(1) This fear may lead to anxiety symptoms. The person finds his sex energy seeking an outlet, and if all outlets are blocked he may develop an undefined fear of where this dilemma will lead him.

(2) It may lead to specific fears that seem totally unrelated to sexual matters. In such instances the specific fear is a symbol of the repressed actual fear. For example, a fear of high places may be an expression of a fear of a moral fall. A fear of crowds may symbolize a fear of too intimate contact with the other sex. A fear of disease is often present because some diseases are known to spring from sexual relationships with diseased persons. Many other such symbolic fears are based on undue sexual inhibitions.

(3) It may lead to frigidity. It is possible that there are

individual differences in the tendencies toward the other sex. If this is so it is likely that the sex urge follows the normal distribution curve which would mean that a very small proportion would manifest sexual frigidity. It is present in a greater proportion of people than a normal distribution would warrant and is probably due in large part to inhibiting fear.

(b) SEXUAL HYPERESTHESIA. This condition is the other extreme from frigidity. It may have a physiological basis, it may be due to lack of proper education in restraint, or it may be an overcompensation from too severe restraint. When found to an extreme degree in a woman it is called nymphomania, and when found to excess in man it is called satyriasis.

5. *Abnormal objects of love.* We have shown how the love for another person is built up. If it happens that some peculiar thing is predominant in the projection of the feeling of satisfaction on which the love response is based, that thing may become the object of a perverted type of love. It matters not whether such love is returned so far as its vital significance for the individual is concerned.

(a) PEDOPHILIA. This is a tendency to love an immature child. It can be seen how such a tendency might develop from a fear of the complications involved in falling in love with an adult. However, the reasons for its presence must be determined in each individual case.

(b) BESTIALITY. That this is not a new perversion (as are indeed none of these) is indicated by the fact that bestiality is forbidden in the Old Testament.¹ Affection for an animal is not regarded with disfavor by most persons as is evidenced by the fact that we tend to have pets around our homes. Where the love for the animal becomes a substitute for love for humans it is not so readily accepted. The main cause of such a situation is a lack of human love adjustments and is well expressed by the phrase, "the more I see of some people the more I love my dog." That the intense love for an animal is a substitute for a maladjusted human love is seen in the following instance. A woman of seventy was

¹ Exodus 22:19.

brought to the hospital because she had become unbalanced on the death of her pet cat. Now, even if she did love her cat why did she become unbalanced because the cat died? We may love a human being but do not need to become insane when we lose him by death. We found upon investigation that due to a series of unfortunate circumstances she had lost faith in all human beings. Her grip on life had about slipped except for the meager comfort she had gained from her cat. The cat was thus the last defense and the last object upon which to hang her thwarted affection. When the cat died she had nowhere to turn.

(c) FETICHISM. This is by far the most common type of sexual perversion. Usually it is rather harmless although it may go to such extremes as to lead to difficulty. Fetichism refers to the situation resulting from the love of some object which has become associated with the love impulse but which of itself would not arouse a love impulse. Such objects may be the hair, glove, handkerchief, lingerie, a mole, a dimple, a particular hair color, and so on. The reason for the importance of these things is probably association with the object of childhood loves. For example, a case has been reported where a man could have no interest in a woman unless she wore particularly disreputable shoes. It was found that an old nurse whom he had when a child had worn shoes of the particular type that he so much admired.

As we have said the presence of a fetich does no particular harm. If a man has loved a dimple in his mother's chin and he loves a girl because of her dimple he has made a fairly normal adjustment. Some peculiar difficulties arise, however, from this cause. Suppose a boy has a fetich for long hair. He marries a girl because she has hair of this sort, although neither may realize that this is the main source of her charm. If with changing styles she cuts off her hair she may be discarding the source of her attraction for her husband and may find his ardor cooling. We have encountered several such instances.

In other cases the fetich may lead to depredations of one

sort or another. Cases have been reported where men have waylaid women, cut off their hair and permitted them to depart shorn of their locks. It is quite likely that many incidents of peculiar thefts are based on this mechanism.

6. *Abnormal love manifestations.* The manner in which one must gain expression for his love may be perverted into various forms.

(a) ANATOMICAL ABNORMALITIES. Anatomical transgressions, where the person chooses as the object of his love an unusual part of the body, are not infrequent. The seriousness of these attachments depends upon the strength of the associations as well as upon the part of the body involved.

(b) EXHIBITIONISM. The tendency to gain gratification by exhibiting one's self is very common. It may range all the way from a crude display of one's body to the appearance in a drama or speech. The following case illustrates how this impulse may have a very important bearing in important phases of life. A young man with this tendency very strongly developed appeared with the following complaint: He had come to college planning to study for the ministry, but complained that all his interest in his studies had departed. He hated the university, his books, his professors and everything connected with study. We found that he had as a child been able to do good work only when his endeavors brought to him the plaudits of his comrades and elders. For example, he led his whole class in geometry as the result of a wager with the girls in his class that he could lead the class. He gained considerable notoriety by the feat. He had wished to go on the stage but his parents disapproved of this career on the grounds of the moral temptations involved. In order to gratify them he had planned to go into agriculture and had entered college with this as his manifest goal. He took no interest in this work and failed. He then decided to go into the ministry, and entered another university, but had again lost interest in his studies. The agriculture ambition was a complete surrender to his parents' ideas. The ministry was a compromise between his desire for exhibition

and their desire that he be free from temptations to immorality. A fine compromise seemingly, but not in line with his main motives. He stated that if he could not get interested in his studies he would have to leave college. He could not go home and so the only thing left was to go with a friend of his who was an actor. His failure in interest was obviously a scheme to force himself into the thing he wanted to do. He was finally adjusted by getting him to major in work in the university leading to dramatics.

(c) CURIOSITY. Ungratified curiosity concerning the facts of sex may lead to undue curiosity, a perverted expression of which is the "peeping Tom." If not guided this impulse leads to all sorts of peeping exploits. Even adults have been so subject to this tendency that they have come into conflict with the law. An indirect expression of this tendency and one which provides a good adjustment is to give the individual an outlet in scientific research or some other field where he can gratify his curiosity in a social manner.

(d) ABNORMAL ASSOCIATION WITH PAIN. In a manner which has not been adequately explained the love impulses of a person may become connected with pain. This may take two forms. Sadism is a perversion where the person gains gratification by inflicting pain on others. Masochism is where the person gains gratification by suffering pain at the hands of another. The pain may be physical or it may be mental. In its grossest exaggerations it may lead to torture and even to murder of the sadist's victim. In a refined form it may lead to the creation of situations in which the victim is tortured by all sorts of personal injuries. Some persons never love another with great fervor until they have made the object of their love weep. The pleasure some persons experience in "making up" is probably based on this association. On the other hand some persons never love another until they have suffered keenly at the hands of that person.

This outline of the perversions of love indicates the dangers which surround this most important emotion. Their presence in human life emphasizes the importance of judicious di-

reaction rather than the attempts to ignore or suppress this emotion.

161. Hate. Hate is the opposite of love and may be called forth by any of the objects capable of stimulating the love impulse. When such an object leads to an unsatisfactory love response the reaction is one of extreme discomfort and the emotional attitude toward the stimulus for this discomfort is what we call hate. Let us examine this relationship between hate and love.

1. *Hate and love closely related.* Because they are opposite in their expression we are sometimes led to think that the two are not related very closely, but such is not the case. The transition from love to hate and from hate to love is very easily accomplished. Once having had a strong affective reaction toward any person or thing it is very unlikely that we ever became neutral toward it, at least to the particular phase of it that gave rise to the original emotion. Many personal relationships are begun by an active dislike of one person for the other.

2. *Ambivalence.* This is a term that is applied when a person has a feeling of love and hate toward the same object. This is well described by Bleuler:¹

"Even the normal individual feels, as it were, two souls in his breast, he fears an event and wishes it to come, as in the case of an operation, or the acceptance of a new position. Such a double feeling tone exists most frequently and is particularly drastic when it concerns persons, whom one hates or fears and at the same time loves. This is especially the case when sex is involved, which in itself contains a powerful positive and almost equally powerful negative factor; the latter conditions among other things, the feeling of shame and all sexual inhibitions as well as the negative valuation of sexual activity as sin, and the evaluation of chastity as a cardinal virtue. But such ambivalent feeling tones are the exception with the normal person. On the whole he makes a decision from the contradictory values; he loves less because of accompanying bad qualities, and hates less because of accompanying good qualities. But the abnormal person often cannot bring together

¹ Eugen Bleuler, "Psychiatry," Copyright 1924, by The Macmillan Company, pp. 125-126. Printed by permission.

these two tendencies; the hate and love manifest themselves side by side without the two affects weakening or even influencing each other in any way. He wishes his wife's death and when hallucinations picture it for him, he is desperate, but even then, besides crying he can at the same time laugh over it."

XXXIX. EXAMINATION OF EMOTIONS

The emotions are so complex in their texture and so manifold in their expressions that it has been very difficult to get any adequate quantitative means of evaluating them. Free association tests and the galvanic reflex have given the best results.

162. Free association. The only method that has been of any practical clinical value has been that of free association which has already been described. By means of free association tests the various points of affective sensitivity may be located and then these examined by further qualitative investigation. *See Section XXI.*

The main source of difficulty in examining the emotional life of a person is the fact that the greater part of our social training consists in learning to conceal our emotions from others. This training is necessary because our emotions are the most vital part of our existence and the indiscriminate display of them to others would open us to all sorts of inconveniences and make us the easy prey of our enemies. Consequently, in order to get any light on the emotions of the patient we must secure his confidence. He must feel certain that any expression on his part will not be used to his disadvantage. This may not be so when the person is too far deranged to have any control left but even in such cases we will find that the overt expressions are but subterfuges to hide the more significant and vital emotional trends.

163. The psychogalvanic reflex. It has been found that if two electrodes be attached to the body and these be connected with a galvanometer that the instrument will register when the person has an emotional reaction. This method may be used to detect whether a person responds emotionally when there is good reason to believe that he is restraining the expression of his feelings. The clinical value of this method

is rather limited, however, as an unstable person will become perturbed by any such experimentation. In addition, when a galvanometer record is made it gives one no clue as to the nature of the emotions, it merely indicates their presence, and one is still at a loss to know how they may be interpreted.

The scientific evaluation of specific emotions is still in a very undeveloped state, a fact which makes it necessary for us to rely on a qualitative evaluation. This makes our study of the emotional life of any specific individual difficult but should never lead us to underrate its importance. A true understanding of emotional life will carry us a long way in the complete understanding of personality.

IMPORTANT TECHNICAL WORDS

- adrenal-glands.** Glands above or in front of the liver.
affective. Emotional.
ambivalence. Emotion of love and hate toward the same object.
autoerotism. The tendency toward self-induced organic satisfaction.
erogenous. Productive of sexual excitement.
exhibitionism. The tendency to indecent exposure of one's person.
euphoria. A feeling of well-being.
fetichism. Devotion to an object not usually a love stimulus.
ganglion. An aggregation of nerve cells.
homosexuality. Tendency to love members of one's own sex.
hyperesthesia. Unusually increased sensibility.
innervate. Stimulate to activity.
inversion. Sexual inversion is the tendency to take on the characteristics of the other sex.
masochism. Condition in which one experiences pleasure in the abuse and cruelty inflicted upon him.
narcissism. Self-love.
pedophilia. The love for an immature child.
perversion. The unnatural use of a particular function.
phobia. Abnormal fear.
psychic traumata. Mental injuries or shocks.
receptor. Sense organ.
sadism. Condition in which one experiences pleasure by inflicting pain upon or abusing another.
skeletal muscles. The muscles attached to the parts of the skeleton, as distinguished from those of the viscera.

sympathetic segment. The central segment of the autonomic nervous system.

synapse. The functional connection between nerve endings.

PROJECTS FOR FURTHER STUDY

1. If you can get access to a patient in a hospital for the insane or elsewhere, who is emotionally disturbed, try to describe the nature of his emotional disturbances in the light of the various forms that have been described.
2. Think of someone whom you heartily dislike, or someone whom you like very much. Try by the method of free association to discover what it is you like or dislike about him and why you feel as you do about any trait that stands out.
3. Have the members of the class list all the things that they fear. Analyze these to see how many appear rational on the surface and how many do not. If you have any irrational fears, see whether you can discover what is the real background of the fear.
4. Watch the emotional reactions of a dog and a cat when they are brought near to each other. How would you go about training the dog and cat to be less hostile? Try your plan on two of these animals and see if you can succeed. Why would it be an easier task with young animals than with older ones? What bearing has this on the problems of abnormal psychology?

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CHAPTER VIII

MOTOR DISORDERS

It is necessary for the student of human nature to be able to interpret motor behavior as the expression of certain aspects of personality. Since some motor disorders can be the direct result of physical injuries, we shall give a brief description of a few of these in order to provide a clear distinction between them and the functional motor disorders. We shall endeavor to show that functional motor disorders indicate personality difficulties. The correction of such disorders involves a personality adjustment, the direction of which is often indicated in the motor symptom. In other words, motor disorders are often defense mechanisms designed to hide an inner conflict. One must learn how to get behind the disguise to the real trouble.

164. Illustration of functional motor disorder. "Dr. Brown-Séquard relates a remarkable case of ecstatic catalepsy in a girl whom he was called in to see. She lived in Paris, close to the Church of St. Sulpice, and every Sunday morning at eight o'clock, when the bell began to ring, she used at once to rise from her bed, mount the edge of the bedstead, and stand there on tip-toe until the bell sounded at eight in the evening, when she returned to her bed. The board on which she stood was curved and polished, and it would have been impossible for the most athletic man to have remained on it in such a position for more than a few minutes at a time. While standing there, she was utterly unconscious of her surroundings, and continued murmuring prayers to the Virgin all the time, her hands clasped, her eyes fixed, and head slightly bent. Some of the bystanders were skeptical, and Dr. Brown-Séquard, to put her to the test, applied a strong, interrupted current to her face. She showed no signs of pain; but the muscles reacted energetically, and her intonation was

therefore slightly affected. The girl was weak and anemic, and was so thoroughly exhausted by her Sunday exertions, that the remainder of the week she could only lie helpless in her bed."¹

It will be the purpose of this chapter to show that even such unusual conduct has meaning. We should not be satisfied to designate an act as unusual. We should strive to know why a person chooses, and how he is able, to do such bizarre things.

XL. GENERAL NATURE OF MOTOR RESPONSES

Motor behavior is the last link in the chain of neural activity. Actions, consequently, cannot be considered in isolation. They depend upon the stimulations that the organism has received, the way in which the various stimuli have been organized in the central mechanism, both cerebral and autonomic, as well as upon the motor mechanism itself. We must learn why a person acts as he does.

165. Importance of interpretation of motor responses. Often the integrity of the sensory and central processes can be determined only by the behavior of the individual. The person who hallucinates may respond to those hallucinations as though they were real perceptions. "Thus, a patient named Mantel, who was locked in his room, repeatedly heard the words: 'Mantel, thou strong hero.' Whereupon he reacted by demolishing his room to show his annoyers that he was really strong."²

Similarly, our knowledge of central neural processes depends upon our observation and interpretation of the conduct of individuals. If a person has a delusion that he is being persecuted we shall never know it unless his motor organism informs us of the fact. We have no magic microscopes to see what is going on inside of a man's brain. He may take steps

¹ C. L. Tuckey, "Treatment by Hypnotism and Suggestion," p. 14f. Quoted by G. B. Cutten, "The Psychological Phenomena of Christianity," Scribner, 1908.

² Eugen Bleuler, "Psychiatry," Macmillan, 1924, p. 142.

to defend himself, he may act as though he were suspicious of others, or he may tell us about his suspicions. From the things he does and says we must infer what is going on.

In view of such intricate mental processes, it may be seen that all abnormal psychology is a study of behavior of one sort or another. In this chapter our aim will be to indicate the significance of the motor abnormalities that may be observed—to derive the meaning that lies behind the overt expressions that we see.

166. Similar behavior may result from different causes.

One may make the same response as a result of a number of situations. This is due to the fact that the same motor mechanism may be activated by different causal combinations. At one time we use our arm to fight, at another time to caress. At other times we use the same arm to write, to adjust our clothing, to emphasize what we are saying, or to carry food to our mouths. We never realize how much we do use it and for what varied purposes until it becomes disabled and we are forced to act without it.

If we understand clearly the significance of the fact that the same motor organism serves a multiplicity of functions we shall understand why we cannot tell immediately the significance of any specific motor process without a knowledge of some concomitant circumstances. If we see a man move his finger and know none of the accompanying circumstances we cannot answer the question, "Why did he move his finger?" The only way to determine just what is back of a bit of behavior is to change some of the circumstances just as one would change conditions in a definite experiment. By such controlled change and observation we can arrive at the significant factor behind any bit of conduct.

This should serve as a warning to the student never to attempt to explain behavior from hearsay or from a superficial observation of one or two manifestations of an act. Report is notably inaccurate because of the perceptual errors of the observer, the bias of those carrying the report and the distortions that result from the telling. This is especially

likely to be the case when a bit of peculiar conduct is reported. The teacher or clinician wants to arrive at the reason for an act and he surely cannot do it if all he has is a distorted narrative. Furthermore, when once we discover the cause of some piece of behavior in one person there arises a temptation to explain the same or similar conduct in another person in the same manner. The student of abnormal psychology must be on his guard continually against explanation by analogies of this sort.

Sherrington has shown by experiment how a number of central impulses may all try to get control of what he calls the "final common path." What the organism finally does, depends upon an integration and balancing of all the stimuli both internal and external that are operative at the time. One may have a stimulus to laugh at the same time that he has another to make him cry. Which will he do? One will finally gain the ascendancy and will dominate the conduct.

We can make this clear by an illustration. The other evening the author attended a moving picture in which a number of children were subjected to persecution of such an extreme character that all those in the audience were very much aroused emotionally. The tension grew until the climax of horror was reached when the children were trying to escape through a wilderness from their tormentor. In this scene they were all out on a rotten log over a stream filled with alligators who reached up in their efforts to get the children. The log began to give way and the jaws of the alligators came nearer and nearer to the struggling children. The audience gasped with horror for a time and finally broke out in boisterous laughter. What had happened to them? The horror of the scene was so great that they had to modify their reaction. As their emotional tension became greater and greater it became unendurable so that the realization that it was a travesty broke through and the violent laughter resulted. If a stranger had come in at that moment he would have been astounded to see an audience laughing boisterously when presented with such a grewsome scene. Such seemingly perverted conduct

could not be explained without a knowledge of the complete situation.

This illustrates what is happening with us all the time. The various factors operative at one time produce an incessant conflict; they are all struggling for control and when we do a thing it means that certain forces gain the ascendancy and dominate our acts. In the next instant a contradictory set or at least a different set may become supreme. In other words, while the final behavior may appear relatively simple, the forces behind the behavior are always more complex than appearances would suggest. Our question, "Why did he do this thing?" must be modified to read thus, "What factors were operative at this particular time to make the person do this?" Several people in the same situation may laugh from entirely different motives. One may be responding to a joke that he has heard, another may not have seen the point but be laughing so that the others in the party will not discover that he failed to see the point, another may have been thinking of something entirely remote and laugh mechanically or in response to his own thoughts, while another may have been thinking of a joke that he wants to tell and laughs at his own pet story. The same general response may result from different stimuli although the difference may not be readily apparent.

On the other hand the same situation—as far as we can observe it—may produce entirely different reactions in different persons. If the joke happens to "be on us" it ceases to be funny and we may become angry instead of amused. An adequate interpretation of any bit of conduct depends upon a knowledge of the complete setting of the act.

167. Various sources of motor disorders. The cause of a motor disorder may be at any point along the sensory-motor arc from the sensory organ to the motor organ. It may be in the motor organ itself, in the efferent fibers leading to the motor organ, in the reflex centers, or in the higher coördinating centers. It is usually pretty easy to discover if the disturbance is on the sensory side of the arc because

we can stimulate the motor apparatus from different sensory stimuli; and, of course, if the motor disturbance is normal when we have one type of stimulus, and deranged with another, the trouble is obviously in the sensory apparatus.

The type of motor disturbance which holds the greatest interest for us is the one which is caused by central factors. However, these cannot be understood unless we know something of the nature of those depending upon the reflex centers and upon the motor organs themselves. We shall therefore take up our study by investigating first disorders of the motor mechanism, functional disorders of the motor mechanism, and then disorders of the more complex expressive functions.

XLI. DISORDERS OF THE MOTOR MECHANISM

Only those motor disorders will be discussed which have a bearing upon the interpretation of mental processes. Some of these have value in excluding the possibility of a functional background. This is especially true of reflexes and muscle tonus. Paralyzes, tremors, incoördination, and convulsive movements may be either functional or organic, and the psychologist should be able to distinguish them for that reason.

168. Reflexes. The examination of the reflexes is most important in any case of disordered motor function. The psychologist should be familiar with the most important reflexes so that he can briefly test them. Should he find them disordered he can be sure that the patient should have a complete neurological examination before any mental reëducation is attempted. If, on the other hand, the reflexes are normal, he should be encouraged to search for the root of the trouble in some of the higher personality integrations. Of course the loss of the reflex does not conversely indicate that there is no disturbance of the higher functions. One cannot measure mental integrity by testing the reflexes.

Reflexes are usually divided into two rough classes. The superficial reflexes are those that result from stimulation of the nerves in the skin as by touching, scratching or pinching.

The deep reflexes are those that result from a stimulation of the deeper nerves, chiefly those of the muscles. Most of the latter reflexes are elicited by tapping a tendon. Such a tap produces a quick pull on the muscle, the sensory stimulation from this pull is carried to the nerve center and a reflex excitation causes a contraction of the muscle.

1. *Superficial reflexes.* There are many superficial reflexes.¹ We shall give a few of those most easily examined.

(a) THE CORNEAL AND CONJUNCTIVAL REFLEXES. These are produced by taking a small piece of absorbent cotton, rolling it tightly and moving it over the conjunctiva (the outer covering of the eyeball) to the cornea. Normally the eye should wink. In some conditions (notably hysteria) the patient will permit the examiner to place the cotton on the cornea without any reflex movement.

(b) THE PHARYNGEAL OR PALATAL REFLEX. Stroke the back of the throat with a spatula or small wooden object and the patient will normally cough or gag. This may also be absent in hysteria.

(c) THE PLANTAR REFLEX. This is the most important of all the cutaneous or superficial reflexes. Have the patient raise his leg and support the calf. Using a blunt object, rub along the inner side of the sole of the foot toward the toe or from side to side. In the normal adult individual there results a flexion of all the toes. Normally in infants and abnormally in adults this stimulus will produce a flexion of the four small toes with an extension of the great toe. This is known as the Babinski reflex. The presence of the Babinski reflex indicates an involvement of the pyramidal tract. Up to the age of eighteen months the pyramidal tract² remains undeveloped and so the presence of the Babinski in infants is normal. When found in adults it indicates a pathological

¹ A list of the human reflexes is given in Howard C. Warren's "Human Psychology," Houghton Mifflin, 1919, p. 101.

² The pyramidal tract is a bundle of motor fibers that connects the motor cells (called pyramidal cells) of the brain cortex with the motor organs.

involvement of the pyramidal tract. The Babinski is an important means to help distinguish between organic and functional conditions. In purely functional conditions the Babinski reflex is not found.

(*d*) THE CILIO-SPINAL REFLEX. This is elicited by pinching the skin at the nape of the neck. The pupils should dilate upon such stimulation.

2. *The deep reflexes.* Like the superficial the deep reflexes are numerous. We shall describe only two of the most important and most easily examined of these.

(*a*) THE KNEE JERK. Various positions have been used in testing this reflex but the best method is to have the patient sit on a table with his legs hanging loosely. Feel for the lower end of the patella, and with a rubber hammer, a book or the fingers strike the patellar tendon just below the knee cap. The foot should kick out. If the patient is watching this performance the reflex may not occur. If with his attention diverted it cannot be elicited it may be produced when reinforcement is used. This reinforcement consists in having the patient clasp his hands, pulling as though to tear them apart. Just as he gives a pull on his hands strike the tendon. If this does not produce the response still another method may be tried. Have the patient sit on a chair with his feet flat on the floor. With one hand placed on the quadriceps muscle strike the tendon while the patient pulls his hands. The examiner may feel the contraction of the quadriceps muscle even though the foot may not move.

The knee jerk may be absent or exaggerated. An absence of the reflex may indicate a pathological condition involving the spinal center. An increase of the reflex may indicate a condition of emotional excitement or an involvement of the cord above the center used in the reflex. The normal connections of reflexes with the higher centers exercise an inhibitory effect by these higher centers on the reflex. If this inhibitory connection is broken the reflex will be exaggerated.

(*b*) THE PUPILLARY REFLEX. There are two methods of eliciting the pupillary reflex. The first is to permit a light

to strike the eye. This can be done by a flash-light or by shielding the eye and then exposing it to a window or electric light. The light should produce a contraction of the pupil. The second method is to have the subject look first at a near and then a far object of as nearly equal illumination as possible. Normally the pupils become smaller when the subject looks at a near object and larger when he looks at a distant object. When the far and near reaction is present but the reaction to light is absent the condition is known as the **Argyll Robertson pupil**.

If any of the above reflexes are not normal the individual should be examined by a competent neurologist before any corrective work is attempted.

169. Tonus. Muscle tonus is a condition of partial contraction of the muscle which may be maintained for long periods of time with very little consumption of energy and with very little fatigue. It is the normal condition of most muscles of the limbs and trunk in ordinary waking life. Tonus depends upon neural stimulation rather than upon anything in the muscle itself. This stimulation is a reflex phenomenon depending upon the stimulation coming from the sensory nerves in the muscles. Sherrington¹ has shown that this reflex tonus is connected with the maintenance of posture. As we maintain a posture we are continually getting sensory impressions which in turn stimulate the muscles in such a manner that the position is maintained.

1. *Hypertonicity.* In certain conditions, notably emotional excitement, tonus is increased. The muscles become tense and remain so for long periods of time. This increase in tonus is normally a preparation for violent activity. Where the activity is inhibited the person may have an abnormal degree of tension which is readily recognized as a sign of emotional excitement.

2. *Atonicity.* This describes the person who shows a marked degree of lassitude. This may be exhibited locally or may involve the whole organism. In cases of emotional

¹ "Brain," 1915, 38, p. 235.

apathy or depression this condition is usually found. The subjects may make no active movements for long periods. They may be handled like puppets, pushed hither and thither with no normal resistance to such treatment.

If the teacher observes what appears to be either an increase or a lack of tonus, she would do well to have the child given a physical examination. Sometimes a glandular condition is behind such disorders and this can be determined only by definite laboratory tests. Sometimes a nutritional factor accounts for a lack of tonus. Hypertonicity may be caused by some physical irritation. If all such examinations prove negative, the teacher would do well to look into the emotional life of the child.

170. Motor paralysis. Motor paralysis is a loss of ability to use certain muscles and may be either functional or organic. In the organic type there is a direct injury to the motor centers or to the efferent tracts from the motor centers to the muscle. In functional paralysis the motor centers are intact as well as the afferent fibers. The disorder is caused by the higher personality coördinations. It is the functional paralyses that we wish to emphasize but we shall postpone their discussion until later. At this time we shall give a brief description of the organic paralyses so that we may have a basis for distinction when we come to study the functional type.

The organic paralyses may be divided into three classes: the upper motor neuron type, the lower motor neuron type, and the peripheral type. This classification is based upon the location of the disturbing lesion. The main motor tract, the pyramidal tract, extends from the cortex to cells in the motor horn of the cord. A lesion of these fibers (called cortico-spinal fibers) gives rise to the upper motor neuron type or paralysis. From the cells in the motor horn of the cord motor fibers (called spino-muscular) run to the end plates in the muscles. Lesions in this section give rise to lower motor neuron paralyses. Peripheral paralyses are due to disorders in the motor organs themselves. The paralyses from

these three causes are quite different in their forms. The main differences between the symptoms of the upper and lower motor neuron types may be summarized as follows:¹

SYMPTOMS OF UPPER MOTOR NEURON PARALYSES	SYMPTOMS OF LOWER MOTOR NEURON PARALYSES
1. Diffused muscle groups affected. Never individual muscles.	1. Individual muscles may be affected.
2. Rigidity of paralyzed muscles.	2. Flaccidity and atonicity of paralyzed muscles.
3. Deep reflexes present in paralyzed limbs and usually increased.	3. Deep reflexes absent or diminished.
4. No atrophy.	4. Atrophy of paralyzed muscles.
5. If foot is affected Babinski is present.	5. If foot is affected, plantar reflex normal with full flexion of toes.

In peripheral paralyses it is a local peripheral nerve which is involved and the result is a characteristic deformity depending upon the part of the body affected.

From this brief outline it may be seen that paralyses are very diverse in form. The enumeration of the specific forms need not concern us. What should impress us is that since there may be such a wide variety of types one must be very careful not to conclude hastily that a paralysis is functional. On the other hand even an expert may be deceived into believing that a functional paralysis is organic. The author sat in a clinic with four psychiatrists and a neurologist who pronounced a patient a case of organic paralysis. He had to be brought to the clinic on a wheel chair. Being impecunious, he was sent to the county poor farm. His residence at this place was by no means a comfortable one. One morning after about a month he was missing, and has not been heard from since. No one helped him to leave and accessory evidence led to the conclusion that he walked away. Such instances of error in diagnosis are by no means rare.

¹ E. L. Hunt, "Diagnostic Symptoms in Nervous Diseases," Saunders, 1920, p. 49.

171. Tremors. Tremors are found in a great variety of forms and have been classified in a number of ways. A large number of them are of organic origin. Some of them are functional and others have an emotional basis. It is often very difficult to determine from the form of the tremor what the background may be.

Probably the best way to classify them from our point of view is into two groups; coarse and fine. In the coarse tremor the rate of movement is slow and the extent great in comparison with the fine tremor whose rate is rapid and extent small. While there are exceptions, as a rule a coarse tremor indicates an organic involvement while a fine tremor is more likely to indicate either a functional disorder or a toxic (poison) disturbance.

The intention tremor is a peculiar type of tremor in which the member shows absolutely no tremor when it is at rest but when a voluntary movement is attempted there begins a small tremor which increases in amplitude as the movement progresses. While the intention tremor may be affected by the emotional condition of the subject—emotions increasing it—it is well known to rest definitely on an organic basis. It has little significance for abnormal psychology, but is mentioned here lest some student seeing it and hearing the name applied to it will think that it rests upon a functional basis.

172. Incoördinations or ataxias. Ataxia is derived from a Greek word meaning disorder. It is used specifically to refer to indefinite, irregular or unsystematic movements that result from some disturbance of the motor centers, the coördinating mechanism of the motor organ itself. "Ataxia is an advanced state of incoördination; incoördination is a mild ataxia."¹

Most ataxias are organic but in some functional disorders the patient may have a lack of coördination which closely resembles the organic type. The presence of ataxia should always be taken as evidence that there is an organic lesion until it can be definitely proved that no such lesion exists.

¹ Hunt, *loc. cit.*, p. 149.

Consequently, the psychologist should be familiar with a few of the simple tests of ataxia to guide him.

1. *Tests for static ataxia.* The most important of these is the Romberg sign. To elicit the Romberg sign have the patient stand erect, his feet together (both heels and toes touching) and his eyes closed. The normal man should be able to stand steadily without swaying. If he sways, the Romberg sign is positive. In serious cases the patient may even fall if not supported. Some patients have learned that they are unable to stand thus and will not close their eyes tightly so the examiner must use care to determine that the patient is not seeing. The presence of this symptom indicates some failure in the coördination of the elements involved in equilibrium.

2. *Tests for motor ataxia.* These consist of having the patient make a certain movement to determine the accuracy with which it can be executed.

(a) THE FINGER TO FINGER TEST. Have the patient, with a sweeping motion of the two arms, bring together the tips of the index fingers of the two hands.

(b) THE FINGER TO NOSE TEST. Have the patient with a sweeping motion touch the tip of his nose with the index finger of each hand. The test should be made separately with each hand.

(c) THE HEEL TO KNEE TEST. Supporting him so that he will not lose his balance, have the patient, while standing, touch the knee of one leg with the heel of the other.

These, as well as other similar tests, can be made both with the eyes open and with the eyes closed. While the accuracy of these movements will be lessened with the eyes closed, the subject should be able to execute them to a fair degree. The student will need to try these on a number of normal persons to get a basis of comparison with the abnormal.

173. Convulsive movements. A convulsion is a violent and abnormal muscular contraction. Convulsive movements may be very definitely localized in a small group of muscles.

These are called tics. They appear in multitudinous forms, such as twitching of the muscles of the face, giving rise to queer grimaces, twisting the fingers, legs or arms, jerking the head, etc. They are often present in functional cases but may have an organic basis. When the convulsive movements are more widespread they are called choretic, a characteristic type of which is commonly known as St. Vitus' dance. In other cases the convulsions involve the whole organism and the patient goes into a violent spasm.

A convulsion in a child indicates the need for a physical examination. But a convulsion often has an emotional background which it would be well for the teacher to recognize. For example, a boy who showed no organic trouble upon careful physical examination one day said to his teacher, "If you do not let me do that you will make me have a spell." Perceiving that he was using his convulsions to get his own way, she told him to have his spell, that he could do the required task after he recovered. He looked at her in a queer manner, as much as to admit that he was caught, did not have his spell, and never had another.

This brief outline of motor disorders will not enable the psychologist to diagnose organic diseases, but it should enable him to distinguish organic motor disorders from the functional disorders which present purely psychological problems.

XLII. FUNCTIONAL MOTOR DISORDERS

We shall now consider those motor disorders which can only be explained when we know something of their history and the personality background in which they flourish. The types that we shall consider are functional paralyses, queer postures or catalepsy, compulsive acts, and automatic acts.

174. Functional paralyses. Functional paralyses are modified by sleep, by artificial means such as hypnosis and may appear and disappear without any seeming reason. If, however, we know something of the mental conditions underlying the disorder we can usually arrive at some explanation of them.

The following instance cited by Janet¹ shows how a paralysis may disappear in a sleep-walking episode:

“A man of thirty-two usually remains in bed, for both his legs are paralyzed. . . . In the middle of the night he rises slowly, jumps lightly out of bed,—for the paralysis we have just spoken of has quite vanished,—takes his pillow and hugs it. We know by his countenance and by his words that he mistakes this pillow for his child, and that he believes he is saving his child from the hands of his mother-in-law. Then, bearing that weight, he tries to slip out of the room, opens the door, and runs out through the court-yard; climbing along the gutter, he gets to the housetop, carrying his pillow and running all about the buildings of the hospital with marvellous agility. One must take great care to catch him, and use all sorts of cautions to get him down, for he wakes with a stupefied air, and as soon as he is awake, both his legs are paralyzed again, and he must be carried to his bed. He does not understand what you are speaking about, and cannot comprehend how it happens that people were obliged to go to the top of the house in order to look for a poor man who has been paralyzed in his bed for months.”

These paralyzes develop from causes totally inadequate to explain them on an organic basis. This is shown by the following case:²

“A girl twelve years old had fallen into a passion, and, against her mother’s will, had quarrelled and fought with one of her little friends. In the heat of the fight, she had been knocked to the ground, and had fallen rather violently on her posterior. This fall had been complicated by an aggravating circumstance; namely, her frock had been much dirtied in a particularly significant part. The pain was slight and did not prevent the girl from getting up again and returning home; but what is essential is that she experienced a feeling of shame, of fright, and tried to hide her fault. The next day began a complete paralysis of both legs, a serious paraplegy³ which lasted eight years. Bear this in mind—eight years’ paralysis of the lower limbs for having fallen rather violently on her back.”

¹ Pierre Janet, “Major Symptoms of Hysteria,” Copyright 1913, by The Macmillan Company, pp. 28–29. Reprinted by permission.

² Janet, *loc. cit.*, pp. 139–40.

³ Paralysis of the lower half of the body involving both sides.

The person with a functional paralysis exaggerates the symptoms of his paralysis:

“Hysteric paralysis is exaggerated, always carried to an extreme, which is very rare in organic paralysis. A man whose hemiplegy (paralysis of one side) is consequent on a cerebral hemorrhage can still move a little, and makes some effort to conceal his paralysis; one in whom hemiplegy is due to hysteria has no longer a shadow of movement in his diseased side. Hence comes this difference in gait. . . . The subject affected with organic hemiplegy . . . walks helically, throwing his paralyzed leg sideways by a movement of his loins. The subject affected with hysteric hemiplegy . . . drags his paralyzed leg in walking as if he did not trouble himself about it in the least, as if it no longer existed at all.”¹

“Functional paralyses are often very inconsistent in their manifestations. When undergoing tests the patient may exhibit them in perfect form. When his attention is diverted to something else he may demonstrate his ability to use the disabled motor organs. For example, a certain patient in the laboratory is unable to move her foot, or even one of the fingers of her hand, without looking at it. In the yard she walks very fast, eyes wide open; she catches any object you throw to her; she follows with her eyes the flying bird, and yet she walks very steadily and does not fall.”²

“In some cases particularly curious, the subject retains the power of jumping, dancing, walking on all-fours, hopping on one foot, etc. He is paralysed in only one single act, normal walking. . . . Sometimes it is found that the subject, at the moment when he tries to walk, experiences an emotion, an anguish analogous to that which would drive an agoraphobe (one with an abnormal fear of open places) to cross a public square. . . . Rem., paralysed for ordinary walking, can, however, walk on tip-toe, as if she were in constant fear of crushing fragile objects.”³

In these cases it is quite evident that what is lost is a certain function. This loss depends upon a condition of the mental life of the patient. To treat a functional paralysis the mental background must be discovered. To center the

¹ Janet, *loc. cit.*, p. 146.

² Pierre Janet, “Mental State of Hystericals,” G. P. Putnam’s Sons, 1901, p. 179.

³ Janet, *loc. cit.*, pp. 328-9.

attention upon the symptom is just what the patient wants and only tends to exaggerate it. Correct the mental difficulty and the paralysis will disappear of itself.

175. Catalepsy. Catalepsy is a condition of muscular rigidity. The illustration given at the beginning of this chapter illustrates a functional catalepsy. The way in which this condition appeared and disappeared eliminates the possibility of an organic cause. No organic cause can be conceived that would appear at eight o'clock each Sunday morning and disappear at eight o'clock of the same evening.

It is often very difficult to distinguish catalepsy from an organic contracture. The latter is often a secondary result of paralyzes and manifests itself in deformed postures because certain muscles contract and remain rigid. In the case cited above it is easy enough to conclude that the posture is not the result of an organic cause because of the manner in which it comes and goes and because the posture is filled with meaning. A true contracture seldom takes the form of a definite meaningful attitude. To be sure this latter criterion is not a definite one because an attitude may be meaningless to one individual but full of meaning to another. Because we can see no meaning in a posture, is no reason for assuming that it is organic. Two general types of catalepsy may be described.

1. *Cerea flexibilitas*. This is the Latin for waxy flexibility and is used to designate a particular type of catalepsy. Patients with this symptom are likely to lack any initiative to make movements of their own. They will stand around like a piece of statuary, until some one moves them. They offer little resistance to such externally imposed movement and when so moved will remain where and in whatever posture they are placed. If you move the arm of such a patient a slight resistance will be offered but when you remove the force required to move it, the arm will stay just where it was when you released it and will not return to the position in which it was originally. If you take the hand of the normal person and extend it horizontally to one side the chances are that

he will let it drop to his side when you release it. If you do the same thing with a person with the symptom of *cerea flexibilitas* the arm will stay in the horizontal position. Furthermore, it will stay there indefinitely. The normal person soon becomes fatigued if he holds his arms at a horizontal position for any length of time, but your patient will hold his arms in this tiring position for a much longer time than is possible voluntarily. After a long time the arm may sink lower and lower but shows no trembling or other sign of fatigue or evident exertion.

You may tell a patient of this type that he does not need to obey you, that you are just having fun with him, but he will maintain the posture in which you place him just the same. One patient being placed in an awkward position was asked why he stayed in that position. He replied, "You make me." Told that no one was making him, that it was just a joke, he answered, "Well, then it is a joke." But he maintained the posture just the same even while saying it was a joke.

The distinguishing mark of this type of catalepsy is that it is produced by force external to the patient, who acts like an automaton, a yielding mass that any person can push around and mold in any way that he sees fit. We shall discuss the relation of such symptoms to the whole personality at a later time, but we should see clearly that in such a patient the bodily movements must in some way be disconnected from the ordinary internal motivation that is present in most of us. Such a patient acts like a reflex machine who has no central coördinating control. The normal man does not respond only to a push, he reacts to the total situation operating at the time. If some one gives you a shove you may move but at the same time you question why he should shove you. You respond to the social situation as well as to the mechanical one. Our bodies are part of us and cannot be regarded as so much extraneous putty for any stranger to maltreat.

2. *Rigid catalepsy.* Rigid catalepsy designates a definite bodily attitude that the patient assumes. The attitude of the

girl on the foot of the bed is an illustration of this. Here the attitude or posture is not the result of irrelevant mechanical forces. It comes from a central stimulus in the patient. Being centrally controlled a patient with rigid catalepsy will energetically resist external manipulation. He may be influenced by suggestion but not by force except when the force acts as a suggestion through his central neural mechanism.

The postures that these persons may take are quite varied.

"The arms, for example, might remain contracted in a menacing or a praying posture. We related the example of a woman who lifted her fist against her husband and who, by a celestial punishment, is keeping her arm contracted in the position of dealing a blow with the fist. . . . A young man, sailor on a merchant-vessel . . . received upon the chest and abdomen the shock of a barrel rolling on the deck. He was not hurt, but he remained bent forward by a permanent contracture of the muscles of the abdomen and thorax. He kept this singular position for six weeks. . . . Margaret has had for a year her right hand contracted in the position of a hand that holds a needle. Justine had her hands contracted in the position a pianist would give them in trying to stretch an octave."¹

That these postures have some central meaning has been shown by the possibility of inducing such cataleptic postures by suggestion, either waking suggestion or under hypnosis. For example, Janet² suggested to a patient while she was under hypnosis that, on awaking, she would take a flower from a bouquet. True to the suggestion she reached out as though to take a flower, but as she did her hand assumed the rigid posture of one taking a flower; thumb and index finger brought together as though holding a rose, and the other fingers slightly curved, but all very rigid. It is possible with hypnosis to suggest various poses and have subjects maintain them for long periods of time with very little evidence of fatigue.

3. *The meaning of postural expressions.* The meaning of

¹ Pierre Janet, "Mental State of Hystericals," G. P. Putnam's Sons, 1901, p. 331.

² *Loc. cit.*, p. 192.

these postural expressions is not always apparent in the postures themselves. Because one has an attitude of devotion does not indicate necessarily that the significant thing in the mind of that individual is his devotion. Even excessive devotion would not make us take a rigid posture indicating that we are devout. The meaning must be sought elsewhere.

Postures in general may be of two sorts, absent-minded postures and preparatory postures. The first type is familiar to us all. When we are lost in thought the position of our limbs or bodies is a matter of indifference. One can tell little about our thoughts from seeing us in such a condition of reverie, because the position that we take is likely to be the result of accidental circumstances. This is the type of postural indifference that we see in the cases of *cerea flexibilitas*. The patient is wrapped up in his own thinking, everything external is a matter of insignificance, including his own body. Place his hands or arms or any part of his body in a peculiar position and the local reflexes will enable him to maintain the posture in the way that we have seen. *Cerea flexibilitas* can then be interpreted as due to a very extreme form of absent-mindedness, such extreme indifference to everything except the thoughts that are engrossing the patient that one can man-handle him in any way that he sees fit. Such a patient is like a plastic piece of putty. He acts as though his body did not belong to him. You can mold him into any shape you care to, and that shape will persist until some other external force makes him change.

The form of attitudinizing that is found in the rigid cataleptic is of a different order. Here the person has not so far retired into himself that he has given up control of his bodily members. They are still an integral part of his whole personality and his postures are a direct result of his mental processes. The attitudes of such patients have been found in many cases to express one side of an intense mental conflict. Suppose a patient has been strongly tempted to do or think something that is contrary to his moral ideas. In mustering his forces to defend himself, he may decide, "I

must be more pious, more religious, and then I surely cannot fail in this struggle." Still the temptation persists so that he must keep more predominantly before him the opposite force typified by, "I must be religious, I must be religious." It is only one step from this to a tendency to repeat the affirmation, "I am religious, I am religious." In such a conflict what more natural than to assume a posture to help out the religious forces? The religious posture may then be seen to be an expression of the urge to be more and more as the posture would indicate. The real meaning of the posture is not what it typifies, but the mental conflict which gave rise to the necessity of maintaining it in self-defense.

When we understand such a mechanism we see how to study such a postural activity intelligently. The question we ask ourselves is, "What is the nature of the mental struggle that would lead to the adoption of such a posture?" If we can answer this question for the specific case under examination we have the secret meaning of the catalepsy.

Evidence points to the fact that the beginnings of catalepsy may be found early in life. It is because these are not understood and are permitted to develop that we have the advanced types that have been described. If incipient cases are properly handled there is little doubt that many more serious cases could be averted. For example, a mother brought to a nursery school a girl of four who went through queer movements, took absent-minded postures during which her hands could be placed in queer postures and would remain there, and during which she would make no response to anything that was said to her. Her mother thought that she must be on the road to insanity and was much perturbed about the situation. In two months' time, under proper treatment by those in the nursery school, who understood that such things had meaning, she completely recovered from these symptoms. Certainly, everyone dealing with young children should clearly understand that postures are expressions of personality trends and cannot judiciously be ignored if the child is to be brought successfully to maturity.

176. Compulsive acts. Compulsive acts are those that are performed without apparent motive, often very suddenly, and for which the subject can offer no rational explanation or excuse. Sometimes they appear silly, as when a child must avoid the cracks in a sidewalk, or must step on each one, when he must kick each post he sees, when he must stamp his palm whenever he sees a white horse. If these are mere games, as they often are, they do not merit the name of compulsion. It is when the individual feels that he must do these things and is uncomfortable if he does not, that they become significant.

Sometimes they are of a more serious nature. When they do become serious, as in the cases of compulsions to steal, to kindle fires, or to kill, the patient usually suffers no regret, but usually offers as an explanation that he could not help it, that he was impelled to do what he did by a force he cannot understand and over which he has no control.

In order to indicate the vast range of such compulsions we shall indicate two extremes. "Maudsley tells of a man who for weeks was annoyed by an impulse to overturn two stones which lay upon a wall, finally forcing him to sneak out at night in order to perform the absurd act."¹ Quite the other extreme is the instance of a man seized with the impulse to take an axe, go into the home of a group of strangers and kill the whole household with the axe. In each case the individual confessed the same inability to resist the impulse when it came upon him. Regardless of the nature of the act these persons acknowledge a vast relief when they have acted upon the compulsion.

There is often a close relation between compulsive acts, phobias, and obsessions. The compulsion can often be explained in terms of an underlying phobia just as the obsession can often be explained by a basic fear. In some cases the victim may be aware of the causal fear behind his compulsion but in a number of cases the subject has no notion as to any

¹ A. R. Diefendorf, "Psychiatry," Macmillan, 1918, p. 507.

emotional background. Let us examine some of the forms that a compulsion may take.

1. *Tics*. "This name is generally reserved for rather sudden little movements of short duration, and other terms are used when the same involuntary movements have a greater extent. These little muscular shakes may present themselves in all parts of the body. You may especially notice them in the face; they constitute grimaces of a thousand kinds, affecting the eyes, the nose, the mouth. The patient puckers his forehead in various ways, raises or lowers his eyebrows, winks, looks sideways by starts; he makes his nostrils tremble, closes or opens them too much. A very interesting patient . . . blows violently through his left nostril. Others seem to wipe their noses or to sneeze; their lips suddenly draw to the one side or the other, stretch forward or shrink backward, or else are continually bitten—the upper lip as well as the lower one. . . . In tics of the neck (the patient) involuntarily and suddenly inclines his head towards one shoulder, or throws it back, or bends it forward, or turns it on its axis. . . . In tics of the limbs the arms, the hands, seem to have taken strange habits; they rise suddenly or move backwards; the shoulders are shaken convulsively; the legs, instead of regularly performing the act of walking, every moment interrupt it by a strange little shake of the knee or foot or toes."¹

When the movements are more widespread than the tic they are called *choretic movements*. As we have said these movements are often based on an organic irritation but there is no doubt that some of them have quite a different significance. One characteristic of the functional type of choretic movement is that they do not seem so distasteful to the one afflicted with them as one would be led to suppose.

"The patients say that they are trying to stop, that they do not like to perform peculiar actions, but at the same time they seem to be perfectly happy about it. For example, one patient in a hospital would lie flat on his back in bed. Suddenly he would give a violent contraction of his back muscles in such a way that he would throw himself a foot or so up from the bed. The body would scarcely have stretched out to normal when another violent jerk would come and throw him up in the air again. These movements would last from several minutes to half an hour, and the

¹ Pierre Janet, "Major Symptoms of Hysteria," Copyright 1913, by The Macmillan Company, pp. 120-1. Reprinted by permission.

patient would be utterly exhausted at the close of such a session. One might think that such a violent series of movements would be extremely unpleasant. On the contrary, this patient, perfectly conscious all through, would look up after a particularly violent jerk and laughingly say, 'That was a good one, wasn't it?' The observer would be forced to infer that, while the attacks looked gruesome, the patient was certainly enjoying them."¹

Various explanations have been offered to account for functional tics and choreas. One theory is that they originate in an organic irritation, the movement is a natural reaction to such irritation. After the organic irritation disappears the movement has been organized into a habit and persists when there is no irritation to give immediate cause for it.

Another explanation is that they are symbolic representations of a mental irritation of some sort. This group of theorists would explain many of them as secondary expressions of a sexual irritation. In support of their view they have especially emphasized thumb sucking and nail biting as indicative of this kind of irritation.

It is quite evident to anyone working with these symptoms that they are expressions of a basic emotional instability and tension. They are never successfully treated by directing attention to the symptom itself. This may cause a cessation of the particular manifestation but it is very likely to crop out in another form. On the other hand, if the cause of the emotional instability is removed, if the person attains poise and becomes normally relaxed, the tic or chorea automatically disappears.

2. *Ritualistic acts.* Ritualistic acts are little ceremonials that one goes through as accessories to the ordinary acts of life. One person always stops and bows before going through a door, another must touch the door jam first on the right and then on the left side, another person will turn around in a complete circle before sitting down, another will make specific fantastic movements with his hands before rising. In

¹ John J. B. Morgan, "The Unadjusted School Child," Copyright 1924, by The Macmillan Company, pp. 198-9. Reprinted by permission.

some cases the movements are more bizarre. One boy will suddenly throw himself upon his stomach upon the floor, mumble a few incoherent phrases, then kiss the floor and arise. In some instances these acts may resemble a religious ritual but are not usually recognized as such by the subject, who may be of a non-religious make-up.

Until recently such bizarre conduct was simply described as so much nonsense, was given the name clownism, and was taken as evidence that the person was unbalanced. The psychoanalysts have tried to interpret these acts as symbolical of some hidden mental process.

The method which they used in arriving at such an interpretation was to have the patient give free associations to each of the different parts of a ritualistic act and then to piece these associations together. We get nowhere by the assertion that the behavior is meaningless, and surely the meaning we want is not what the acts may mean to the observer but what they mean to the subject. If we can get true associations to the acts then we will have valid material for interpretation.

3. *Compulsions and phobias.* A phobia in many cases naturally leads to a compulsive act. If one has a fear of filth he may have a handwashing compulsion to go with it. The fear of dirt drives him to a continual cleansing. In such a case it does no good to work with the compulsion if you have not removed the underlying fear. We had a boy in the hospital who was incessantly washing his hands. One day one of the patients told him that if he ever hoped to get out of the hospital he would have to stop washing his hands, that we kept him because he persisted in this performance. As a result he told the doctor he had stopped washing. Apparently he had. But when he was watched it was found that he was surreptitiously still washing. The trouble had not disappeared, he had simply decided to hide its manifestation.

4. *Compulsions and obsessions.* We are all familiar with the experience of having an idea persist until we are forced to act upon it. An illustration will indicate how this takes place normally. A young couple were touring the country in their

car. One night they stopped at a hotel in a small town and since there was no garage they left their car parked in front of the hotel. Just as they had gone to bed the young wife said to her husband, "Did you lock the car?" Now, locking the car was an automatic performance for him and he was sure that he had done so, although he could not recall specifically having done so. He assured his wife that he had locked it but doubts assailed him and he could not go to sleep for trying to recall whether he had or not. The more he thought about it the more troubled he became, although he kept telling himself that he had. Finally, he dressed, went down to make certain, and, of course, found that the car was locked. Then he could go to sleep.

In pathological cases the doubt persists in spite of frequent assurances that there is no occasion for it. A patient will question whether she has locked the door of her room, will go and look and thus assure herself that it is locked. In a few moments the doubt will return and she must go again to reassure herself. This may be kept up for hours at a time with dozens of trips to ascertain that the door is locked. In such cases the reassurance does not remove the doubt as it did in the case of the young man and the automobile. Consequently, it is evident that the doubt is the thing to be treated. When properly investigated it is usually found that the doubt is a symbol of something else in the mental life of the patient.

5. *Specific compulsions.* Many individuals show a tendency to do some specific act of a particularly irrational sort whereas the rest of their lives may be relatively normal. These compulsions have been given the name monomanias. Like other compulsions they can be understood if we discover the underlying cause and do not accept the name as an explanation. They take various forms. We shall mention a few of the most important of these.

(a) *WANDERLUST.* Some persons are seized with an uncontrollable impulse to ramble or roam about. They go here and there until their money becomes exhausted. Such a tendency means that for some reason travelling has become over-

valued. Why? We must learn something of the background of the individual if we are to explain it. We had one boy brought to us with such a complaint. He had stolen some money and had taken a trip to a neighboring town, where he was found by the police. It was learned that he had made similar trips before the one leading to his arrest. Investigation showed that his mother had the same tendency and he doubtless acquired his interest in travel from her. His mother had a very unsatisfactory home relationship and had been periodically seized with a keen desire to return to her home in England. She had on three different occasions secured enough money to get to England but had to be supplied with funds from charity to return. At the time that the boy took this last trip his mother was stranded in England. The mother's trips were clearly the surrender to an impulse to get away from an unpleasant situation and to return to her childish life where she was no doubt much more happy. The home situation was no more pleasant for the boy than for the mother and he was simply adopting her tactics to escape it.

In general, wanderlust can be traced to an inability to face actual life situations of one sort or another. The foreign or distant scene always looks more glowing than our own surroundings, especially when the latter are not ideal. Having reached the distant place we find it just as humdrum as the place we left and so, if we have not learned our lesson, we must move on again.

(b) KLEPTOMANIA. This is a term applied to an irresistible impulse to steal. Usually the stealing is particularly foolish, the stolen articles have no particular value for the thief and the stealing is often done in a childish and silly manner. Wealthy women, who have no need for anything, will take articles from department stores. One man, whose wife had such a compulsion, made an arrangement with the stores frequented by his wife, whereby they would send him the bills for the things that his wife took. Healy¹ has investi-

¹ William Healy, "Mental Conflicts and Misconduct," Little, Brown, 1923.

gated a number of such instances and has found that they are expressions of some mental conflict.

In some cases the articles stolen have the significance of a fetich. Burt¹ gives a good illustration of this sort.

A fifteen-year-old boy was taken for stealing a watch and some money from the school master. When asked why he took the watch he said: "I suppose it was the glass. I put my pen through it, and then smashed the works." Asked what he did with the money, he replied: "I wanted to pay for some glasses I had ordered." Investigation revealed the fact that he had accumulated fifty-four pairs of spectacles. Some he had found, others he had stolen. It appears that the boy was having a particularly hard time with his studies. This situation made him envious of others who were doing good scholastic work, several of whom wore glasses. The accumulation of glasses symbolized to him the acquisition of their mental ability. "The boy's main reaction appears to have been jealousy, with the almost fetishistic idea that to wear the externals of those superior to him in work would somehow confer their ability."

(c) OTHER COMPULSIONS. A large number of other compulsions have been described and have been given Greek names. Some of them are: pyromania, a compulsion to kindle fires; dipsomania, a compulsion to drink intoxicating liquors; and homicidal mania, a compulsion to kill. Regardless of the form that the particular compulsion may take or the name with which it may be labeled the mechanism of compulsions is usually the same. The root of the trouble is some mental conflict and the conduct is a symbolic act expressing some phase of the inner struggle. In some cases the conduct may be an apparent bursting forth of some repressed tendency, in other cases it may be purely symbolical. The way to arrive at the cause is to determine with what, in the mind of the patient, the particular compulsive act is associated. To deal with the act as a rational performance is absurd and leads nowhere. To determine why the act is significant for the patient paves the way for an adjustment.

¹ Cyril Burt, "The Young Delinquent," D. Appleton & Company, 1925, 175-78.

177. Automatic acts. Some automatic activities are the result of habits which have been so well organized that they require no control for their execution. 'One walks, swims, writes on the typewriter or carries on similar complex activities with no thought as to the manner in which the movements are executed. They have been so well learned that they are almost reflex in their operation.

Of quite a different sort are automatic acts which are not based so clearly on habit and which the person may wish not to perform when his attention is called to them. These have been called symptomatic acts.

"Different ways of occupying the hands often betray thoughts that the person does not wish to express or even does not know of. It is related of Eleanora Duse that in a divorce play, while in a soliloquy following a wrangle with the husband, she kept playing with her wedding-ring, taking it off, replacing it, and finally taking it off again; she is now ready for the seducer. The action illustrates the profundity of the great actress's character studies. . . .

"Analysis of (these symptomatic acts) shows that they are the symbolic expression of some suppressed tendency, usually a wish. In many instances the action is a complicated one, and performed on only one occasion; in others it is a constant habit that often is characteristic of the person. The mannerisms of dress, of fingering the moustache or clothes-buttons, the playing with coins in the pocket, and so on, are examples of this kind; they all have their logical meaning, though this needs to be read before becoming evident."¹

XLIII. DISORDERS OF THE EXPRESSIVE APPARATUS

Speech and writing are by far the most important forms of motor expression that man possesses. Because of the complexity which they involve, they are subject to peculiar disorders, many of which could have been avoided by judicious training.

178. Disorders of speech. Speech is one of the most used and most characteristic forms of expression that the human

¹ Ernest Jones, "Psychoanalysis," Baillière, Tindall & Cox, 1918, p. 82.

being possesses. Through speech we not only express ourselves to others but through speech we cover our secrets and deceive others.

A large number of the symptoms that we have already described have been manifest only through the speech of the patient. It is not our purpose to review all these at this time but to point out the difficulties that are manifest in the act of speaking itself. However, these cannot be understood without some reference to other factors in the mental life of the subject.

1. *Mutism.* A person may be mute because of sense deprivation. The deaf-mute cannot talk because he has no way of evaluating sounds. We have already seen that sensory intake is necessary for motor control of any sort, hence, if one lacks from birth the ability to hear sounds he cannot be taught to control his own production of sounds. Mutism may also be based on mental deficiency or brain injury.

There are forms of mutism that are not dependent upon deafness or any organic disturbance of the central mechanism or of the speech organs. The case given at the beginning of Chapter II illustrates a functional type of mutism in an immature boy. In adults mutism may be a symptom of serious disease or it may indicate hysteria.

The same factors which helped us to distinguish functional disorders of other forms are also present in functional mutism. They can be distinguished from their history, from the fact that the mutism is inconsistent and usually overdone.

Mutism of this sort is often brought on by an emotional trauma.

“A man of about forty, living in a little town, had saved some money; his wife persuaded him to come and spend it in Paris. He settled with her in an hotel in the metropolis. One day, after a short absence, he came back to the hotel and found that his wife had disappeared, taking the little hoard with her. The poor man was so upset that he was deprived of utterance, and remained speechless for eighteen months. Now, though seemingly cured, he is still liable to the same accident; at the least

emotion or fatigue, he loses again the use of speech for a fortnight or for two months."¹

Mutism is often adopted by children as a means of bringing adults to terms. It is a very effective weapon because of the intense interest that adults usually have in the proper development of the child's speech. Rather than do anything to disturb the child's speech, the adult surrenders, little realizing that such procedure merely acts as a temptation to the child to continue the ruse.

2. *Stuttering*. "A great many speech disorders are due to abnormalities in the peripheral organs, such as cleft palate, malformed arch, poor occlusion, etc., such cases naturally going to those who specialize in this field. When, however, we study an unselected series of speech disorders in adults and in children, we find that perhaps not more than ten or fifteen per cent are caused by abnormalities in the peripheral organs. The rest are due to functional causes. . . . The stuttering is only a symptom of the anxiety, fears, and lack of emotional poise."²

Surveys of the incidence of speech defects indicate that about one per cent of the total population stutters. It is one of the most common types of motor disorder that we find and is probably the least understood.

"Terman states that the number of stutterers 'exceeds the combined number of deaf, blind, and insane,' and adds that 'when we remember, further, that a large majority of speech defects could be readily and inexpensively cured, the usual apathy assumes almost the aspect of cruelty.'"³

Probably the greatest deterrent to a true understanding of the stutterer lies in the fact that we have been prone to devote our attention to the stuttering and not to the possible causes of the stuttering. Stuttering is a symptom and, as we have repeatedly stated, to treat a symptom is absurd. We must unearth the cause and treat it.

¹ Originally reported by Charcot. Cited by Janet, "Major Symptoms of Hysteria," Copyright 1913, by The Macmillan Company, p. 211. Reprinted by permission.

² Smiley Blanton, *Jour. of Oralism and Auralism*.

³ M. G. and S. Blanton, "Speech Training for Children," Century Co., 1919, pp. 102-103.

The trouble usually begins with some rather serious inability to adjust some personality difficulties. This maladjustment often shows itself only slightly in speech for a time, but in a situation of emotional stress the child may find himself unable to express himself adequately. When such a manifestation appears he is treated in a manner well calculated to aggravate the difficulty. His comrades laugh at him, his parents or teachers scold him or, in sympathy, attempt to overlook it, but their charity in the latter case is so obvious that it only increases his emotional turmoil. In any case the possible cause is overlooked and the condition is likely to become chronic. Cases of seemingly spontaneous recovery, when investigated, only serve to verify this viewpoint. In such cases some outside factor has served to resolve the emotional difficulty and the stuttering, never more than a symptom, disappears.

A study of stuttering has shown that there is invariably an emotional element involved. This has received various expressions. It has been supposed that a stutterer can talk better when alone than when with others. He can speak better when he is calm and collected than when excited over any situation. If he is particularly tired he is likely to stutter worse than when he is well and energetic. Consequently, it has been customary to teach the stutterer to be calm and collected at all times. This, of course, is not invariably possible. There are times when all of us get excited but we do not stutter for that reason. Hence, while emotional excitement aggravates stuttering we need a deeper analysis to determine why excitement will make one person stutter while it does not so affect another.

We have learned that under emotional stress a person may tend to become transfixed with fear or to adopt a fighting attitude. Normally the first is simply a transitory stage leading to the latter. If the fear reaction is maintained the whole body is tensed and inactive, the individual can do nothing. In wild excitement the subject will do all sorts of things; but the significant thing is that he does something. From this

point of view stuttering is a continuation of the fear attitude; it occurs in the individual who reacts with fear to difficulties rather than with active attempts at solution.

Some recent experimental evidence bears out this point.¹ It has been found that under normal conditions the voice of the stutterer has similar variation in pitch, or even more variation than the non-stutterer. Under emotional excitement the stutterer has less pitch variation than the non-stutterer. Since restricted pitch range may signify fear tension, this shows that what is needed is not to teach the stutterer to vary his speech in speaking, as has been advocated, but to teach him an active and aggressive attitude in place of the cowardly fear attitude he has been accustomed to adopt.

This explanation also shows why the typical treatment of the stutterer aggravates his difficulty. He is the butt of all sorts of jokes, he feels that he is different from others, and as soon as he attempts to speak he becomes frightened. He is told that if he does not remedy his defect he will be a failure in life, and his whole attitude is the attitude of failure. The remedy is not to train the child to correct his speech mechanism as such but to reëducate his personality. This means that anything that will increase his self-confidence—that will make him turn from a fear attitude to a fighting attitude—will help and any method which reduces self-confidence is faulty.

Sometimes the cause of his fear is a specific experience or a series of such experiences. In such cases the specific causes should be discovered and a new attitude developed toward these. Sometimes the attitude is not dependent upon any one experience, but on a series of incidents. In any case it must be remembered that the essential thing is emotional reëducation.

Most chronic stutterers have a history of mismanagement in the class room. The teacher has either ignored them out of seeming charity, or has tried forcibly to cure the defect

¹ L. E. Travis, "Study of the Stutterer's Voice and Speech," *Psychol. Monog.*, 1927, 36, pp. 109-141.

by open exposure, ridicule, or harsh commands to speak properly. This is all due to a failure to recognize that stuttering is a personality problem. The majority of cases of stuttering, if treated early may be cured, mistreated or ignored they tend to become chronic. If the teacher does not know how to handle such cases she should refrain from bungling methods and refer them to some one who does know. To ignore them is inexcusable.

3. *Organic speech defects.* One should be careful not to confuse defects due to organic deterioration or some part of the neural mechanism with stuttering. Organic defects can usually be distinguished from functional stuttering rather easily. Every one knows that a stutterer at times can talk very fluently and easily. The very sounds which make him pause at one moment will be glibly enunciated an instant later. Organic speech defects are free from this distinguishing mark. In the latter some of the muscles of the lips, tongue or pharynx may be paralyzed or the coördination of the different parts may be faulty.

As an example of organic faulty speech the so-called paretic speech is very striking. Paresis is a destructive disease which involves rather widespread areas of the cortex and often some lower centers. The following characteristics have been observed in paretic speech: It may be thick, indistinct and tremulous, or it may be a slow drawl with deliberate enunciation of each syllable. This latter characteristic has been called scanning speech, the patient talks as though he were scanning poetry. Another characteristic has to do with the sequence of syllables. The patient may omit syllables, reduplicate syllables or interchange them. All these symptoms are the result of a lack of coördination of the various elements involved in the speech process.

The above characteristics are usually brought out by giving the patient certain test phrases to repeat, such as: Methodist Episcopal, third riding artillery brigade, medical electricity, etc. For *medical electricity* the patient may say *medcal elixity*, *medcalixity*, *medcal extricicity*, or some other queer

combination. He may say *Methdist pispacol*, etc. Often when he attempts to repeat the phrase it comes out with explosive force. It can be seen that such speech is quite different from the characteristic functional stutter.

179. Writing disorders. Next to speech the most used method of motor expression is that of writing. Theoretically one should be able to tell a great deal about the personality of the writer from the way in which he expresses himself, from the form of the writing and other related characteristics. In spite of this supposition little valuable scientific research has been done in this field. Some have made wild claims of ability to analyze character by means of handwriting but they have not, under adequate control, demonstrated anything more than the ability to make broad generalizations which have little practical value. It is only when the content of the writing is considered or when extremes of one sort or another appear in the form of the writing that it can be of value to the student of human nature. It should be added that evidence derived from a study of writing should not be taken at face value or considered as sufficient evidence for a complete personality analysis. It is only when such evidence is supplemented by other evidence that it becomes valuable.

1. *Motor incoördination in writing.* Most writing incoördination is due to some organic defect. One of the most striking is the paretic writing which has some of the characteristics of the paretic speech just described. Such writing is shown in Figure 18. An outstanding feature of this writing is the tendency to omit or duplicate portions of the writing. This is seen in the omissions in the word April and in the tendency to make too many loops in writing such a letter as *n*. A handwriting tremor is shown in Figure 19.

2. *Peculiarities in writing output.* If the mental processes are shattered as in some types of mental disease this may show itself in the things that the patient writes. Figure 20 illustrates the production of a patient who has a marked disintegration of personality. The writing is incomprehensible. New words are coined (neologisms), there is a strange

A

Manhattan State
Hospital Monday

October 15 1922

This is a beautif-
-ul day

B

Manhattan State Hospital

This is a beautiful day in April

- Around the ragged rock the ragged verdure ran

Benjamin Bicker
April 7 1908.
1919.

FIG. 18. PARETIC SCRIPT

Illustration A shows a marked disturbance of coordination. There are marked interruptions in the lines which are especially pronounced in *beautiful*, which is hardly legible. In B one may observe numerous reduplications of strokes and letters. (From Eugen Bleuler, "Textbook of Psychiatry," The Macmillan Company, by permission.)

repetition of words and numbers in a totally senseless fashion. It will be noted here that the striking thing in this illustration is not the form of the writing but the peculiar things that are written.

3. *Writer's cramp.* An interesting phenomenon is what has been called writer's cramp. When one has written for a long time the muscles of his hand and arm may refuse to

This is a fine day
 This is a fine day
 Ther is a fine day
 Electricity is very useful
 Electricity is very useful

FIG. 19. HANDWRITING OF A CHRONIC ALCOHOLIC OF 63 YEARS

He drank heavily, mostly whiskey, for about 45 years. The characteristic tremors are plainly visible, and increase with fatigue, as shown in the last two lines. (From Eugen Blueier, "Textbook of Psychiatry," The Macmillan Company, by permission.)

operate and the writer is forced to desist. This looks like a sort of organic paralysis caused by fatigue, but in many cases such a writer's cramp is of central origin. In such cases it has been found that the writer is running out of ideas. His writing paralysis then becomes a defense against admitting that he can no longer make his brain function. His hand refuses to work until his ideas become clear and then the writing cramp ceases.

4. *Mirror-writing.* By mirror-writing is meant writing in which all the letters and words are reversed, as they would appear if we looked at ordinary writing in a mirror. This phenomenon is not very common but the few cases that have been found have created a great amount of interest and speculation. Some children show a tendency toward this type of writing which is very easily corrected. In others the tendency seems to persist. There are individuals who can write either forward or in true mirror style, and still others who write normally with one hand and mirror-writing with the other.

Mühl¹ reports the case of a woman during automatic writing "writing forward normally on one line, dipping down at the right margin and writing mirror-wise on the next line, again dipping down at the left margin and writing forward, etc., without ever taking her pencil from the page." This woman "used mirror imagery as a child in play activities . . . and probably this practice of recklessly juggling spatial perception which gave her the ability to reverse images . . . plus the convenience of not taking her pencil from the paper, caused her to adopt the particular mode of writing in which she indulged."

It has been demonstrated that our knowledge of space relations is built up by experience and it is only because our experiences have been as they were that we should write forward. If one in his childhood has by some chance learned the reverse relationships this phenomenon is not so strange. The puzzling part is that in some individuals it should tend to persist. This persistence may be based on training which has occurred without the knowledge of teachers. It was quite a fad when the author was in elementary school to produce mirror-writing notes so that those who did not know the method would not be able to read them. At first mirrors were used in the writing, but most of the boys soon learned to write mirror script without the aid of a mirror. Inability

¹ Anita M. Mühl, "The Use of Automatic Writing in Determining Conflicts and Early Childhood Impressions," *Jour. Abn. Psychol.*, 1923, 18, 6.

to change from such a habit indicates a lack of plasticity, an inability to drop one habit system for another.

XLIV. MOTOR FUNCTIONS AS EXPRESSIONS OF PERSONALITY

In our survey of motor disturbances we have seen another phase of personality. Our motor responses are in the last analysis a means of expression, they indicate the way in which we have received impressions through our sensory apparatus and how they have been coördinated. Some of the problems that these motor disorders present cannot be entirely analyzed until we study the integration of the personality as a whole. They will, nevertheless, give us a background upon which to build when, in Chapter X, we shall make a study of the person as a whole.

One thing we should like to emphasize before leaving this subject. We judge others by their motor expressions—their actions, their speech, their writing, and their bodily postures. But we can understand the significance of these motor expressions only when we have answered the question, “Why does he behave thus?” Social adjustment involves the inhibition of certain tendencies, the disguising of our impulses under expressions designed to mislead the observer. While this is true in normal life it is vastly more significant when we study abnormal manifestations. The clever student of human nature is the one who learns to see the real significance of various motor expressions.

IMPORTANT TECHNICAL WORDS

ataxia. A lack of coördination of muscular movements.

catalepsy. A condition of muscular rigidity.

chorea. Commonly called St. Vitus' dance. A condition characterized by widespread convulsive twitchings.

compulsion. An irresistible impulse to perform some specific act.

conjunctiva. The mucous membrane which lines the inner surface of the eyelids and the fore part of the eyeball.

contracture. A state of permanent rigidity of the muscles.

convulsion. A spasmodic contraction of the muscles. Cramp.

- cornea.** The transparent covering of the front of the eyeball which covers the iris and pupil.
- efferent fibers.** Fibers which carry impulses from the nerve centers to the muscles and glands. Motor fibers.
- fetich.** An object of unreasoning devotion.
- mutism.** Without speech.
- obsession.** An obtrusive, unwelcome, and unreasonably persistent idea.
- paralysis.** The loss of function.
- paresis.** The name of a disease characterized by degeneration of the higher nerve centers.
- patella.** The kneecap.
- reflex.** An immediate, definite response to a sensory stimulation.
- sensory motor arc.** The neural pathway from the sense organ to the nerve center, through the center, and back again to the motor organ.
- tic.** The habitual twitching of a small group of muscles.
- tonus.** The state of partial contraction of muscle fibers.
- tremor.** A quivering or vibratory motion.

PROJECTS FOR FURTHER STUDY

1. Learn to make the tests for reflexes and motor coördinations described in the chapter. Have some physician demonstrate the reflex and motor reactions of some patients with different forms of motor disorders.
2. Hold your arms horizontally at your sides as long as you can, timing yourself. Have a cataleptic patient demonstrated and measure the time that he can hold his arms in a similar position. Notice the tremors in your arms when you begin to get tired, and note the absence of any such movements in the patient's arms.
3. You can study in yourself something analogous to the restless urge which drives a patient to a compulsive act by the following scheme: After planning an event for a week or more, after you have keyed yourself up to these plans and are all "set to go," arbitrarily change your plans and forego the event. Note the peculiar restlessness you feel. This may not be quite the same thing as a compulsion, but it is similar to the urge experienced by one suffering from a compulsion. Now carry out the original plan and notice the relief you feel. Of course this will not work unless the changes in plan are real and are not recognized as a game.
4. Make a study of the voices of your classmates as indicators of their emotions. This study will include changes in basic

pitch of the voice, pitch range, rapidity of speech, tremors and coördination. Can you discover any other motor expression that is as indicative of poise or emotional stability?

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CHAPTER IX

ABNORMALITIES OF INTELLIGENCE

While there is some disagreement as to the nature of intelligence, we have long recognized wide individual differences in intellectual ability, ranging from the brilliant genius to the total lack of mental ability. The clinical classification of intelligence types, a description of which we shall give, has been largely supplanted by distinctions based on the results of records made in intelligence tests. This more accurate determination of the degree and form of intellectual deviations has paved the way for a rational program of treatment and prevention, the main phases of which we shall outline.

180. Illustration of intellectual deficiency. "From the year 1850 to 1916 (66 years) there was resident in Earlswood Asylum a patient who was called 'The Genius of Earlswood Asylum,' who justly earned this title, and whose skill in drawing, invention, and mechanical dexterity is certainly unequalled by an inmate of any similar institution. . . . He did not talk until seven years, and for a long time only uttered the word 'muvver.' He never went to school, as no school would take him. He showed an early taste for drawing, and used to spend the greater part of his time at this occupation or in carving ships out of bits of firewood. Such instruction as he had he received from his parents and brothers and sisters at home, and from these he learned to write and spell the names of simple objects, but this was practically the sum total of his scholastic acquirements. . . . He was able to wash, dress, and take care of his person, but his speech was very imperfect and he was *very deaf*.

"He was put to work in the carpenter's shop, and soon became an expert craftsman. . . . The result, after sixty years, is to be seen in the fifty to sixty crayon drawings, the carvings in ivory and wood, and the wonderful models of ships and the like,

which today adorn the walls and fill the two large workrooms placed at his disposal in Earlswood Asylum. . . . One of the most wonderful of his works, and the one of which he was the most proud, is the model of a steamship which he named the Great Eastern. . . . It took him three years and three months to complete, and every detail, including brass anchors, screw, pulley-blocks, and copper paddles, was actually made by the patient from careful drawings, which he prepared beforehand. The planks of this leviathan are fixed to the ribs by wooden pins to the number of nearly a million and a quarter. All of these were made by Pullen in a special instrument, which in turn he also planned and made. He also devised and executed a strong carriage on four wheels for the conveyance of the ship. The model is 10 feet long, $18\frac{5}{8}$ inches wide, and $13\frac{5}{8}$ inches in depth. It contains 5,585 copper rivets, and there are thirteen lifeboats hoisted on complete davits, each of which is a perfectly finished model. It is fitted with paddles, screw, and engines, and it contains state cabins, which are decorated and furnished with chairs, tables, beds, and bunks. . . .

"In disposition Pullen was usually quiet, well-behaved, and good-tempered, and he seemed to be perfectly happy so long as he was allowed to work out his own ideas when and how he pleased. He was intolerant of supervision, inclined to be suspicious of strangers, and easily affronted by injudicious busybodies. At times he got a little out of hand. . . . On one occasion he threatened to blow up the place because a request had been refused. . . . On another occasion he did actually partially wreck his workshop in a fit of passion. Many years ago there was a steward of the asylum to whom Pullen took a violent dislike, and he spent many days planning his destruction. This culminated in the erection over the door of a most diabolical instrument, which was intended to guillotine the unfortunate officer, and there is not the slightest doubt that it would have done so had it not gone off a fraction of a second too late.

"He once became enamoured of a female whom he had chanced to meet outside the asylum. Nothing would satisfy him but that he should have his discharge and be allowed to marry her. He moped about, utterly refused to do any work or to listen to argument or persuasion, and it became clear that the position was critical. A happy inspiration occurred to a member of the committee, and a gorgeous naval uniform, resplendent in blue and gold, was procured. Pullen was invited into the board-room and informed that his case had been carefully considered, and that it had been decided to accede to his request. At the same time it

was pointed out to him that the committee would be exceedingly sorry to lose his valuable services, and that, if he would reconsider the matter, they would, as an alternative, grant him a commission as Admiral in the Navy. The uniform was then shown to him as an earnest of their intention. This was too much for Pullen; he took the uniform, and never afterwards alluded to the subject of marriage. This uniform he usually donned on ceremonial occasions. . . . Pullen died in 1916 at the age of eighty-one years."¹

This case illustrates some of the problems which confront us when we come to investigate the problem of mental ability. If a person is defective in some respect, is there not some capacity which might be developed? Is it necessary to institutionalize such individuals? Could not this man have been trained so that he might have been an asset to society instead of a liability for eighty-one years? What part has training toward social adjustment to play when we deal with such persons? Was it some general function he lacked or was his status the result solely of his sensory defect? If so, would a different type of education have resulted in the production of a different adult? We have not finished with our problem when we come to the decision that an individual is defective.

XLV. DEFINITIONS OF INTELLIGENCE

The psychological literature on the nature of intelligence is rather confusing. A great variety of opinions exist and, as a result, many different definitions of intelligence have been proposed. In order to orient ourselves, let us review some of these definitions.

181. The economic standard of intelligence. An intelligent person is one who is capable of competing on equal terms with his normal fellows, or who is capable of managing himself and his affairs with ordinary prudence. This definition is derived from the attempt of the British Royal Commission to designate clearly those individuals who lack intelligence.²

Such a standard has the obvious defect that economic success is a very vague thing. It depends not only upon traits

¹ A. F. Tredgold, "Mental Deficiency," Baillière, Tindall & Cox, 1922, pp. 340-344.

² Tredgold, *loc. cit.*, pp. 92-96.

in the individual other than intelligence, but also upon a number of factors independent of any ability that he may possess. One person, exposed to many difficulties, may fail, while another, with equal ability, may be so safeguarded that "to manage his own affairs" is a relatively simple matter.

One judge, using this definition as a criterion, refused to admit that a certain woman was not intelligent, arguing that for a period of five years she had not lost some property which she owned. It was found that she could not very well have lost it because it had been willed to her with the restriction that it could not change hands during her lifetime.

"Relatively dull persons may succeed in making a living by virtue of unusual caution, persistence, and disposition to conform to the rules laid down by society. On the other hand, truly brilliant persons sometimes make a miserable failure because of violent passions or psychopathic disposition."¹

182. Excellence of some particular mental process. A number of writers have attempted to identify intelligence with excellence of some particular mental trait. Binet thought that attention was the basic factor in intelligence. Ebbinghaus identified intelligence with the ability to combine the elements of experience. Spearman thought that intelligence was primarily the ability to discriminate fine differences. Accordingly, some writers have argued that we have a great number of intelligences, as many as we have mental processes, and that we might speak of learning intelligence, of cognitive intelligence, of affective intelligence or of motor intelligence. Used in this manner the term becomes a synonym for any kind of mental excellence and has little psychological value.

183. Sum total of specific abilities. Thorndike has defined general intelligence as the sum total of specific abilities. This is really an extension of the preceding conception. If we wish to determine the degree of intelligence that a person possesses we must first determine his ability in a large number of specific traits and then average them together.

¹ Frank N. Freeman, "Mental Tests," Houghton Mifflin Co., 1926, p. 484.

184. Ability to control mental processes. Terman, quoting from Binet, defines intelligence as "(1) the tendency of thought to take and maintain a definite direction, (2) the capacity to make adaptations for the purpose of attaining the desired end, and (3) the power of self-criticism."¹

185. Ability to adjust to novel situations. This view has probably received wider acceptance than any of the others. In a sense some of the others may be included under this one. James held this view. Burt expresses it as "the power of readjustment to relatively novel situations by organizing new psychophysical combinations."² Stern says it is "a general capacity of an individual consciously to adjust his thinking to new acquirements—it is general mental adaptability to new problems and conditions of life."³ Freeman defines it as the "facility with which the subject-matter of experience can be organized into new patterns."⁴

XLVI. CRITERIA OF INTELLIGENCE

Should we accept the definitions that state that intelligence is excellence in specific mental traits, our study of intelligence would resolve itself into a study of particular abilities. If we look upon it as a more or less general ability as implied in the last definition, our study will take the direction of distinguishing different degrees of this ability. The latter method of study has received the greater emphasis in psychology, and the study of abnormalities of intelligence has come to be largely a study of quantitative deviations from normal ability. Our problem may then be stated as follows: How can we distinguish differences in ability to meet and adjust to new situations?

186. The social criteria. Since intellectually deficient persons were first studied because they failed to adapt socially

¹ L. M. Terman, "The Measurement of Intelligence," Houghton Mifflin, 1916, p. 45.

² C. Burt, "Experimental Tests of General Intelligence," *British Journal of Psychol.*, 1909, 3, 168.

³ W. Stern, "Psychological Methods of Testing Intelligence," Baltimore, 1914, p. 3.

⁴ F. N. Freeman, "Mental Tests," Houghton Mifflin Co., 1926, p. 489.

the social criteria are the oldest. Three degrees have been distinguished and designated as follows:

The *morons* are those persons who are capable of earning a living under favorable circumstances, but who need constant supervision. The technical meaning of moron does not justify the meaning ascribed to it by newspapers. They use it to indicate a person who stupidly commits some atrocious crime. The word was adopted by scientific writers to indicate a person with a certain degree of mentality and the inference from the newspaper usage that a moron is a brutal criminal is wholly unwarranted.

The *imbeciles* are those persons who have a mental defect so pronounced that they are incapable of managing themselves or their affairs with ordinary prudence and who cannot be taught to do so.

The *idiots* are those persons who are so defective in mental ability that they are unable to guard themselves against common physical dangers.

Some writers have contended that the social should be the ultimate criteria of intelligence regardless of other means of determination. Theoretically this may be so, but it is rather a wasteful and unsatisfactory process to subject all individuals to such a rigorous test before arriving at any decision as to their mental ability. Consequently, more refined methods of differentiation have come into use by means of which we are able to measure intelligence and prepare an individual so that he can meet social situations. It is not necessary to expose him ruthlessly, watch him fail, and then condemn.

187. The clinical criteria. There are a great number of types of mental deficiency. Some of these present clinical signs by means of which the expert clinician may classify them. Many of these signs are anatomical defects. At one time a great deal was made of these defects, but they have been largely discredited as indicators of intelligence. The reasons for this latter attitude toward them lies in the fact that the presence of such anomalies alone cannot be taken as

sufficient evidence of mental defect. A large number of normal persons have such anatomical deviations. A compromise has been reached by some writers when they make the statement that the possession of a few of these anomalies is not significant, but that when one person has a large number their presence may be taken as a significant criterion of deficiency. While this may be so, such evidence is far from accurate and should never be taken as anything except as an indicator which needs to be checked by the more accurate method of intelligence testing.

These anomalies, described in detail by Lombroso, have been given the name "stigmata of degeneracy." We shall mention some of these stigmata (distinguishing marks) with the warning to the reader that they should not be taken too seriously.¹

(a) DEFORMITIES OF THE EAR. These include deviations in the size and shape of the pinna, attachment of the lobe to the cheek, and supernumerary lobes.

(b) DEFORMITIES OF THE EYE. Almost any defect of the eye is considered as a stigma; such as obliquity of the eye fissure, persistence of the pupillary membrane, opacity of the media of the eye, strabismus, astigmatism, errors of refraction, and cataract.

(c) DEFORMITIES OF THE FACE. Those of the nose include any deviation in shape and size. The lips may differ from the normal in form and size, an especially common anomaly being hare-lip. The jaws may be small and receding or protruding. The teeth may not occlude properly, they may show irregularities in size, position, form or number. The palate may be saddle- or V-shaped.

(d) DEFORMITIES OF THE CRANIUM. The head may be unusually large or small or may show various forms of assymetry.

(e) DEFORMITIES OF THE SKIN. The skin may develop

¹ A detailed account of these stigmata may be found in A. F. Tredgold, "Mental Deficiency," Baillière, Tindall & Cox, 1922, pp. 157-167, and pp. 546-7.

moles. There may be an unusual distribution of hair. The hair may show peculiar swirls commonly known as cow-licks.

(f) **DEFORMITIES OF THE BONES.** Some of these have been mentioned in the deformities of the face. Others are unusual development of the bones leading to a condition, known as gigantism; or underdevelopment, known as dwarfism. Other bone deformities give rise to polydactylism (extra fingers or toes), syndactylism (toes or fingers joined together), or unusual conditions of the joints which may appear as double-jointedness or bowlegs.

From this enumeration of a few of the signs that have been used to differentiate so-called degenerates, it can be seen that their value depends upon their being related to mental deficiency. While in some cases it is quite possible and even probable that such anatomical deformities may be caused by the same condition which gives rise to mental deficiency, we can have mental deficiency with none of them and we can have many of them with no signs of mental deficiency.

188. The criteria of mental tests. With the advent of mental testing methods the social and clinical criteria of intelligence have been largely superseded. If a person does not get along in society or if he has clinical signs of mental deficiency these are taken as indicators that the person needs a mental examination, but the mental examination is the final means whereby his mental status is gauged. This does not imply that mental tests are in a perfected form at present. It does imply, however, that they are so far in advance of the older methods that no one should discard the test findings in favor of the cruder methods.

Should an individual show by a test score that he is normal in intelligence and fail to make social adjustments, the examiner knows at once that the cause of his failure must be sought in some other factor than his intelligence. Other phases of mental life must be studied qualitatively because we have no adequate means for quantitative evaluation. The path of development lies in the perfection of these measures for other traits as well as for intelligence and not in any

reversion to the older and cruder qualitative methods of a quarter of a century ago.

XLVII. CLINICAL DESCRIPTION OF TYPES

The great proportion of feeble-minded individuals have no distinctive appearance, and they cannot be distinguished from normal persons on the basis of any physical characteristics. On the other hand, there are some varieties of feeble-mindedness which are caused by factors which also produce physical defects. These will be treated in this section. We shall study first those who are defective from birth, or aments; and secondly, those who were normal but who later deteriorated, who are called dements.

189. Amentia. Amentia designates a condition of mental deficiency existing from birth or from an early age. An ament is a person who *never has possessed*, as far as can be ascertained, normal intelligence. A large proportion of aments show no distinguishing characteristics beyond the fact that they possess deficient mentality. A small proportion have distinguishing anatomical characteristics which make them easily selected and these will be considered in this section.

1. *The microcephalic.* This group comprises not more than about five percent of all mentally defective individuals. The distinguishing characteristic of the microcephalic is, as the name implies, an abnormally small head of usually less than seventeen inches in its greatest circumference. There is usually a marked recession of the frontal section of the cranium as well as a flattening of the occipital region. The hair is likely to be very thick, coarse, and wiry. A typical microcephalic is shown in Figure 21.

As the extremely small size of the skull suggests these persons have very small brains. The normal average brain weight is 1375 grams for males and 1244 for females. Microcephalic individuals have been reported with brain weights as low as 170, 198 and 219 grams. Most of them weigh several hundred grams more than these but all are decidedly below normal.

In mentality, although they are scattered through the en-

tire feeble-minded range, the majority of them are in the imbecile group. From this it can be seen that the condition clinically known as microcephaly is a descriptive one based on appearance and tells little about the actual mental ability of the individual patient.

2. *The hydrocephalic.* Hydrocephalus is a condition in which there is an excessive secretion of the cerebro-spinal fluid. This excess, occurring when the skull is plastic causes a hypertrophy so that



FIG. 22. HYDROCEPHALIC, AGED 14
Head circumference— $26\frac{3}{4}$ inches.
(From A. F. Tredgold, "Mental Deficiency.")



FIG. 21.

A microcephalic of imbecile grade of mentality.

there appears a gross enlargement of the head. If the excessive secretion does not begin until the individual is mature there may be hydrocephaly with no enlargement of the skull. This excessive secretion is accompanied, in many cases, by a lack of normal development of the brain. The case illustrated in Figure 22 has a head circumference of nearly 27 inches.

This condition can exist in varying degrees with corresponding variations in intellectual ability from the lowest grade idiot to normal. The causes are varied. In some

cases it can be induced by chronic meningitis or tumors (usually syphilitic or tubercular) of the base of the brain. In others no specific lesion can be found. The remedy is not in the draining off of the spinal fluid. This provides only a temporary relief. The removal of the principal cause is, in many cases, ineffective, because the damage to the brain substance is usually accomplished before any treatment is instituted. Should the condition be remedied in early life it may be possible to train the child to greater achievements than if he is permitted to suffer from the original lesion, but in few cases can it be expected that the condition will be entirely remedied by medical treatment.

“The peculiar enlargement of the skull makes diagnosis easy. The hydrocephalic skull is uniformly increased in all directions, and thus tends to assume a globular shape. The forehead is high and projecting, and there is usually a characteristic bulging at the root of the nose, but the greatest circumference is at the level of the temples. The fontanelle¹ is tense, and the sutures² often widely separated. . . . The scalp is thinned, and often marked by large and prominent veins. The excessive size of the cranium, in conjunction with the small face, causes the head, as seen from the front, to have a very characteristic conformation, resembling an inverted pyramid, thereby producing a curiously ‘top-heavy’ appearance.”³

3. *The macrocephalic.* The macrocephalic has an abnormally large head. In many cases there is no increase in cerebro-spinal fluid but in the brain tissue itself. This leads to an enlargement of the skull of the characteristic type known as macrocephaly. This hypertrophy of the brain is due, not to an increase in the active nerve cells, but in the supporting elements known as glia cells. The size of the head may range all the way from the normal (about 22 inches) up to 25 inches.

The distinction between the enlargement due to glia formation in the brain (macrocephaly) and an increase of cerebro-

¹ The lozenge-shaped soft spot on the top of an infant's head, where the skull bones have not matured.

² The line of union between the bones of the skull.

³ A. F. Tredgold, *loc. cit.*, p. 292.

spinal fluid (hydrocephaly) is largely in the shape of the head. The former is likely to be more square than the latter and does not show the characteristic bulging at the fontanelle, the sutures and the temples.

4. *The mongolian.* This variety of amentia was so named from a supposed facial resemblance of these persons, to the members of the Mongolian race. A typical case is illustrated in Figure 23. The cause of the condition is unknown. There have been studies which suggest that syphilis might be a factor, but other studies seem to disprove this. They often appear in families where the other children are all normal. It is exceedingly rare for two mongols to be born in the same family. One case has been reported who was one of twins, the other child being perfectly normal.¹



FIG. 23.

There are three principal anomalies that characterize mongolism. (1) The skull is small, rounded and shortened in its anterior-posterior measurement. The face is flattened without any marked recession of the forehead, such as is found in the microcephalic. The occipital portion of the head is likewise flattened. (2) The eyes are narrow and slope upward and outwards from the nose. It is this characteristic which gave the condition its name, although it is not as constant as the other two characteristics. (3) The tongue is quite dis-

A Mongolian girl of 8 with the mental level of an imbecile. (From A. F. Tredgold, "Mental Deficiency.")

¹ A. F. Tredgold, "Mental Deficiency," Baillière, Tindall & Cox, 1922, p. 241.

tinative. This is illustrated in Figure 24. It is usually large and has across its surface great fissures. These fissures probably result from a combination of two factors. The mucous membranes of these patients is particularly susceptible to injury and they are strongly inclined to be tongue suckers.

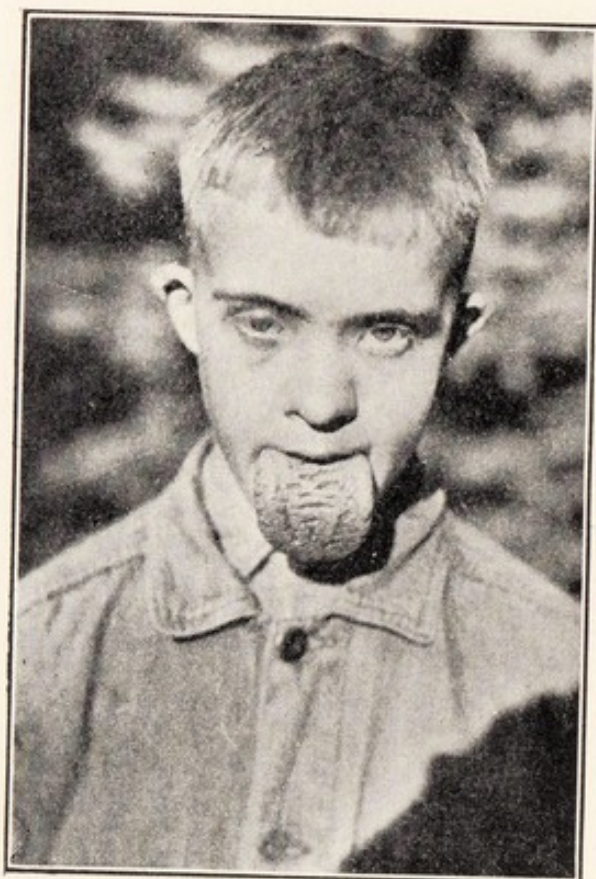


FIG. 24.

A Mongolian showing fissures of the tongue.

These two factors together furnish a plausible explanation for the condition.

In addition to these distinctive signs these patients have a number of other anomalies which are not so constant and which need not concern us. Psychologically they are of interest because they are invariably defective in intelligence. Since the physical signs in this condition appear more strongly than in the milder cases, it is quite likely that these have contributed to the delusion that intelligence may be judged by physical signs.

5. *Cretinism*. "Although cretins have been recognized and remarked upon for hundreds of years (even by such writers as Juvenal, Pliny, Strabo, as well as by the more modern Paracelsus), it is only comparatively recently that the cause of this condition has been at all understood. It is now established beyond doubt that cretinism is . . . dependent upon an absence or diminished secretion of the thyroid gland."¹ When the condition is present from birth it is called cretinism, when it develops later in life it is called myxedema.

"The (cretin) infant gives few signs of intelligent response to his surroundings. He makes only automatic reactions to

¹ Tredgold, *loc. cit.*, p. 312.

stimuli. The head is relatively large, as a rule; the fontanelles, which ought in normal babies to be closed by the end of the sixteenth month or thereabouts, remain open long after the second year has ended. The lips are thick, the tongue is thickened and often protrudes from the mouth; the malar (cheek) bones are prominent. The stature is dwarfed; the legs short and bent. The mental condition is one of complete idiocy or imbecility. More than one-half of all cretins are said to be deaf, or mute, or both. The teeth are slow in their eruption, atypical in location, badly shaped and deficient in enamel. They easily decay. The mucous membranes are prone to inflammation. . . . The cretin, like other idiots, is untidy in his habits. The skin is rough and dry; the hair dry and coarse; the oil and sweat glands act imperfectly; the temperature is subnormal. . . . The subcutaneous fat is irregularly disposed in pads—over the clavicles (collar bones) perhaps, or about the legs. . . . The abdomen is protuberant, hernias of various kinds are observed, and in males the testes may fail to descend.”¹

Some improvement in these cases has been produced by thyroid therapy, when such treatment is begun early enough. If treatment is delayed little can be done to correct the condition.

There are a number of other conditions which result in inflammatory, toxic or destructive lesions in the cerebral cortex and which in turn produce changes in the mentality of the individuals who suffer from them. These are medical problems and are recognizable by the physician through the clinical signs of the disease of which the mental defect is but one symptom.

We trust that we have made clear the fact that inborn mental deficiency, may take varied forms as far as physical appearance is concerned. A large proportion of these cases are normal in physique. In other instances, the amentia may be connected with various anomalies and, consequently, may be regarded as but one symptom of the particular pathological condition which it accompanies.

190. Dementia. A dementia is a mental deterioration, that is, the person may be normal at birth and for some years

¹ W. N. Berkeley, “Endocrine Medicine,” Lea & Febiger, 1926, p. 97.

of his life and then degenerate mentally to such an extent that he becomes definitely abnormal.

Anything which produces a degenerative lesion of the cerebral cortex may bring about a mental deterioration or dementia. These destructive agents include such things as gross injuries, or toxic results of various poisons which may come from internal sources or may be taken in from the outside. The latter include alcohol, lead, morphine, cocaine, etc. Malnutrition, anemia, inflammatory diseases, old age and similar conditions may likewise produce degeneration of the cortex. We need not go into these in detail but two conditions deserve special consideration because of their profound effect upon the mentality of the individual. These are syphilitic infections and epilepsy.

1. *Syphilitic dementia.* Cerebral syphilis has been given the name of paresis or dementia paralytica. It can exist from a very early age, can have been contracted even before birth. For a time this fact led to a misconception that syphilis could be inherited. This notion has been discredited. The juvenile paretic has been infected either in utero or in early infancy. Syphilis is a vascular (blood-vessel) disease and the injury to the cortex comes from a breaking down of the cerebral blood vessels.

(a) JUVENILE PARESIS. In some cases of juvenile paresis, although by no means in all, certain signs are present at an early age. One of these is Hutchinson's teeth. These are peculiarly peg-shaped, may be cross-ridged, discolored and peculiarly subject to caries. Lesions of the mucous membranes of the nose are common, giving rise to continued "snuffles" which is often mistaken for a chronic cold. The nose may be depressed, in extreme cases even missing altogether. Peculiar deformities of the bones and joints may occur, a common one being lack of sensitivity in the joints, so that the juvenile paretic may become a fine contortionist. These signs should not be taken as definite indicators but should be followed by a laboratory test (the Wassermann test) to determine whether the disease is present.

In some cases the external signs do not appear until about the age of puberty (sexual maturity). In such cases definite physical indications of neural degeneration appear, such as muscular weakness, increase of the knee-jerk, tremors of the hands, mouth and tongue, and the typical paretic speech. (See Article 178, Paragraph 3.) In addition mental deterioration is manifest. A child who has made fair progress in school is found to be deteriorating rapidly both mentally and physically.

(b) ADULT PARESIS. Adult paresis often comes on rather insidiously, affecting the higher mental processes first and then later taking in the more basic functions. Since social and ethical developments are the most complex these are disturbed first and are often misinterpreted as immorality instead of symptoms of a definite disease.

White¹ gives a good description of the onset of mental symptoms:

“Manifesting itself in its incipency by symptoms of defective intelligence, lack of judgment, memory defects, and moral obtuseness, we frequently see the most pitiful of pictures—a previously respected citizen, father of a family, occupying an enviable social position, become at the height of his career an ardent worshipper at the shrines of Venus and Bacchus. Friends and relatives see nothing in these manifestations but the outcropping of original sin, and are distracted by their inability to stay the career of drunkenness and vice upon which their erstwhile respected relative has entered. How many heartaches, how many pangs of anguish, how many blushes of shame could be spared the wife and children of such a man if the family physician did but recognize in these occurrences the symptoms of the onset of a mental disease and advise them what course to pursue! . . .

“In general, these mental symptoms are symptoms of a gradual change of character and of progressively failing mental and physical powers. There is beginning failure on the part of the patient continuously to apply himself to his work, and mental application of any sort soon brings on fatigue; memory is not quite so good and business engagements and the details of business are forgotten, the morale of the patient is quite apt to undergo alteration, and he may go to excess in drinking and associate with lewd

¹ W. A. White, “Psychiatry,” Washington, 1926, pp. 165–169.

women oftentimes openly, without shame, which is of course of most significance if contrary to his previous habits and ideals. In addition to these symptoms he shows poor judgment in his business relations and may not only risk large sums of money on hare-brained schemes, but may enter into all sorts of financial relations with persons and preserve no records to show what they were. The appearance of the patient may also indicate the beginning of mental reduction; he is less careful about his personal appearance, wears soiled linen, has forgotten to button his vest, or to put on a necktie; his clothes are shabby and soiled, and in general the degradation toward which his condition is tending has begun to show itself. . . . The dementia manifests itself by failure of memory, defective judgment, inability to apply the mind consecutively for any length of time, and failure of the moral sense. The picture, from a mental viewpoint, is then one of a gradually deepening dementia, correlated with organic changes in the cerebral cortex, a true organic dementia. If upon this basis of organic dementia there be erected mayhap symptoms of excitement or depression, delusions of a hypochondriacal or grandiose nature, multiform hallucinations and illusions, a true delirium, these symptoms may properly be considered as unessential, accidental accompaniments."

2. *Epileptic dementia.* A second organic disease which may lead to intellectual deterioration is epilepsy. There are a great variety of epilepsies and by no means all of them lead to mental deterioration. In certain forms, if the disease begins in early life, and progresses with age a definite loss of intellectual powers is seen. The deterioration may be mild or it may be so pronounced that the individual may reach the level of an idiot.

These cases of true organic dementia are medical problems. The syphilitic dementia cases especially should be referred to proper sources for anti-syphilitic treatment at as early an age as possible so as to stop the deteriorating process. The teacher should be warned against the tendency to exclude the epileptic from school as soon as his condition is recognized. The epilepsy may not be the deteriorating form so that such exclusion may be the ejection of a capable pupil. Many very intelligent individuals have had some form of epilepsy.

191. Pseudo-dementia. One can judge the intelligence of a person only from the way in which he responds to external situations. When he fails to respond intelligently the observer is led to believe that there is a lack of intellectual capacity. This may be a fallacious conclusion. He may have the capacity to respond intelligently but is prevented from so doing because of some other condition. Two marked instances of such apparent dementia are found in extreme cases of introversion and in sense-deprivation.

1. *Extreme introversion.* An introvert is one who has turned his thoughts and interests inward. He is an individual who has functionally dissociated himself from his environment, has ceased to respond, in a measure, to external stimuli and is actuated by internal processes. If you give a person who is an extreme introvert an intelligence test he may respond to certain questions automatically, but to most situations he will fail to respond adequately, consequently appearing intellectually deficient. That such persons are not truly demented is indicated by various lines of evidence. It can be shown by suitable tests that while they did not respond to the test they have the intellectual capacity to do so. Under other circumstances they may quickly give a correct response. Another bit of evidence is found in the fact that little or no sign of cerebral deterioration has been found in the post-mortem examination of these persons. What little has been discovered can by no means account for the profound lack of response that they show. These persons seem stupid because they are living their lives within themselves and simply do not care to carry on intelligent intercourse with the outside world.

It is necessary then, to be most careful in pronouncing such people intellectually defective. Intellectual deterioration means that a person has not the capacity to respond intelligently. If he has the capacity to respond and does not, the external appearance may be the same as though he could not, but a true understanding means that we must distinguish

such a person from the one who has a cerebral lack and who could not respond under any condition.

2. *Sense-deprivation.* One cannot respond adequately if he lacks the proper receptor apparatus. The two senses most closely related to the ability to make intelligent responses are vision and hearing. Our educational methods are designed for those who have normal sense perceptions, so that, when a child comes to school who is defective he suffers from a great handicap unless special methods are used.

The classic example of the efficacy of special training leading to victory over sense-deprivation is the case of Helen Keller. She was deaf, dumb, and blind as the result of an attack of scarlet fever when nineteen months of age. When eight years of age she was placed in the care of a special teacher and made remarkable progress. She soon learned to read and write and later to speak.

The most serious difficulty comes in cases of slight visual or hearing loss. Such a condition may go unrecognized and the dullness of the child be attributed to intellectual defect. This is much more likely to occur with hearing than with vision because it is harder to make an accurate examination of the hearing of very young children than it is to measure their visual acuity. The most pronounced effect of a slight hearing loss is what appears to be inattention. When tested the child seems to respond but as soon as the general class work is resumed he slumps into indifference. The reason for this apparent incongruity is that when keenly attentive (which he is when tested) he can interpret what is said from other than auditory cues, such as lip reading, movements of the hands, facial expression, etc. Watch tests are always inaccurate. More accurate audiometers are now to be had so that this difficulty should not be so vital.

An indirect result of partial deafness is that the child may acquire an antagonistic attitude toward others. Or he may use his defect as a trick to avoid doing things he dislikes. It is a convenient device to fail to hear the things that one would prefer not to hear. The adoption of such a device,

far from proving the child deficient, indicates that he at least has some cleverness. Many a person with normal ears has wished he could close them at times. A number of instances have been discovered where the teacher complained that the child was inattentive, when examinations with accurate instruments (the audiometer is an instrument which will accurately measure auditory acuity) indicated a partial hearing defect. In nearly every one of these cases the child was seated in the back of the room, where the ordinary teacher places the pupils who do not do so well.

192. Supernormal intelligence. From a clinical point of view the person of superior intelligence is not often very bizarre and for that reason has received little attention from students of abnormal psychology. We are beginning to learn that the superior child needs special care as well as the inferior child. If he is not recognized for what he is, he often fails to fit into the usual school and social molds and becomes a menace.

An illustration of a person of exceedingly superior intelligence and who also made good use of his intelligence in later life is that of Francis Galton:¹

“The day before his fifth birthday, Francis Galton wrote the following letter to his sister:

My dear Adèle:

I am 4 years old and I can read any English book. I can say all the Latin Substantives and Adjectives and active verbs besides 52 lines of Latin poetry. I can cast up any sum in addition and can multiply by 2, 3, 4, 5, 6, 7, 8, (9), 10, (11).

I can also say the pence table. I read French a little and I know the clock.

Francis Galton,
Febuary 15, 1827.

“The only misspelling is in the word February. The numbers 9 and 11 are bracketed because one had been scratched out with a knife, and the other was covered by a bit of paper pasted over it.

¹ H. Woodrow, “Brightness and Dullness in Children,” J. B. Lippincott Company, 1919, pp. 9-11.

"By the age of six, Galton was conversant with the Iliad and the Odyssey. At six and seven, he busied himself with collecting insects and minerals, which he is said to have classified and studied in more than a childish fashion.

"Notwithstanding his wonderful precociousness, this noted English scientist accomplished his best work at an advanced age. *Hereditary Genius* was published in his fiftieth year; *Natural Inheritance* in his sixty-eighth."

The fact that Francis Galton, the boy genius, developed into the adult scientist is due largely to the wisdom of his teachers. We tend to assume that a bright boy will become bright regardless of the type of training he receives, but the falsity of this assumption is evidenced from the fact that many a bright child has been ruined by unwise teaching.

One error that has been made has been to accelerate the child in school. Unless this is done very judiciously it leads to pernicious consequences for the child. He gets out of his social sphere, the other children ridicule and shun him with the result that he either becomes a misanthrope or else turns against learning to win back social favors.

Another error comes with the attempt of the teacher to make the brilliant child conform to classroom discipline. His precocity is misinterpreted as mischievousness and he is punished. He then puts his brains to work to outwit the teacher who has abused him, and usually succeeds in this, with the result that a bitter conflict ensues which ends in the total discomfiture of the teacher and the disgust of the child for school.

The general opinion is that the bright child should not be accelerated. He should be taught to make social adjustments, and his superior intelligence should be given an outlet in broader activities which may be added to the regular school curriculum of his normal grade.

193. Idiot-savants. The case cited at the beginning of this chapter is that of an idiot-savant, a person who is clever in one field and defective in another. In this case the disparity was no doubt due to the fact that Pullen was deaf. It is quite likely that under different tutelage he would have

been an entirely different individual. Permitted to isolate himself and to work in institutional shops for years it is no wonder that he should develop the peculiarities that are attributed to him.

True idiot-savants are not common and where they do appear, the evidence strongly favors the belief that they are the product of injudicious education. Those who have in their care one showing a peculiar aptness in some line are tempted to give him special training in that direction to the exclusion of other types of work. Consequently they become unbalanced—freak geniuses. Educators are beginning to appreciate this problem and the ideal now is to give a balanced curriculum; to train the individual in social, moral, motor, and intellectual spheres rather than to exploit one particular achievement.

XLVIII. MEASUREMENT OF INTELLIGENCE

The degree of intelligence cannot be determined by any form of clinical examination based on appearance. Definite tests have been devised for this purpose. In this section we shall give a brief history of the development of these tests, indicate some forms that are used and outline the classification of intelligence levels which has resulted from their use.

194. Development of intelligence tests. Pioneer studies in the measurement of intelligence were made by Galton in 1883, by Cattell in 1890, and by Binet and Henri in 1895. These were immediately followed by similar studies by others. The first contribution which found wide acceptance and which proved to have practical value was the Binet-Simon scale published in 1905. Even though intelligence testing is young it has been established so firmly that it is an essential part of our educational and social life.

During the early stages of development, and still in some quarters, a bitter controversy was waged concerning the nature of the mental ability which was measured by these tests. Some contended that they measure native capacity alone. Others contended that they measure the effects of education and environment. The view which most psychologists take

today is that they measure neither native endowment nor educational achievements exclusively. They indicate the ability of an individual at the present moment and tell nothing about how he acquired that ability.¹ This is the sensible view to take. We know that persons can be born with brain defects so that they can never develop normal intelligence. There are other cases where the individual may have normal capacity and develop until something comes in to disturb his mental growth and he progresses no further. There are still others who make normal or superior progress to adult life and then deteriorate. A test will indicate whether or not a person has normal intelligence but it tells us nothing about why he is normal or abnormal. In other words, performance on an intelligence test is no more than a symptom, and like all other symptoms that we have discussed, it may indicate various underlying causal factors.

The strength of intelligence tests lies in the fact that they have been standardized empirically. This being the case it is not essential that psychologists agree upon any definition of intelligence *per se*. If it can be shown that those who make high scores in the test show evidences of ability in other ways, and those who make low scores in the test give other evidences of a lack of ability, the findings of the test are valid even though we may not know exactly the nature of the ability that we are measuring.

Tests are usually samples of the sort of processes that we must accomplish in everyday life and ordinarily any one test scale comprises a number of different kinds of mental processes. To be sure, any test situation is more or less artificial but insofar as the test brings into play the same processes that one is using in the typical tasks of life it indicates the degree of ability that the person possesses.

195. Types of intelligence tests. Tests may be divided into two groups: individual tests and group tests.

1. *Individual tests.* Individual tests are those that are given by one examiner to one individual subject. They have

¹ For a good discussion of the different viewpoints, see Frank N. Freeman, "Mental Tests," Houghton Mifflin Company, 1926, Chapter 17.

the obvious advantage over the group tests, to be described later, that they enable the examiner to study the subject at first hand. He can tell whether the subject is coöperating, he can discover the presence of other symptoms which might indicate some mental difficulty and he should have a fairly accurate picture of the patient's social reactions, his temperament, his persistence, his alertness and other factors when he is through giving the test.

For these reasons, none but individual mental tests should be given in clinical work. The examiner should adhere strictly to the directions in giving each test, but he should know something about the ways of eliciting personal reactions and should endeavor to detect these as well. If a person has some pathological symptoms there is no better method to pave the way for him to present them than the giving of a routine test. If you sit down before a pathological subject and ask him directly about his difficulties, unless he is very much disturbed or very abnormal, he will defend himself against your efforts. A test is a natural way to establish rapport with a subject. Besides, the test material often suggests points of departure for the subject and he will volunteer information about himself. A good clinical examiner will use these leads to draw out the subject, but will not let these modify the technique of giving the actual test material or the scoring of the answers. Let us consider some of the most important individual intelligence tests.

(a) THE STANFORD-BINET EXAMINATION. The Stanford revision of the Binet test is the most widely used individual examination. The validity of this test depends largely upon strict adherence to standard methods of giving and scoring. Any person of normal intelligence who carefully studies the directions can give the test, but the results cannot be credited if it is carelessly given or scored. Consequently, instead of giving samples of the test we shall merely give a reference to the manual of instructions.¹ There has been a tendency for some persons to select at random a few items

¹ L. M. Terman, "The Measurement of Intelligence," Houghton Mifflin Company.

from this test and to give them casually to patients to get what they term "a rough estimate" of their mental ability. Any estimate of intelligence based on any such procedure cannot be too strongly condemned. The norms were established under standard conditions and these conditions must be carried out in any examination if the results are to be considered.

(b) THE HERRING REVISION OF THE BINET TEST. The latest revision of the Binet test is the Herring Revision.¹ The tests are arranged in such a manner that they are much more simple to give and score than the Stanford revision. The entire directions for giving and scoring, including the table of norms, are included in a small book of fifty-six pages. It requires less training to administer and will prove especially valuable for those who are not in regular clinical work.

(c) PERFORMANCE TESTS. The Binet test involves a certain amount of language ability. An illiterate or a foreign subject is handicapped in taking such an examination. To test such persons, performance scales have been devised. These are designed so that the instructions can be given with a minimum of verbal directions and the scores are based entirely upon the motor responses of the subject. These have not proved to be quite so valid as the Binet examination with the ordinary individual, but for the one with a language handicap are much to be preferred.²

(d) MEASURES OF SPECIAL ABILITIES. In addition to the scales designed to measure general intellectual ability a large number of tests have been devised to measure specific abilities. These range all the way from simple sensory or motor functions to very complex mental processes.³

2. *Group tests.* Group tests are designed to test a number

¹ John P. Herring, "Herring Revision of the Binet-Simon Test"; Examination Manual, Form A; World Book Company, 1922.

² Yoakum and Yerkes, "Army Mental Tests," Henry Holt & Co., 1920; R. Pintner and D. G. Paterson, "A Scale of Performance Tests," D. Appleton & Co., 1917.

³ G. M. Whipple, "Manual of Mental and Physical Tests," Warwick & York, 1914.

of individuals at one time. They were developed to meet the need of measuring a large number of men in the army during the World War. Since that time a great variety of such tests have been produced, especially in the schools. A description of the most important of these is given by Freeman.¹ These tests are not so good for clinical work as the individual examinations for the reasons given above. They are valuable in selecting from a large group of individuals those who may need special attention.

3. *Outline of a test program.* Experience has shown that there are definite procedures which will conserve energy and avoid errors in the practical use of tests.

(a) Give group tests to the whole of any large group, a knowledge of whose intelligence status is desired.

(b) Give individual tests to the few who are superior or inferior according to the results of the group tests.

(c) If the individual tests corroborate the group tests it would be well to have the atypical children examined carefully with special ability tests by a competent psychologist with a view to the securing of advice as to the best educational procedure to be used to bring out the best in each child.

(d) Always use the findings from tests as a guide to proper education and never as excuse to justify poor teaching or laziness.

196. Classification on the basis of intelligence tests. The advent of mental testing has made the estimation of mental ability so precise that the clinical descriptions cited above have given place to the results of intelligence scales.

1. *Mental age.* The first test scores were expressed in terms of mental age. A large number of children of different ages were given various tests and by this means it was discovered which test questions the average child of 3, 4, 5, etc. years could answer. When these same tests are given to subjects their average scores are expressed in terms of mental age. This does not mean that the patient's mentality

¹ Frank N. Freeman, "Mental Tests," Houghton Mifflin Company, 1926, pp. 181-190.

is equivalent to the mentality of a child of the age indicated by his score. It simply means that in these tests he did the same grade of work as a child of that age could do. The child of a mental age of six, for example, has potentiality for development, whereas the adult with a mental age of six probably has not. The two are not comparable in any sense except that their test scores are the same.

2. *Intelligence quotient.* The meaning of a score in terms of mental age cannot be interpreted without knowing the chronological age of the subject. A child of six with a mental age of eight is certainly different from a child of ten with the same mental age. The intelligence quotient was devised to express in a single figure a score which would take into consideration both the mental and chronological age of the subject. This quotient is determined by dividing the mental age by the chronological age. A child of six with a mental age of eight has an intelligence quotient (I.Q.) of 1.33; while a child of ten with a mental age of eight has an intelligence quotient (I.Q.) of .80. In practice the decimal point is omitted. In computing this quotient for adults 16 is always used as the denominator of the fraction.

3. *Descriptive equivalents of I.Q.'s.* Earlier in this chapter we gave definitions of three grades of feeble-mindedness. The psychologists have adopted these terms but have defined them in terms of I.Q. Their classification throughout the entire intelligence range is as follows:

<i>Class</i>	<i>Range of I.Q.'s</i>
Near genius	140 and above
Very superior	120-140
Superior	110-120
Normal	90-110
Dull	80- 90
Border-line	70- 80
Moron	50- 70
Imbecile	25- 50
Idiot	0- 25

Tests are a part of every well-organized school system today. The technique of giving, scoring and evaluating tests

is a special discipline with which every school administrator should be familiar. It is because the technique is too important to be treated casually that we have omitted it from this text.

XLIX. TREATMENT OF THE FEEBLEMINDED ¹

Twenty years ago the problem of the feeble-minded was not considered very pressing. Today it is presented to us in various forms and in such a manner that it is very terrifying. One sociologist has gone so far as to predict that in a very few generations we shall be a race of morons. Can it be that in a quarter of a century we have deteriorated so rapidly? Are we just awakening to a menace which has existed for a long period of time? Or, are we being misled by these alarmists? We believe that the latter question should be answered in the affirmative. Since the work of the psychologists has furnished the fuel for these extreme statements, we should understand just what is involved in the study and classification of human beings according to intelligence.

197. **Changing criteria of feeble-mindedness.** Most of the pessimistic statements concerning the rapid growth in the percentage of feeble-minded in the total population are based on a failure to recognize that the figures that are quoted are the result of changed norms, rather than the result of any actual increase in the number of persons with low grade intelligence. The fact that we see the problem of feeble-mindedness more clearly makes it loom larger, but this broader vision leads to a clearer conception of how to handle it and is a hopeful sign rather than a cause for discouragement. A clearer conception of the problem, and a more rational educational procedure in connection with those of retarded intelligence, will be gained by a review of the three directions in which our norms have changed.

1. *We have changed from medical to statistical norms of intelligence.* The medical norm regards all persons normal excepting the few who are extremely abnormal. When the

¹ Feeble-minded is an inclusive term, embracing all the forms and degrees of mental deficiency which have been described in this chapter.

medical view dominated this field only a few were regarded as feeble-minded, not more than two percent of the total population. The great mass of imbeciles and morons were supposed to be normal unless they happened to get into some sort of behavior difficulty.

Since the advent of psychological tests normal intelligence has come to mean average intelligence. Such a norm is obtained by measuring the intelligence of large groups and calling the intelligence found in the large central group of the population normal intelligence. In other words, we have changed from the pathological norm (*See Article 11*) to the statistical norm (*See Article 12*). According to the statistical view sixty percent are normal, twenty percent supernormal and twenty percent subnormal. The individual who is not familiar with this development is likely to read that some twenty-five years ago two percent of the population were subnormal and compare it with a statement made today that twenty percent are subnormal and conclude that we are deteriorating. When we understand the origins of the two statements we readily see that no comparison can be made.

2. *The first norms established by the tests were too high.* Another factor that has contributed to the fallacy that we are deteriorating in intelligence is the fact that the first norms used in intelligence tests were developed with a superior group of individuals and were consequently too high for the general population. The Binet test in France was standardized with school children. The revisions of the Binet test in this country were also standardized with school children, and it is a recognized fact that school children are a select group. Since less than three percent of school children had intelligence quotients of less than seventy-five, it was decided to call all children below this level (75) feeble-minded or retarded. These are represented by the two lower groups in Figure 25. When opportunity came to use these same tests on a large group of the average adult population, it was discovered that forty percent scored below this point which had been arbitrarily established on the basis of the previous work with school

children. Those unfamiliar with the history of test development immediately said that forty percent of our population were feeble-minded and added the corollary that we must be degenerating. In view of our historical perspective the only conclusion that can be drawn is that the first norms were too high.

3. *Social norms of intelligence have been wrongly identified with psychological norms.* According to the social definition (See Article 181) the feeble-minded person was one "incapable

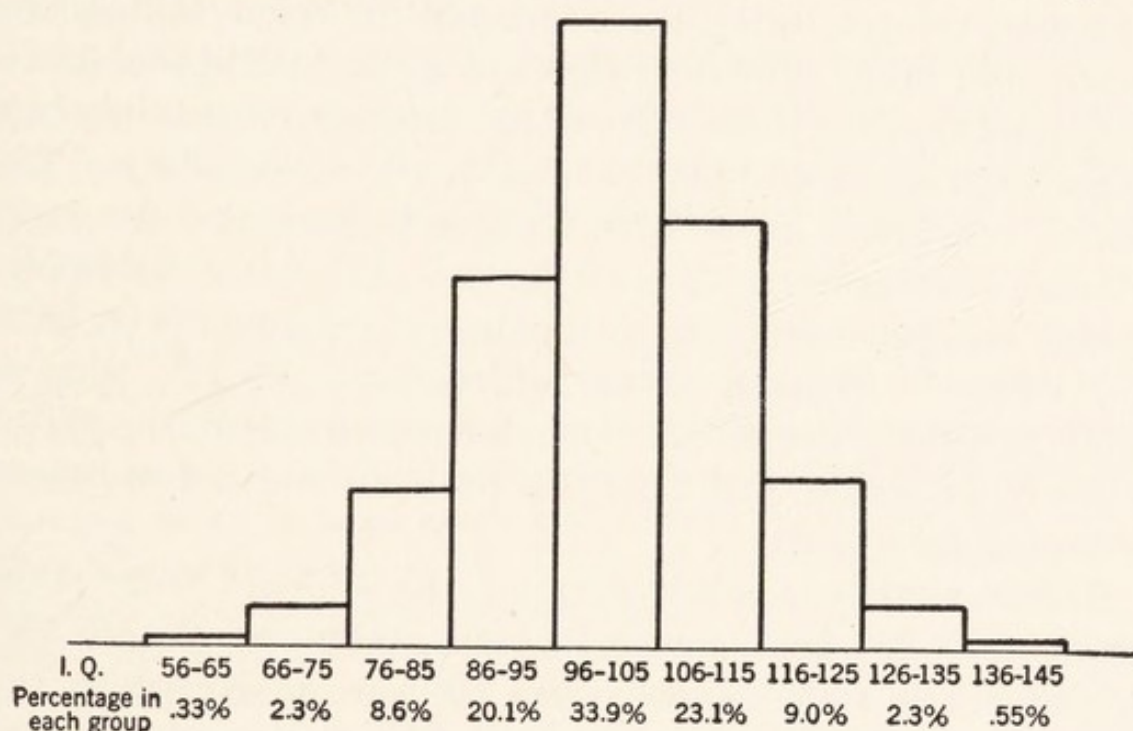


FIG. 25.

Distribution of I. Q.'s of 905 unselected children five to fourteen years of age.

from mental defect existing from birth or from an early age of competing on equal terms with his fellows; or of managing himself and his affairs with ordinary prudence." If the social feeble-minded and the psychological feeble-minded mean the same thing, no one with an I.Q. of less than 75 can manage his affairs with ordinary prudence. This is not the case. Social adjustments involve other factors than those which the intelligence tests measure, and one may be lacking in ability to pass the mental tests and still have those qualities which are essential for social adjustments.

The findings of mental tests should not produce alarmists. They should indicate to us how best to proceed to enable a greater proportion of individuals to make satisfactory life adjustments.

198. Feeble-mindedness and delinquency. For a period of about fifteen years there have been published a large number of studies all leading to the conclusion that there is a close relationship between mental deficiency and criminality.¹ The evidence in all these studies is about the same. The inmates of prisons, reformatories, those indicted for crime, delinquent women, and other similar groups are given intelligence tests. It is found that the percentage of feeble-minded in such groups ranges from about 40 to 60 percent of the whole group. The natural conclusion from such studies is presented by most of these investigators with great fervor. Eliminate the feeble-minded and you have cut the number of delinquents in half. How simple! What a saving of economic wealth, what a saving of human life and how much happiness could be added to life if we would just face this problem and rid ourselves of the feeble-minded!

Recent work has taken most of the support from these statements. We have found that 40 percent of the general population are feeble-minded when they are measured by the same standards that were used in the studies of criminal groups. Studies of the mentality of such institutions as Whitter, California and Eldora, Iowa, have shown the median I.Q. to be 82. This is about the same as that of the ordinary population.

In addition to this when we consider that the clever criminal is likely to keep out of prisons and reformatories it is quite likely, and seems very probable, that the intelligence of all the criminals, both those in institutions and those out of them, would correspond to the distribution of intelligence of the average moral and social individual.

¹ For a review of these studies, see S. P. Davies, "Social Control of the Feeble-minded," National Committee for Mental Hygiene, 1923, pp. 46-57.

Delinquency or criminality depends upon a combination of traits. In some instances mental deficiency may play a part but in others mental superiority may be just as important a factor. One cannot blame all failures in social adjustment, nor anywhere like fifty percent of them, upon low intelligence alone. One may teach a dog to become a non-delinquent animal although measured upon any performance scale his I.Q. would be in the idiot range. We can teach the feeble-minded morality; but by the elimination of feeble-mindedness we cannot eradicate delinquency.

199. Inheritance of feeble-mindedness. Another type of alarm has been sounded by the studies on the inheritance of feeble-mindedness. The pattern which has been followed in all these studies was furnished by Dugdale's¹ study of the Jukes in 1877.

"While written from the standpoint of penology in order to show the combined influence of heredity and environment acting on the individual in the production of crime, this study, nevertheless, revealed how heredity in a degenerate stock, especially when fostered in an isolated community, tends to repeat itself generation after generation in all kinds of anti-social behavior. The Dugdale study included the progeny of five notorious sisters, of whom the most notorious was known as 'Margaret, the mother of criminals.' There were 709 individuals included in this study, of whom 540 were of Juke blood and 169 were of 'X' blood connected by marriage or co-habitation. Of these 709, Dugdale states, there were 180 who had either received poor-house care or outdoor relief aggregating 800 years. Among the social offenders were listed 140 criminals and other law-breakers, 60 habitual thieves, 50 common prostitutes, and 40 women venereally diseased. Dugdale estimated that the total cost to the State resulting from the social failures of this one stock over a period of 75 years amounted to \$1,308,000. Although Dugdale reports only one case of outright idiocy, one of insanity, and one of epilepsy in the Juke blood, it is apparent that we have here a typically defective stock in which by modern methods of examination, a large amount of mental defect would be found."²

¹ R. L. Dugdale, "The Jukes; a Study in Crime, Pauperism, Disease and Heredity," G. P. Putnam's Sons, 1910.

² S. P. Davies, *loc. cit.*, p. 38.

Other studies ¹ have been made following similar lines. In the later ones intelligence tests have been used and show invariably that in the defective families there is a very high proportion of feeble-mindedness. The heredity students conclude that a large part of this degeneracy is based on the inheritance of feeble-mindedness and they have tried to show that intelligence is a unitary trait.

This conclusion of the heredity students added weight to the conclusions derived by those who were making mental surveys of institutional groups. The former held that their family studies showed that feeble-mindedness was an hereditary trait and the latter said that feeble-mindedness was the largest cause of crime. The problem of the feeble-minded is therefore one in eugenics. To better the race and keep down crime keep the feeble-minded from reproducing!

The contention of those who made the earlier family studies was that feeble-mindedness was a unitary Mendelian recessive trait. The study of the Hill Folk by Davenport led to the conclusion that "feeble-mindedness was no elementary trait, but it is a legal or sociological rather than a biological term. Feeble-mindedness is due to the absence, now of one set of traits, now of quite a different set." This conclusion was based upon the fact that (in the Hill Folk Study) when two definitely feeble-minded persons mated (nulliplex for normality), the proportion of defective offspring was not 100 percent as should have been expected, but only 77.3 percent.

Since this study a number of other investigators have come

¹ O. C. McCulloch, "The Tribe of Ishmael; a Study in Social Degradation," Indiana Charity Organization Society, 1888.

H. H. Goddard, "The Kallikak Family; a Study in the Heredity of Feeble-mindedness," Macmillan, 1912.

A. H. Estabrook and C. B. Davenport, "The Nam Family," Cold Spring Harbor, 1912.

E. H. Kite, "The Pineys," *The Survey*, 1913, 31, pp. 7-13.

A. H. Estabrook, "The Jukes in 1915," Carnegie Institution, 1916, Publication No. 240.

M. S. Kostir, "Family of Sam Sixty," Ohio Board of Administration, 1916.

F. H. Danielson and C. B. Davenport, "The Hill Folk," Cold Spring Harbor, 1921.

to similar conclusions. Today most students of genetics have ceased to contend that feeble-mindedness is a unitary trait. Most psychologists state that their tests measure the ability of the individual at the present moment and do not tell where he received that ability (or lack of it). Most sociologists are convinced that feeble-mindedness in itself is not a cause of delinquency. The problem of the feeble-minded is not how to get rid of him nor how to prevent him from reproducing, but how to fit him into the social order. It resolves itself into a problem of education.

200. Education of the mentally deficient. Before we had compulsory education the dull dropped out of school, or else never began to attend. Now we are forcing a large number of children to attend the school who find it difficult if not impossible to do the work of the regular curriculum. The first cry was to put all these into special institutions for the feeble-minded. Since this is impossible, because of the large numbers involved, special classes have been organized in the public schools.

The first method adopted in these special classes was to give the dull children placed in them extra drill so as to make them come up to grade, if possible. If they could not be brought up to their grade they were taught the portions of the regular curriculum that they could grasp.

The opportunity class is now designed to teach the child the things that he can learn and which will best prepare him to take his, and not another's, place in the social and economic world. The subjects included in such a program are training in cleanliness, vocational and industrial training, gardening, and some academic work and speech training, the amount of the latter two depending upon his capacity.

Since a large part of the training of the dull or feeble-minded should be to fit him into the social order, this means that he must acquire the control of impulses which make him a menace. Too often the dull child is permitted to acquire pernicious attitudes or habits which he finds it difficult to unlearn at a later date. What looks like a lack of inhibition

is the result of early injudicious education. A statement by Dr. Fernald concerning the learning ability of dull children is in point:

"It is just as difficult for the feeble-minded to unlearn as it is for them to learn in the first place. If both learning and unlearning, then, are more difficult processes for the subnormal, than the normal, it is the more important that the subnormal child should be placed under the right kind of instruction as soon as the learning process begins. This involves first of all the pre-school years, a most important period in the child's development and perhaps doubly so with the defective child. It is in this period that mental defects usually become manifest. It is in this period also that many of the undesirable physical and personal habits to which defectives are prone, reveal themselves and may be most easily corrected. Here is an important field of opportunity for rendering the most effective kind of help to the subnormal child that has as yet scarcely been touched."¹

Instead of passing the blame to the defective person when we find that he is non-social we are beginning to realize that the fault lies with those who control the training he receives. They, being more intelligent, should have an adequate conception of his psychology and understand how he should be taught and provide such opportunities as he needs.

"The feeble-minded, especially until they reach manhood and womanhood, are notably impressionable and easily influenced. That is why they so characteristically fail in a poor environment and cause little or no trouble in a good environment. In short, the feeble-minded quite truly reflect in their behavior the kind of environment in which they find themselves. In that way they are an index of social conditions. If the community finds large numbers of delinquent, socially menacing feeble-minded in its midst, let it look at itself and ask: 'What kind of community have we here, what kinds of neighborhoods, of homes, of recreation?' The trouble must be sought somewhere behind the feeble-minded. The feeble-minded may be perpetrators but rarely instigators. . . . They are frequently the dupes of more clever wrong-doers of higher mentality who can cover up their own actions and leave the feeble-minded to be caught.

"How commonly has the attitude of the community toward the

¹ S. P. Davies, *loc. cit.*, pp. 172-173.

feeble-minded been one of social ostracism! Those who by reason of delinquency have come to public notice have been wont to be regarded as hopelessly bad characters. 'Get rid of them; keep them out of our midst,' was the natural social reaction. The result of this tendency on the part of society to cast off the feeble-minded was simply to foster in them those anti-social proclivities with which they have been charged. To know the feeble-minded and their impressionistic nature, is to realize what the effect upon them of such a social attitude is. This policy of ostracism, far from solving the problem of mental deficiency, only tended to aggravate it."¹

201. Present status of the feeble-minded problem. Since we have passed the first rude shock of awaking to the fact that people differ in intelligence we have been enabled to view the feeble-minded as a scientific problem rather than a problem in reform. The present views may be summarized as follows:

1. It is clearly recognized that feeble-mindedness may be the result of various causes. There may be hereditary factors and environmental factors (both pre- and post-natal) combining to produce it. A rational disposition of any one case must be based on a scientific study of the individual and not upon any unwarranted assumptions based on prejudice.

2. The mentality of the feeble-minded requires a different type of education from the normal. He cannot be taught some of the things that a normal or superior person can learn, but he can be taught some things (unless too inferior) that will enable him to make economic and social adjustments.

3. Social attitudes and morality are learned. The feeble-minded may not learn morality if the same educational methods are used that are effective with the normal person, but with different training he can be taught to be moral in most instances if the training is begun early enough.

4. The feeble-minded cannot compete on equal terms with normal persons but there is a place for him in our economic system if we but face the problem squarely and attempt to adjust our economic system to our knowledge of individual differences in intelligence. When we cease to give the feeble-

¹ S. P. Davies, *loc. cit.*, pp. 195-.

minded the impression that we think that he is a sinner because he is not brilliant we shall enjoy better relations with him.

IMPORTANT TECHNICAL WORDS

- amentia.** Mental deficiency existing from birth.
- anomaly.** A deviation from the common rule.
- cerebro-spinal fluid.** The fluid which surrounds the central nervous system, the brain and spinal cord, and separates it from the walls of the skull and spine.
- cognitive.** Pertaining to the intellectual processes.
- cretinism.** A particular type of feeble-mindedness which accompanies an extreme innate thyroid insufficiency.
- dementia.** Mental deterioration.
- fontanelle.** The lozenge-shaped soft spot on the top of an infant's head where the skull bones have not matured.
- hydrocephalus.** The condition resulting from an unnaturally profuse secretion of cerebro-spinal fluid in the ventricles and areas surrounding the brain, often resulting in an enlarged skull.
- idiot.** A person with an intelligence quotient below 25.
- idiot-savant.** A person who is clever in one field and defective in others.
- imbecile.** A person with an intelligence quotient between 25 and 50.
- intelligence quotient.** The ratio of mental age to chronological age.
- introvert.** One who has turned his thoughts and interests inward.
- macrocephaly.** Condition of having an excessively large head often accompanied by mental deficiency.
- microcephaly.** Condition of having an excessively small head.
- mental age.** A form of test score based on the average age of children passing the test in question.
- mongolian.** The name given to certain aments because of the fancied presence of Mongolian facial characteristics.
- moron.** A person with an intelligence quotient between 50 and 70 or 75.
- occipital.** Pertaining to the back portion of the head.
- paresis.** Synonym for general paralysis. An organic brain disease resulting from syphilitic deterioration.
- psychopathic.** Pertaining to mental disease.
- stigmata.** Plural of stigma, a distinguishing mark or characteristic.

PROJECTS FOR FURTHER STUDY

1. A visit to an institution for the feeble-minded will furnish an opportunity to see the various clinical types described in this chapter. If such a visit is made, ask the superintendent to show some of his best-appearing morons. This will serve to impress the fact that we cannot judge intelligence by appearance.
2. Procure sets of test material and instructions for the Stanford-Binet test, the Herring examination, and for the Pintner-Paterson performance scale. Practice giving these to some children.
3. Let all the members of the class take a group mental alertness test. A simple one for this purpose is the Morgan Mental Test published by the Clio Press, Iowa City, Iowa.

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FIG. 26. HAVE YOU EVER CONSIDERED THEY WERE ALL ONCE UPON A TIME—

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CHAPTER X

PERSONALITY

A well-adjusted person should have a healthy body, normally acute sense organs, balanced perception, a good memory, sound judgment, rational associations, emotional balance, and motor control; but in addition to each of these he should have an harmonious coördination, or integration, of all phases of his being. Such an integrated being we call a personality. It is a dynamic, growing entity which is continually changing as a result of the various experiences which the individual meets. In such a growing being we can distinguish certain tendencies or trends, which we shall call types, but each individual is continually changing front, changing his trends, so that a description of today may not hold for tomorrow. Let us keep in mind, then, that in our study of personality we are examining cross-sections, profiles of an elusive, changeable, and complex mechanism. This chapter will be concerned largely with a discussion of the nature, development and forms of personality, while in later chapters we shall discuss the typical ways in which the personality becomes modified in various mental maladjustments.

202. Illustration of a typical personality disintegration. The following letter, received by a prominent college athlete, is presented here to illustrate a typical personality disintegration. It contained a large sheet entitled "The New Bible," which was neatly printed, although the letter was crudely written with pencil.

"Dear sir:

"I have mailed these Bibles to coach A. A. stagg and to Pat Page—and asked them to aid me to get work as janitor and offer

to aid them free—Neither one answered my letters and both Chicago and Indiana University failed in foot ball—If you wish to aid your basket ball team can you get me a few hours work each day in helping in care for the Gymnasium at your school—I can aid your basket ball team and base ball team free and can prove this the first games you play—Purdue and Indiana University have ignored these Bibles—They also have shown no intention to give me work—If this continues I should think Purdue and Indiana will be on the joke colum

Talk this over with your team mates and write soon—

THE NEW BIBLE

_____, born near _____, Indiana, Aug. 25, 1874.

Name

I am the God.

I second him.

Universal salvation is the truth. The moment we die we go to heaven to live the eternal life. Our Hell we create for ourselves here on earth. I will use the elements to punish the people if they sin. The elements consist of cyclones, droughts, floods, earthquakes, extreme cold, extreme heat, lightning, hail and sleet storms.

The good weather will be given to the people if they tell the truth and lead a clean moral life. These rules can be used for reform:

We shall not deceive.

We shall not murder.

We shall not steal.

We shall not commit adultery.

We shall not have divorces.

We shall not gamble.

We must be honest.

We must be industrious.

We must practice economy.

We shall not drink any alcoholic beverage.

All people of good health shall marry and raise a family. If we remain single there must be no adultery. This means there shall be no sexual intercourse except between man and his wife. We shall not pay any minister, priest or any reformer in the church. All church workers must be volunteers. There shall be but one church for the people of this earth. This shall be the Universal Church. This is the proper name for the church, for all the people of this world will be saved. There is no punishment after death.

Remember the Golden Rule, 'Do unto others as we would have others do to us.' Jesus Christ is not the Savior. This is Christ's Prayer and this proves that the God is the one to save the people.

THE LORD'S PRAYER

Our Father who art in heaven, hallowed be thy name, Thy kingdom come. Thy will be done on earth as it is in heaven. Forgive us our trespasses as we forgive those who trespass against us. Give us this day our daily bread. Lead us not into temptation but deliver us from evil—For thine is the Kingdom, the Power and the Glory forever—

Christ admits in this prayer that his father has his own way in heaven and prays for his father to have his own way here on earth. This will be done if needed. We shall not eat, drink, or do anything that will injure physically, mentally, or morally.

NOTE:—Divorces might be granted in case either party has a dangerous venereal disease like Syphilis.

The printing of this Bible in county or state newspapers or the use of this Bible in churches so the people of the world will know the truth will in case of heat or drought bring rain in 24 hours. This can be done for two years but in this time the people must start a sincere reform. The truth and good morals will insure good weather. If we acknowledge the truth as stated this will aid the doctor in curing any disease that is curable. Missionary workers might be paid living wages to work in slums and among the illiterate people. No paid speakers in the churches of any educated people. Our work shall be well done.

I suggest reform by education and by law and law enforcement. All social evils should be corrected by law.

I created, and control the movements and position of the earth and all the planets. I gave life to every living thing. We should work six days and rest on the seventh day."

This man has so lost his perspective of life and has such little insight into his own limitations that he vainly imagines he is divine.

L. NATURE OF PERSONALITY

Up to this point our method of study has been to take a small sector of human life, to analyze it, and to study the ways in

which it may show evidences of perversion. This method is necessary if we are to understand the significance of these different manifestations, but we cannot stop there; for, while we may understand the parts of an individual, we do not know that individual unless we can get an adequate survey of how these parts function in relation to each other. What we must do now is to get a proper perspective, to stand off at a little distance and study the manner in which an individual is organized into what we choose to call a personality.

203. Definition of personality. The dictionary defines personality as that which distinguishes and characterizes a person. From a psychological point of view personality can be observed in the typical or characteristic forms of expression of an individual—his behavior. As long as he is alive we can observe some series of expressions and these are to us what the man is. Our only criterion of this vast concept—personality—is the behavior of that person. Behavior must be taken in a broad sense to include every reaction that may be manifested. A failure to respond at all is just as truly a bit of behavior, when an adequate stimulus has been given, as a very violent response would be.

In most individuals there may be observed a tendency to give somewhat similar expressions under different conditions. From this fact we are prone to generalize and attribute to the person certain typical modes of response. We say that one person is taciturn, another emotionally volatile, another voluble, another cynical, because we may have observed the tendency of any one of these traits to exhibit itself repeatedly. It follows, then, that our conception of personality is derived from the observation of certain habitual modes of expressive behavior in those we meet in life.

204. Background of habitual reactions. The observation of these habitual expressions leads us to speculate upon what may be back of them. Why is one person subject to emotional depression and another to emotional apathy? Why is one person characterized by a brazenness that would be inconceivable in another of the same intellectual ability and social status?

There is an inborn element involved in these differences, for a certain amount of original equipment is necessary for adequate human development. A dog and a child exposed to the same environment will not develop in the same manner and acquire the same philosophy of life. When, however, we confine ourselves to one species the significant differences between the individuals of that species are dependent very largely upon individual experience. This is especially true in the human species.

We must also bear in mind that two children in the same home, attending the same school with the same teacher do not have an identical environment. There may be favoritism on the part of parents, jealousy between the siblings (children of same parents), and differences in social contacts outside the home. The author has worked with identical twins where one was aggressive and the other dependent, where one was subject to severe emotional depressions not found in the other.

We stress these facts to indicate that our definition of personality must be a genetic one. Personality is not a static gift which persists unchanged through all the vicissitudes of life. It changes with each new experience. We are not today what we were a year ago, yesterday, or even an hour ago; we shall be different an hour from now, tomorrow, and next year from what we are today. Certain aspects persist as habitual attitudes, others are less stable; but either stability or volatility indicates only varying degrees of persistence and change. The basic factor of change permeates the entire individual.

We may study an individual as he is today, formulate an analysis of him as he appears to us now. Such an analysis is simply a cross-section in the stream of development. It is valuable only insofar as we recognize it as a composite result of all that preceded and as the foundation of what will happen when he meets the experiences to come.

This indicates that the basic element in such development is the coördination of the components, their integration into such a unified whole that the individual remains a definite

unit in spite of the diversity of original equipment and experiences which he meets. The normal man meets each new experience, adjusts to it in some manner and is changed by it. The keynote of personality, therefore, is neither permanence nor stability, but unification. Some experiences may be undesirable, we may wish that we had not encountered them, but that does not prevent their influence. As a result of such encounters we may tend to avoid a repetition of similar experiences, but the very adoption of such an attitude means that we are different.

205. The problem of integration. If we accept the idea that personality is genetic in nature and that its central core is integration it will rid us forever of the "preconceived notion that personality is a mysterious attribute, dropped from the skies, without antecedents in nature. If we simply cast our glance at the animals about us, we shall readily admit, that the difference between horses and mules, between geese and ducks, their 'principle of individuation,' can only be derived from a difference of organization and of adaptation to environment, with the psychical consequences that thence result."¹

This tendency to integration can be seen in various forms and degrees in different stages of animal development.

1. *Integration without specialization.* A unicellular organism has a wall of separation which enables it to preserve its integrity. This wall of separation resists any tendencies from the surroundings to bring about dissolution of the cell. There is no team work with other cells.

In some forms of multicellular organisms the main tendency to integration is still of the unicellular order. This happens where each cell, of which the organism is composed, is exactly alike.

"The constitution of the organism is so homogeneous that each element lives for itself, and each cell has its own special action

¹ Th. Ribot, "Diseases of Personality," Open Court Pub. Co., 1895, p. 25.

and reaction. But, taken together, they no more represent an individual than six horses, drawing a carriage in the same direction, constitute a single horse. There is neither coördination nor consensus, but simply juxtaposition in space. . . . But higher up, for example in Hydra, observation shows a certain consensus in the actions and reactions, and a certain division of work. Yet the individuality is very precarious. With his scissors Trembly cut fifty individuals from one."¹

2. *Integration with specialization.* With an increase in specialization of the component cells of an organism the individuality becomes more marked. A hand cut from a human being dies and the individual from whom it was severed is permanently devoid of a portion of his individuality. The significance of individuality therefore increases with specialization of function of the component parts. The human being is more than a colony of cells, he is an integration of cells.

3. *Coördination as an element in integration.* Complexity in the organic scale is accomplished in part by a factor other than increased specialization of function of the component cells, namely by the fact that the same cells may be utilized at different times for different purposes. This is accomplished through the coördinating activity of the central nervous system. Through its operation various cells may be organized into different groupings for the achievement of totally different ends.

4. *Unstable character of man's coördinations.* This brings us to the most critical distinction of all. In the lower animals the connections through the central nervous system are rigidly fixed at birth so that specific situations will call forth very definite responses. A wasp, for instance, will go through a definite life cycle, reproduce, and die with little variation. He is definitely integrated from birth, is little subject to the modifications of environment unless these be of a particularly violent nature. The human being has a vastly more complex nervous system, with relatively fewer firmly fixed connections.

¹ Th. Ribot, *loc. cit.*, pp. 26-7.

He has infinitely greater possibilities of variation in response and at the same time much more opportunity for lack of definite integration. Man must depend upon experience to integrate his various elements, whereas a wasp depends upon his innate organization. This should make clear to us why man's environment is so important a part in the development of his personality. The essential similarity in new-born humans is their plasticity, their ability to be molded by training. The similarity of our environment makes us as nearly alike as we are. This does not, of course, mean that a baby can be changed into a cat through environmental influences. His basic organism is just as fixed as the cat or the wasp, but in the more intricate functions of his nervous organization, the things that constitute his personality, he is very unstably organized at birth.

206. The force behind integration. What is the driving force which makes an organism tend to maintain its individuality? We feel that the essential nature of this force is of minor importance in the study of abnormal psychology, but speculations concerning it have occupied such a large portion of the literature on this subject that we must at least mention them. We urge our readers not to follow implicitly any one theory. The essential thing is an understanding of the ways in which the adjustments operate. The theories have been designed to explain the facts and if they are not viewed as tentative hypotheses they may blind us to a clear view of these facts.

1. *The instinct theory.* The term instinct was used to describe certain typical unlearned responses observed particularly in animals. A bird will build her nest without training, she does not have to be taught to sit upon her eggs until they are hatched. Instinct describes such an activity but fails to explain anything. The tendency to maintain one's individuality has been embraced under the head of the ego instinct. There is little objection to labelling it thus provided we do not assume that such a procedure explains anything.

2. *The libido doctrine.* Freud used the term libido to

indicate sexual desires in all their aspects. Jung has extended the use of the term to mean what has been designated by philosophers as the vital urge, something in the life of man which corresponds to energy in physics. According to this conception libido is a sort of fountain head from which flows the energy which activates all the conduct of man. The instincts are regarded as issuing from a relatively unitary source, the primal libido.¹ From this fountain head energy flows out in various directions and activates the various instinctive urges as well as later acquisitions of the race and the individual. It is a stream which is constantly subdividing and attaching itself to ever new aspects of life.

The two most basic expressions of the libido (according to Jung) are in the direction of self-preservation and in race-preservation. Any activities or responses that endanger these two are consequently inhibited in favor of those that further them. Other acts are motivated by energy split off from these two main streams.

This doctrine has done a service, probably, in coining a word to designate a thing which when called vital urge had intricate philosophical and ethical implications, but again we have gone no further than devising a name.

3. *Urge toward superiority.* When any individual is thwarted an emotional reaction is set up, as we have pointed out in a previous chapter. Adler has chosen to name this emotional reaction a feeling of inferiority, a fear of failure. The fighting reaction against such a fear of inferiority is an urge toward superiority. This method of looking at the situation describes in a fairly accurate manner some of the actual responses that are made by an individual and does a further service in that it indicates that the environment has an important part to play in the expression of the urge to integration.

4. *Autonomic tensions.* Kempf² has emphasized the rela-

¹ C. G. Jung, "Psychology of the Unconscious," Moffat Yard & Co., 1916, p. 150.

² Edward J. Kempf, "The Autonomic Functions of the Personality," Nervous and Mental Disease Monograph Series, No. 28, 1918.

tion of the autonomic nervous system and the concomitant emotional reactions in the struggle of the individual to maintain his integrity. He has pointed out that any situation which tends toward disintegration causes a very marked autonomic tension which is only relieved when the individual's situation is changed so that integration is advanced. This theory makes the urge toward integration an emotional one based in a certain physiological structure of the body.

These four theories suggest different names for one essential process. The strange part is that, by whatever name we choose to call it, we have not explained the nature of the tendency toward integration. It is quite likely that in the future the nature of the urge toward integration may be explained, but such explanation is not advanced by taking a name as the equivalent of explanation. We need to remember that all we have done thus far is to describe. With this in mind we can make our descriptions more and more accurate until they finally lead us to an explanation. Nothing inhibits exploration in science more completely than making a fetish of a name.

We have emphasized the genetic aspect of personality because this is the vital part for the student of abnormal psychology to understand. His objective in the study of personality is to determine the exact make-up of the person under his observation. He needs to understand how the various attitudes and characteristics grew and the laws of such growth so that he may, by means of educational processes (which are merely controlled environmental influences), modify the individual in a manner that will eliminate his difficulties. Finally, we can conceive of no method better calculated to give us a general perspective of the whole subject of personality; and possibly, because of the breadth of view obtained by the genetic method, we may be able, in the future, to arrive at a more complete explanation of personality.

LI. INDIVIDUAL DEVELOPMENT OF PERSONALITY

The meanings of the various personality traits (we use trait in a descriptive sense only) take on profound significance when we know something about the situations in which they developed. Without such knowledge they are profound mysteries. It is, for this reason, important to know as fully as possible into what circumstances the child was born and how he is responding to these. The factors that affect the development of a child may be summarized as personal equipment, material possessions, and social environment. We will consider interactions with each of these in turn.

207. Personal equipment of the child. Modern psychology has shown very clearly the significance of individual differences. These are important not only in the specific realm in which they appear but in their indirect effect upon the rest of the individual's life. Often a personal peculiarity may be traced directly to an attitude developed toward some trait in a rather unrelated field. We shall consider personal equipment under three heads.

1. *Mental ability.* A dull child may develop very placidly in an environment where not too much is expected of him. He responds in a manner characteristic of his limited ability, probably recognizes the fact before he is very old that others are cleverer than he is, but takes it as a matter of course and may mature into a very demure individual. The same person, forced to face situations too difficult for his limited intelligence, may get into various serious predicaments. Having innocently done something at the suggestion of a more intelligent person he may be amazed to find himself being punished for what was to him an innocent performance. He may, as a result, develop anything but a docile disposition. He may cultivate a queer cunning to help him over his difficulties, he may be filled with a feeling of his own incompetence and may fight against it, or he may take a hateful attitude toward those who cause him so much discomfort.

At the other extreme, a bright child may find life too tame and commonplace for him. He may come to depend

upon his cleverness to avoid the more monotonous duties of life, become extremely arrogant because of his feeling of superiority and develop into a hateful person, with whom no one would care to live. A personality study involves not only a knowledge of the degree of intelligence, but an understanding of the secondary attitudes built around this factor. It is not enough for a teacher to know a child's intelligence quotient: his emotional reactions and the use he makes of his intelligence are not to be ignored.

2. *Health.* The most important personality modification that may result from illness is not the direct effect of such sickness upon the nervous system, but the indirect effect upon the rest of the personality. In illness one is treated with great solicitude, which is enjoyed despite the attendant suffering. Any mother can testify to the fact that the disposition of her child is quite different after a serious illness. She will state that she has to "train him all over again." In this retraining process she may be only relatively successful. In any case, the disposition is radically changed because of such illness. In many instances complicating circumstances enter to make the effect of illness even more serious. If a child fancies himself mistreated during his illness, hatred or cruelty may ensue. Specific phobias of doctors, ether, nurses, or disease may develop. If one's illness enables him to escape something more undesirable, such as warfare, he may become sick upon the slightest provocation. It can be easily demonstrated that this latter development is rather common. If a quiz is announced there is a probability that a greater number will be absent from this quiz than are customarily absent. Many of these give the excuse that they were ill. The author cured his class of this tendency by announcing that there would be no excuses granted for absences unless the student's physician telephoned in advance and reported the illness. After this announcement there was practically perfect attendance. Surely this was an easy way to promote health in a student body!

Even if we did not have to consider specific effects of ill-

ness the very outlook on life is different, depending upon physical well-being. A sound philosophy of life is more likely to develop in a healthy body than in a diseased one. In studying the effects of illness it is important to determine as far as possible how the outlook was modified by illness. Some persons are no doubt helped by illness, while others are pushed farther toward disintegration.

3. *Physical appearance.* Unfortunately, adults are sure to impress upon a child, in his most formative years, their attitude toward his physical appearance. Many a girl has been made egocentric because a doting mother or relative has remarked upon the beauty of the child in her presence. Children's attitudes toward their parents are changed or emphasized by remarks indicating similarity or difference. "Isn't he just the image of his mother? He must be mother's boy." "He is a chip off the old block. He has all his father's tricks." We may think that impressions from such remarks are not lasting but much evidence has come to light to indicate that they are. The following concrete instances are typical: Many queer reactions in one woman could be traced to the fact that when she was a little girl some one remarked in her presence that she had sensuous lips. One man's perverted attitude toward women could be traced to the remark made by a dressmaker, who chanced to be working in his home when he was about six years of age, to the effect that, with his eyes, he certainly would be a heart-breaker.

The influence of peculiarities of appearance is aggravated by the tendency of other children to select outstanding differences and to hold them up for ridicule. As is well known, many nicknames are based on this performance; such as red, fatty, skinny, mugs, and freckles. So we may repeat, in the study of physical peculiarities, emphasis should be placed upon their influence upon the personality as a whole.

208. Material possessions. The values that a child places upon material possessions are in most instances the direct result of the attitude of his parents or guardians toward material things. These soon become accentuated by compari-

son with the possessions of other children. A child will naturally be satisfied with few toys until he finds that his parents bemoan the fact that he has no more, or that other children have more to boast about than he has. Most parents are familiar with the experience of buying expensive toys for their children only to find that they prefer some very ordinary toy to the elaborate gift.

Once impressed with the fact that he has little, various reactions may be adopted. The deprived one may set about acquiring things in the easiest manner—stealing them. He may wreak vengeance upon the more fortunate by breaking their toys. He may shun companionship because of a self-deprecatory attitude. He may imagine that he has countless things and live in a world of phantasy. He may relate the contents of such phantasies as though they were real and in the eyes of his elders be a liar. Or, he may develop an ambition to become a great man so that he will have the means to acquire all that he wants. Many of the foibles of grown men are the result of attitudes developed by being deprived of things as children, or rather, their feeling that they were deprived.

It is a very easy thing for a child to overvalue material things and their importance. The author had occasion to meet a student who was very much depressed because she had no friends. She attributed this to the fact that she did not have the clothing, a car, and the money essential to bring friends to her. She called all the girls "snobs" when as a matter of fact she was much more snobbish than they were. She had tried to "hold her head up" in spite of her material handicaps and held it so high that all the other girls avoided her. It was easily demonstrated to her that her lack of friends was not the result of her meager material possessions but of her attitude. When she changed her attitude she won friends very easily. The value which a child places upon material possessions is usually reflected from the attitude of his elders.

209. Family relationships. As important as any determiner of personality traits that the child inherits are the

home relationships in which he finds himself. The significance of these relationships cannot be understood in terms of kinship, but must be sought in the personal interactions of the different members of the group. What may, on the surface, and to outsiders, appear to be a perfectly adjusted and happy family, may to some particular member of the household be a place of torment. A home which appears to the outsider as a nest of evil may be the means of producing a strong character in the child reared in it. An adequate understanding of any person's individuality cannot be obtained without knowing something of his family background, and the attitudes developing from it.

The most significant influences are the subtle ones which neither the parent nor the child recognizes.

"The adult unconsciously exerts a decisive influence on the wishes of the child without the child having the slightest comprehension of the existence of the influence. . . . He unconsciously cultivates in the child attitudes that please his own wishes and tends to repress in the child the spontaneous interests that irritate the affections which the adult has repressed."¹

The temptation of the student in this field is to oversimplify these relationships. The tendency is to search for a specific family situation which will explain any peculiarity in a person. The interrelations are so many and so far-reaching that no such simple formula can be found. The child's personality is not characteristically the result of the influence of father, mother, brother, sister, aunt, uncle, nurse, or others who happen to come into his life, but depend upon an intricate combination of all these influences working together. A child may derive one attitude from one family combined. A child may derive one attitude from one family influence, another attitude from another source. Furthermore, as we have stressed, personality is never static and so one attitude is changed into a succeeding one. In studying the influence of different family situations we shall necessarily be forced to study different influences separately, but we

¹ Edward J. Kempf, "Psychopathology," Mosby, 1920, p. 86.

cannot emphasize too strongly the fact that these are always operative in differing combinations and with different degrees of force.

In order to illustrate how the different home situations can develop different tendencies in the same person let us trace a few of these factors in the case of a normal girl, whom we shall call Pearl. Pearl's father was forty-five years of age when he married her mother, who was twenty. Four girls were born of whom Pearl was the youngest. When she was six years of age Pearl's father developed a marked tremor which made him unable to write, to hold a paper or book, or even to eat without much difficulty. His daughters' main delight was to write letters for him and to wait upon him in general. Their attitude toward him was pity rather than the dependence or respect naturally induced by physical stamina. The mother, being so much younger than the father, was accepted as one of the younger group. Consequently, Pearl developed an attitude of self-dependence which was a factor in her leaving home and working her way through college. The father's marriage had been bitterly opposed by his family, particularly by his sister Mary who no doubt had an abnormal attachment for her brother. Not succeeding in keeping her brother from marrying she proceeded to do her best to disrupt the life of this new family. After a few years, out of spite, she married a man she did not love and who spent most of his time away from home, leaving Aunt Mary free to pester her brother's family. When Pearl was a tiny girl, Aunt Mary would look at her, sigh and shake her head with the remark, "You poor child, you are an old man's daughter." If Pearl was restless, Aunt Mary would tell her to keep quiet, that she was becoming just like her father. From the age of ten to sixteen Aunt Mary cared for her under the pretense of helping her. During these six years she did her best to convince Pearl that she was an invalid, and insisted that she was "organically weak." Aunt Mary was herself an hypochondriac whose main enjoyment was taking drugs. She traveled with Pearl from one resort to

another drinking health waters, hunting up new drugs and feeding calomel to herself and Pearl at regular intervals. This latter became almost a ceremonial with her. Pearl's reaction to all this has been to escape from all that her aunt ever suggested to her. She now will never take medicine of any sort and has spent untold energy proving to herself that she is troubled with none of the diseases that her aunt said that she had. Having been told that she had pulmonary tuberculosis, Pearl worked until she had the greatest chest expansion of any one in her college class. In their travels throughout the country the two had to sleep together and the aunt always made Pearl's life miserable by insisting that she keep perfectly still throughout the night. She would make her retire first and command her to get perfectly quiet before she came to bed. She impressed upon her the fact that all activity was a sign of nervousness, and, in order to keep from becoming like her father, she must be perfectly quiet. This is the one thing for which Pearl has been unable to compensate. Even now when excited she becomes very tremulous and has to fight the fear that she is nervous. Besides, the aunt kept up a regular series of admonitions concerning decorum and keeping up the family standards. This peculiar combination of restraints has tended to make Pearl strive for freedom of all sorts. She takes delight in doing things that would, in Aunt Mary's mind, lower the family standard. She is a firm disbeliever in heredity, the reason being obvious in her background. She is a hard worker, her goal is independence—independence from the restraints of her aunt. With pity rather than respect for her father she has a poor background upon which to build a normal attitude toward men. Certainly, this meager sketch is enough to show that Pearl could not be understood without some knowledge of the personal contacts under which she was reared. With a knowledge of them one can control her present situation so as to strengthen her hold upon life, a thing which would merely be a chance thing without such information. We must note also that the important thing to consider is how she

reacted to those about her. We have but one side of the story until we know the effect of each of these influences.

Since family relationships are of such vital importance in personality development, it may be profitable to examine in some detail the specific effect of some of the most striking forms that these relationships take.

1. *Dominance of one person.* The fact that each of our lives is influenced by a number of individuals is one of the most beneficent features of environmental modification. This permits any outstanding idiosyncrasy of one person, which might have an undue influence upon us to be softened by the influence of another, who may not only offset this, but at the same time add other influences of a different sort. There are, nevertheless, some instances where a particular individual exercises a dominant influence and such situations are always fraught with danger.

(a) **SMALL FAMILY GROUP.** An outstanding illustration of this condition is the only child. An only child is the center of attention whether there be only one adult in the family or whether there are more, and so he is likely to become unduly influenced by the particular individuals who train him. "Spoiling" of this sort is aggravated when it is accomplished by a certain member of the adult group.

(b) **EXTREME ADULT INTEREST.** Various situations may lead to the development of undue interest in the child on the part of an elder. If a mother has lost her husband she naturally looks to her child for comfort and showers her affections upon him. Marital incompatibility of one sort or another usually brings the child to the focus of attention more than he otherwise would be. Other members of the family, grandmothers, aunts, grandfathers, uncles, or other relations, having unsatisfactory lives of their own may take it upon themselves to "do the best for" the child. Usually this is the best for the adult. They do service and homage to the child not for "his good" but for their own and then they rationalize their conduct by thinking they are doing the poor fellow a service. When analyzed most of the interest that adults

give to children is selfish in nature and is not a reasoned program calculated to be of benefit to the growing personality.

Few of us have failed to see specific instances of a mother who has transferred her affection from her husband to her son. In such cases it is very easy for the mother to urge her son not to marry, saying: "What shall I do if you marry?" This undue affection in a lesser form often accounts for a mother's feeling that no girl, or that some particular girl, is not good enough for her son. Rivals are always unworthy.

(c) EMOTIONAL CRISES. If, in the event of some bereavement or other crisis, a particular individual brings relief it is natural for the child to look to this person with extreme interest and devotion. Usually other events will transpire to divert interest from such an influential person, but sometimes this does not occur as it should. If the one providing such influence happens to get enjoyment from this devotion he is likely to endeavor to continue it. We are not intimating that such a condition is necessarily detrimental but if carried to extreme provides a narrowing influence on the child's personality. No one person, no matter how valuable his influence, can provide a sufficiently broad situation to develop the best type of personality.

2. *Unfortunate family groups.* The combination of personalities is different in each family situation and each must be studied separately. We can, nevertheless, indicate a few outstanding family groups which will indicate the principles involved in family influence.

(a) WHERE THE CHILD IS A BOND BETWEEN MISMATED PARENTS. In such a family the child is usually torn between two conflicting attitudes. One parent hates the child because he is a force that prolongs an undesirable situation: the other looks to him for comfort. This leads to an unnaturally strong positive affective reaction to one parent and a strong negative affective reaction toward the other. The child feels this strained relationship and is likely to be lonely and to consider himself neglected despite the particular attention

he gets from one parent. As he grows to maturity he is likely to feel inferior and dissatisfied with life in general. We had one subject, a woman of thirty-five, who had a profound depression which was traced to such a home condition. When a tiny girl she felt that she, for some reason she could not understand, stood between her parents and as a result wished that she were dead so that they could be reconciled. She felt that her father liked her but that her mother hated her for any attentions that she received from her father. Because they themselves cannot express the nature of the difficulty, we often fail to realize how seriously children take such things. Few things have so pernicious an influence on a growing personality as the feeling that one is unwanted.

(b) DIVORCED PARENTS. While separation of the parents may relieve the situation described above it brings other conditions which have a different but just as serious effect. If the child is given to the parent who loves him he is likely to receive undue affection. He takes the place of the departed spouse in the affective life of the guardian and is consequently "spoiled." The indirect consequences of such a situation are very far-reaching. As an illustration, one boy of eleven could not read first grade material in spite of the fact that he had been given special reading drill in the schools for years. Investigation revealed the fact that the mother regarded him as her comfort and solace for a husband who had left her when the child was born. She had cherished him in an inordinate manner and when she found he had difficulty in reading had read to him several hours a day. When she saw what she had done she changed conditions and taught the boy to become independent; she ceased to read to him and he learned the joy of doing things for himself. In one year after this change in attitude on the part of the mother the boy had advanced with such rapidity that he could read material of sixth grade difficulty. *See Article 160, Paragraph 2.*

If the child happens to be given to the parent who does not love him the situation is even worse. We found one boy

who was failing in his second year of college work in spite of the fact that he had superior intelligence. His parents were divorced when he was three years of age and the court gave the boy to the mother with the stipulation that the father could have him one day a week. The mother spent six days endeavoring to make him hate his father and the father spent the seventh lavishing affection upon him and purchasing him gifts. The boy, being deprived for the most part of the comradeship of the one he loved and being forced to stay with the one who did not love him, developed a strong cynicism which went so far that he stated his only delight consisted in making others suffer. He had deliberately courted six different girls in his short college career, and after they had become somewhat attached to him he had deliberately "jilted" them in order to see them "suffer."

(c) PARENT JEALOUS OF CHILD. Where the bond of affection between husband and wife is none too strong one parent or the other may become jealous of the attentions that the child receives at the hands of the other. Since the mother is usually the one who gives the infant the most attention it is more often the father who is jealous. We have encountered cases where the reverse held. One child was reported because she was failing in school and the trouble was traced to a very serious family situation. The father was twenty years older than the mother and preferred to stay at home and read to any of the pleasures that the younger wife would have enjoyed. He had been a staid old bachelor before he met his future wife and during the period of courtship had learned to dance, had accompanied her to the theater and seemed to be interested in social affairs. As soon as they were married he settled down to the comforts of home and would accompany her nowhere. When their girl was born he immediately devoted a great amount of attention to her and the wife consequently became extremely jealous. His response to this jealousy was to devote even more attention to the daughter, showering gifts upon her without measure and killing all incentive in her. The child appreciated this conflict between

the parents and played one against the other to get what she wanted. This substitution of trickery for industry led to her failure in school.

(*d*) THE PARENTS WHO MAGNIFY THEIR ILLNESSES. A woman may magnify her ill health either to win attention to herself or to bring out the mild traits in an otherwise coarse husband. This has a varying effect depending upon whether the child concerned is a boy or a girl. In either case the child is likely to sympathize with the mother and to hate the father if he does not accede to every wish of the sickly mother. A girl may pattern after her mother and learn the same tricks or she may resent the fact that her mother has to suffer so much and take the initiative in providing for her. She thus develops a masculine protective outlook upon life and hates the coarse type of man that her father appears to be. A boy will also usually take his mother's side in such a situation and become his mother's hero, taking the place of the father in supplying the mother's needs. An analogous situation maintains where it is the father who craves attention and becomes ill in order to secure it.

(*e*) THE DEVOURING PARENT. An egocentric parent sees the world only in terms of selfish desires and ambitions. A child to such a parent simply spells an opportunity to work out in him a career in which the parent will delight. This leads to total blindness to what might be best for the child, the child is forced into the preconceived mold of the parent. A mother of this type will follow son and daughter and cling to them even after they are married and will want to mother the grandchildren as well, thus providing the typical mother-in-law problem. A father will mold his son into a business or profession to his own liking, or will endeavor to shape the life of his son-in-law. If the father happened to get into a profession that he enjoys he makes sure that the son follows in his footsteps. If he is displeased with his choice he will select another for his son, but will, nevertheless, be just as insistent upon his following it. The child may follow such guidance or may revolt emphatically from the course laid out

by the father. Such revolt may be seen in the fact that quite a number of boys, when asked what they wish to do, reply, "Anything but what my father does."

Kempf¹ has well stated the result upon the child of treatment of an unreasoning and domineering type.

"Whenever an adult forces a child to do something or to learn something against its wishes, without justifying his demands by inducing the child to wish or act, other than as a compensation for fear, the adult, whether a sincere, devoted parent or not, dulls the child's initiative and curiosity. Repeated experiences of this sort subdue the youth's aggressiveness, and opportunity is lost to his competitor, who, although he may have less inherent capacity, wins because he is better trained."

A prime requisite for personality development is for each individual to learn to "stand on his own feet" and when a parent, for selfish reasons, encourages the child to depend upon him he is really keeping him in an infantile stage and doing him an incalculable injustice. Many persons who are chronologically adults are babies in personality because of devouring parents.

(f) RIVALRY BETWEEN SIBLINGS. If there is only one child in the family he is the lord of the situation and, as we have seen, is likely to become so dependent upon the attention of his parents that he expects the same sort of treatment outside the home. The first-born always enjoys a period of complete dominance which is rudely interrupted on the appearance of a second child. This begins a rivalry between them for the attention of the parents. Judicious handling may reduce such friction to a minimum but in many cases it persists quite strongly. The younger, being weaker, requires the protection of the mother or father, which the older one interprets as partisanship, which, of course, only accentuates his jealousy. The younger one plays upon this tendency of the parents to take his part, and he is likely to be the spoiled one, while the older one is the disgruntled, neglected one, fighting for his rights. Additional children may modify such a situation

¹ Edward J. Kempf, "Psychopathology," Mosby, 1920, p. 113.

but, in turn, may complicate it. In a large family the youngest child is likely to be the pampered one, getting the attention, not only of the parents, but of the older children as well. This is especially likely to happen when there is an interval of years between the next oldest child and himself.

210. Adjustments to family the pattern for later adjustments outside the home. The intricacies of family situations could be elaborated upon indefinitely and then all situations would not be covered. Each case has to be studied individually. The important thing in all this is that the child must learn to adjust to the situation he finds in the home in which he is placed and this adjustment is what gives the major portion of coloring to his personality. As he enlarges his world and makes contacts on the outside he carries into these new relationships the patterns that he has learned in the home. Any trick that he has learned he tries on his associates. Fortunate is he if his tricks do not succeed with his comrades, for then he tends to drop them and acquire better reactions. If the parents keep him from such outside associations, they are merely strengthening the home pattern by eliminating opportunity for it to be modified by outside influences. If the home situation is of a desirable sort no serious results may ensue from such limitation of environment, but if they are not of the right sort the limitation may have serious results. Since it is hard to judge which is the case, the best procedure is to encourage outside contacts as early as possible, especially where the family is small.

From this discussion it may be seen that we do not have to depend upon the mechanism of biological heredity to account for the continuance of some situations in a family tree. Biological heredity may be an important factor in the continuance of bodily traits, but personality traits are primarily dependent upon social heredity. Kempf¹ has said in this connection:

"I have been able to find that the happy or unhappy experiences of a greatgrandfather conditioned him so that he, in turn, uncon-

¹ *Loc cit.*, p. 117.

sciously, conditioned the affections of his children, and they conditioned their children, and so on to the fourth generation."

The foregoing gives us a perspective of the genetic growth of personality. If a teacher wishes to understand a child, it is obvious that she must know something of his home background, not of the material surroundings, however, so much as the personal relationships which exist in the home. We can see from this study that we all are the result of the interaction of various influences. Some individual tendencies have been inhibited by these influences, some have been cultivated. Some of our experiences have tended to tear us apart, some have tended to make us into more unified individuals. Each person is, in a very real sense, the result of all the elements that have preceded in his particular life history. If we take a cross-section of any person we can usually find some traits or attitudes which are outstanding. The predominance of these may tempt us to describe a person in terms of his idiosyncrasies. These are, of course, a part of him, but we need to exercise care lest these overshadow the balanced normal expressions and attitudes which he manifests. If we are careful to study personalities only in their proper setting, we shall be less liable to this error of seeing only his outstanding peculiarities.

LII. PERSONALITY TYPES

In the following section we shall discuss various personality types. By type we do not mean that any characteristics can be marked off in a separate and distinct manner. Mental measurements have indicated that every type simply expresses an unusual development of a trait which is present in most persons in a lesser degree. From a descriptive point of view we are forced to select these outstanding attitudes and discuss them separately, but the reader is urged to keep in mind that this is an expository device. No person is exclusively one type or the other.

211. The balanced individual. By a balanced personality we mean one who has developed normally in all directions,

one who is not eccentric in any particular. A balanced individual has no outstanding characteristics of any sort. He is of average intellect, emotionally stable, active to an average extent, and socially well received but not outstandingly so. Probably none of us should idealize such a person, and it is very doubtful if we should want to develop ourselves into such a personality.

Most of us place more emphasis upon certain traits than upon others. We want to be different in some particular. There is little unanimity in our evaluation of qualities. The trait that one person exalts may be despised by another. Hence the norm for balance cannot be social approval but is a statistical norm. It follows that no one should be disturbed to know that he is different. The way in which he differs from others is the important consideration, for it may be in a particular which only a small group of his associates would consider desirable. But even such a difference may, at times, be desirable, for the genius of one age may have been the freak of the preceding age.

212. Intellectual types. The intellectual types comprise all those persons who place unusual emphasis upon the rational processes. The various expressions of intellectual emphasis depend upon the motives underlying this emphasis, the motives, in turn, depending upon the way in which they learned to give the intellectual feature of personality the dominance which it possesses in their lives.

1. *The compensating intellectual.* One important motive for attempting to excel in intellect is a failure or inferiority in some other realm, such as physical deficiency. Intellectualism based upon such an urge takes an arrogant form which depreciates physical prowess, or physical beauty. This overweening intellectual vanity leads its exponents to invent such phrases as, "Strong back and weak mind," and "beauty and brains never go together." Such a person pursues his chosen field with feverish zeal, realizing that if he fails in his attempt at compensation he is lost.

2. *Intellectualism as an escape from affective failure.*

Sorrows, disappointments over love, or other emotional crises may lead to the pursuit of intellectual activities with unbounded vigor. Such an intellectual becomes hard and cold in his logical analyses. He may carry over his intellectual dominance into religion, for instance, reducing it to a series of intellectual formulae and disparaging its affective value. He rationalizes about the emotional lives of others, seeing only calculation behind the romance in the lives of his associates. This type of intellectualism may be distinguished by the emotional fervor with which the individual pursues his chosen subject. He loves it with the fervor of a true emotional attachment: he has fallen in love with his intellect.

3. *Intellectualism as an escape from social failure.* Intellectual activities are, in many instances, cultivated in isolation. Having failed to adjust to others, the retreat to a solitary pursuit of learning gives many persons a very satisfactory substitute. Such intellectuals lose themselves in books. The acquisition of knowledge by disputations with their fellows is distasteful. You may hear such an individual express keen disappointment when he has occasion to hear in lecture or converse in private with the author of a book which he has greatly admired. His is an acquisition of knowledge which can rarely be converted into any pleasing presentation for the consumption of others. He may be able to put his learning into book form, but it is likely to be stilted for he does not understand the persons for whom he is writing. If he attempts to speak in public he is likely to make a complete failure. The author knew intimately an individual of this type who was a complete master in his chosen field. He had read and digested every printed work on his subject, but when occasion came for him to present a portion of his erudition to an audience he made a most miserable jumble of it.

4. *The visionary intellectual.* The visionary is one who, having failed to adjust to his present environment, escapes by substituting the delights of imagination. A large number of visionaries do not attempt to justify their phantasies, but others do attempt such rational explanations of them. The

spiritualists are of this type. They are not content to call their visualizations by any name which signifies that they are subjective, but must build a rational system of the universe to explain them. In strictly intellectual pursuits these persons build the most fantastic hypotheses, stating as laws the theories that they would like to believe. Sometimes a person of this type makes a crude guess which is later substantiated, and thus gets credit for acumen which he did not possess. In every field of learning one has to be on his guard against this type of person. Once he is discovered one may take his conclusions for what they are worth.

5. *The curious intellectual.* Intellectual endeavors may be motivated by curiosity. In many such instances the reason for the extreme curiosity is that the person was made unduly curious as a child by having certain things withheld from him. Often a morbid curiosity about sexual topics becomes sublimated in a lifelong curiosity which gets an outlet in scientific research. Unless such motivation is supplemented with definite scientific training and a certain amount of persistence the scientist is likely to be superficial. He will begin a research project with great fervor and unbridled energy, will pursue it as long as there is much uncertainty connected with the outcome; but, once the end is in view, he will suddenly lose all interest in the project. Some shifts of scientific interest in very reputable scientists may be thus explained.

6. *The exhibitionistic intellectual.* The exhibitionistic intellectual manifests his presence by a morbid desire to see his name and productions in print. He wants recognition. He is a past master at making "much ado about nothing." He will take the smallest bit of scientific or literary lore and expand it to enormous proportions. His main anxiety is how his work has been received rather than concerning its ultimate substantiation. How much easier it would be to ascertain what has been accomplished in any field of learning if it were not necessary to wade through all the literature produced by the exhibitionist who has chosen intellectual fields in which to display himself!

Writing is not the only way in which the intellectual exhibitionist can function. He is a chronic lecturer, has vast numbers of his portraits to furnish reporters, typewritten copies of his wise sayings for publication in the daily papers, and manages to keep in the limelight. He is a chronic "joiner." This does not mean, of course, that every intellectual luminary who gains wide publicity is thus motivated. The exhibitionist is discernible because he seeks publicity, he gloats in his rising fame, and usually it may be found that his actual contributions are rather small in proportion to the turmoil that is made about them.

7. *The cynical intellectual.* Having abandoned all hope of ever attaining the things that he had hoped for, a person may defend himself by caustic comment upon the futility of life in general, and by ridiculing those who are still laboring under the hope of attaining the things that he has failed to gain. With an intellectual person this type of reaction becomes more than an emotional outburst, it is supported by carefully worked out logical arguments purporting to show that everything is a delusion. Such a person finds plenty of fuel for his fires, for everyone recognizes that mankind is in the midst of a constant struggle which necessarily has its disappointing aspects. Ideals that were held sacred at one time are discarded at another, men of one generation sneer at the things for which our forefathers died. The cynicism of disgruntled individuals performs a service in that it keeps us from viewing life with too great tranquillity. The cynic is a harmless soul if he is not taken too seriously.

8. *The balanced intellectual.* The normal man enjoys an intellectual challenge, but if he is worsted he can get a thrill over the intellectual prowess of his opponent. He realizes the limitations of his intellectual powers as well as his abilities, and is not totally disgruntled when he learns that he has made a mistake. He recognizes clearly the part that bias plays in his reasoning and is not laboring under the delusion of cerebral dominance. To be sure, he honors his intellect as probably the most important part of his being, but at the

same time he realizes that its value is not enhanced by disparaging other characteristics which he possesses or by gloating over the failures of his less astute comrades.

213. Emotional types. The emotionally balanced individual thinks well of himself, but is not too much in love with himself; he enjoys the company of his own sex, but prefers the other sex; he is emotionally aroused upon occasion but does not go to affective extremes, he controls himself without undue inhibitions; in short, he can enjoy life without being afraid of himself for so doing.

As we consider some of the ways in which persons deviate from normal emotional reactions, let us keep in mind the fact that we are not considering specific types but trends or tendencies in diverse directions.

1. *The self-centered individual.* One may justify an inordinate love for himself by the euphemism of self-respect, he may fail to recognize his auto-infatuation, or he may recognize it with no apologies for it. Self-love often centers upon some particular personal characteristic. One may be engrossed in his own sensations, upon his skill in some direction, upon his beauty of face or form, upon his intellectual acumen, upon his moral integrity or his inheritance. Prudery is often a poorly disguised inordinate self-love. On the other hand, it may be a general self-love, taking no specific element to feed it.

Vanity may be a primary affair, the individual never having advanced beyond the infantile engrossment with self; or it may be a secondary regression, the result of unsuccessful or unsatisfactory attempts to transfer his affections to others. The latter type is more amenable to change for the simple reason that an attempt has already been made to attain a more advanced adjustment, that is, an effort to love some one besides himself, which attempt may be repeated with more success.

2. *The homosexual individual.* By homosexual in a broad sense we do not mean an actual perverse tendency. The term has been broadly used to designate any one who prefers the

activities, companionship, and interests usually followed by those of his own sex to the exclusion of interest in the other sex. In extreme form, of course, it may be accompanied by an actual perversion. A large number of individuals have a homosexual preference to a rather pronounced degree. They can endure the companionship of the other sex for a time but are generally relieved when they find themselves in the company of their own sex. This is more or less natural with growing children but in adults it signifies either a lack of adequate development or a regressive tendency. It is fostered by the projection of unnatural prudery in one's parents or teachers which results in restraint whenever members of the other sex are present. A homosexual is always hyperconscious of his sex. He cannot enjoy the companionship of those of the other sex on the basis of personality; he must be aware continually that they are not of his sex. The existence and popularity of men's clubs, women's clubs, and similar organizations that are sexually exclusive bear witness to the prevalence of this feature of personality.

3. *The emotionally uncontrolled.* This classification is designed for those who are relatively uninhibited. They are heard in public places boisterously laughing, telling everybody within earshot how happy or how sad they happen to be. They will inform a whole coach full of passengers, "Oh, how glad I am I came on this trip. It pleases me beyond words. Could anything be more wonderful? If George could only be with me!" Of course such conduct may be based on an exhibitionistic tendency, but the uninhibited type can be distinguished from the exhibitionist in that the former does not care whether he is heard or not, he is oblivious of his surroundings, more or less, while the exhibitionist is performing solely for his audience.

The uncontrolled individual also shows himself in other realms. He will fall violently in love with a girl, take her clear off her feet and be on the way to the altar when he will become just as violently infatuated with another. One young college student was madly in love and engaged to four

girls within one year. He would enact the most heart-breaking scenes one could imagine. With sweetheart, mother and friends as witnesses he would sob out his story of being in love with another. Not wanting to hurt his betrothed, what could he do? She of course would give him up, generously, but in a few months he would be going through a similar situation, with the same or intensified emotional fervor with a new group. He was not trying to do anything spectacular; he was sincere in his feelings, and merely lacked control.

4. *Emotionally repressed type.* Emotional education usually takes the form of training in inhibition. The repressed type is the one who has taken such training too literally. This leads to a substitution of fear for aggressiveness, a tendency to appear superficially happy and to hide any tendency toward sorrow, and a restraint of expression of affection. Such a person feels that it is a sort of disgrace to give vent to any emotional activity, he makes a pretense of being intellectually motivated on all occasions and often appears hard and cold to the casual observer. Closer scrutiny will reveal that these apparently frigid individuals are, under the surface, a seething caldron. One individual, so emotionally perturbed that she was on the verge of suicide, who, when we were talking about her vital problems would writhe in agony, was described by another individual, who lived in the same house with her, as the most poised person she ever knew.

Such extreme repression is likely to give way under undue stress and then the individual shows extreme emotional reactions. The typical manic-depressive swings which we shall describe in a later chapter are based on this type of personality. Seen in a state of extreme elation or depression they have the appearance of possessing no inhibitions. The barrier of reserve has finally broken, in such cases, and the whole personality is for a time flooded with the emotions which have been dammed up for so long.

5. *The irritable person.* The irritable person is the one who has more emotional stimulation than he has physical energy with which to respond adequately. He reacts to a

new stimulus with wild enthusiasm, starts to work with extreme vigor, but is soon exhausted and if he finishes his projects he does it on what is commonly called "his nerve." Such emotional extremes are probably due to an inherent recognition of a marked lack of reserve energy, with a consequent feeling of shame should he give up a task half-performed. These persons may be observed becoming more and more unstrung as their work progresses. They suffer from a conflict between a fear that they will not succeed—that they will break before they have accomplished their ends—and an urge to succeed. This irritability expresses itself in relation to irrelevant aspects of life. The victim of this conflict will rave at his friends and family; he will storm around in a perfectly senseless fashion. He can be distinguished from the uncontrolled type in that the latter shows a perfectly wholesome physical energy behind his activity. The latter bubbles over with physical energy, his activity is not of the feverish sort that is seen in the irritable person.

6. *The anxious person.* We have already described the mechanism of anxiety. (Article 158, Paragraph 2.) The anxious person is beset with nameless and mysterious fears which attach themselves to everything that he encounters. He is continually finding new things about which to worry, seems to revel in them, so much so, that if one seeming object of worry is removed, another is immediately found. As we have seen, the victim of anxiety is usually afraid of himself, afraid of his own affective life and so assumes the attitude of worry as an accessory inhibition to any free expression of emotional fervor.

7. *The dare-devil.* The audacious individual is usually manifesting an overcompensation for fear. He is at heart very easily frightened but manifests a courageous attitude to hide this fear. He is a "bluffer" who assumes an air of self-confidence which is dispelled when some real opposition arises. The following quotation illustrates the mechanism behind the dare-devil:

"Among the dogs in our laboratory we have a cowardly one.

This particular dog barks the loudest when a stranger approaches. He runs out and snarls and gives the stranger the impression that he is the bravest dog in the kennel. All one needs to do, however, to test him, is to stop and look directly at him. He will run into the kennel with his tail between his legs and will whine in the most agonizing fear. Just as this dog cannot very long deceive the stranger, so the person who has learned to be a failure cannot long deceive his comrades by bluster. He overdoes the initial attitude of self-confidence, and despite this attitude, retires at the slightest discomfiture."¹

8. *The suspicious individual.* When one has had his affective reactions toward others repelled, or has met with treachery and deceit in others, his love turns to hate and he suspects the motives of others. If such experiences frequently recur, the victim of them develops an habitual attitude which colors his whole outlook upon life. The balanced individual does not trust everybody, nor does he suspect everybody of improper motives. He tries to evaluate each situation in its true proportions and withholds his judgment until he has some basis for decision. The suspicious type of individual suspects everybody, trusting only a certain few, perhaps, after having put them to a severe test. Investigation will often show that an individual of this order is not only on his guard against other persons but is very much inhibited in his personal life. He carefully protects all his conduct and thinking because he is afraid lest the weight of some person's influence may lead him in a way he does not desire. Hence, excess suspicion can often be taken to signify a defense against the self. The victim of suspicion is afraid of himself and projects this suspicion until it includes others.

9. *The esthete.* From early childhood we are given the impression that to respond to our emotions is rather undesirable. Some persons take this type of teaching very seriously but still possess strong emotional tendencies. These are very likely to build a graded evaluation of emotions, classifying certain ones as vulgar and others as refined, with the natural

¹ John J. B. Morgan, "The Unadjusted School Child," Copyright 1924, by The Macmillan Company, p. 64. Reprinted by permission.

consequence that they strive to express all emotional reactions in the most refined manner. These are the esthetes.

This enumeration of emotional types is not exhaustive but it indicates the main trends that may be found in persons who deviate from normal emotional reactions.

214. The kinetic types. Comparable to the intellectual and emotional types are the kinetic types. In the latter thought and feeling are not dormant but energy or its lack is the chief factor.

The kinetic types may be divided into two groups: the hypokinetics, who lack energy, and the hyperkinetics, who manifest an excess of energy.

1. *The hypokinetic.* The true hypokinetic individual lacks actual physical energy. He is relatively inactive because he does not possess the adequate drive to be physically active. Not all persons who have the appearance of inactivity are lacking in energy. The inhibited individual, if he is able to maintain his inhibitions successfully, may be very energetic but still show little initiative or energy. On the other hand, there is the real hypokinetic who attempts to manifest energy for one reason or another but whose zeal can be discovered to be artificially stimulated. When the stimulus is some emotion we have the irritable person, previously described, who is continually wasting energy in useless activities.

2. *The hyperkinetic.* Hyperkinesis can be manifested in a variety of forms. We shall take up the most important of these.

(a) **THE EMOTIONALLY REPRESSED HYPERKINETIC.** One of the favorite schemes of man for forgetting an unpleasant experience is to become so engrossed in work that his attention is diverted from the undesirable subject. Mental work is not the best type of diversion of this sort because it brings the mental life into activity and the associations may easily revert to the tabooed topic. Physical activity, on the other hand, if carried to extreme, often successfully keeps the mental life from being too active. Thus we may learn to forget our troubles in violent physical exertion. Compensating activity

of this sort can be observed on many occasions. Break in on a group of friends who have been discussing you and notice how they attempt to cover their confusion by a burst of silly chatter. If, just before launching on your evening's enjoyment, you receive some bad news that you do not wish your comrades to learn, notice how you become overactive and furnish the life of the party.

The person who carries this type of escape to extremes, flees from all his difficulties by excessive work. He is running from trouble by burying his head—ostrich like—in work; but that does not relieve the difficulty, and eventually he breaks from overwork. The true hyperkinetic never breaks down from overwork. His activity is a healthful expression of boundless energy. He is benefited by getting rid of some of it. When a person breaks from overwork it very often is an indication that his work was an escape from some mental difficulty. He worked because driven by a feverish urge to escape something.

(b) THE DOMINEERING HYPERKINETIC. There is the type of hyperkinetic person whose stimulus to activity lies in overriding some one else. He gets satisfaction not so much from his own activity, but from the discomfiture of others. He is commonly called a bully. He must always win, and his winning is usually paraded before the losing competitor to increase the latter's chagrin. Such a characteristic may be a sadistic (tendency to inflict pain upon another) manifestation, may be the result of compensation for abuse received from others, or may be a compensation for physical inferiority. As long as such a person is winning he will be stimulated to renewed activity. If he begins to lose he will quit. He is a poor "sport."

(c) THE EGOCENTRIC HYPERKINETIC. There is a certain amount of organic pleasure that comes from activity. When this becomes the primary object for doing things it is a sign that the person is very much wrapped up in his own feelings. The egocentric hyperkinetic is on the constant chase for such thrills. He talks about the glow from the feeling of well-

being. He is content to get his workouts alone, in fact prefers them that way, for then he has no one to divert his attention from his own sensations. Exercise for him is really a form of autoerotism (self-stimulated erotic feeling). Such persons can be seen going on long hikes by themselves, playing golf all alone, and can be detected by their continual discussion concerning the pleasure they derive from their exercise.

(d) **THE EXHIBITIONISTIC HYPERKINETIC.** The drive for this type is the adulation that their exploits bring to them. The exhibitionist will perform only in exhibitionistic games or in such activities which will bring prestige from their physical prowess. Exhibitionistic dancing, "strong man" performances and in some instances the activity of competitive games are followed by this type of person.

These deviations from a balanced output of physical energy again indicate the sort of person who is balanced in this field. He enjoys physical exercise and indulges because of the sheer drive of physical energy. He is not striving to get an outlet for unduly repressed energy, he does not manifest any domineering, egocentric or exhibitionistic tendencies. He realizes when he has had enough and stops for rest, just as the man who has partaken of a hearty meal stops because his hunger has been appeased.

215. Social reaction types. The personal types which we have considered furnish but a narrow glimpse of an individual. Most important are the ways in which he reacts to his fellows. In most of the cases cited above there is apparent evidence of the effect of social interactions in the manifestations of the various trends that we have considered. We shall not repeat the bearing of social factors upon the types already outlined but shall take up in this section certain traits which have a predominant social implication.

Two predominant social attitudes have been distinguished (principally by Jung) as the introvertive attitude and the extraverted attitude. Jung¹ has defined the introvert as the one who is governed by subjective factors; the extravert as

¹ C. G. Jung, "Psychological Types," Harcourt, 1923, pp. 416-517.

the one oriented to objective data. At best these two terms indicate a relative value ascribable to the subjective and objective in the perceptual interpretation of sensory material. The normal man probably is motivated by both sets of factors. At different times one or the other may predominate, depending upon local and temporary circumstances.

The two terms are of value, in spite of their limitations, in distinguishing the extremes of attitude which an individual may take. Since the description of these concepts by Jung, they have been glibly adopted by many writers and have come to be common terms. They are often used as synonyms for sociability and unsociability.

While there is some confusion as to the essential nature of introversion and extraversion, we shall try to give some of the most essential characteristics of these attitudes. It should be remembered throughout that they represent two diverse ways in which an individual may have been affected by his social contacts.

CHARACTERISTICS OF THE INTROVERT

1. Thoughts, interests and activities all centered around himself.
2. Either indifferent or resistive to suggestions or advice from others.
3. Unpleasant situations tend to make him go off alone to brood. At these times his thoughts are concerned with himself.
4. Feels isolated. Thinks people do not understand him.
5. Seeks solitude.

CHARACTERISTICS OF THE EXTRAVERT

1. Other people and surroundings more potent in determining thoughts, interests and activities than purely personal factors.
2. Eager and willing to take suggestions and advice from others.
3. Unpleasant situations stimulate him to attempt to change the situations. If worsted, his thoughts turn toward plans to win next time.
4. Always in the swim. Does not concern himself with what others think.
5. Seeks company of others.

1. *Introvertive types.* (a) THE DEFENSIVE INTROVERT. It is in times of crisis that the basic tendency of the individual to adjust to the objective factors of the difficult situation

or the tendency to retire into himself becomes apparent. At such times the defensive introvert takes a regressive attitude, resolves his conflict by avoiding objective conditions and builds his attitude in terms of his individual experiences. The defensive introvert may appear very objective when things are progressing tranquilly, he does not show his introverted tendencies until difficulties confront him. Such a person probably learned as a child to keep to himself, but as he grew to maturity was taught, in accordance with present-day standards, to adopt a more objective attitude. The crisis then becomes a good indicator as to the basic attitude which preceded his more recent acquisitions.

(b) THE COMPENSATED INTROVERT. By compensated introvert we mean an individual who has fought against his introverted tendencies so strongly that he has gone to the other extreme and appears excessively extravertive. He may be detected by the superficiality of his objective reactions as well as by their excessive nature. He is a "gusher." If he shakes your hand he crushes the bones of your fingers or pumps your arms until it hurts. Be kind to such a person and he will shower you with attentions until you become literally embarrassed. Through it all the recipient of these demonstrations has a feeling that they are shallow, that they are a superficial play, an attempt to adopt behavior patterns that are not a real part of the personality.

(c) THE FEARFUL INTROVERT. The fearful introvert is not so much afraid of others as he is afraid of himself. Objectively his conduct may appear as a fear of others, but analysis will show that the basic reason for the fear is a subjective one. The person who has an objective fear manifests it when there is a logical objective stimulus to fear. When the environment is more reassuring his fear disappears. The fearful introvert, having the cause of his fear—himself—always with him, is likely to manifest this emotional attitude upon occasions offering little reason for fear. He retires into himself because he is afraid to expose himself to the exigencies of life.

(d) THE HATING INTROVERT. Hate for others may arise from the fact that a person has suffered at the hands of others or because they portray to him those characteristics that he hates in himself. The latter is the background of the introvert's hate, the former represents the hate of the objectively oriented person. Having high ideals, the introvert reacts against any suggestion of any personal characteristics which would lower those ideals. To see these characteristics in others suggests to him how hateful such things would be in himself, and rather than acknowledge that they are a part of his personality, he projects this hatred upon others. He is literally hating himself by hating others.

(e) THE NEGATIVISTIC INTROVERT. Some persons build up a resistance against any sort of influence from other individuals. This manifests itself in a refusal to do the bidding of others, but it is also seen in a tendency to take the opposing side in any issue that may arise. They take pride in their independence, their freedom of thought. You can hear them continually arguing about any topic in order that they may manifest their difference of opinion. All this is a vain attempt to maintain the integrity of their ego. Their attitude is purely a destructive one. All that they can see in the work or opinions of their fellows is error and contradiction. If no one opposes their tirades against bobbed hair they will begin a war on jazz.

(f) THE NON-CONFORMIST INTROVERT. When the negativistic type of introvert enters the realm of convention he opposes the existing order of things just as he opposes any chance comer in a debate. He wants to be different just because the environment is hateful to him. Take an idea as old as the universe itself and present it to him in the form of radicalism and he will accept it. Take the newest idea and make it appear conventional and he will immediately resist it.

(g) THE SNEAKING INTROVERT. Some persons learn to get what they want through trickery. This necessitates a constant guard against the possibility of others ascertaining

their attitudes, motives or actions. Consequently they shun others. They play a "lone hand" in all their tricks because they do not trust others and impute to all others the same duplicity which characterizes their own conduct.

(h) THE INFERIOR INTROVERT. One who has failed in his social adjustments may feel inferior and incompetent in the presence of others and for this reason tend to shun their company. He is very likely to choose occupations which will remove him from his fellows, but even in such cloistered work he has a keen desire for recognition, which may take the form of an intense struggle to gain newspaper notoriety, to see his name in print, and the like.

2. *Extravertive types.* (a) THE TRUE EXTRAVERT. The true extravert enjoys being with other people. If he gets into a difficult situation his natural tendency is to meet the difficulty objectively. If he fails in this he tends to seek out his friends, either for advice or comfort, or to forget his troubles in companionship. He is more at ease when with others than when alone. You do not find him attending the theater by himself. He is not blind to the defects in others, but realizes that their good qualities far overshadow their bad traits. People like him because he is not always demonstrating himself and does not appear bored when others wish to show off their good traits. You do not hear him sigh with relief when he leaves his friends, saying, "Well, that is over."

(b) THE RESTRAINED EXTRAVERT. The restrained extravert is very conscious of the opinions of others. So much so that he appears very self-conscious. He is continually wondering what others think of him and for that reason often appears ill at ease. This feeling does not make him shun their company (if it did he might become an introvert) but makes him very conventional in his manner. He is always playing to the audience, is conscious of his every act and knows just how he is being taken. People feel that they have to be cordial with him or he will be hurt. He tires his friends with his unexpressed demands upon them.

(c) **THE UNACCEPTED EXTRAVERT.** There are those who crave society, who want the good-will and attention of others, but who for some reason do not get it. Their very anxiety in this direction makes people shun them. Their reaction to this indifference or avoidance is to become very ambitious to make themselves wanted. They become the typical social climbers. They devise all sorts of tricks to make others like them. In many cases these individuals are introvertive persons overcompensating and trying to make themselves extravertive, although this is not always the case with the unaccepted person.

(d) **THE SUGGESTIBLE EXTRAVERT.** The suggestible person is the counterpart of the negativistic person. He has learned from experience that it pays to take suggestions from others and so he becomes extremely amenable to their influence. In an extreme form he may be very gullible, the tool for any machinations they care to contrive. If he is the subject of abuse because of his extreme suggestibility, he is hurt thereby, but will just as readily follow the suggestions of the next comer. His name occupies a prominent place on the "sucker-lists" and his strong box is filled with worthless securities. He knows what he buys is good for nothing, but he "could not resist that wonderful salesman."

(e) **THE CONFORMIST EXTRAVERT.** This type is closely related to the suggestible one but he follows the crowd more than the suggestions of the individual. He finds which party is going to win and votes on that side. He must be with the majority. Nothing pains him quite so much as to be different.

(f) **THE FIGHTING EXTRAVERT.** In childhood this type appears as the "bully" of the "gang." In later life he is the leader of the political party, the boss who enjoys lording it over his fellows. The "hard-boiled" army officer and the school teacher who enjoys intimidating her children are illustrations of this type.

(g) **THE EMOTIONAL EXTRAVERT.** The emotional extravert always has a profound emotional response to others. He either loves or hates everyone he meets. If he happens to

hate them it does not lead to regression into himself, as happens in the case of the introvert, but to active opposition to the disliked individuals, or to an intense endeavor to win them over to him. These people are perfectly miserable when anyone hurts them and are overjoyed when some one shows them a kindness.

The above description of types will serve as a basis upon which to build a description of personalities. But we should repeat that these types are not mutually exclusive or static. A person may show contradictory manifestations, may have peculiar trends which are a combination of those mentioned, or perhaps trends that have not been included, and at different times he may appear in quite a different light. Finally, because we have no adequate measures of any of these trends our description will of necessity be qualitative.

LIII. IMPORTANCE OF INTEGRATION

It is not sufficient to possess certain desirable traits. They must be of such a nature and in such degree that they work together harmoniously so that the individual is enabled to maintain both his personal and social integrity. Furthermore, each individual is confronted with the problem of maintaining a unified, balanced personality in the face of situations which tend to destroy that balance. All this is involved in integration, a fact which should be emphasized through the remainder of our study.

216. Failure to integrate. "A fact to be noted and which must be taken into consideration by any theory of personality, is that of the various and many organized dispositions. . . . All are not assembled under all conditions and at all times into a functioning whole. The individual reacts at one moment with one set of traits and at another with another, perhaps of an opposite character. Indeed he may possess . . . traits that are antagonistic to one another, such as sentiments of hatred and love, or interest and disinterest, for the same object; or he may manifest both charitableness and uncharitableness; intelligence and stupidity. Obviously such opposing traits cannot be manifested at one and the same moment. But let the conditions of the organism be altered, such as occurs in fatigue, or illness, or intoxication, or states of dissociation, or moods; or let the conditions of the en-

vironment be altered and one or the other of these opposing traits comes into functional activity. The dispositions underlying its opposite then may be said to be dissociated from the functioning systems of the personality, or be suppressed, or switched off. In other words, that which is the functioning part of the personality undergoes alterations from time to time, one set of traits being predominant at one time and another at another. . . . A person will appear as a shrewd, hard, selfish, ruthless egotist in his dealings with his business competitors, when one side is uppermost; and to the public, when it is the other side, as a compassionate, generous, philanthropic altruist, interested in bettering the welfare of his fellow-beings by the use of his millions."¹

Minor failures in integration are not at all uncommon; few of us attain the ultimate of coördinating every experience to such an extent that our conduct at all times and under all circumstances is consistent. But in spite of these inconsistencies the goal toward which every person must strive in his development is unity and any deviation from that must be considered as a failure in adjustment.

Where such failure appears, various devices are adopted to defend ourselves against the acknowledgment of the inconsistency. The various symptoms that we have described in previous chapters may be viewed as defense mechanisms which the patient has adopted because of a lack of harmony in the different personality attitudes which he has adopted, they indicate either a failure of integration or a disintegration more or less profound. A study of symptoms resolves itself into a search for the reasons why the subject failed to integrate at the point indicated by the symptom and a correction of the symptom involves the reconstruction of attitude to an extent that will permit a more complete integration.

IMPORTANT TECHNICAL WORDS

autoerotism. The tendency toward self-induced organic satisfaction.

compensation. The mechanism whereby a person hides a defect in one respect by attempted superiority in another.

¹ Morton Prince, "The Problem of Personality," *Pedagogical Seminary*, 1925, 32, p. 269.

- egocentric.** Intense concentration upon one's self.
- extravert.** One whose mental life, interests, and activities are largely determined by other persons and objective circumstances.
- genetic.** Pertaining to the mode of production or development.
- homosexual.** Tendency to love members of one's own sex.
- hyperkinetic.** Manifesting excessive muscular activity.
- hypokinetic.** Manifesting a deficiency of muscular activity.
- instinct.** A comparatively complex and unlearned reaction pattern.
- integration.** Such a combination of constituent parts as to form a unitary whole.
- introvert.** One whose mental life, interests, and activities are largely centered around himself.
- kinetic.** Pertaining to motion.
- libido.** A name applied to man's life urge.
- sadistic.** Pertaining to the condition in which a person experiences pleasure by inflicting pain upon or abusing others.
- sibling.** One of two or more children of the same parents but not of the same birth.

PROJECTS FOR FURTHER STUDY

1. Following the outline of personality as given in this chapter, make an outline of your own personality as it is today.
2. After you have completed the sketch of your personality as it is today, draw up a similar outline from the memory of your attitudes when you entered high school. Notice the points of difference. In which items have you made progress? In which do you think you have regressed?
3. By means of an interview draw up a personality outline of some normal child of about ten years of age and of one normal adult.
4. Interview a psychopathic patient and make a personality outline similar to the one for the normal adult. Guard against the tendency to describe the outstanding peculiarities to the exclusion of the other items.

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CHAPTER XI

SLEEP AND DREAMS

Until recently, dreams have been viewed with superstition, awe, or disdain by the scientific investigator. We are, in spite of such questionable antecedents, beginning to understand that dreams are a part of the mental life of the dreamer, and as such may be used to throw light on his personality. It is with this purpose in mind that we shall investigate dream life. As a background we shall investigate sleep and the various theories of dreams, and finally, we shall indicate how dreams may be used as a means of personality study.

217. Illustration of significant childhood dream. "The incident happened when he was about four years old. He had seen for some days that the water-iris in the draw-well moat was beginning to open, and his 'hands tingled to pluck some of the lovely golden buds.' Arrived at the stream, he climbed down to the water's edge, and stretched out his hand to clutch the flower, when he slipped up to his neck in the water. Soundly rated by his mother, he nevertheless soon found himself at the moat side again, and splash!—the former process was repeated. He was saved by his mother, who soundly rated him as before, and dressed him up in his festal suit. As luck would have it, before long he was beside the moat for the third time, and caution was flung to the winds when the temptation was repeated. 'There were those golden flowers again mirrored in the water and exciting my desire; but a desire so passionate, delirious, excessive, as to make me forget my two previous disasters.' He stretched out his hand as before, the reed he clung to with the other hand snapped off short, and for the third time he was in the middle of the stream, head foremost. There was a great fuss made, but he was saved, given a dose of medicine, and put to bed. 'Worn out with emotion, I soon fell asleep. Can any one guess of what I dreamed? Why,

of my iris flowers! . . . In a stream I beheld the most beautiful clumps of iris covered with a perfect wonder of golden blossoms! Little dragon-flies with blue silk wings came and settled on the flowers, while I swam about naked in the laughing rivulet and plucked by handfuls and armfuls those enchanting yellow blooms. And the more I picked the more sprang up. All at once I heard a voice calling me. . . . I awoke and to my joy I saw a great bunch of golden iris shining by my side. The master himself, my worshipful sire, had actually gone to pick those flowers I so longed for and the mistress, my dear sweet mother, had placed them on my bed.' ''¹

In this illustration we see a boy obtaining in his sleep, in the form of a dream, the flowers he had been unable to procure when awake. Numerous questions come to mind when we read such a story. Why did the boy dream? Was it because he had the accident which precipitated his being put to bed, or was it his desire for the flowers? Did his desire for the flowers determine the content of the dream or had the fact that his mother entered the room with the flowers something to do with it? Was the dream an omen that he should receive the flowers? Does the nature of such a dream throw any light on the nature of this boy's personality? While we may not be able to answer all these questions definitely, recent investigations have proposed certain answers which it may prove valuable to review.

LIV. SLEEP

We shall begin our study of sleep by an examination of the physiology of sleep. In this connection we shall discover that sleep takes various forms, in some of which psychological factors are of primary importance. An investigation of these psychological characteristics will pave the way for a better understanding of the nature of dreams.

218. Importance of the study of sleep. Torn by the struggles of life, weary from its arduous tasks, embittered by its disappointments, the harassed human being has a

¹ A. J. J. Rateliff, Small, Maynard Company, 1921, pp. 130-131. Quoted from "Memoirs of Mistral."

haven to which he periodically retires in order to recover and gain strength for the next battle: he goes to sleep. This strange process, so welcome to the normal man, so vainly sought at times by the mentally sick, so hated by the child who wants to play a little longer, has always been a mystery to scientists. Like so many other mysteries it has often been neglected by the scientific investigator, with the result that its exposition in the literature is accompanied with superstitious awe, which makes one feel that he is treading on forbidden ground when he attempts to explain it. The theoretical explanations have been exceedingly numerous and the genuine attempts to study its nature have been correspondingly sparse. The student of abnormal psychology, in spite of these limitations, cannot ignore its presence or neglect it if he is to understand the significance of many of the peculiarities of mental life. The recognition of its importance has led the boldest investigators in recent years to attempt to solve some of its problems, with results that have been far-reaching. While it has not been adequately explained, many vital facts concerning it have been recently discovered, and these studies, in turn, have thrown much light upon various mental problems.

219. Some facts about sleep. The facts that concern us most are the mental processes that occur in sleep. Sleep, however, is essentially a physiological process and we should review what is known about it from this angle in order to become oriented for our study of the psychology of sleep and dreams.

1. *The physiological changes that accompany sleep.* The central fact in the physiology of sleep is that there is a marked diminution of activity. This decrease of activity is largely a lessening of activity of the cerebrum. The other physiological changes may be grouped around and be considered as irradiating from this central phenomenon. This change in activity is a relative one and comes about gradually.

“The entire cortex does not fall asleep at the same instant nor always to the same extent. Ordinarily as sleep sets in the

power to make conscious movements is lost first and the auditory sensibility last, and on awakening the reverse relation holds. The individual may be conscious of sound sensations before he is sufficiently awake to make voluntary movements."¹

The secondary changes that accompany this central fact of reduction of cortical activity are very numerous. The respiration becomes slower and deeper. The eyeballs roll upward and outward and the pupils are constricted. The knee-jerk disappears. The glandular secretions diminish. The blood pressure falls. Sensory sensitivity is much decreased; there must be an enormous increase in the intensity of any stimulus before it will arouse a specific response.

2. *Depth of sleep.* Experimenters have given a great amount of consideration to the depth of sleep, not so much because of the vital nature of this particular aspect, but because of the light they hoped that these studies might shed upon the nature of sleep itself.

The early method used to determine the depth of sleep² was to determine the intensity of auditory stimulus required to awaken the sleeper. The curve of sleep (Figure 27) derived from this method indicated that the deepest sleep is attained in the first hour of sleep and from the second to the third hour onward the depth of sleep is very slight. The conclusion from these studies was that "the recuperative effect of sleep is not proportional to its intensity." This conclusion was more or less supported by studies of blood pressure during sleep.

Recently other investigators have studied the depth of sleep by recording movements made by the sleeping subject. The assumption here is that in deep sleep the subject will make fewer movements than in light sleep. Restlessness is taken to indicate approach of the waking condition. These investigators found that some subjects made more movements

¹ William H. Howell, "Physiology," W. B. Saunders Company, 1921, p. 255.

² William H. Howell, *loc. cit.*, p. 255.

during the first part of the night, some were more restless during the latter part, others made the fewest in the middle of the night and still others during the first and last quarters.¹

Such a divergence of results indicates pretty clearly that resistance to sensory impressions and cessation of motor activity do not go hand in hand in sleep. This is borne out

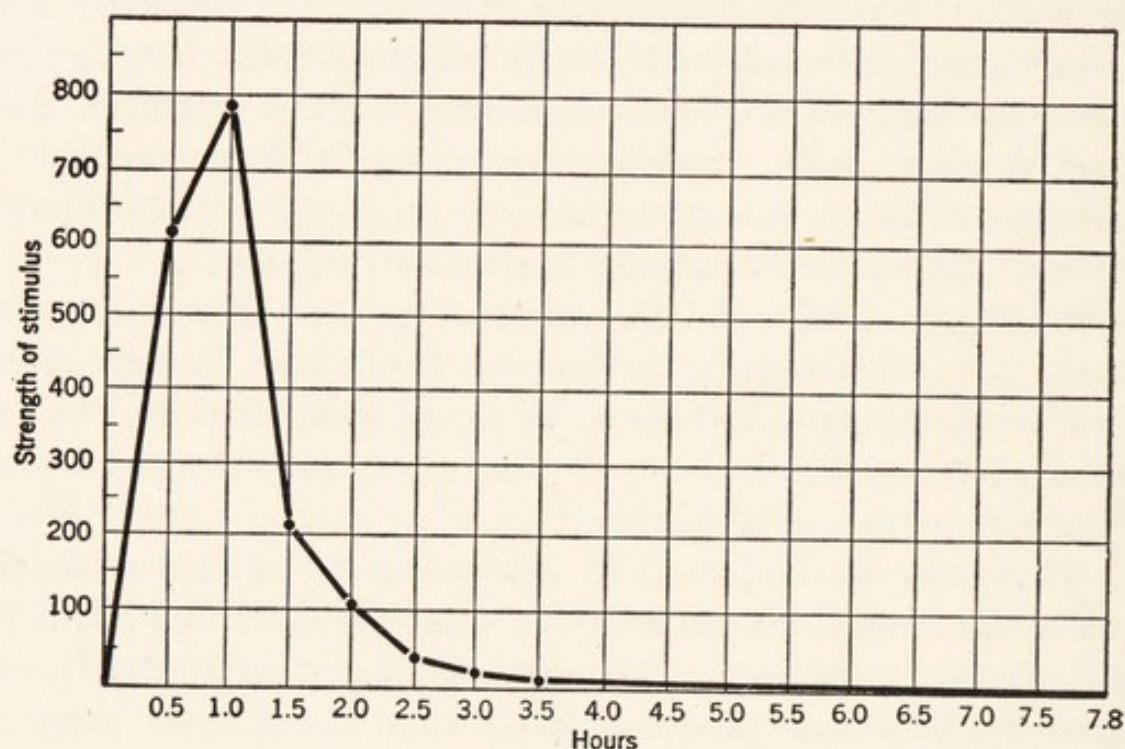


FIG. 27.

Curve illustrating the strength of an auditory stimulus (a ball falling from a height) necessary to awaken a sleeping person. The hours marked below. The tests were made at half-hour intervals. The curve indicates that the distance through which it was necessary to drop the ball increased during the first hour, and then diminished, at first very rapidly, then slowly. (From W. H. Howell, "Physiology," W. B. Saunders Company.)

by the phenomenon of sleep walking, or somnambulism. A person may be soundly asleep and nevertheless arise, and go through violent physical exertion without being aware of the sensory impressions from without. In other words, one may be impervious to impressions from the outside world and at the same time have a multiplicity of central neural processes, which in turn may lead to motor expression. While this evi-

¹ Johnson, Swan and Weigand, "Sleep," *Psychological Bulletin*, 1926, 23, p. 483.

dence is not conclusive, it gives weight to the statements of those writers who contend that neural processes do not cease in sleep, but that we are continually experiencing cortical activity which takes the form of dreaming. When the dreams become intense enough, they may lead to motor activity, such as talking in sleep, and even such coördinated activities as walking.

220. Kinds of sleep. That there are different types of sleep is at once apparent to the student of this subject.

1. *Narcotic sleep.* Certain drugs, such as ether, chloroform and opium have the power to cause the individual to lose consciousness. That the effect of these drugs is due to their action upon the neural mechanism has been definitely established. The administration of very light doses causes a sleep which is similar to natural sleep, but with stronger administrations the individual goes into a deep state of unconsciousness, or coma, which is very different from ordinary sleep. No amount of sensory stimulation will wake one when under the influence of such strong doses of narcotic drugs.

2. *Sleep resulting from cortical injury.* Certain diseases, such as meningitis, may cause a change in consciousness. Permanent effects from these diseases, such as the so-called sleeping sickness, may leave the individual in a chronic condition similar to natural sleep. Disease toxins may have a similar effect. Victims may be partially aroused by sensory stimulation, but even when so aroused their alertness is not that of the normal man when awake. Where such conditions are of long duration, a permanent mental defect may result. Similar results may come from violent shock to the brain, such as that caused by a blow on the head. In these conditions a great variation in the degree of consciousness may be found in different subjects and at different times. This range extends from a simple clouding of consciousness to complete coma. Some of them are very similar in appearance to natural sleep.

3. *Hypnotic sleep.* Sleep resulting from suggestion is commonly called hypnosis and will be treated more fully

later. That some persons can go into a sleeping condition upon a mere suggestion is unquestioned. A surgeon in China told the writer of an experience he had with a native Chinese woman. He was to administer ether to her in order to perform an operation. Just as the anesthetic mask was about to be applied to give her the "magic air" (as they called it) he found that she was already sound asleep. She had such faith in the power of this drug that she did not need the actual inhalation before she went into the land of dreams.

Experimentally hypnosis can be produced in a large proportion of individuals and much of our knowledge of what happens in sleep has been gleaned from experimental hypnosis. Certainly such sleep is not of the same sort as that produced by ether. It indicates that a certain attitude, mental set, or whatever we choose to call it, is enough to bring about a condition of dissociation from our sensory mechanism. We know that there must be a functional element (a learned adjustment) in sleep as well as a physiological one.

4. *Natural sleep.* That natural sleep is due to both physiological and functional factors is pretty evident. Fatigue will tend to produce sleep through the exhaustion of our physiological organism. Excitement will tend to counterbalance this exhaustion and keep us awake. Monotony, or lack of stimulation in the environment, will tend to put us to sleep, although our bodies are fresh and vigorous. Recent experiments indicate that part of our sleep is a biological necessity and part is due to habits that we have established.

221. Effects of deprivation of sleep. While there appears to be a great variation in the amount of sleep required by different persons, experiments have shown that sleep is essential. One investigator¹ kept ten nursing puppies awake for varying periods. One died after 92 hours, one after 143 hours and all ten were dead within a week.

A number of experiments have been made to determine

¹ de Manacéine, M., "Quelques observations experimentales de l'insomnie absolue." Atti dell' xi congresso medico internazionale, Roma, 1894, 2, pp. 174-177.

the effects of sleep deprivation on efficiency in a great variety of mental and motor tests.¹ The general conclusions from these studies is that these tests are not adversely affected when the subjects are deprived of sleep for periods ranging from 40 to 115 hours. The investigator using the longer periods admits that some of his subjects, in spite of all his precautions secured little naps while undergoing certain tests, such as the basal metabolism test, where the patient had to remain quiet for a considerable period. The negative results from these experiments only serve to indicate that the tests used were not crucial tests and do not prove that the sleep deprivation had no detrimental effect.

Corroboration for the conclusion that loss of sleep was detrimental was found in some of the experiments where the tests showed no change. This was the behavior of the subjects in activities not included in the tests. One investigator reports that "during the second night one of his subjects 'found it impossible to read or to study.' On the day following he had great difficulty in taking lecture notes. 'After a few words had been written in the correct fashion, his hand would begin to slip . . . would slide across the paper, and instead of words there was unintelligible scribbling.' After the third night, 'taking lecture notes was entirely impossible, as the pencil would fall out of the subject's hands after he had been sitting for a short while.' . . . Attempts to count one's own pulse were almost always unsuccessful, because the subject would lose trend of the count after he had reached twenty or thereabouts, or else would become extremely drowsy. . . . One reactor required to drive a car, soon landed it in a ditch on the *left* side of the road. A member of that group would occasionally attempt to lead the rest in singing, but after a stanza or so would drop into a different song." ²

The conclusion that follows from these experiments is that the human organism is extremely adaptable, that, while there

¹ Johnson, Swan and Weigand, *Psychological Bulletin*, 1926, 23, pp. 486-500.

² Johnson, Swan and Weigand, *loc. cit.*

is a detrimental effect from loss of sleep, which shows itself in the incidental tasks, the subjects respond to the challenge of a test situation and overcome the deterrent effect as far as the test results are concerned.

222. Insomnia. What then of those persons who, harassed by some mental disorder, assert that they do not sleep for days and days? The only conclusion is that their insomnia is not complete, but that they get short naps. This has been corroborated by observations of individuals. It has been found that those who claimed that they did not sleep a wink all night long were found soundly sleeping by the nurse on her ward rounds. No doubt their sleep is broken and very much disturbed, but this is quite different from the complete loss of sleep maintained in the experiments that have been cited. Insomnia is largely a mental attitude, a fear that one cannot sleep, followed by a feeling that one has not slept after a fitful waking period of attempted slumber.

223. Psychology of sleep. The things that we have considered thus far have been for the most part concerned with the physiology of sleep. On the basis of such data various theories have been formulated; some of these have been physiological in nature, some histological, and some biological. None of these has been entirely satisfactory and they need not concern us here. While sleep may originally have been a simple physiological process, in the human organism it has become greatly complicated by its relationship to the higher neural integrations. We are concerned with it because it has possibilities of enabling us better to understand other phases of mental life.

From a psychological point of view, sleep is an escape from reality. "It is a condition in which I wish to have nothing to do with the external world, and have withdrawn my interest from it."¹ This is demonstrated by the fact that when we are in an exciting situation, when there is much to interest us we can remain awake for long periods. Let our surround-

¹ Sigmund Freud, "Introduction to Psychoanalysis," Boni & Live-right, 1921, p. 67.

ings lose interest and take on the character of monotony and how soon we find ourselves being wooed by Morpheus!

The infant spends a large proportion of his time in sleep. He wakes, satisfies his hunger, and finding nothing in the environment to stimulate him longer, will go off to sleep again. As he gets a little older he becomes tremendously fascinated with his surroundings and is loath to sleep at all. Through a fear that he will miss something, he fights off any tendency to succumb to the physiological necessity for sleep. Parents often wonder how they can make their children desire to retire at the proper time in the evening. In many homes the proper time for the child to retire is the time for the fun to begin for the rest of the family. The child knows this and of course does not want to retire. Arrange things in the home so that the utmost monotony prevails after eight o'clock and the child will soon become sleepy.

Very often as one gets older he again has fewer things to interest him in life, and consequently spends more time in sleep than during his active years. There may be a physiological factor in this increase in sleep with old age, but there is also no doubt a strong psychological factor as well. This is demonstrated by the fact that old men who have maintained a serious interest in their work are content on much less sleep than less active individuals. A monotonous old age breeds sleep, an active old age (mentally active) will make an individual do without sleep. A factor that may accentuate this last condition is the feeling that one's time is getting short, which, of course, gives an added urge to accomplish all that one can while there is time.

Not only may sleep be a means of escape from monotony but it may be a means of escaping from a specifically undesirable situation. An illustration of this appeared in the literature recently.¹

"When Millard was four years old, he threw a piece of glass at a boy, and the boy happened to be what they call 'a bleeder.'

¹ Malcolm M. Willey and Stuart A. Rice, "The Psychic Utility of Sleep," *Journal of Abnormal Psychology*, 1924, 19, pp. 175-6.

I guess this frightened Millard nearly to death. Apparently no one saw him do it. He came into the house and said, 'I'm tired; I want to go to sleep.' I did not know then, of course, what had happened, though he actually looked as though he would fall asleep then where he stood. He was always affected like that when he did anything wrong, and he actually would lie down anywhere, perhaps under the bed, and go to sleep at once, even with his hat and coat on. He always would sleep until I woke him for his next meal. Not infrequently I would be going around the house and find him asleep. Then I would know that he had done something wrong. . . . I remember the day he was two years old. I took him to have his picture taken. He did not want to go, and all the time they were trying to take him, he kept saying, 'I'm tired. I'm tired!', and I thought really he would fall asleep."

Some fainting spells in adult life may be explained on this same basis. When a mental conflict becomes too intense the person may escape by losing consciousness. The author has, on several occasions, been listening to a person recite some phase of his mental life, when suddenly as he came to a critical and especially painful situation he would faint away. The natural tendency, in such a case, is to take steps to revive the patient. We have learned that at such a time one has an excellent opportunity to elicit some crucial fact. When a patient, coincident with an emotional upset, says, "Oh, let me get some air or I will faint," we have found that it pays to tell him to proceed to faint. He will usually enact for us the scene of his difficulty in a way that he would be unable to do if he were to remain conscious. He goes through a sort of somnambulism.

We do not mean to imply from the above statements that the whole of sleep consists of an escape from reality. There is an essential physiological background. But in human life this physiological element becomes connected with the other factors to such an extent that we cannot fully understand sleep unless we recognize the psychological aspect.

LV. DREAMS

The thing that has been so puzzling about sleep is the nature of the psychic life of the sleeper. We observe sleep periodi-

cally in animals just as we do in man, we can induce sleep by narcotics, by a blow on the head, by fatigue, or by hypnosis, and these facts have a fairly sound physiological explanation. But why should a person have such peculiar things happen in his mental life when he is asleep? Probably no phenomenon has brought forth more theoretical explanations than have dreams. These range all the way from the assumption that they are messages from the spirit world to the belief that they are temporary madness. Probably as good an approach as any to the study of dreams is a review of some of these theories with a brief survey of the evidence advanced to sustain them.

224. Some characteristics of dreams. Let us see some of the characteristics of dreams that have made them the subject of so much misunderstanding.

1. *They are related to some sensory field.* Investigations have shown that by far the greater proportion of dreams are visual. Less than half as many are auditory. Over ninety percent are probably either visual or auditory or a combination of both. The order of frequency of dreams in the other sensory spheres from the most to the least frequent is kinesthetic, tactile, olfactory, and gustatory.

Dreams are in the form of hallucinatory experiences which depend for their material upon actual past sensory experiences. These experiences are, of course, so recombined that they often cannot be traced to any actual sensory experience, any more than an hallucination can, but the sensory background is, nevertheless, essential. Jastrow¹ has made this clear by his study of the dreams of blind and deaf persons. Of thirty-two persons who became blind before the completion of their fifth year, not one had visualization in his dreams. Of six persons who became blind between the fifth and seventh year, four visualized clearly in their dreams, the others seldom and vaguely. Of twenty persons who became blind after their seventh year all had "dream-vision." This study indicates that the organization of sensory experiences into some

¹ Joseph Jastrow, "Fact and Fable in Psychology," Houghton Mifflin, 1900, pp. 341-2.

perceptive interpretation is an essential requisite for dreaming in that sensory realm.

2. *Dreams are often illogical and incoherent.* In our waking life we endeavor to control our thoughts, or, if that is not possible, at least to see some chain running through the sequences. If we can see none we feel that our minds are certainly disordered. Yet this is the very characteristic that marks dreams in so many instances. The dream thought jumps from one thing to another so that the whole is one confused jumble. When we narrate dreams we attempt to fit them into some sensible order, but if we were, in each instance, to record the dream exactly as it occurred, it would not be sensible or coherent in the ordinary sense of these terms. This can be easily demonstrated. If you wake in the middle of the night after having dreamed and write down the dream exactly as it occurred, you will find upon waking in the morning, that, if you attempt to relate the dream, without consulting your notes, your narration will be quite different from what is recorded. It is almost impossible to get an experienced observer to narrate a dream without interpolating explanatory and organizing material.

The following illustrates the incoherence of dreams:

"I dreamed that I possessed ubiquity, twenty resemblances of myself appearing in as many different places, in the same room and each being so thoroughly possessed by my own mind that I could not ascertain which of them was myself, and which my double. On this occasion, fancy travelled so far into the regions of absurdity that I conceived myself riding upon my own back—one of the resemblances being mounted upon another, and both animated with the soul appertaining to myself, in such a manner that I knew not whether I was the carrier or the carried."¹

3. *Dreams often violate our moral principles.* It is a rude shock for an individual to discover that he had a dream which is diametrically opposed to the moral ideals he has built for himself. What is he to do in such a case? If he admits that

¹ A. J. J. Ratcliff, "History of Dreams," Small, Maynard, 1921, p. 7. Quoted from Robert MacNish, "The Philosophy of Sleep," 1834.

his dreams represent some phase of his personality he must admit that he is not so moral as he fancied himself in his waking hours. Most persons adjust to this situation with the feeling that they are not responsible for their dreams. Our forefathers blamed these dreams on visitations from evil spirits, and barred their doors and windows to keep the evil spirits away while they slept. Many delays in the development of an explanation of the dream process have been due to the unwillingness of the investigators to admit that they had the impulses that their dreams indicated.

Most readers will readily recall this characteristic in their own dreams. We commit in dreams acts for which we should weep tears of blood if they were real, and yet never feel the slightest remorse. The familiar check of waking hours, "I must not do it because it would be unjust or unkind," never once seems to arrest us in the satisfaction of any whim which may blow about our wayward fancies in sleep. "A distinguished philanthropist, exercising for many years high judicial functions, continually commits forgery; and only regrets the act when he learns that he is to be hanged. A woman whose life was devoted to the instruction of pauper children, seeing one of them make a face at her, doubled him up in the smallest compass, and poked him through the bars of the lion's cage. One of the most benevolent of men (the late Mr. Richard Napier), who shared not at all in the enthusiasm of his warlike brothers, ran his best friend through the body, and ever after recalled the extreme gratification he had experienced on seeing the point of his sword come out through the shoulders of his beloved companion." ¹

4. *No sense of proportion in dreams.* The dream will often play a weird trick upon the dreamer, it will place him in a situation which is either most embarrassing or ridiculous.

"It had been concerted between Honoria and myself that we should pass the honeymoon at some place along the coast. The purpose of my solitary journey was to procure an appropriate dwelling, which, we had agreed, should be a little pleasant house,

¹ W. B. Carpenter, "Mental Physiology," Appleton, 1874, p. 586.

with an indispensable lookout upon the sea. I chose one accordingly, a pretty villa, with bow-windows, and a prospect delightfully marine. The ocean murmur sounded incessantly upon the beach. A decent elderly body, in decayed sables, undertook on her part to promote the comfort of the occupants by every suitable attention and, as she assured me, at a very reasonable rate. So far the nocturnal faculty had served me truly. A daydream could not have proceeded more orderly. But, alas! just here, when the dwelling was selected, the sea view was secured, the rent agreed upon, when everything was plausible, consistent and rational, the incoherent fancy crept in, and confounded all—by marrying me to the old woman of the house!"¹

5. *Time is distorted in dreams.* Various experiments and reports indicate that dreams covering long periods of time may be compressed into a very short space of actual dreaming time.

"An oft-told dream, illustrating this extraordinary time-perspective, is contained in an old handbook of dreams. At the first stroke of midnight by the parish-clock, a certain man fell asleep, and dreamed a dream. He ran away to sea, served on board ship for a long time, and, just escaping with his life from a shipwreck, swam to a desert island. No rescue arriving he began to abandon hope, when at last a ship hove in sight and took him on board. He became a ringleader in a successful mutiny, took charge of the ship himself, and sailed it across remote and uncharted seas. At length wearying of this life, he sailed for England, sold the ship and entered business on shore. One day, some one recognized him as a mutineer; he was arrested and tried, condemned to death and led off to execution; but at the eleventh hour, when the noose was round his neck, and he was expecting death at any moment, he awoke with a start, and heard—the last of the twelve strokes of the clock."²

6. *Dreams are easily forgotten.* When an impressive experience comes to us in our waking life we have a strong tendency to remember it, but a situation of equal or greater intensity occurring in a dream may be immediately forgotten. An individual may have very vivid dreams, as attested by the fact that he has actually enacted them in his sleep, and

¹ A. J. J. Ratcliff, *loc. cit.*, pp. 6-7.

² A. J. J. Ratcliff, *loc. cit.*, pp. 8-9.

yet on awaking may disclaim any memory of having dreamed at all. In other instances the dream may be very vivid when the sleeper awakes, so vivid, that he is very emotionally disturbed about it. Yet, in a few hours, if he attempts to recall it he finds it impossible to do so. Strangely enough this tendency to forget is not confined to unpleasant dreams but may affect pleasant ones or indifferent ones as well.

Other characteristics of dreams might be enumerated, but these outstanding features are the ones that must be considered in any theory that may be devised to explain them. In proceeding to a study of dream theories we should like to add a word of warning against any tendency toward oversimplification. Dreams are as varied in form as mental life itself. Just as our understanding of mental life depends upon viewing it from different angles and under different circumstances, so our understanding of dreams involves viewing them from different angles. One dream may be explained in one manner and another in another. We should avoid the attempt to place them all in one category and to explain them all by some simple formula.

LVI. SOME THEORIES OF DREAMS

In view of the modern researches in abnormal psychology, the older theories of dreams have been relegated to the realm of superstition. Strangely enough, we have found students, after hearing an exposition of the current theories of dreams, who still cling to some of the conceptions that modern psychology has even scorned to mention. In order to orient the student who has not studied this problem, it may be well to review some of the older theories before taking up some of the modern viewpoints.

225. Historical theories of dreams. 1. *Dreams as real experiences.* Even a normal modern person may have difficulty in distinguishing a dream from reality. If we happen to be gratified beyond measure by the happenings of the moment we may "pinch ourselves" to see if we are awake. A dream may have been so real that we find ourselves acting upon

it and it is only when we obtain data from our surroundings that we learn that it is not real.

This being the case, it is not strange that primitive races regarded their vivid dreams as a part of their lives. The thing that was most real to them was their own personalities and why should they regard a part of their experience which happened to come while they were asleep as unreal? The experience was, to them, the reality, and externals had to be explained, if they were explained at all, in terms of the experience. Dreams were sorties of the soul which took place in just as real a way as the experiences of the day.

"One morning," writes Im Thurm, in *Among the Indians in Guiana*, "when it was important to me to get away from a camp on the Essequibo River, at which I had been detained for some days by the illness of some of my Indian companions, I found that one of the invalids, a young Macusi, though better in health, was so enraged against me that he refused to stir, for he declared that, with great want of consideration for his weak health, I had taken him out during the night and had made him haul the canoe up a series of difficult cataracts. Nothing could persuade him that this was but a dream, and it was some time before he was so far pacified as to throw himself sulkily into the bottom of the canoe."¹

2. *Dreams as messages from supernatural realms.* Perhaps the typical example of modern supernatural dreams is the Swaffham tinker's, which is like thousands current in conversation if not in books.

"Once a certain tinker, of Swaffham in Norfolk, dreamed that he was told to go on a journey to London, and stand at a certain point on London Bridge, where he would be met by some one that would tell him news of great importance to his future. The tinker's wife teased him about the dream, but when it was repeated the next night, and the night following, he was so powerfully moved that, in spite of his wife's complaints and his neighbors' ridicule, he did actually set off for London.

"In three days' time he finished the ninety-mile tramp; and next morning he took up his station on the bridge, which (for he had never seen it before) was in appearance exactly as he had

¹ Quoted by A. J. J. Rateliff, *loc. cit.*, p. 18.

dreamed it to be. He waited all day long, but nobody accosted him; the second day it was the same; and the third day, too.

“Late at night with his mind made up to go home next day, he began to quit his stand on the bridge, when a stranger accosted him and inquired what he had been standing about for so long. Without giving names and details, the tinker told the stranger why he had come there, while the latter burst out laughing at him for a fool, and bade him go back home and be wiser for the future. ‘I, myself,’ said he, ‘were I disposed to trust such things, might now go a hundred miles into the country on just such an errand as yours; for three nights this week have I dreamed that if I went to a town called Swaffham, in Norfolk, and there dug under an apple tree in a certain garden on the north side of the town, I should find a chest of money; but I have something else to do than to run after such idle fancies! No, no, my friend; go back home and work hard at your calling, and you will find there the riches that you have come here to seek.’

“The tinker, concluding this to be the message he had come for, thanked the stranger for his advice; and next morning he set out for home. At Swaffham he kept his own counsel, got up early in the morning, and began digging at the spot the stranger had described. A few feet down, his spade struck against something hard, which proved to be an iron chest, which he soon hauled up and bore home. The chest contained a pile of money, and an inscription; the latter he could not read, but some boys from the local Grammar School told him it read, ‘Where this stood is another twice as good.’ He went back to the apple tree and dug again, and found a second chest, twice as big, and bursting with gold and silver.”¹

Such a tale is manifestly absurd, but it represents the notion of dreams that has existed from time immemorial, and we can still find numerous individuals pinning their faith to their dreams, but with less success than the story attributes to such ventures.

3. *Dreams as omens.* When dreams were regarded as supernatural visitations they usually required an interpreter, so that dream interpreting became a profession during the first five centuries of the Christian era. Later they were regarded as omens and dream books were published, which purported to interpret the various symbols of the dreams in

¹ *Ibid.*, pp. 52-54.

a most senseless fashion. To interpret dreams by means of these symbols is about as bootless as having one's fortune told by putting a penny in the slot and drawing forth a card upon which is disclosed one's future.

226. Modern theories of dreams. The modern theories of dreams have the common assumption that there is nothing supernatural about them. They are a natural product of our neural mechanism and must be so explained. As to the exact significance there is a great diversity of opinion, but we believe that this lack of harmony in explanation is due to the fact that dreams are so diverse in form. One investigator tends to study the dreams that fit into his particular theory and another investigator selects those that fit his.

Another attitude which has handicapped the study has been the tendency to endeavor to study the dream as such. If the dream is to be considered as a phase of the dreamer's personality it cannot be abstracted from the dreamer and considered in isolation any more than can any other mental process. The significance of dream study is not what the dream means in and of itself. This is a relic of the days when the dream was supposed to be implanted in the mind by some outside agency. The true significance of a dream lies in the light it sheds upon the personality and mental life of the dreamer. The question, "what does this dream mean?" becomes changed into the question, "What does this dream tell us about the dreamer?"

The two most important modern theories of dreams, the two which we shall consider, are those of Freud and Jung.

1. *Freud's theory of dreams.* "The dream . . . is the way in which the psyche reacts to the stimuli acting upon it in the sleeping condition."¹ This gives part of the content of the dream, but "the dream does not simply reproduce the stimulus, it elaborates it, it plays upon it, places it in a sequence of relationships, replaces it with something else."²

¹ Sigmund Freud, "Introduction to Psychoanalysis," Boni & Live-right, 1921, p. 68.

² *Ibid.*, p. 74.

It is this additional material which gives the dream its significance. Freud's method is to discover the meaning of these accessory elaborations of the dream experience.

(a) THE THEORY OF THE UNCONSCIOUS. The essence of his theory is derived from his conception of the unconscious. In the unconscious most of our psychic life is centered, here the important decisions are reached, here is the key to our real selves, while those parts of our mental lives "which are conscious are merely isolated acts and parts of the total psychic life."¹

Much of the content of our unconscious is of a character that we should not recognize as a part of ourselves, should it come into consciousness. This is due to two factors. The first is that we are born "perverse," full of impulses of an undesirable character. The second is that our experiences add still more undesirable elements to the fund of unconscious impulses.

The part of ourselves that we consciously recognize he calls our ego; the part that dwells in our unconscious and which we would not care to own, centers around the libido, or striving, which is largely sexual in nature. To the ego "these tendencies are of an objectionable nature throughout, they are shocking from an ethical, aesthetic, and social point of view."²

(b) THE CENSOR. These distasteful things are kept in the unconscious by means of the restraining force of what he calls the censor. It may be well to give Freud's own statement as to the nature of this censor.

"I hope you will not consider the expression too anthropomorphically, and picture the dream censor as a severe little manikin who lives in a little brain chamber and there performs his duties; nor should you attempt to localize him too much, to think of a brain center from which his censoring influence emanates, and which would cease with the injury or extirpation of this center. . . . The dream censor is no more than a very convenient phrase for a dynamic relationship."³

¹ *Ibid.*, p. 7.

² *Ibid.*, p. 115.

³ *Ibid.*, p. 114.

In our waking life the censorship operates so effectively that we have very little or no knowledge of the contents of our unconscious lives. The repressed, hidden elements may, nevertheless, influence our thinking and our conduct in indirect ways. These ways can be detected if we know the signs of their working. In the dream the censor still operates, but much less effectively. Sleep is a letting down of the severity and vigilance of the censor so that the content of the unconscious may come nearer to the awareness of the individual, but even in dreams the defense is not completely broken down. It is because Freud considers that the approach to the unconscious is closer through the study of dreams, that he has emphasized them in his technique for arriving at an understanding of psychopathic patients.

The content of the unconscious is not a mere mass of inanimate material, but of elements striving to get to consciousness just as any conscious element may tend to push toward the focus of attention. To this urge on the part of the unconscious element to get control of the thinking and behavior of the subject, Freud applied the general term *wish*. Consequently, we each have two diametrically opposed forces in conflict; the wish, or the force urging the unconscious material toward the point of effectiveness, and the censor, or the force which holds these wishes in the background, lest they come to consciousness and influence overt behavior. In spite of Freud's request that these terms be considered as names for certain dynamic elements in our mental lives they have been taken literally and anthropomorphically by both adherents and opponents of his theories.

This interaction between the urge of the unconscious material to become dominant and the repressing force of the censorship may be so effective in waking life that little knowledge may be had directly of the nature of the suppressed forces or wishes. In sleep the strength of the repressing energy is weakened so that the unconscious comes nearer to the surface. Hence, a dream comes nearer to being influenced by unconscious material than waking behavior would be, but the

unconscious is, nevertheless, given out in a very much distorted form.

(c) **MANIFEST AND LATENT CONTENT OF DREAMS.** The dream as it appears to the individual, distortions included, Freud has called the manifest content of the dream. The impulses which in part gave rise to the dream, but which are not apparent in the presented dream he called the latent content. The task of interpretation consists in working back from the manifest content to the latent content. The object of interpretation is not to discover the logical relation of the latent to the manifest content but to determine the associations in the mind of the dreamer that connected the two. This point has probably been misunderstood by a number of critics of the Freudian psychology. One of Freud's great contributions has been to emphasize the fact that some of the most significant associations are unexpected, bizarre, and even seem to contradict the laws of conscious thought.

A number of ways in which the manifest dream is a distorted form of the latent dream have been presented by Freud, which we shall discuss in a moment, but we should like to preface their consideration by indicating that the central core of dream interpretation is free association. Regardless of the manner in which an outsider may interpret the dream, the meaning to the dreamer is always approached by means of discovering to what, in the mental life of the dreamer, the elements of the dream are related. The method of free association is the one means of determining this.

From a descriptive point of view a dream, then, represents in a more or less distorted form an ungratified wish. The wishes that come to life in a dream are, for the most part, wishes that have not been gratified because the waking censor of the individual would not permit them expression. They have been repressed, only to show themselves in disguised form in the dream.

(d) **DREAM WORK.** The way in which this distortion takes place Freud calls the dream work. Dream work is divided into several forms, which we shall now describe.

(1) Condensation. By condensation it is understood that the manifest dream is a shorter, abbreviated rendition of the latent content of the dream. It is not always present, but customarily it is. It "occurs in the following ways: (a) Certain latent elements are entirely omitted; (b) only a fragment of the many complexes of the latent dream is carried over into the manifest dream; (c) latent elements that have something in common are collected for the manifest dream and are fused into a whole."¹

The mechanism of condensation has one effect that is particularly important in the understanding of dreams, namely, that several latent thoughts may be connected with the same element in the manifest dream. In other words, one element in the manifest dream may, through association, lead to quite diverse thoughts in the unconscious. The interpretation does not involve the selection of one of the associated elements, but the acceptance of both or all.

(2) Displacement. The second dream mechanism that Freud describes is that of displacement. This consists of a distortion of emphasis, or a means whereby fictitious values are ascribed to the different parts of the dream. An item that, in the manifest content, may seem to be a very important element, may be a very insignificant item in the latent content; conversely an item which seems to be trivial in the manifest dream may be very important in the latent dream. This distortion is very pronounced in the emotional reaction to the different parts of the dream.

(3) Dramatization. Dramatization consists in translating the thoughts of the dream into visual images. Freud considers that the dream has no means at its disposal for representing logical relations, hence it only elaborates upon the objective content of the dream thoughts and expresses these always in terms of imagery, usually visual. He goes into detail in showing how successions and combinations of images

¹ Sigmund Freud, "Introduction to Psychoanalysis," Boni & Live-right, 1921, p. 142.

can express what we usually understand as logical or verbal relationships.

(4) Secondary elaboration. This is the name given to the alterations that the dream material undergoes for the purpose of presentation to the conscious self or to others.

“When the dream is apprehended in consciousness it is treated in the same way as any other perceptive content—i.e., it is not accepted in its unaltered state, but is assimilated to pre-existing conceptions. It is thus to a certain extent remodelled so as to bring it, so far as is possible, into harmony with other conscious mental processes.”¹

(e) DREAM INTERPRETATION. The dream as given is, as can be seen from his elaboration of the means used to distort and hide the latent content, only a vague caricature of the latent content or unconscious background of the dream. The task of interpretation is to take the different elements of this “cartoon”—the dream—and find what meanings they may have for the dreamer.

The dreamer is told to consider, in turn, each of the elements of the dream. Using each element as a stimulus, he is to abandon himself to free association. The piecing together of these associations will enable the dreamer to determine the latent content of his dream.

(f) DREAMS AS WISHES. The theory that dreams are expressions of ungratified wishes Freud supports by various arguments. The first evidence he takes from the dreams of children. In many of these dreams there is a direct undistorted and unconcealed fulfilment of a wish. The dream given at the beginning of this chapter is an illustration of a dream of this sort.

To the objection that some dreams have a very painful affect, Freud answers that there are often different portions of the personality in conflict. What may be the desire of one part may be wholly distasteful to another. In an un-

¹ Ernest Jones, “Papers on Psychoanalysis,” Baillière, Tindall & Cox, 1918, p. 204.

pleasant dream, then, he assumes that the dream expresses a wish of one part of the personality, but that the conscious part of the personality objects to this wish, and so its gratification is very painful. Hence, even a conscious-painful dream may still be the expression of an unfulfilled wish of another part of the personality.

Anxiety dreams he ascribes to a fear that the underlying wish will gain expression. Here, again, the wish is counter to the ego ideals, was repressed, and the affect in the dream indicates a fear, lest the censorship be too weak to maintain the ego defense. By these ingenious arguments he reduces all dreams to the one category, that of expressing unfulfilled wishes.

2. *Jung's theory of dreams.* In general, Jung's speculations concerning the part played by the unconscious in dreams is very little different from that of Freud's. Whereas Freud attempted to trace all dreams backward to the underlying wish which prompted it, Jung gave the dream a prophetic significance, it indicated to the dreamer the policy he should pursue in the future in resolving the conscious conflict which stimulated the dream. In other words, the wishes which the dreamer has repressed cause a lack of balance in the mental life of the dreamer. The dream compensates for this lack of balance and presents a condition which is the opposite of the wish and which gives the situation a balance. The unconscious has presented the dreamer with a solution for his difficulty. The analysis of the dream thus points the way to adjustment. In Jung's words, "The dream arises from a part of the mind unknown to us, but none the less important, and is concerned with the desires for the approaching day."¹

LVII. DREAMS AS PERSONALITY INDICATORS

The value of any dream lies not in its specific meaning but in the light that it throws upon the personality of the dreamer. In studying dreams we should not ask, "What does that dream

¹ C. G. Jung, "Psychology of the Unconscious," Moffat, Yard, 1916, p. 9.

mean?" Our inquiry should always be, "What does this dream tell us about the dreamer?" Let us see how personality may be reflected in dreams.

227. Dreams reflect the mental life of the dreamer. From our survey of the various theories that have been advanced to explain dreams it is plainly apparent that there has existed a tendency to reduce all dreams to a simple explanation. Why dream life should be made to fit some simple hypothesis is hard to understand. The mechanism used in dream life is the neural mechanism of the dreamer. We have seen that the waking life of the individual is extremely complex and varied. Why should we imagine, then, that the dream life should suddenly be reduced so that it fits into some simple formula? Wish fulfillment may be a factor in some dreams, no doubt, but it is just as reasonable to state that all behavior may be reduced to the expression of a wish of one sort or another as to state that all dreams express a wish. If we try hard enough it might be possible to explain all life on such a simple hypothesis, but the value of such an attempt is extremely questionable.

As a means of discovering significant characteristics in the personality of the dreamer, dreams may be of great value if viewed correctly. The student of human nature must observe the way in which individuals react under diverse conditions; the dream is merely a form of behavior that occurs during sleep. Its value lies in the fact that it sheds light upon the problem of personality, which light enriches the observations that we may make upon the same individual when he is awake. Let us examine how the dream indicates personality characteristics.

1. *Dreams vary in different persons.* A very significant fact is that dreams vary in type with different types of people.

"Dr. Marie de Manacéine collected data, over a period of five years, of the dreams of thirty-seven very different people, and arrived at the following conclusions: the educated and active brained dreamed more than the uneducated and slow; the dreams of the

educated were the more logical, complex, and varied (four-fifths of the dreams of the uneducated were mere reproductions of recent waking experience); journalists, chemists, schoolmasters, and other brain workers had only from three to ten dreamless nights a month, whereas manual workers had from eight to twenty-five, and dreams become rarer and rarer with age."¹

2. *Specific conditions affect dreams.* Specific conditions affecting the individual, such as alimentary disturbances, pressure of clothing, heat, cold and the like, have a marked influence on the nature of his dreams.

"Hunger (as Arctic explorers find) induces dreams of delicious cakes; jaundice, of the world gone yellow; a nasty taste in the mouth, of loathsome foods; and thirst of dried-up streams, hot deserts, and torrid heat.

"Drugs, also, exert a powerful influence on dreams. Alcohol affects them, but in many different ways; however, if taken to excess, it tends to cause disagreeable dreams, especially of reptiles and vermin (like Bishop Hatto's of rats). Opium dreams are more voluptuous and grandiose; as were De Quincey's: his were of fantastic oriental scenes and tortures, and his sense of space and time were so magnified that buildings and landscapes pained his sight to gaze on, and a single night seemed to stretch out into seventy or a hundred years. Hashish, or Indian hemp, induces horrible nightmares, and sometimes homicidal mania (from which circumstance the word 'assassin' is derived from it). The fumes of carbon-bisulphide, impregnating the atmosphere in rubber factories, induce nightmares in which the sleeper leaps over precipices, or is brutally murdered."²

3. *Dreams indicate the attitude of the dreamer.* Life is made up for the most part of making adjustments to ever-varying circumstances. In making these adjustments we endeavor to give due weight to all the factors that have a bearing on the specific problem of the moment, but impartial consideration is handicapped by conventional modes of thought and by habitual patterns of thinking and acting which prevent us from viewing our problems equitably. In sleep the strain is temporarily thrown off, it must be thrown off

¹ A. J. J. Rateliff, "History of Dreams," Small, Maynard Company, 1923, pp. 95-6.

² A. J. J. Rateliff, *loc. cit.*, pp. 94-5.

or we could not sleep. Consequently, the problems of life may take a different form when relieved from the control that we continually impose upon our thinking while we are awake. It follows that a dream may indicate a solution we should have reached had we let all personal factors operate to the exclusion of waking convention and restraint. A dream is a portrayal of a purely personal attitude toward the issue involved in the dream. It represents what would happen were we to drift instead of attempting to control ourselves, or if we could get away from the restraints imposed by the external world or by society.

A boy one night dreamed of parallel lines. He could remember no other fact about them except that they literally fulfilled the definition of parallel lines and never came together. Ordinarily, parallel lines appear to intersect as they recede from us, but as far as he could see these lines were no closer together and no farther apart. What did such a dream mean?

These lines suggested to him a theorem which he had studied a number of years previously when in high school. He could not state the theorem, he merely remembered that it stated that parallel lines could never meet no matter how far they might be extended in either direction. His next association was of another theorem about non-parallel lines intersecting. Crossing lines made him think of a girl with whom, some time previously, he had become romantically involved. This romance had been terminated in a manner which made him determined that nothing similar should ever occur again, yet he had a fear that it might recur. This fear had come to him in a particularly vivid manner the day preceding the dream. He had entered upon a new position, which, until that time, had had purely impersonal relationships. In spite of himself, he felt himself responding to a particular girl with whom he was associated. This feeling was a shock to him. Was he beginning another situation which would bring about a repetition of the suffering from which he had so painfully recovered?

According to the Freudian interpretation this would mean that he wished he could enter another romance. To be sure, this was probably so. It was a recognition of this possibility which started the conflict of the day preceding the dream. Such an interpretation would be no revelation in this case. The boy had a romantic urge, but his previous experience had been a painful one. He was pained at the thought of a repetition of what had happened. What should he do? He had worn himself to the point of exhaustion during the day preceding the dream with a futile consideration of the different angles of this problem. Finally, as he went to sleep he sighed and thought, "Oh, what is the use?" He had not solved anything, and, more or less consciously, had done what most of us do under such circumstances, decided merely to let things drift. What was his dream but a portrayal of this drifting?

Now, it would not be legitimate for any outsider to give this allegorical meaning to his dream. Unless this meaning came to the dreamer by the process of free association no outsider would have a right to interpret it for him. If an outsider attempts to do so, he is interpreting himself. He is telling what the dream would mean were he to dream it. In this instance, the dreamer, after carrying his associations back to his high school geometry, and then to his previous unpleasant romance, burst out with the remark, "Oh, yes, I see now that I decided to let things go on parallel, forever, just like the theorem in geometry. I can let my work keep straight on, and my personal feelings for this girl go straight on. If they are both perfectly straightforward they will never meet. I certainly do not want any such intermingling of the two as I have previously experienced."

This indicates how the interpretation of a dream in this manner can be of value. It was used in an attempt to discover the present attitude of the boy, not to fit it into any theory. This boy had decided upon a solution to a problem, but the nature of his decision had been rather vague to him. He could not have formulated his decision very clearly. The

dream associations brought the whole thing to him in picturesque form and he could see clearly that his hope lay in keeping the two sets of things entirely separate. This does not mean that his solution was the best one, it simply indicates the point which he had reached in his wrestling with the problem. The value of the dream is apparent. If a person tells us that he has decided a problem in one manner or that he has a specific point of view, when his associations from his own dreams indicate another solution or attitude, the examiner may know that the patient's conscious statement of attitude is not the genuine one, although he may have been honest in his attempt to state it.

Just as anxiety and fear in waking life may indicate total incapacity to cope with the environment, so an anxiety or fear dream may represent a profound inability to meet life squarely. A girl for years had a recurring dream about as follows: She pictured herself in her mother's bed, in the surroundings which existed when she was a child of about six. Her father was throwing cotton over her face so that she felt choked, the sensation that one has when very much depressed. She felt as though she must swallow but could not because the cotton deprived her of breath. From this dream she always awakened with a feeling of great depression, a feeling of the general futility of life. The association to this dream brought up a very unpleasant incident. The mother, unmeaningly perhaps, in a fit of anger had told this girl, when she was a little child, that she was sorry that she had been born. This incident precipitated an enmity between the two which still persisted. The girl had naturally wished to turn to her father, but, although they were good friends, and she respected him, she could never bring herself to confide in him. The two would take long walks together without either saying a word. If she tried to tell him something, she seemed to choke. For years, as a result of this situation, she had felt that she had no one to whom she could go for advice when in difficulty, no one to comfort her when she was distressed. The recurrence of these dreams portrayed

her desire to give vent to her feelings, to pour out her troubles to some one she trusted and loved; but she had no one. One may regard this dream, recurring as it did, as an expression of her attitude toward the futility of life. It indicated that she had not reached even a tentative solution, except to continue to bottle her feelings within herself. The unkindness of her mother and the smothering attitude of her father are the forces which she blames, unconsciously, for her inability to express her feelings. Here, again, we have a dream, recurring in this case, which reveals an attitude toward life.

228. Motor expression in dreams. Most dreams are primarily central neural processes and have only minor expression in motor activity. By watching a sleeper one can often discover that he is dreaming by the incipient motor responses that he makes. When this becomes more pronounced, it may take the form of talking, actually getting out of bed, or going through complex acts. It has been assumed that such animals as dogs have dreams, because of the activities that they go through while sleeping.

It is, nevertheless, certain that much that goes on in dream life gets no adequate expression in activity and it is probably for this reason that motor activity during sleep has aroused such intense interest in those who have observed these phenomena.

1. *Night terrors.* Night terrors are probably an extension of the anxiety dream. In children they indicate a serious inability to cope with some highly disturbing situation. In such cases it is very worthwhile to endeavor to ascertain what has terrified the child to such an extent as to cause him to awake screaming.

An interesting example of one such night terror came to the author's attention. A child had been having spells in which she would wake in the middle of the night, screaming in great terror. She could not tell what the nature of her dreams had been; nothing remained in her mind but the extreme fear which she had manifested. In many instances

it would take half an hour to calm her and the mother would be forced to stay with her until she again returned to sleep. The mother tried to explain these situations as the result of a scare that the whole family had suffered. Having moved into a new house, the whole family was very much terrified one night, when they found two strange men prowling around the house. The police were called and a great furor made about the incident, which the mother thought might account for the child's night dreams.

An association test did not reveal any particular emotional reaction to any words which might be related to any such incident, but it did bring out the fact that she feared that her mother would leave her, that she believed her mother considered that she was bad. The mother recalled an incident some time previous when the girl had made the statement that her mother did not like her, that she thought she was a bad girl. The mother's response to this statement had been to argue with the child that she did love her and that she knew that she was a good little girl.

It was learned that this girl had suffered a rather vicious experience. She had been afraid to tell her mother about this, although her part had been a purely innocent and passive one. Should this incident be discovered she felt sure that her mother would have nothing more to do with her. Her night terror, then, was a real expression of a fear that, as a result of a terrifying incident, her mother would regard her as bad and would leave her.

This illustrates the fact that the night terrors of this girl were simply an extension into the motor realm of the anxiety dream, with the added complication that the content of the dream had been forgotten.

2. *Somnambulisms.* In discussing the disorders of memory we considered the forgetting that follows sleepwalking episodes. A sleeper can go through the most complicated performances and after waking have not the slightest memory of what occurred. This is an exaggeration of the memory

loss that accompanies ordinary dreaming and is probably due to emotional resistance to recall, the nature of which we have already explained.

The interpretation of the significance of a somnambulism follows the same lines as the interpretation of an ordinary dream. It, in addition, has the advantage that the observer may know something of the content of the dream of the patient by seeing his conduct, even though the latter may have forgotten it when he awakens.

It can be appreciated that if a dream gains such control over an individual that he enacts it, he must have a very powerfully organized impulse, or group of impulses, in the direction indicated by the dream. Most of us have tendencies that are out of line with the main trends of our personality. The conflicts arising from these impulses, we have found, give rise to the dream compromise. These may be so insignificant that they are of little concern in our daily lives. When the conflict is so extensive and so powerful that, in sleep, we get up and enact it, the indication is that, by all means, some better adjustment should be effected.

On the other hand, we must not conclude from this that the only one who needs adjustment is the one who has somnambulistic episodes. It is quite possible that the somnambulist is a particular type of personality, that another with even a more severe mental maladjustment would never walk in his sleep. Hence, the presence or absence of a somnambulism can never be used as a distinctive criterion of mental stability. One who has never walked in his sleep may be very much unbalanced and one who has walked repeatedly may be well adjusted.

229. Dangers of vicarious dream interpretation. In concluding this chapter we wish to emphasize the fact that the meaning of any dream lies in the mental life of the dreamer. Its value lies in the fact that it may lead the way to a better understanding of the struggles and emotional attitudes of the dreamer, rather than in any predictive significance.

The method of arriving at the significance of the dream

we have indicated to be the method of free association; but we wish to emphasize that the free association must be that of the dreamer and not that of any outsider, professional dream interpreter, or psychoanalyst. It might happen that if the dreamer associates to the elements in the dream, he will have associations somewhat similar to those of an outsider. Similarity of environment may lead to similarity of associations in different individuals. But the reason for studying dreams is to discover peculiarities in the life of the dreamer and this cannot be done if an interpreter, following his own associations, tells the dreamer what his dream means. If he does so, he is simply saying what, if he had a similar dream, the dream would mean to him.

May we utter another warning against symbolic interpretation of dreams? We believe that symbolic interpretation is most pernicious. Freud, although he has given a warning against symbolic¹ interpretation, has gone so far as to suggest that certain symbols are common to man through the ages and that we inherit them. No doubt some symbols are common to a large number of persons, and insofar as they are, the interpretation by symbols may chance to be correct. But in spite of such chance correct interpretations we are only deluding ourselves if we believe that we have done something of value. If individual psychology has done anything for us, it has warned us against assuming that the mental life of another is the same as our own. If the reader endeavors to study his own dreams he should adhere to his own associations in doing so. If he attempts to study the dreams of another, he should keep away from his own associations, and consider only the associations of the dreamer.

IMPORTANT TECHNICAL WORDS

affect. Emotion.

anthropomorphism. The ascription of human characteristics to things not human.

¹ "Introduction to Psychoanalysis," Boni & Liveright, 1921, p. 155.

biological. Relating to the branch of knowledge which treats of organisms.

censor. A Freudian term to denote resistance against the appearance of certain associations in consciousness.

cerebrum. The large hemispheres of the brain which fill the entire upper portion of the skull.

cortical. Pertaining to the outer layer or cortex of the brain.

free-association. The unhampered sequence of associations.

histological. Pertaining to the microscopic structure of the tissue of organisms.

insomnia. Prolonged inability to obtain due sleep.

latent dream. The mental processes which instigated the dream but which are not apparent in the dream as related.

manifest dream. The dream as it appears to the dreamer.

narcotic. A drug which tends to allay pain and, in large doses, to produce sleep.

psyche. A mythological goddess used to personify the human soul. Freud uses it as a synonym for mind.

somnambulism. Sleep walking. A state in which an individual asleep performs actions appropriate to the waking state.

PROJECTS FOR FURTHER STUDY

1. Keep a record of the readiness with which sleep comes and of the difficulty you experience in going to sleep under varying conditions. Note especially the influence of the following:
 - a. Intense excitement of a pleasurable sort before retiring.
 - b. Worry over some difficulty.
 - c. Absorption in some interesting problem,
 - d. The eating of heavy foods or drinking of stimulants before retiring.
 - e. Reading after going to bed.
 - f. Disturbing conditions in the environment, such as sounds of music, etc.
 - g. Changed conditions, such as riding on train, strange bed, etc.
2. Try to recall any recurring dreams that you may have had. Interpret these by means of the method of free association.
3. Make a survey of the class to determine the sensory fields involved in dreams. This can be done by having each member of the class keep an accurate record of his dreams for a week and submitting an individual report.

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CHAPTER XII

SUGGESTION AND HYPNOSIS

Our purpose in studying hypnosis is to discover what light it sheds upon the personality of the person hypnotized. We shall find that hypnosis is not the result of any mysterious power possessed by the hypnotist, as has been often alleged, but that it is solely the result of an attitude of the person hypnotized. This attitude is suggestibility. We shall examine the nature of suggestibility, study how it operates in the extreme form found in hypnosis, and finally indicate how hypnosis may be used to learn something about personality.

230. An illustration of hypnosis. "Mr. X., forty-one years old, seats himself on a chair. I tell him that he must try to sleep. 'Think of nothing but that you are to go to sleep.' After some seconds I continue: 'Now your eyelids are beginning to close; your eyes are growing more and more fatigued; the lids quiver more and more. You feel tired all over; your arms go to sleep; your legs grow tired; a feeling of heaviness and the desire for sleep take possession of your whole body. Your eyes close; your head feels duller; your thoughts grow more and more confused. Now you can no longer resist; now your eyelids are closed. Sleep!' After the eyelids have closed I ask him if he can open them. (He tries to do so, but they are too heavy.) I raise his left arm high in the air. (It remains in the air, and cannot be brought down in spite of all his efforts.) I ask him if he is asleep. 'Yes.' 'Fast asleep?' 'Yes.' 'Do you hear the canary singing?' 'Yes.' 'Now you hear the concert?' 'Certainly.' Upon this I take a black cloth and put it into his hand. 'You feel this dog quite plainly?' 'Quite plainly.' 'Now you can open your eyes. You will see the dog clearly. Then you will go to sleep again, and not wake till I tell you.' (He opens his eyes, looks at the imaginary dog and strokes it.) I take the cloth out of his hand, and lay it on the

floor. (He stands up and reaches out for it.) Although he is in my room, when I tell him that he is in the Zoological Gardens he believes it and sees trees, and so on. In this case X. is thrown into the hypnotic state by my arousing in his mind an image of the sleep. . . . On my assurance, he thinks he hears a canary, or hears music. He takes a black cloth for a dog, and believes himself to be in the Zoological Gardens when he is in my room. But the following phenomenon is still more striking. X. hears all that I say to him, and allows himself to be influenced by me in every way. Yet two other men, A. and B., who are present, appear not to be observed by the hypnotic at all. A. lifts up the arm of the subject; the arm falls loosely down, and when A. desires the arm to remain in the air the subject takes no notice. He obeys my orders only, and is *en rapport* with me only. In order to wake him I now call to him: 'Wake up!' He wakes at once, but only remembers going to sleep; of what happened during the sleep he knows nothing."¹

This illustration indicates how completely a man under hypnosis obeys everything he is told to do, even to the point of absurdity. The essential factor in hypnosis is suggestibility. Consequently, in order to understand the extreme suggestibility involved in hypnosis, it will be necessary to examine the nature of suggestibility in general. Such an examination will deprive hypnosis of much of its apparent mystery and place it in the realm of any ordinary psychological process.

LVIII. NATURE OF SUGGESTIBILITY

Suggestibility and negativism have been used with no clear notion of what these terms connote. The meanings have ranged from sheer mysticism to absolute mechanism, but in spite of this range of definitions the phenomenon of suggestibility has been known from time immemorial. Perhaps an examination of its nature will enable us better to understand its functioning.

231. Definitions of suggestibility. 1. *Parmelee's definition.* Parmelee,² giving expression to the mechanistic view, defines the term as "the process by which a stimulus is

¹ Albert Moll, "Hypnotism," Walter Scott, London, 1897, pp. 33-35.

² "The Science of Human Behavior," Macmillan, 1913, p. 247.

transmitted from a receptor (sensory) center by means of an association center to a motor center" and states that "the suggestibility of an individual depends upon the ease with which such transmission takes place within the central nervous system." According to this concept one is suggestible when any situation finds a ready formed pathway leading to a definite discharge.

If this view is held, suggestion is enhanced by any mental process which tends to facilitate associations. Learning to play the piano makes one suggestible to the music score. A mere glance will set off numerous responses of a very definite sort. The difficulty with this opinion is that the opposite type of performance—negativism—is merely synonymous with unlearnedness. One is suggestible when certain reaction patterns are set off by the music score; one is negativistic when he is untrained so that the music score produces no such response. Negativism is a term ordinarily not used to express the idea of mere unlearnedness. We should not say a person was negativistic if he could not play, but we should say he was if he could play and refused to do so, or if he refused to try to learn when he had no good reason (according to our viewpoint) to refuse the suggestion.

2. *Janet's definition of suggestibility.* Janet, on the other hand, regards suggestibility as an abnormal phenomenon and proposes it as the most "fundamental stigma of the hysterical state."¹ He tries to distinguish between the ordinary response to an external impression and the response of a suggestible person. The ordinary individual when given an idea has other ideas follow in the train of this first one, but the "images are always dim," the tendencies to action are always vague and slight, the idea develops into action only with the coöperation of an additional volitional element, the personality must back the idea and the end reaction is accompanied by conscious effort. In the suggestible person, on the other hand, a clear-cut idea "seems to be transformed and to become at once another psychological phenomenon, an act or

¹ "Major Symptoms of Hysteria," Macmillan, 1913, p. 279.

a perception. In fact, they almost immediately move their limbs in a manner quite visible outwardly. They really get up and dance; they walk, run, jump, struggle, cry." "Each idea seems to develop to the maximum, to give all it contains in the way of images, muscular movements, and visceral phenomena. This complete development of all the elements contained in an idea is an essential characteristic of the phenomenon."¹

3. *Suggestibility as an attitude.* Suggestibility, in our opinion, involves more than ease of conduction in the sense of Parmelee's definition. Ease of conduction is an element, but it is not a sufficient explanation of suggestibility to identify it with associational processes. Nor can we agree with Janet that it is merely an immediate and complete response to an idea. We believe that *suggestibility is an attitude or set which makes a person amenable to a wide range of stimulus situations.* It is this set which makes associational processes easy, which makes possible immediate and complete responses to stimuli. It is our purpose to analyze the factors involved in this set, to show how such a set develops, how it influences a person's conduct, and to what abnormal degrees it may go.

An illustration² will indicate how the attitude of suggestibility operates. The following display was placed in the window of the Guardian Savings and Trust Company in Cleveland:

"Glorious opportunity to get rich quick. Invest in the California Ranching Company now being organized to start a cat ranch in California. We are starting a cat ranch in California with 100,000 cats. Each cat will average 12 kittens a year. The cat skins will sell for 30 cents each. One hundred men can skin 5,000 cats a day. We figure a daily net profit of over \$10,000.

"Now what shall we feed the cats? We shall start a rat ranch next door with 1,000,000 rats. The rats will breed twelve times faster than the cats. So we shall have rats to feed the cats.

"Now what shall we feed the rats? We shall feed the rats the carcasses of the cats after they have been skinned.

¹ *Ibid.*, p. 282.

² From Starch's "Principles of Advertising."

"Now get this. We feed the rats to the cats, and the cats to the rats, and get the cat skins for nothing. Shares are selling at 50 cents each, but the price will go up soop. Invest while opportunity knocks at your door."

With the above poster was displayed the following notice:

"Some gullible people will try to buy this stock. It is a foolish fake, of course, but no more foolish than many 'wild-cat' schemes being promoted today. Investigate before investing. Don't hand over your money to any unknown glib-tongued salesman."

In spite of this warning and the plain statement that the cat ranch was a "fake," so many persons came into the bank to buy this stock that the bank was forced to remove the sign from the window.

This incident indicates that the attitude of these people (their mental set) was more in harmony with the positive suggestion to "get rich quick" than it was in harmony with the negative suggestion to avoid foolish fakes and glib-tongued salesmen. People want more to get rich than they desire to avoid salesmen. The significance of this story is the light it throws upon the wishes of people, rather than a portrayal of the evil influence of the sign giving the suggestion.

232. Suggestibility explained by facilitation. What strikes us particularly about suggestion is that the response is very likely to be out of all proportion to the strength of the stimulating situation. If the response were always directly proportional to the stimulus, there would be no occasion for the term suggestion. But this paradox is not confined to complex behavior. We know that even in reflex responses there is little general correspondence between the energy of the stimulus and that of the response. Some reflexes show a powerful response to a weak stimulus, while others give a feeble response to a strong stimulus. This situation is especially apparent in the so-called spread of a stimulus. As a stimulus becomes stronger the response becomes more and more widespread until the "irradiation" may involve the larger part of the organism. In all this spreading only those muscles are involved which lead to a harmonious result. The nature of this spreading has been clearly set forth by the

researches of Exner¹ and Sherrington.² They showed that two stimuli acting simultaneously can either lead to a combined harmonious result or they can antagonize each other and lead to a conflicting result. The former situation is related to the simple spreading caused by increasing the strength of a single stimulus and was called by them facilitation. The latter situation they called inhibition.

There is good reason to believe that these phenomena of facilitation and inhibition apply to more complex mental processes as well as to the simple reflexes. It is quite possible to have a situation which would lead to a certain complex form of behavior in the normal organism. In the face of such a situation it is possible to have an organism tuned to respond in the same way that the situation dictates. Here the inner set and the outward stimuli reinforce each other and you have the phenomenon of facilitation. Viewed from another angle we can say that the person is suggestible. On the other hand, the set (or attitude) of the individual might be such that it opposed the sort of reaction that the outside situation demands. Here we have a competitive situation and the external stimuli might be neutralized by the internal set and the person not respond at all. In such a circumstance the person would appear to be negativistic. To say a person is suggestible is only another way of saying that he is tuned to respond to some external situation (the suggestion of another person); to say he is negativistic is but to restate the fact that his internal set is opposed to the external stimuli (the suggestion) of the moment.

Not only may the same individual differ in the relation of his attitude toward an external situation at different times but there is a fairly constant attitude that may be attributed to the same individual in different circumstances. We may have a person who is *habitually* suggestible or negativistic. When we speak of a person as being suggestible, we simply

¹ Pflüger's *Arch. f.d.ges. Physiol.*, 1882, 28, p. 487.

² "Integrative Action of the Nervous System," Scribner, 1906, pp. 114-234.

mean that he has learned to maintain an attitude which is likely to harmonize with the advice or commands of other individuals.

When the tuning is present in an exaggerated form we get an amount of facilitation or suggestibility that assumes serious proportions. Hypersuggestible individuals of this sort become the victims of all sorts of schemes. For example, an intelligent student in one of our best medical schools was told by his classmates that his ankles squeaked. They informed him that such squeaking denoted a lack of proper lubrication, a situation which would become serious unless steps were taken to correct it. The remedy, he was informed, consisted in getting some lubricant to the affected parts. Since ordinary grease would not penetrate the tissue he was advised to soak his feet in kerosene, which would penetrate the dry joints and effect a cure. He took all this advice seriously, and complied with the suggestions, with the result that his feet became a mass of blisters.

When the set of the person is so strongly against the incoming stimulus that every suggestion is resisted we get genuine negativism. Such attitudes, although most definitely marked during the age of childhood, persist into adulthood when they may become somewhat disguised and modified. Thus, a negativistically inclined child will respond to every prohibition by defiantly performing the forbidden act. The adult who is similarly inclined, may try to hide the obviousness of such a response by a process of rationalization.

Obviously, suggestibility depends upon an attitude which facilitates the carrying out of a suggestion and negativism depends upon a counter attitude which resists all suggestions.

LIX. THE DEVELOPMENT OF SUGGESTIBILITY

A study of the development of suggestibility and negativism will show us that the characteristic attitude of each is learned, and that in extreme forms we have but an exaggeration of the same process which operates in the mild degrees. A clear understanding of these facts will enable us to keep in mind

that the suggestibility which is observed in hypnosis is dependent solely upon the attitude of the subject, and that the hypnotist plays but an incidental part.

233. Suggestible attitude is learned. There may or may not be innate differences in the tendency to suggestibility. There seems to be no way at present of determining this fact; but regardless of this uncertainty there are positive environmental influences that tend to promote this attitude. We know that a child learns to do things in the way that nets him the greatest satisfaction. If, by following suggestions that are given him, he gets more satisfaction than he does by doing things in contradiction to suggestions, he learns that this attitude pays in terms of satisfaction and will no doubt tend to retain it.

The pleasure which results from the adoption of a certain attitude is not the only determining factor. There is accumulating evidence that a complex emotional attitude or a complex behavior pattern will tend to repeat itself for no other reason than the fact that this attitude or pattern has been active before. In other words, the operation of habit is not confined to simple mechanical patterns but may express itself in such a complex attitude as suggestibility or negativism. When one is suggestible it is because he has learned to be suggestible, when he is negativistic he has learned to be negativistic.

The normal individual gets a balance between tendencies to adopt a suggestible attitude and a negativistic attitude and so shows no marked trend in either direction. Even the normal individual is inclined to react without due deliberation in situations where the emotional concomitant is strong, and so even the normal person at times shows tendencies toward either attitude. Hence, we can take a normal person and under different conditions cause him to show either a negativistic or a suggestible attitude. Persons who are slightly unstable will show either tendency more easily.

It is certainly more plausible to think that attitudes or emotional sets are more determined by such environmental training than by any innate tendency. Even if there does

exist an innate tendency in either direction it takes a concrete situation to enable it to develop, and it is perfectly conceivable that a person who has a tendency in one direction may be modified by education so as to develop a normal balance or even a tendency in the opposite direction.

234. Extreme suggestibility. Just as normal suggestibility is the product of individual experience, so abnormal suggestibility—the tendency to accept literally everything one is told—is produced by incidents which occur in the life of the subject. Let us review the several ways in which it may develop, remembering that individual experience is the basis in each case.

1. *It may be a response to incidental circumstances.* While normal suggestibility implies that the immediate and fairly complete response of an individual is a customary reaction, extreme suggestibility often involves a response that is not customary. Such a reaction cannot, at first glance, be accounted for by the previous experience of the individual but a more complete knowledge will show that the person has been especially keyed to make the response that we observe.

“Throughout a long illness brought about by the death of her mother, this patient (Irene) refused to drink the water drawn from a particular tap, saying: ‘What flows from that tap is not water but red blood.’ This remarkable delusion began one day when the water was falling from the tap drop by drop, ‘like the blood from Mother’s lips.’”¹

This incident involves a combination of component factors, no one of which could have caused the delusion, but a combination of which did. Irene was an hysterical patient, inclined, in general, to be suggestible. She had been through an extremely distressing experience with her mother, who had died from pulmonary tuberculosis, so that she was keyed to respond very actively to anything suggesting the terrible scenes connected with her mother’s illness. After her mother’s

¹ Pierre Janet, “Psychological Healing,” Copyright 1925, by The Macmillan Company, p. 210. Reprinted by permission.

death she had been so strongly tempted to commit suicide, that the response to any suggestion of death had become a highly resistive one. She hated the thought of death, even the death of her mother, because it suggested to her a thing which she considered immoral—suicide. What a fertile field for a suggestion to find lodging! The water from the tap dropped with a frequency which recalled the blood dripping from her mother's lips. This set off this whole group of associated ideas (complex) which had such a strong affective component, that, when aroused, took entire control of her conduct.

Had she had complete control of the situation she might have reasoned with herself thus: "I know that this is silly. The dripping water simply reminds me of blood. If I shut it off or go away I can think of something else." But she did not. The associations were so strong that they produced virtual identity. Her associations were probably something like this: Dripping water—blood—I hate it—I won't drink it. This same series of suggestions might occur in a normal person, but he would not refuse to drink the water. Irene's attitude toward this group of ideas made them dominant. Upon the slightest suggestion they took complete control of her. It is evident that the explanation lies in her mental history and not in the external situation.

We shall see the importance of this point when we come to study hypnosis. In the above illustration we readily admit that there is no particular potency in the suggestion issuing from water dripping from a tap. But when the subject does some bizarre thing as the result of queer incantations of a manipulator, we may find ourselves strongly tempted to believe that there is some efficacy in the machinations of the operator. We cannot easily imagine that there is any peculiar supernatural force in the dripping of water from the tap, so we look to the mental life of Irene for an explanation. It has taken ages for us to learn that we must use the same methods to explain extreme suggestibility that we adopt to explain milder forms.

2. *Automatic nature of extreme suggestibility.* When we deliberate before making a response, our attempt is to survey the situation from all angles and then to respond with the full force of our entire personality behind the action. This ideal is not always accomplished, for the longer we deliberate about some situations the more evenly balanced become the odds on either side, so that the only escape is to say, "Well, I cannot decide, but I must do something, so here goes!" In this situation we throw deliberation to the wind, and act impulsively. Abnormal suggestibility is akin to this impulsive conduct, with this difference, there is no preceding deliberation. Immediately upon the receipt of the suggestion the subject acts. If there is any deliberation, it comes after the act and takes the form of an excuse, or what we have defined as rationalization (Article 122).

Sometimes a part of our organism will act automatically to suggestion, whereas we should not respond with our whole being.

"Marguerite had had a quarrel with her mother, and had made up her mind that nothing would induce her to tell me what it was all about. While she was still uttering loud protests to this effect, I put a pencil into her hand, and she wrote: 'Mother did not want me to go to see my young man.' Although she had written these words, she continued to behave as if she had kept her own counsel, and I have every reason to believe that she was really satisfied as to my ignorance."¹

Talking or walking in sleep may similarly be produced with some individuals, and under favorable circumstances, by suggestion.

"X. was a woman of thirty-three. Her husband noticed that she had a way of talking in her sleep. It occurred to him to turn this tendency to account. Without waking her, he would say to her in a low tone: 'Tell me what you have been doing today.' She would promptly comply. She soon came to realise in her waking hours that her husband knew all her doings, even things she would rather have kept to herself; and she came to the hospital to ask me if I could safeguard her against these involuntary indiscretions."²

¹ Janet, *loc. cit.*, p. 213.

² *Ibid.*, pp. 212-213.

If we examine these automatic responses we shall find that the suggestion "takes" because the subject is unusually sensitive to the nature of the thing suggested. The girl who would not tell her secret was having difficulty in keeping it. She did guard her tongue but the secret broke through at an unguarded point. The same thing is true of the woman who talked in her sleep. She was afraid that her husband would learn what she was doing. She was forced to exercise control when awake lest she permit something to slip, but in sleep her defenses broke through and the suggestion found a ready soil.

To synthesize what we have said: Abnormal suggestibility may be of several forms. It may be the result of overdevelopment of training to respond impulsively, or it may be due to some particular situation which has conditioned a person to be particularly sensitive to suggestions of a specific nature. Such training often ends in a response of the entire personality to a suggestion. On the other hand, a person may have built defense against making a certain response. If the thing which is guarded has a high affective value, and especially if there is a fear concerning the adequacy of the resistance against response, the suggestion may not be effective when the person is on guard, but may serve to cause a response of a part of the personality, such as occurs in talking in sleep, walking in sleep, or in automatic writing.

235. Subjective nature of suggestibility. The clear understanding that suggestibility is conditioned upon the attitude of the subject is a rather recent development, but it is this realization which has done more than any one thing to rid the concept of much of the misunderstanding and mysticism within which it was enshrouded. The facts of suggestibility have been known for ages, but they were usually interpreted in terms of an external agent which seemingly influenced an individual to do things without due reason or control. The potency of suggestion lies not in the individual who gives the suggestion, nor in the nature of the thing which he suggests, but in the personality of the individual who receives it.

"Hypnotism and suggestion were undoubtedly known in ancient times, for the Egyptian priests made use of them. The history of the ancient Orient reveals many examples of the use of hypnosis and suggestion in religious ceremonies. Knowledge of them was present in the time of the apostles. Their popularity was established among the priests, medical men, magicians, sorcerers, under the mark of influences coming from the gods, or from charms, exorcisms, and so on. Hypnotism and the power of suggestion afterwards took refuge among the civilized classes of European society, under the cloak of black magic, the so-called animal magnetism, mesmerism with its fluids, and other occult doctrines. This was greatly favored by the activity of charlatans and adventurers who presented the real manifestations of hypnosis in such an irrational way that it was almost impossible to distinguish between truth and deception."¹

The view, long held by man, that each individual is a free agent, able to direct his own thoughts and actions in every particular, led naturally to the interpretation of suggestion as a mysterious force. As long as a person could account for his thinking and conduct on a rational basis he was willing to assume responsibility for them. When he found himself thinking thoughts and doing acts for which he could give no rational account he perforce must find some agent to explain them. Influence from the outside is a ready explanation of this sort. Every naughty child adopts this scheme. Ask him why he did a thing and he will say, "Johnny told me to do it," or "Johnny made me do it." He, in this excuse, admits that he was subservient to the influence of the suggestion of John, just as Adam admitted that he was subservient to the influence of Eve in eating of the forbidden fruit. Being influenced by others is an extremely aged excuse, but it still seems to maintain its virility.

None of us takes this explanation very seriously in such simple instances, but when it comes to doing bizarre things, acts which seem to be quite foreign to our whole personality, then we cling to such an explanation with some tenacity. We must either admit responsibility for our acts or blame

¹ W. V. Bechterew, "What is Hypnosis?", *Jour. of Abnormal Psychol.*, 1906, 1, p. 18.

them on something or somebody else. We bring up this issue, not because we wish to raise the question of personal responsibility, but because we believe that we must get away from this issue if we are to understand the mechanism we are discussing. A person is no more responsible for being either suggestible or negativistic than he is for having been taught to eat with a knife and fork in place of chop sticks; for having learned to talk English instead of Sanskrit; for being in college, studying psychology, instead of living in savagery, eating raw fish; or for living in peace with his neighbors and organizing a family, rather than killing his fellows and carrying off the woman of his choice, by force, to a cave. The only responsibility in all this is the responsibility of learning. If we do not learn the lessons taught us by the struggles of our ancestors and which have been handed to us in the form of social heritage, we are responsible and suffer accordingly. To learn the balance between suggestibility and negativism is one of our obligations.

We have made this slight digression to support our position that suggestibility is a learned reaction pattern. It is subjective, but not in any mysterious sense. Nor does this explanation make personality simple or degraded. Personality is complex and marvelous, but it is the possibility of learning that makes it so. Its sublimity is due to the fact that we have a rich social heritage and are able to incorporate in our lives the product of all the achievements of the millions of human beings who have preceded us.

236. Teaching children a balance between suggestibility and negativism. Since the attitude of suggestibility or negativism really describes one's relation to his fellows it is apparent that the development of a balance between the two is of primary importance. If a child is taught implicit confidence in everybody, with no critical estimate of their merits, he becomes a gullible fool, easily deceived by every charlatan who crosses his path. If, on the other hand, he is taught to become so distrustful of others that he wards off every proffered service, he finds himself alone in the world,

walled in by the suspicion with which he views everybody. In view of the importance which attaches to normal suggestibility it may be well to note some practical ways of training children to become properly balanced in their confidence or mistrust of others.

1. *Let the child have a wide range of human contacts.* Nothing will give the child a breadth of social vision quite so effectively as a first-hand knowledge of the tremendous variations in the persons he meets. He learns that people are not alike, that he can trust a few persons implicitly, that there are others he can trust to a limited extent, that there are others whose motives are not of the best, and that there are a few from whom he must guard himself very carefully. If these contacts are numerous in childhood he has learned his lesson by the time he reaches adult life and the experiences which teach him to be on his guard are not so serious as might be the case if he is shielded too carefully in early life, only to be awakened by a rude shock because of some serious injury inflicted by another adult.

The tendency to shield a boy from contact with other boys lest he should be forced to stand up for his own rights is a detrimental one. Let him have his hard knocks, but make sure that he maintains his balance through them all. A balance has to be learned gradually and is harder to acquire if it is postponed too long.

2. *Teach the child not to generalize from a few experiences.* The child should never be permitted to entertain the fallacy that all persons are alike. If some boy steals his playthings do not permit him to conclude that everybody is dishonest and that he can trust no one. Teach him that some boys are dishonest, and that he must learn to discriminate before entrusting his toys to others.

3. *See that experiences are balanced.* When he has an experience that would lead to distrust, see that the child has another which leads to confidence. In this manner balance can be maintained. If he expresses the attitude of suggestibility or negativism to an extreme degree, his teacher or par-

ents can balance such an attitude by seeing that experiences of the opposite type are more numerous for the time being.

LX. THE NATURE OF HYPNOSIS

Few topics are more fascinating than hypnosis and few so little understood. While hypnosis has only a distant application in the ordinary affairs of life, a brief study of it is necessary for a well-proportioned view of psychology. Hypnosis illustrates an extreme suggestibility which is very illuminating when clearly understood, but which becomes a source of much confusion when not seen in its true light. Our purpose will be to make it as clear as possible, to rob it of its mystery, and to exhibit it in its true light. In order to set the problem clearly before us it may be well to examine it first from the historical point of view.

237. History of hypnosis. The very early history of hypnosis need not concern us here. The phenomenon that we now know as hypnosis has been known for ages, although not by this name. When it did appear, it was thought to depend upon some occult force. It was one of the things brought forward as evidence of a vital spirit in the universe. With this theory as to the cause of these manifestations it is no wonder that men were afraid to attempt to study them scientifically.

1. *Mesmerism.* The modern history of hypnosis begins with the work of Mesmer (1733-1815). About the year 1772 he began to study what he considered to be the curative powers of the magnet. He found that certain patients when touched by a magnet were cured of certain diseases. He learned, later, that patients could receive the same benefits by a touch from him. From this observation he developed the theory of animal magnetism, the theory that persons have irradiating from them a force which will influence others who come under the range of this power. Finally, he learned that if he touched objects made of wood, glass, iron, etc., that they could receive and be charged with animal-magnetism. These charged objects could affect patients in the

same manner as the electric magnet or his personal touch. The final complication of his work was the construction of the *baquet*, which was an oak chest or tub from which proceeded iron rods. This *baquet* Mesmer "magnetized" so that all patients who touched one of its appendages would be cured.

At first his discovery was greeted with attention and acclaim. Honors were conferred upon him in Germany and in 1778 he went to Paris and made a fortune in a short time by his then famous magnetic cures. Some of the members of the medical profession supported his work, but he refused to reveal his secret to others, even though he was offered an annual pension of 20,000 livres (about \$4000) if he would do so. This led to the discrediting of his work by some and an investigating committee reported against him.

One of Mesmer's followers found, in 1784, that patients could be made to enter into a state which was named artificial somnambulism. The chief characteristic of this sleep was that the ideas and actions of the "magnetized" person could be directed by the magnetizer. Moll¹ thinks that Mesmer knew of this sleep before this time but, even though he did, his chief emphasis had been upon the curative effects of animal-magnetism. With this new discovery, the basic test of animal-magnetism was the power to place a subject into an artificial sleep rather than the healing of any particular disease. Mesmerism was known as the process whereby one individual by means of animal-magnetism could cause another to enter into an artificial somnambulism.

2. *Psychological interpretation of hypnosis.* The most significant work in this field after Mesmer was done by James Braid (1795-1860). Although Janet² states that Braid's work was antedated by Bertrand, the latter never exerted much influence. Braid proved to his own satisfaction that what happened to the subject during mesmerism was purely subjective. He coined the word neuro-hypnotism to designate

¹ Albert Moll, "Hypnotism," Scott, London, 1897, p. 9.

² Pierre Janet, "Psychological Healing," Macmillan, 1925, p. 157.

the "nervous sleep" which he was able to produce by artificial means.

Before Braid's time there had been a rather acrimonious discussion between the "fluidists" and the "animists."

"The fluidists, without troubling much about details, thought that the changes in the subject's state must be regarded as due to the physical effects of a fluid emanating from the magnetizer. The animists ridiculed this unwarranted assumption, and declared that everything depended upon the changes induced in the subject's mental state."¹

Braid upheld the latter view, having arrived at his view somewhat as follows: In attempting to induce artificial somnambulism by the methods known at the time, he discovered that his subjects could be made to pass into this sleep by being told to fix their gaze upon the glass stopper of a water-bottle. This led him to discard the notion of a "nervous fluid" or "magnetism." He began studies which led him to believe that hypnosis was the result either of fatigue of a particular type or of the fixation of attention. He finally favored the latter theory as his method of inducing hypnosis shows.

Braid's method was "to seat the individual operated upon in an arm-chair, whilst he held a bright silver object, usually his lancet case, a few inches above the person's eyebrows, and to require him to raise his eyes upwards until he saw the shining metal, soon after which, the patient went off into a sound sleep."²

He likewise discovered that the subject often would forget what happened during hypnosis although a recall of the incident could be demonstrated in another production of hypnosis, indicating that the incident had not been lost but simply that it could not be recalled in the waking state.

Bramwell reports an illustration of peculiar effect of hypnosis upon memory:

¹ Janet, *loc. cit.*, p. 159.

² J. M. Bramwell, "Hypnotism," Rider & Co., London, 1906, p. 466.

"Braid always awoke his subjects from their hypnotic condition by sharply clapping his hands close to the sleepers' ears, which at once aroused them. One day, before doing this, Braid said to me, 'I will show you another effect of hypnotism. Lend me your pocket-book and pencil.' I did so. He then placed the book in the boy's left hand, which he raised into a convenient position in front of the lad's breast. My pencil was placed in his right hand, which was lifted into such a position that the point of the pencil rested upon the pages of the book. This attitude was rigidly maintained until Braid whispered in his ear: 'Write your name and address.' The lad did so: 'John Ellis, Lloyd Street, Manchester.' This done, the book and pencil were restored to my pocket. Braid then awoke the boy and asked, 'John, what were you doing just now?' He looked about rather wildly for a moment, and persistently answered, 'Nothing.' Braid then sent him off to sleep again. The question was again asked: 'John, what were you doing just now?' The lad answered promptly, but in a low voice: 'Writing my name and address.' A succession of similar experiments clearly indicated two things: first, that a mesmerized individual would do what he was told to do; second, that things done when in that state were remembered only when the same condition was resumed; otherwise they were forgotten."¹

All this indicates that hypnosis is entirely subjective. No physical means are necessary to induce it and the most striking characteristics are the implicit obedience, or extreme suggestibility and the memory effects.

3. *Hypnotic anesthesia for surgical operations.* In deep hypnosis it was found possible to make the subject partially or totally anesthetic. When this fact was first discovered it was thought that this method could be used generally to alleviate the pain involved in surgical operations. This fact made a marked impression upon the public, so that the newspapers during the second quarter of the nineteenth century gave publicity to it. Sometimes birth notices were followed by the statement "painlessly during mesmeric trance."²

The most remarkable use of "mesmerism" for surgery was carried on by Esdaile in India. He performed nearly 300 major operations and several thousand minor ones using

¹ J. M. Bramwell, *loc. cit.*, p. 466.

² *Ibid.*, p. 158.

this means to produce anesthesia. The following is a typical description of one of these operations:

“Dr. Esdaile . . . instructed a Native assistant to commence the process, and the patient quickly passed into a state of deep coma. Esdaile then amputated the leg six inches above the knee; not a muscle moved, the pulse was steady and regular, there was no perspiration on the forehead, no paleness on the countenance; in fact the patient was as motionless as a corpse. Shortly after the operation he awoke in the most natural manner, stretching out his arms, yawning and rubbing his eyes. He said, in reply to questions, that he had had a good sleep and felt all the better for it. He was intensely surprised when told that the operation was over; and showed his gratitude in the usual Native manner, by placing his hands on his breast and muttering blessings on the doctor.”¹

Hypnosis as an anesthetic had a brief history. In 1846 the discovery of anesthesia by the inhalation of ether was discovered and in 1847 a similar use for chloroform was found. These narcotic drugs have entirely superseded the use of hypnotism for various reasons. The first is, that while a large proportion of persons may be placed in a light stage of hypnosis, only about ten percent of those hypnotized can be put into sleep deep enough to produce anesthesia. Consequently, it would be a waste of time to attempt hypnosis for anesthetic purposes when narcotic drugs are so much more easily applied and so certain in their effect upon the patient. A second reason is that the patient may inadvertently awake from the hypnosis, a thing which would be very embarrassing to the surgeon in a major operation. Bramwell² gives thirteen advantages of hypnosis as an anesthetic, but the two disadvantages so outweigh the advantages that it is not used today for this purpose.

4. *Hypnosis adopted by charlatans.* Braid had shown that hypnosis was a subjective process. At this time the physiological and anatomical emphasis was so pronounced that anything not physiological was discarded as belonging to meta-

¹ *Ibid.*, p. 160.

² *Ibid.*, pp. 174-5.

physics and not to medicine. To say that a disease was imaginary was equivalent to stating that the person had none. As long as people had felt that hypnosis injected something into the patient from outside, whether this something was a "nervous fluid," "magnetism," or what not, they could tolerate it as a remedial agent. If it were a manifestation of what was already in the individual then it was all fiction. Since hypnotism had no place as a remedy, and since it was superseded as an anesthetic by ether and chloroform, physicians discarded it.

The only individuals who would permit themselves to become contaminated by dabbling with hypnosis were the ones who hoped to make some monetary profit from it. It became the stamping ground for charlatans. These fakirs, with performances that were mostly faked but partly real, went from town to town and demonstrated to gaping audiences how they could put people to sleep for long periods of time, how they could make them so rigid that they could be stretched from the backs of chairs and support heavy weights, and how they could make them do queer things. To confess that one had any faith in these performances was equivalent to admitting one was a dupe. No one in the scientific world dared to dabble in a thing of the ill-repute into which it fell.

238. Present attitude toward hypnosis. Today the theory of animal-magnetism is totally discredited. Only charlatans pretend to be able to influence others by any mysterious power. It is quite probable that, in spite of this fact, numbers of uneducated people still fear the possibility of having their lives dominated, in some particulars, by others. A man approached the author recently with the question: "Is it possible for my enemies to hypnotize me and to cause me to fail to lock my door when I retire, so that they can enter my house and steal my money?" It took much arguing to convince this man that such a thing was impossible. Absurd notions concerning the power of suggestion have become so involved with such other superstitions as mental telepathy and clairvoyance, that, doubtless, quite a number of seem-

ingly normal people go about laboring under fears that other people, thousands of miles away are directing their thoughts and actions. We trust that our historical sketch will fortify the student so that he can answer any such question.

Suggestion is not, primarily, the influence of one person over another, it is purely a subjective tendency of one person to be influenced by the various situations which confront him. The whole secret lies in the person who receives the suggestion. The good hypnotist is not one who has any mysterious power, he is one who understands his subject. As we have pointed out in the beginning of this chapter, every experience which develops relationships with others tends either to make us trust people or to distrust them. If our experiences happen to be of the sort where we are benefited (made more satisfied) by taking suggestions, we have thereby learned a lesson in suggestibility. If we suffer when we take suggestions, we tend to become suspicious—we have learned a lesson in negativism. In organizing one's thoughts about the present status of hypnosis the following points may well be considered:

1. *Bad repute of suggestive therapeutics.* Hypnosis and suggestion as therapeutic agents are in bad repute today. This fact is due to a combination of factors, but the two most important are the developments of experimental psychology and the psychoanalytic work of Freud and his followers.

Experimental psychology has shown that man is a learning, adapting organism. If a person is encountered who has some attitude that is undesirable, we can assume that he learned that attitude by a combination of circumstances peculiar to his life experiences. To give him suggestions, whether he be awake or in a state of artificial sleep, resolves itself into another experience. It may be that such an experience may help him to adjust to his difficulty, but educational psychology¹ has demonstrated the weakness of suggestion in the

¹ Character training based solely on suggesting "good thoughts" and good books is rather futile because of the transient nature of any specific suggestion. A later suggestion of another sort may easily overbalance the good suggestion. It is better to teach a child to evaluate

development of any permanent attitudes or behavior patterns. Consequently, suggestion is far less desirable than a thoroughgoing reëducation, designed to correct the pernicious attitude.

Furthermore, Freud has pointed out clearly that suggestion was always directed toward the removal of symptoms only and has shown the futility of such methods. The symptom is a secondary result of some underlying mental conflict, usually adopted by the patient to enable him to hide his real trouble. To suggest away the symptom does not resolve the conflict, it simply removes a defense that the patient has built, with the result that he immediately builds another defense—develops another symptom—usually more vicious than the first.

2. *Suggestion with persons of low intelligence.* In spite of the ill-repute of hypnosis, hypnotic suggestion may prove valuable in cases of low intelligence. Freud's analytical method requires a normal amount of intelligence to interpret the bearing of the different factors involved in the maladjustment. A normal intelligence is required to carry on a satisfactory reëducation program. In the work of reëducation the subject is taught to evaluate the different emotional and intellectual attitudes which are in conflict and to discover means of reorganizing the divergent issues. This work requires some intellectual acumen and emotional control. The subject must face the implications of every issue, study the various adjustments that are possible and select the one which seems to present the most satisfactory solution. In this way he becomes master of himself in a very real sense. With persons of low intelligence, the morons or the normal dulls, authority becomes an important guiding principle. Such a person must have a "boss" and his conduct is the result of authority imposed upon him. If the influential forces in the past have led to a maladjustment, to an improper emphasis concerning life's ideals and adjustments, then the superposition of greater authority may be effective with such a person. various issues for himself rather than blindly to follow the suggestions of some teacher.

This method of superimposed authority was used with success with one patient of this type¹ and if used with discretion may be of value. The patient was hypnotized, and under hypnosis divulged the root of her trouble. Having analyzed her difficulty she was told, under hypnosis, how she must change her attitude.

"It might be thought that the same thing could be done by waking suggestion. It might be, but not with the same effectiveness. It took six hours of hard work to get this patient to the point where she would yield to hypnosis. This same blocking would have been directed against any attempt to reconstruct her ideas . . . and one could have suggested for days without producing results. In fact, we could not get anywhere near the real root of her trouble before the hypnosis without causing tremendous blocking. Under hypnosis the facts came out very clearly and easily, and suggestions were given with force and 'took' very readily. The patient recovered from her symptoms with about three hours of hypnosis." It must be clearly understood that, in this case, the suggestions were not directed against her symptoms, but against the attitudes which were behind the symptoms.

In other words, in the case of the person of low grade intelligence, instead of teaching to reëvaluate their attitudes, it is more effective to tell them dogmatically that their attitude is incorrect and that a substitute attitude is better. Hypnosis is simply a means of strengthening the force of such dogmatic statements.

3. *Hypnoanalysis*. Recently² hypnosis has been used in connection with analysis with fairly satisfactory results. Artificial somnambulisms are induced in order to facilitate the recovery of memories concerning any trauma which might have had an influence on the disorder present in the subject. Great care is used to avoid suggestions to the patient con-

¹ John J. B. Morgan, "Hypnosis with Direct Psychoanalytic Statement and Suggestion in the Treatment of a Psychoneurotic of Low Intelligence," *Jour. Abn. Psychol.*, 1924, 19, pp. 160-164.

² W. S. Taylor, "A Hypnoanalytic Study of Two Cases of War Neurosis," *Jour. Abn. Psychol.*, 1921-2, 16, 344-355. "Behavior under Hypnoanalysis and the Mechanism of the Neurosis," *Jour. Abn. Psychol.*, 1923, 18, 107-124.

cerning his symptoms or the material which he produces during the hypnosis. During the waking state, the physician may use the knowledge gleaned from the recovery of these memories in the reëducation of the patient. Used in this way, hypnosis may be a valuable aid to the physician; but this, it must be remembered, is quite a different use from that advocated by the adherents of hypnosis of half a century ago.

In spite of its seeming worth, it is very doubtful whether even this method will prove of any great ultimate value. Its use is based on the assumption that memories may easily be recovered in hypnosis. Experiments have shown that memories revived in this manner are not very deeply hidden and by a little extra pains may be recovered without the use of hypnosis.¹ If a subject has great resistance against divulging a secret, that secret cannot be forced from him during hypnosis. It has been suggested, for example, that a suspected criminal might be hypnotized and made to confess when under hypnosis. This has never been successfully accomplished. Hypnosis does not remove all the inhibitions of a suspect. In a few instances it might remove some, but in the majority of cases an inhibition against confession will carry over into

¹ "Bernheim adduced proof that the recollections of somnambulism are only manifestly forgotten in the waking state and can be readily reproduced by slight urging accompanied by hand pressure which is supposed to mark another conscious state. He, for instance, imparted to a somnambulist the negative hallucination that he was no more present, and then attempted to make himself noticeable to her by the most manifold and regardless attacks, but was unsuccessful. After the patient was awakened he asked her what he did to her during the time that she thought he was not there. She replied, very much astonished, that she knew nothing, but he did not give in, insisting that she would recall everything; and placed his hand on her forehead so that she should recall things, and behold, she finally related all that she did not apparently perceive in the somnambulist state and about which she ostensibly knew nothing in the waking state." Sigmund Freud, "Selected Papers on Hysteria, Nervous and Mental Disease," Monograph Number 4, p. 17.

The author has been able to recover similar memories without the pressure on the forehead. This method of Bernheim was no doubt superficial, a relic of the notion of manipulation that has so long played a part in hypnosis.

hypnosis. This would especially be the case if the suspect knew the purpose of the hypnosis.

Another argument against the hypoanalytic method is that the productions of the patient during hypnosis may not be facts. They are often in the nature of dreams and express what he would like to be the truth rather than what is the truth. If his productions are interpreted into fundamental attitudes they may tell us something of his mental life, but this is a different thing from attempting to elicit the truth.

This review of the historical development of hypnosis and the present attitude toward it indicates that it has little or no practical value in mental therapeutics. Its only value is in the light it throws upon certain phases of mental life and the insight it gives us into individual differences in suggestibility. A balanced man should not be susceptible to hypnosis except at the hands of a very few individuals in whom he has learned to have implicit confidence. One who is so suggestible that he can be hypnotized by any one who attempts it, needs to learn that it does not pay to trust himself so completely to strangers.

LXI. METHODS OF INDUCING HYPNOSIS

The methods by means of which hypnosis may be induced are quite varied. This fact in itself should warn us against attributing any particular efficacy to the method. All the methods may be considered as means to get the subject to a point where he is willing to obey implicitly what he is told to do. A skillful hypnotist is the one who knows when and how to apply the different methods. What will prove to be successful with one subject may fail with another; the hypnotist must be able to know which are effective and which are not and to apply them cleverly. As we review the various methods it will be seen that many of those that have been used are mere tricks.

239. Stroking the subject. This was the method of Mesmer. He "put his hands upon the shoulders of the subject, then brought them down the arms to the extremities of the fingers, and, after holding the thumbs a moment, re-

peated this process two or three times.”¹ The actual contact with the subject is of no significance only insofar as he feels that such contact is affecting him. This method is simply a scheme to make the patient feel that some mysterious force is passing into his body from the body of the hypnotist. Since Mesmer’s subjects did believe this it was effective. It will not be effective with one who knows the true nature of hypnosis. The efficacy is in the faith of the subject and not in the method.

240. Passes without contact. In this method no actual contact is made with the body of the subject, but the hands are passed about him in a grotesque manner which leads him to believe that influences are coming from the finger tips of the hypnotist and affecting him. The fact that these passes without contact are just as effective as the stroking used by Mesmer shows that contact is non-essential. The following quotation from Moll² shows how this method operates:

“When she (the subject) has seated herself on a chair I place myself before her; I raise my hands, and move them downwards, with the palms toward her, from the top of the head to about the pit of the stomach. I hold my hands so that they may not touch her, at a distance of from two to four centimeters. As soon as my hands come to the lowest part of the stroke I carry them in a wide sweep with outspread arms up over the subject’s head. I then repeat exactly the same movements; that is, passes from above downwards, close to the body, and continue this for about ten minutes. At the end of this time the subject is sitting with closed eyes, breathing deeply and peacefully. When I ask her to raise her arms, she raises them only slightly; they then fall down again heavily. When I ask her how she feels, she explains that she is very tired. I forbid her to open her eyes. (She makes useless attempts to open them.) Now I lift up her right arm; it remains in the air, even after I have let go. I command her to drop her arm. (She drops it.) I lift it again, and again it remains in the air; upon which I request her to drop her arm, declaring at the same time that she cannot do it. (She now makes vain efforts to drop her arm, but it remains in the air.) The same

¹ J. M. Bramwell, “Hypnotism,” 1906, p. 40.

² Albert Moll, “Hypnotism,” 1897, p. 32.

thing happens with the other arm. When I forbid her she is unable to drop it; she cannot pronounce her own name directly I have assured her that she is dumb."

The passes that are used are of value only if the subject believes in their efficacy.

241. Method of fixed gaze. This is the method used by Braid. The hypnotist holds in his left hand an object about a foot before the eyes of the subject and somewhat above the level of vision so as to cause a convergence strain and at the same time a strain upon his eyelid muscles. The subject is told to look fixedly at the object and to think of nothing else. The hypnotist then extends and separates the fore and middle fingers of the right hand, and carries them from the object toward the subject's eyes. The lids are generally closed involuntarily. If they do not close the process is repeated. The subject is told to permit his eyelids to close when the fingers are moved toward them, but to keep his eyeballs fixed in the same position as though looking at the object held before him. After the eyelids are closed the arm is raised and usually it remains extended. This is an indication that the process has been successful so far.

Other operators have used different methods to obtain a fixed gaze. One method (used by Luys) was to use a rapidly revolving mirror. Another common method is to use a crystal ball.

242. Auditory stimuli. Two forms of auditory stimuli have been employed. One is to have a monotonous auditory stimulus and the other is to produce a sudden loud noise.

The former may take various forms. One common method is to use a watch. Holding it near to the subject's ear, he is told to listen to it and to think of nothing else. Any monotonous sound will produce just as effective results, such as the soft beating of a drum or tom-tom, or some bit of song, repeated over and over.

The sudden loud sound has not been used very extensively, and when it is used probably induces fear. Some subjects, of course, may be more affected by fear than by monotony

and hence such a stimulus may operate more effectively in such cases.

243. Galvanic current. It was thought at the time that this method was first used that there was some efficacy in the actual current. It has been shown that this is not the case. The subject responds because he believes that he is being influenced by the electric current. The fact that the current has no potency has been demonstrated by the fact that one may apply an electrode which has no contact with any source of electric potential and obtain just as good results as when there is an actual electric current.

We have enumerated these different methods, but repeat that there is no particular efficacy in any of them. The essential thing is to induce the subject to respond without question to the commands of the hypnotist. A particular method succeeds only because the subject feels that there is some efficacy in the passes, sights or sounds which make him submissive.

LXII. PSYCHOLOGICAL ANALYSIS OF STEPS IN HYPNOSIS

The essential thing for the hypnotist to know is the attitude of the subject throughout the entire performance. We shall gain more insight from a study of the control of these attitudes than from any further examination of objective methods.

244. Getting the coöperation of the subject. The first essential is to get the subject into an attitude where he is willing to be hypnotized. The way in which this may be accomplished varies greatly with individuals.

If one has an intelligent subject the best way to proceed is to explain to him the nature of the process. By talking calmly any fears that he has may be removed. He can be told that there is no mystery in the process, that there is no subtle influence to be used, but that it is merely a matter of fixing attention upon the hypnotist, excluding other things as far as possible, and giving up all endeavor to do anything except what he is told to do.

With subjects of lower intelligence this method is not so

effective. The dull subject cannot understand the nature of the process, even though he may try to do so. The low-grade individual is more influenced by authority. Hence, the most effective method with such subjects is to convince them that the hypnotist has power to do what he tries to do. To permit such a person to see another hypnotized is very effective. In fact, this helps with any type of subject. For this reason, the reputation of the hypnotist, as a hypnotist, is of great value. In a hospital where the author was stationed it was rather difficult to hypnotize the first patient. She, after her experience, went back upon the ward and told all the other patients what had happened, which, of course, gave the operator a reputation as a hypnotist, and the work was comparatively easy with the others. Reputation may do more to obtain coöperation than much talking.

The subject must have enough confidence in the operator to be perfectly sure that no foul play will result from submission. To go to sleep in the presence of another is to become totally helpless. If there is the slightest doubt as to the moral integrity of the operator, hypnosis will not be successful. Hence, the operator must have a reputation with his subjects for moral integrity as well as a reputation for his ability to hypnotize.

245. Eliminating emotional tension. The second aim is to procure relaxation. Objective conditions that favor quiet and repose are essential at times, especially with a subject who has never been hypnotized. Subdued lights, quiet, comfortable surroundings and a comfortable temperature are essential. The subject may be seated in a comfortable chair and told to relax. If he fails to do so it is useless to proceed. The hypnotist must ascertain any cause of failure to relax and remove it. A large part of his success depends upon his ability to perceive any perturbation, to discover its cause and to overcome it.

246. Training the subject to implicit obedience. The next step is to teach the subject to obey without effort or control exactly what he is told to do. Success in this depends

upon various factors. One rule is to be sure that every command is extremely explicit. A vague command leads to disobedience for the simple reason that one cannot obey implicitly when he is not certain what he is expected to do. Repetition of commands is a help in this connection.

Further, the operator must give very easily obeyed suggestions first and only lead up to others as the simpler ones are unquestionably obeyed. For example, it is well to begin by telling the subject to stand up, to sit down, to raise his arm, to lower it, to close his eyes, to open them, and the like, merely to get him in the habit of doing what he is told to do.

When he is told to relax the statement should not be left in abstract form. Few of us know just what is meant by relaxation. He should be told that he must permit his muscles to be limp so that if his arm is raised it will fall like an inanimate object.

Relaxation is favored by telling him that hypnosis is just like sleep, that as he sits there he will get drowsy, he will feel himself getting sleepy, that the feeling of sleepiness will be a pleasant one, that he will be perfectly comfortable, and so on. If the suggestions are effective the subject will be ready to go into an artificial sleep.

247. Artificial somnambulism. The usual method of producing the actual hypnosis is to suggest to the subject that he will go to sleep. The procedure is somewhat as follows: The subject is seated in a chair and an object held somewhat above the level of his eyes and about two feet distant. He is then told: "As you look at this watch you will feel your eyes growing tired, the lids are becoming heavy, you feel drowsy, your muscles are limp, you feel very, very sleepy. The sleepy feeling is getting deeper and deeper, you are getting sleepier and sleepier, your eyes are getting heavier and heavier, they want to go shut, they want to go shut, they are going shut, they are going shut, they are going shut. They are tight shut. You are asleep. Your eyes cannot open until I tell you to open them. You cannot wake until I tell you to wake."

The number of times the above statements must be repeated depends upon the subject. The hypnotist must observe how far he is responding and fit his commands accordingly. The subject gets sleepy mainly because his eyes are made to ache by means of the intense fixation. He is told that this is a sleepy feeling. When he identifies the ache with sleepiness his coöperation has been won. He can then be told to go into a deeper sleep, that he can talk, but that he will ignore everyone present except the hypnotist. In the state of artificial somnambulism which such suggestions may produce various phenomena may be observed.

1. *Hallucinations can be induced.* The subject may be told that "Home, sweet home" is being sung by a beautiful contralto voice, and he will hear it. He may even be made to join in the singing. He may be told to open his eyes and he will see his brother standing before him. He will open his eyes and speak to the hallucinated brother. Tactile hallucinations may be induced by telling him that a bug is crawling up his arm. He will be likely to shudder and attempt to remove it. By telling him that he has a pain in his stomach he can be made to go through contortions as though in pain. All this fits in with the facts that we have learned about hallucinations being largely central in origin. Our interpretations of experience are based on our inner attitude. If the hypnotist produces the attitude by his suggestions the experience seems real to the subject.

2. *Anesthesias can be induced.* The subject may be told that his hand will become insensitive. If the suggestion "takes" it may be possible to prick the area involved in the suggestion without the subject's giving the slightest evidence that he feels pain. This fact has an important bearing on the interpretation of the functional anesthesias that we have considered (Section X). The fact that by means of a simple suggestion a pain stimulus can be kept from adequately registering and causing a suitable reaction bears out the fact that anesthesia is not necessarily organic in nature.

3. *Muscular rigidity can be induced.* The hands of the

subject can be clasped together so tightly that he cannot open them until they are released by the command of the hypnotist. An arm may be placed in some particular position and rigidly fixed in that posture by suggestion. For example, the subject may be told that he cannot remove his hands from his pockets, whereupon they become paralyzed in that position. Here again we have substantiation for the thesis that some paralyses are functional in nature. We can produce a functional paralysis by suggestion.

4. *Dreams can be induced.* The subject may be told that he is a person of a certain age, that he is a boy of fifteen again, and can be told to do over again the things he did as a boy. The subject will, as a result of such a suggestion, reënact some scene of his boyhood, probably a scene which has some importance in his life. In this way memories of painful incidents have been recovered in individuals who in their waking life had apparently forgotten them. Likewise, dreams which have no relation to events which have happened can be produced by suggesting the nature of the desired dream to the subject. This indicates that suggestion may have a marked influence upon the associational processes of an individual.

5. *Sensory hyperacuity can be induced.* By means of an audiometer it is possible to determine accurately the faintest sound that a person can hear when awake. It has been found that, under hypnosis, a person may be told to listen carefully for the sound from the audiometer and can thus be made to sense a fainter sound than was possible when he was awake. Some evidence is at hand which indicates that there may be increased sensitivity in other sense realms but the difficulties involved have precluded conclusive experiments. This increased sensitivity is probably the result of the concentrated attention which hypnosis makes possible. In waking life we are continually receiving many impressions which interfere with the one upon which we are trying to fix our attention. In hypnosis the range of attention is nar-

rowed, a fact which doubtless accounts for the increased sensitivity when the appropriate suggestion is given.

6. *Amnesia for events of hypnosis.* In the lightest stages of hypnosis the subject recalls all that occurred during the hypnotic state. In deeper stages he is likely to forget what occurred, but can be made to recall everything if the hypnotist suggests to him that he will do so. That the memories are not lost when the subject has apparently forgotten can easily be demonstrated by putting him back to sleep, whereupon he can relate what happened in the previous sleep. The significance of studies in hypnosis upon recall has already been studied. (Article 135, paragraph 4 [b].)

248. Post-hypnotic suggestion. One of the most peculiar things about hypnosis is what has been called post-hypnotic suggestion. While in the hypnotic sleep the subject can be told that after he wakes he will do a certain thing. It has been found that he will follow such instructions, but when asked why he did the thing will give some logical reason or simply state that he does not know why he did it. For example, one subject, while in hypnosis, was told that when he was wakened he would rub his hair with his right hand and then get up and move to the chair which was in front of him. After being awakened he did as he had been told. When asked why he had rubbed his hair, he replied, "I don't know. I didn't know I rubbed it." When asked why he changed his seat, he replied, "I thought you were through and so that was the natural thing to do." As a matter of fact, the natural thing would have been for him to take his regular seat and not the one he had been told to take. He did not remember that he had been told to do these things. In one instance he had no reason to offer for his action and in the other he manufactured one.

In another instance the subject was told that when he awoke he would say, "Here is your handkerchief." After he awoke, he sat, seemingly bewildered, made an incipient movement toward his hip pocket, stopped and said nothing.

Why did the first suggestion prove effective while the latter one failed? For the simple reason that the first one was a direct, sensible command and fitted itself into the situation very nicely. The second one was senseless, was vague and could not readily be obeyed. He did not have the handkerchief, so how could he give it to the hypnotist? What the suggestion does is to give the subject a set, or readiness, to do the thing that he is told to do. If it is a reasonable thing to do, he will do it, but if unreasonable, if it would make him ludicrous, or if it is impossible, he will not attempt it. The other factors in the situation outweigh the force of the suggestion.

This phenomenon of post-hypnotic suggestion illustrates a very important psychological principle. We often do things that seem to us conscious acts, that seem reasonable to us, and the motive for which we can glibly explain, but which are based on impulses about which we know nothing.

That an attitude may be effectively changed is shown by the following incident: A girl of seven, who had lived with her grandmother, had been taught by her that it was disgraceful to have bobbed hair. Her father and mother tried to induce her to have her hair bobbed, but only succeeded in arousing great resistance from the girl when they suggested it and usually precipitated a crying scene. The father had hypnotized her several times and during hypnosis told her that it would be a nice thing to have her hair bobbed, that all little girls did, and that her grandmother's attitude was not like that of anyone else. After several of such suggestions he one morning told her that she would that day ask her mother to bob it. True to the suggestions, she came to her mother with the scissors and asked her to cut her hair. She sat calmly through the entire proceedings with a mirror before her and was quite elated when it was all over. When the grandmother saw what had been done she began to cry and said, "Oh, what a shame. Now my little darling has all her hair cut off." The child calmly surveyed her grandmother and finally made the remark, "Oh, Grandmother, don't be so

silly.''' Although two years have elapsed since the incident the child has shown no regret over her lost hair. No doubt the hypnotic suggestion in this case was reinforced by waking suggestions so that the actual effect of hypnosis may not be a very great factor in the permanency of the suggestion.

Such a change in attitude is not much different from what may be effected by waking suggestion, except that a small amount is more effective.

LXIII. SOME QUESTIONS ABOUT HYPNOSIS

There are several questions that invariably arise when hypnotism is being discussed. The most important of these are: Should untrained persons attempt to hypnotize? Who can hypnotize? Is hypnotism dangerous? Let us attempt to get rational answers to these questions.

249. Should untrained persons attempt to hypnotize?

The answer to this question is determined not by the degree of skill of the operator but by the motive behind his attempt. If his motive is scientific study, the degree of skill is unimportant, but in such a case he would do well to seek the instructions of a competent hypnotist.

If his motive is not scientific investigation what could it be? Only two others suggest themselves to us. The first is a desire to gain undue influence over another. The second is a silly and idle attempt to feel superior to others.

It is the fact that there are persons who attempt to influence others for their own selfish ends which makes it essential that each person use discretion in the choice of those he will permit to influence him. While hypnosis will not enable any hypnotist to induce a radical change in character, a change might be wrought by insidious suggestions just as the same process operates in waking suggestion. Hence, we repeat that any person should know the character and motivation of the hypnotist before submitting to him.

As to the idle attempt to dominate others, all we can say is that any person activated by such a motive is evidently

somewhat unbalanced and would do well to use some other means than hypnotizing to regain his poise.

250. Who can be hypnotized? We have stated that a suggestible person, one who has learned that it pays him to obey others, can be hypnotized. We have also stated that some persons learn to distrust others and that such individuals cannot be hypnotized. Hypnotists have said that they can hypnotize a large proportion of people. Does this mean that most persons have learned to trust others? Experiments seem to indicate that if we arrange all persons according to whether they are suggestible or negativistic in the form of a distribution they would arrange themselves in a typical bell-shaped (*See Figure 1*) curve. At one end would be a few extreme individuals who are so suggestible that almost any stranger would be able to hypnotize them. At the other extreme would be a few individuals so suspicious and negativistic that they would never permit any one, under any circumstances, to hypnotize them. The majority of persons would fall between these two groups, that is, they would have a balance between the two attitudes. These normal persons have a few acquaintances whom they trust implicitly, a larger number that they trust somewhat and some that they would not trust at all. They have a balance between trust and caution. If this is so, the normal man cannot be hypnotized by anyone who happens along, he must learn something about the personality of the hypnotist before he will trust him sufficiently to submit to him.

A number of observers¹ have stated that "they have succeeded in hypnotizing guinea-pigs, rabbits, frogs, birds, crayfish and other animals. The principal argument in favor of this is drawn from the fact that some of these animals, after certain physical stimuli had been applied to them, presented the phenomenon of catalepsy. Is this catalepsy invariably a genuine one? I am inclined to think that in many instances it is a conscious simulation of death. . . . If, for

¹ Kircher, Czermak, Heubel (1877), Preyer (1878), Beard (1881), and Danielwski (1889).

example, you turn a beetle on its back it will remain motionless and apparently cataleptic, with its legs sticking rigidly in the air. The moment you go away, however, it scrambles to its feet and resumes its journey.

“Granting, however, that the catalepsy is a genuine one, important differences exist between it and hypnosis in general, thus:

“1. Physical means alone will not induce hypnosis in the human subject: he must know what is expected of him.

“2. The phenomenon is explained in varying, and even opposite, ways by different observers. Thus, Heubel and Wundt consider the so-called hypnosis of animals a true sleep, resulting from the cessation of external stimuli. Preyer, on the other hand, believed the condition to be one of paralysis from fright, or catalepsy produced by sudden peripheral stimulus.

“3. Catalepsy is only one, and a comparatively unimportant, phenomenon of hypnosis.”¹

251. Is hypnotism dangerous? A bitter war has been fought over this question. In an attempt to answer this question the following demonstration was staged:

“A number of persons of importance, magistrates and professors, had assembled in the main hall of the Salpêtrière museum to witness a great séance of criminal suggestions. Witt., the principal subject, thrown into the somnambulist state, had under the influence of suggestion displayed the most sanguinary instincts. At a word or sign, she had stabbed, shot, and poisoned (with paper swords, blank pistols, and fake poison); the room was littered with corpses. The notables had withdrawn, greatly impressed, leaving only a few students with the subject, who was still in the somnambulist state. The students, having a fancy to bring the séance to a close by a less blood-curdling experiment, made a very simple suggestion to Witt. They told her that she was now quite alone in the hall. She was to strip and take a bath. Witt., who had murdered all the magistrates without turning a hair, was seized with shame at the thought of undressing. Rather than accede to the suggestion, she had a violent fit of hysterics. . . . Enlarging upon this significant incident, Gilles de la Tourette makes a few reflections upon the ease with which purely fictitious crimes can be suggested, whereas it is difficult to make the subject carry out

¹ J. M. Bramwell, “Hypnotism,” Rider & Co., London, 1906, pp. 156-7.

a suggestion of a much less serious character when the suggested actions are real." ¹

In a sense all suggestion is dangerous. It is perfectly possible for a scoundrel to set about to get a person's confidence with the intent of suggesting some immoral performance. This is done every day. One would be just as foolish to permit any stranger to hypnotize him as he would to buy oil stock from a stranger.

"One does not have to be hypnotized to receive suggestions that are not for his good. Moral character implies strength enough to resist undesirable suggestions, and it is a poor defense, after one has made a mistake, to blame the act on another simply because he suggested it. If I am looking at a diamond and am tempted to steal it and a friend standing by says, 'Take it,' I certainly cannot blame him for the theft. If I take it, it is because I was partially ready to take it or I would not have followed his advice." ²

LXIV. CONCLUSIONS

The aim of individual psychology is to teach each individual so thoroughly to understand the forces at work in his mental life that he can exercise a due amount of control upon their integration and thus be able to behave in a normal, balanced manner. For an individual to submit blindly to any suggestion which comes to him, whether it be from some accidental circumstance or whether it issues from the mandates of some person, is *prima facie* evidence of a lack of such control. As long as man thought the power of suggestion was due to some mysterious "nerve fluid," to "animal-magnetism," or to some occult force which pervaded the universe, his only defense was to guard against it. When it is seen to be the result of the natural interaction of one personality

¹ Pierre Janet, "Psychological Healing," Macmillan, 1925, pp. 184-5. Quoted from "Gilles de la Tourette, L'hypnotisme e les états analogues au point de vue *médico-légal*," 1887.

² John J. B. Morgan and A. R. Gilliland, "An Introduction to Psychology," Copyright 1927, by The Macmillan Company, p. 274. Reprinted by permission.

upon another our point of view toward it is transformed. Guarding against suggestion is not drawing ourselves away from others so that they cannot influence us, but it is a rational comparison of our friends, one with the other, with a resultant selection of the ones we shall trust and those we shall not trust. We seek suggestions from those in whom we have confidence and implicitly follow their guidance. Trusting our welfare in some particular instances to a specialist is a typical example of such trust, and is evidence of good judgment rather than of gullibility. We depend upon our physician, upon our teacher, upon our financial adviser.

It is when we are distraught by some problem that our suggestibility becomes dangerous. Like a drowning man we grasp at the straw that comes our way, only to find at a later time that we have erred. This accounts for most of the symptoms that we have studied under the name of functional disorders. The sufferer has had some conflict from which he saw no way of escape. If a delusion, or a phobia, a functional paralysis or some similar escape is suggested to him, he grasps it. The trouble is not with his suggestibility but its root lies in the fact that he was so hard pressed that he had to do the irrational thing. To apply our figure of the drowning man, you do not argue with him that to grasp the straw is a senseless thing, you save him with something that will support him, a float, a life-saver, a raft or a boat, or you drag him to shore. Likewise we should not tell the man who is poorly integrated or who is unadjusted to the realities of life, not to be so suggestible and warn him of the dangers of taking advice. What we need to do is to supply in his environment those elements which make for a successful adjustment.

With its spectacular elements gone, hypnosis is of value only insofar as it sheds light upon the nature of mental processes. It has had a long and varied history and has fallen into disrepute, but it has accomplished a valuable service. It has shown us that a personality may be disintegrated, that a person may act from impulse without any

knowledge of why he acted. It has shed a flood of light on the problems of memory. Finally, it has indicated to us the real factor in our personal relationships. We have learned largely through hypnosis, and the study of suggestion, why it is that we like people and why we hate them. These reactions are due largely to our experiences with people. We have found that it pays to trust some and to distrust others. When we meet strangers we judge them by a comparison of what we can learn about them with what we know about others we have met, and trust them or distrust them accordingly. But we usually react toward the stranger with enough reservation to guard ourselves against too strong an involvement.

Hence, we may conclude that our social responses are not governed by any fluid emanating from them, not by any animal magnetism, not by any hypnotic force or any other mysterious factor, but by an accumulation of experience.

IMPORTANT TECHNICAL WORDS

anesthesia. A loss of sensibility.

animal magnetism. The doctrine that peculiar lines of force radiate from living organisms.

artificial somnambulism. An artificially induced state in which the subject is apparently asleep and at the same time reacts in a limited manner as though awake. A term used to designate the state of complete hypnosis.

cataleptic. Pertaining to the condition of muscular rigidity.

clairvoyance. A supposed power of discerning objects not normally perceptible.

mental telepathy. The doctrine that thoughts may be transmitted directly from one person to another without the use of ordinary means of communication.

mesmerism. The doctrine that persons could be placed into a condition of artificial sleep by means of animal magnetism.

negativism. A learned attitude which makes a person resistive to external suggestions.

occult. Hidden from the understanding.

suggestibility. An attitude or set which makes a person amenable to a wide range of stimulus situations.

trauma. An injury.

PROJECTS FOR FURTHER STUDY

1. Let each member of the class prepare a list of all the persons whom he feels he would be willing to trust with his secrets. Let him prepare another list of those he particularly distrusts. Let him then destroy the lists, but submit the number of individuals he placed in each list. Make three distribution curves for the entire class as follows:
 1. One curve based on the number of trusted friends.
 2. One curve based on the number of distrusted persons.
 3. One curve based on the algebraic difference between the two.
2. Using each of the distributions as a scale, each student may determine where he falls on the scale of suggestibility-negativism.
3. Correlate the different measures to see if they are related. Which seems to be the best index?
4. Have some person (preferably a physician) demonstrate hypnosis upon a patient in a hospital for mental disorders.

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CHAPTER XIII

HYSTERIA

Hysteria is essentially a personality disorder which manifests itself in a great diversity of physical manifestations. These symptoms take such numerous forms and occupy such a large part of the picture that one should be on his guard against failure to see the significance which they have for an understanding of the personality as such. We shall describe some of the most important of these symptoms, enumerate some of the theories of the disorder, and finally indicate the way in which the hysteria is developed in the attempt of the personality to adjust to the severe difficulties which precipitate it.

252. Illustration of hysteria. "The patient's mother had been a spoiled child before her, and so the patient received fine training for her hysteric personality. Her mother was always complaining; when ill she was worse than anyone else. She was radically religious, and always thought she was absolutely right, that it was impossible for her to make a mistake. Many times she would gather the whole family around her bedside, saying that she was dying, and would bid them all an affectionate farewell, only to recover and repeat the heart-rending performance later. She would have spells in which her muscles would twitch and she would fall out of her chair, although she never lost consciousness. Then she would be in bed for six months at a time and during these periods of 'illness' would insist that she be considered first and that her daughter (the subject of our illustration) stay with her. Even if she were not sick she insisted that our subject stay with her for fear she might get sick.

"Our subject in turn has an only daughter whom she wants to wait upon her as she did upon her mother. The daughter sees through the situation and refuses to be made the dupe of such a trick. It is apparent that a large part of the patient's symptoms

and illnesses are attempts to force from the daughter homage of the sort that she once gave to her own mother.

"In 1919, the patient had an attack of mucous colitis with a 'nervous breakdown.' This served as a lever to induce her husband to begin building in the city so that they could move from the farm where she had to do a good deal of hard work. The patient looked forward happily to the time when she could live a life of leisure in the city. Owing to financial difficulties the house got no further than the foundation and the thought of building had to be abandoned for a time. Following this, in the winter of 1921, she insisted on living in a hotel in town on the ground that she was not well enough to live in the country. In the following March the husband planned to return to the farm but the patient, dreading hard work, opposed the plan. However, they went. As soon as they arrived at the farm the patient was extremely dissatisfied. She made a servant do all the work. She cried a great deal, would wring her hands on the slightest provocation and run her fingers through her hair for hours at a time. She was so miserable that her husband was deceived by her symptoms and took her to a sanitarium and left her there for eleven weeks.

"On her return home she showed no improvement and so stayed at the home of her daughter (who was married and lived in town) while her daughter kept house on the farm. The daughter did not fancy this arrangement and, wanting to return to her home, induced the patient to come back to the farm. She did so, but was frantic when she learned that her daughter was returning to town instead of staying on the farm. She cried, walked the floor, 'pranced about,' and kept saying, 'There is something terribly wrong with me and I get no sympathy. Take me to the insane asylum.' A physician was called but he would not listen to her excited conversation and told her she would have to be quiet. She visited her daughter in town every day and talked about herself continuously. When the daughter told her to stop talking she would cry, saying that the daughter mistreated her and, still crying, would return to the farm.

"She then went to a near-by city to take treatments from a quack 'psychologist' for nine weeks. He would place her in a chair and walk back and forth in front of her, saying: 'You are relaxing your muscles and nerves, you are relaxing your muscles and nerves,' over and over again. He assured her that he was saving her from a terrible end; that if she had not had his services, she would have become insane and might have murdered someone. This acted as seed and one night she developed the idea that she might murder the children of the people with whom she

was rooming when they were left with her while the parents went to a theater. She put the children to bed and locked herself in her room for fear she would do them harm. That night she sat up in bed, shook and jerked, and wrung her hands. The landlady called the physician, who said that her trouble was nothing but a tantrum. She succeeded in having her daughter sent for, however, on the pretext that she was in a serious condition, and kept her there for several weeks. But the daughter's husband and child came too, and this proved to be a fly in the ointment. Every time the daughter and her husband wanted to go out together the mother would get very much worse. She seemed to feel that she was abused if asked to stay with the baby. Finally, she returned home and spent her time talking to the neighbors about her terrible condition. She seldom smiled and continually said that everyone except her daughter and her daughter's husband appreciated the fact that there was something terribly wrong with her. Every time she was crossed she would have a tantrum, in which she would hold her breath, make queer sounds, refuse to talk, throw back her head, and 'arch herself in bed so that her back did not touch the bed.'

"All the sickness of this woman was simply an elaboration of the childish performance of being ill in order to achieve the selfish end of getting attention. She had been taught that such methods succeed, had actually succeeded with them herself on many previous occasions, and so was continuing to practice the same tricks."¹

This illustration indicates the manner in which a child may be taught to get what he desires by emphasizing some physical ailment, which may be wholly fictitious, or which may have some reality, but may be exaggerated; and how such training may persist to such an extent that, as an adult, the individual continues to use the same methods. As this case illustrates, the individual adopting such a method loses more than he gains and thus he is deceiving himself more than he is anyone else. No unadjusted person receives as little sympathy as an hysterical.

¹ John J. B. Morgan, "The Unadjusted School Child," Copyright 1924, by The Macmillan Company, pp. 191-194. Reprinted by permission.

LXV. DESCRIPTION OF HYSTERIA

Keeping in mind that hysteria is essentially a personality disorder we shall review the various symptoms that are found, first in minor hysteria and secondly in the major forms.

253. Essential nature of hysteria. Hysteria is one of the oldest known mental disorders. The term is derived from a Greek word meaning uterus, indicating one of the earliest conceptions of the disease, namely, that it was a disease of the womb. While this early theory has long since been discarded, the development of such a conception indicates that even at this early date there must have been a recognition of the prominence of sexual components in the disorder. Freud still contends that it has a sexual etiology (cause), but as conceived by him the cause is not a mere wandering of the uterus through the body, as the ancients thought, but a specific type of adjustment to failure in the love life of the individual.

We shall find that hysteria is essentially the resolution of a mental conflict by means of the adoption of some disease symptom. The essential background is some sort of unsatisfactory condition either in the individual's inner mental adjustments or in his adjustment to his environment. The form that it takes expresses the method he has adopted in an attempt to make his circumstances more to his liking. While varying greatly in degree, the essential nature is the same when we see a child feigning an illness to get attention and when we see a woman paralyzed for years in order to enslave her relatives.

The forms of hysteria are so manifold, the conceptions of the disorder that have been held at different times have been so diverse, and the nature of its symptoms so complex and mystifying, that to give a consistent picture of the disorder is extremely difficult. We believe that the real reason for this difficulty lies in the fact that the true nature of hysteria has not been understood. It has been regarded, until

very recently, as a specific disease. A disease, as ordinarily considered, is a failure or perversion of normal physiological action. If hysteria is a disease there must be some physiological background for it, consequently, much of the study of hysteria has been in the nature of an attempt to discover such a physiological cause. Such attempts have proved futile. There has been found no lesion of the organism, no germs such as give rise to tuberculosis, typhoid fever, and the like, sufficient to account for the manifold expressions of the hysterical. This failure to find an organic lesion has led to the modern conception that hysteria is of a so-called functional nature. It is a disorder of the personality, a failure of the different attitudes, habits and reactions of the person to work in harmony. It might be compared "to a watch which needed oiling or cleaning, or merely winding up,—as against one in which a vital part was broken."¹

This fact makes the study of hysteria purely a psychological problem. Its understanding presupposes a thorough knowledge of normal functioning of the personality, an analysis of the training of the individual which made him the type of person who will develop hysterical manifestations, and, finally, the specific experiences which precipitated the disorder. The reason that this conception has been so difficult for the investigators to grasp is that the majority of them have not been accustomed to view a disease as a development of habit patterns. They tend to look for a specific factor which could account for the symptoms that are found. Since personal attitudes are the result of a great number of experiences of a diverse sort it can be seen that such a search is futile. It is a disorder, the symptoms of which are exceedingly variable, and which can be understood only from an analysis of its origin and growth. Furthermore, its treatment cannot be effected by a simple therapeutic agent but must involve a complete change in the personality. The patient

¹ Abraham Myerson, "The Nervous Housewife," Little, Brown & Co., 1920, p. 18.

must be reëducated in such a way that he is a different individual, capable of taking a different attitude toward life and prepared to respond in a different manner to life's varying conflicts.

Thus prepared to regard hysteria as a personality disorder we shall not expect too much unity in the different behavior peculiarities that have been ascribed to the disorder.

254. Minor hysteria. The lay conception of hysteria is that it is a disease in which the subject has paroxysms of laughing or crying out of proportion to any cause and seemingly beyond the control of the individual. Such excessive emotional expression, while it may not be called hysteria, in the true sense, is very interesting in its operation. It is often a defense against overstimulation of some sensitive emotion. For example, a very sensitive boy was listening to an orator depicting the evils of alcoholism. The lecturer told with gruesome detail the way in which a man, wild with drink, came home and beheaded his wife and child with the lid of a tin can. The boy shuddered and was revolted by the story, which was drawn out and elaborated upon until he could stand it no longer. Losing control of his emotions he began to laugh violently, was convulsed to the horror of everyone in the audience about him, and finally, had to be taken from the lecture room by his horrified parents, who interpreted this as evidence that their son was a very callous, unfeeling boy. His behavior proved that he was just the opposite. The emotional effect had been overdone and laughter was his only defense.

The same principle has been demonstrated in laboratory experiments. Mothers know its operation. You may hear them say, "Now children, you are getting too violent in your laughter. One of you will be crying in a moment." It is probably not chance that makes such prophecies come true.

Paradoxical emotional explosions may manifest themselves in other forms as well as in laughter. No doubt tantrums are of this order. Fits of anger are not uncommon in which

a person, with no apparent cause, will break dishes or furniture and seemingly gets much relief from such outbursts. A child may be heard to remark to her mother, "If you make me wipe these dishes I will break them."

Real as these paradoxical emotional outbreaks are, and important as they are in the understanding of behavior, especially that of adolescents, they do not compose the hysteria of the medical man. They have been designated minor hysterias to distinguish them from the major form.

255. Major hysteria. A large number of the symptoms that we have in previous chapters described in detail as functional disorders are regarded as evidence of hysteria. We shall enumerate them here with little elaboration in order to get a concentrated picture of the forms that the disorder may take.

1. *Somnambulisms.* Somnambulism is the act of walking or performing other activities during sleep. Examples of these have already been given. (Article 135, paragraph 3.) That these are not senseless activities is readily apparent to anyone studying them. They are really the expansion of a dream, beginning and developing in a regular manner, centered around a focal topic, and progressing to a definite conclusion, unless the person is awakened. Upon awaking he is very likely to have forgotten the content of his somnambulism. Evidently the victim of these sleep-walking episodes becomes dominated by a single idea, often an idea which is not recognized as a part of his waking personality. Its existence is evidence that an important part of the subject's personality has been blocked off from recognition. This theory is supported by the fact that if attempts are made to have the person recall the dream he may again revert to the sleeping state with the reënactment of the dream. This characteristic of hystericals indicates that one of their main distinctions is the ability to block off successfully part of their life from conscious recognition. The somnambulism is evidence of the effectiveness of the blocked-off section in spite of such repression. It indicates a failure of integration.

That a somnambulism has meaning in the mental life of the subject is demonstrated by the following incident.¹ A war veteran complained that since his return from France he had been a restless sleeper and "about four nights a week had a certain nightmare, as a result of which he frequently awoke in the act of choking his bed-fellow, or found himself on the floor in all sorts of queer postures." He was unable to recall the dream which went with these episodes. Upon hypnosis he was prevailed upon to recall the dream, which consisted of a portrayal of a highly emotional experience which had happened while in the service, but which he had forgotten in his waking life.

2. *Fugues*. A fugue is a more advanced form of sleep-walking. The term means to flee, and a fugue can best be understood as an attempt on the part of the subject to flee from some difficulty. The main difference between the fugue and the simple somnambulism lies in the fact that in the latter the subject is totally oblivious to his surroundings while in his dreaming state, so much so, that any attempt to speak to him will either be ignored or will awaken him. In the fugue the subject is in touch with his surroundings, he may buy railroad tickets, may travel from place to place without attracting any undue attention from those he meets, and appear to observers to be perfectly normal.

That the fugue is a bursting forth of some repressed segment of the patient's personality is quite evident from a study of these episodes. It is clearly set forth in a case reported by Janet.² When an adolescent boy this patient was accustomed to mingle with a group of old sailors who used to give him drink and, when under its influence, fill him with alluring tales of travel. Upon recovery from the effects of the drink these tales seemed to vanish. He never spoke of traveling and led a quiet life as a grocer boy. Occasionally, however, he became "transformed, forgot to return home,

¹ W. S. Taylor, "Readings in Abnormal Psychology," Appleton, 1926, pp. 703-7.

² Pierre Janet, "Major Symptoms of Hysteria," Macmillan, 1913, p. 53.

and thought no more of his family." In these spells he traveled quite a distance from home, sometimes alone and sometimes begging along the road with tramps. This would continue until he would suddenly come to himself and find he was far from home, often hungry and in a pitiable condition, whereupon he would forget all that happened to him during the journey.

That the transformation from the condition obtaining in the fugue to the normal state, or vice versa, may be accomplished by a simple suggestion is illustrated by his recovery from one of his episodes. He had wandered far from home and was working as an assistant to a mendicant china mender. One night after they had earned a small sum "the china mender said: 'My boy, we deserve a good supper; and we will keep today's feast; it is the fifteenth of August.' On hearing this, the boy heedlessly said: 'The fifteenth of August? Why it is the feast of the Virgin Mary, the anniversary of my mother's name-day.' He had scarcely uttered these words when he appeared to be quite changed. He looked all around him with astonishment, and turning to his companion, said, 'But who are you, and what am I doing here with you?' The poor man was amazed, and was quite unable to make the boy understand the situation; the latter still believed himself in Paris, and had lost all memory of the preceding months." Not infrequently we read in the newspapers accounts of cases of this order where a man is discovered who does not know his own identity.

3. *Multiple personalities.* Cases of complete multiple personalities are very rare, only about fifty such cases having been reported. The distinction between somnambulisms, fugues, and multiple personalities is not a clear-cut one, but rather one of degree. They shade into each other by imperceptible degrees, indeed, it seems possible that a case of simple somnambulism may, by improper handling, develop into a case of multiple personality, and, conversely, by proper treatment multiple personality may be avoided by timely education in proper integration.

A combination of fugue and double personality is instanced in the following case:¹

“When twenty-four years of age the patient had been in a railroad wreck. Seventeen years later, while he was suffering acute pain, a daughter accidentally overturned a lamp. As he tried to catch it he murmured: ‘Oh! my head,’ and fell unconscious. Upon recovering consciousness, twenty-four hours later, his first question was whether he was much hurt. Then he asked his wife what hospital he was in, and if she was the nurse. With difficulty he was convinced that he was married, the father of four children, and that seventeen years had passed since the train wreck. Upon inquiry it was evident, too, that in his secondary state he had possessed little knowledge of his life previous to the accident. Having reverted to the primary state, he began to worry over the possibility of being declared insane. Sixteen days after the reversion he had a fugue which carried him thirty miles away from home during nine hours. The following day he disappeared again and nothing further was heard from him.”

Very rarely does it happen that alternations in personality involve the entire individual. It is merely a particular group of characteristics that are lost. A few cases have been reported where the change was complete, the most noteworthy being the case of Reverend Hanna, described by Sidis and Goodhart.²

“While alighting from his carriage, the Reverend Thomas Carson Hanna made a misstep and fell, striking his head. Upon recovering consciousness, two hours later, his mind was a blank. Not only had he lost the faculty of speech, but even the ability to recognize objects and persons. He was unable to appreciate distance, form, size, time, etc., and he did not even know how to use his muscles. Though the feeling of hunger was not affected, yet he could not interpret the craving, and he was ignorant both of the purpose of food and of the acts of mastication and deglutition. Spatial conceptions having been lost, he attempted to grasp a tree seen through a window. Among other curious mistakes, he thought a man on a bicycle constituted one living being, while a second man and the horse and carriage that he was driving were

¹ C. D. Fox, “Psychopathology of Hysteria,” Badger, 1913, p. 313. Quoted from E. D. Mayer, *Jour. of the A. M. A.*, 1901-2, p. 1601.

² C. D. Fox, *loc. cit.*, pp. 318-9. From Sidis and Goodhart, “Multiple Personality,” 1905.

another living being of a different kind. In spite of his total amnesia he was very intelligent. At the end of one week of instruction he was able to read, and six weeks after the accident could talk intelligently. His dreams, derived from experiences of the normal personality, were so vivid that it seemed as if he lived over again past occurrences without, however, recognizing them as such. . . . Conservation of the memories of the primary personality was shown also by his ability to solve geometrical problems without being able to explain how he did so. It was thought that a large number of stimuli whose nature differed from that to which the new personality was accustomed might raise above the threshold of consciousness the submerged memories of his past life. If successful, such a procedure would represent fusion of the two personalities. Accordingly, he was taken to New York and subjected to a lively round of amusements. Two hours after having retired he woke as the normal Mr. Hanna, who was much surprised to find himself among strangers, and in strange quarters. He thought that he had been the victim of some practical joke. During the following six days the two personalities alternated until finally, during a psychic crisis, fusion occurred—the two states became synthesized.”

• While these extreme cases seem to indicate that multiple personalities involve a violent transition from one complete personality to another, milder cases point to the conclusion that thorough integration is a relative thing. Most of us have portions which are more or less severed from what we consider our normal selves. It is possible in development to avoid any marked disintegration, or we can cultivate by training a rather distinct cleavage, such as is portrayed in the classical case of Dr. Jekyll and Mr. Hyde.

“All of us have probably experienced tendencies to do things which were inconsistent with conduct conformable with the obligations imposed by occupation, finances, home life, social status, etc. Being incompatible with our external relations, such thoughts were suppressed. Simply being submerged, these ideas continue to exert a modifying influence upon the better side of the ego, thus producing what might be called an average personality. In fact, we are all both better and worse than we appear to be to others, and our personalities, both as viewed by others and by ourselves, are merely masks which serve to screen the possibilities for good or evil that exist within us. Under favorable circumstances one

who has been a criminal may live as an average individual, while if we should transfer the exceptional person to an environment where he is exposed to various stresses, we might bring into evidence traits which neither he nor his friends ever suspected. When dissociation occurs it is but natural that one personality should be lively and not too scrupulous while the other exhibits puritanical tendencies. Study of most of the reported cases of multiple personality shows this difference of moral characteristics."¹

Viewed in a broad perspective cases of somnambulism, fugue and multiple personality, as symptoms of hysteria, indicate that the disorder is one of personality disintegration, that it is not based on a specific disease-producing factor but is the resultant of a process of faulty adjustment. In a few cases a violent shock may be the precipitating factor, but in most instances the disintegration is the cumulative effect of a series of experiences.

4. *Convulsive attacks.* Convulsive attacks in hysteria take the most diverse forms. They may so simulate epileptic attacks that they are almost indistinguishable. It is quite possible that a person with epilepsy may have engrafted upon the epilepsy an hysterical personality so that the manifestations of epilepsy may be complicated by the hysterical fit. This fact has given rise to the designation of hystero-epilepsy. The distinction is especially difficult in that epileptic fits themselves take such diverse forms that a fit which does not conform to the classical epileptic attack cannot, for that reason, be considered hysteria.

Careful observation often shows that the hysterical attack is "staged," it is always developed when others are present, the patient is careful not to injure himself, and, in many instances, he is benefited, although perhaps in a remote way, from the episode.

In other instances, convulsive movements of the hysterical are not in the nature of a complete fit but may take very peculiar forms. Whatever the form, they have the common characteristic that they are not distasteful to those afflicted

¹ C. D. Fox, *loc. cit.*, pp. 331-2.

by them. The patients say that they are trying to stop, that they do not like to perform peculiar actions, but at the same time they seem to be perfectly happy about it.

5. *Motor disorders.* We have already described a number of functional motor disorders, such as tics, choreas, tremors, convulsive movements, paralyses, and contractures. The distinction between a functional motor disorder and an organic one is at times very difficult to make. When, upon careful examination, it is found that the movements have no organic cause, it has been possible, in many cases, to show that they depend upon the same factor as do somnambulisms, namely, a failure to integrate the whole personality. *See Section XLII.*

6. *Anesthesias.* Anesthesias of a functional sort have long been recognized as indicative of hysteria. During the Middle Ages they were called "devil's claws" and were supposed to indicate that the possessor was a witch. One significant characteristic of these anesthesias is that they are in many instances definitely related to repressed or forgotten segments of the personality. It is not so much that the person has lost his sensibility as that he does not want to feel. In other words, memory loss and loss of sensibility may accompany each other.

Janet's ¹ patient, Rose, "had in her remembrance an indisputable lacuna of three months' duration. . . . She presented, as it frequently happens with very ill hystericals, a somnambulism very unstable, continually changing, with occasional spasms and small convulsive accidents. One day, as she was in one of those accidental somnambulist states, she said spontaneously: 'You have often asked me what had happened to me in the months of August and September. Why could I not answer you? It was so simple. I know well now that I did this, that, etc.' The remembrance of the three forgotten months had entirely come back, as we could verify. . . . In this particular somnambulism which brought back her remembrance, Rose suddenly recovered the tactile and muscular sensibility of her whole right side, while in all her other states she was continually an entire anesthetic."

The anesthesias which conform to a functional unit, which we have described in a previous chapter, such as glove and

¹ *Ibid.*, pp. 111-2.

shoe anesthetics, have been held to be particularly characteristic of hysteria. These anesthetics may be regarded as a blocking off in the nervous centers of a functional group of impressions just as the ideas that come forth in a somnambulism are segregated from the rest of the personality. We have also found that such localized anesthetics can be induced in hypnosis. (Article 247, paragraph 2.)

7. *Visual and auditory disorders.* The hysterical, to a marked extent, is supposed to be able to see and hear what he desires and to fail to see and hear what he does not wish to perceive. We recognize how this occurs in normal persons. Intense interest in a certain sensory object will blind us to other equally vivid sensory impressions. In the hysterical, however, the physician may direct attention toward the object to be observed and still the patient declares he cannot perceive it. Furthermore, it can be demonstrated that under other circumstances the patient does observe the thing which at one time he asserts he does not perceive. Hence, we encounter the same process of dissociation in the visual and auditory fields that we have pointed out in the other symptoms of the hysterical.

The way in which such dissociation operates may be readily demonstrated by hypnosis. In hypnosis the individual can be made insensible to visual and auditory impressions of certain sorts and yet very alert to others. For example, under hypnosis a person may be told to open his eyes and to sip coffee from the cup you hold out to him. He will take the glass of cold water that you offer him and sip it as though it were hot coffee. The room may be full of people but he will not see them. There may be others talking but he makes no sign that he hears them.

All this indicates that we see and hear what we are prepared to see and hear. The only difference between hypnosis and ordinary perception is that the hypnotist prepares his subject for the interpretation that he wishes him to make, while in ordinary life the preparation is the result of varying mental processes in ourselves. In hysteria, a particular em-

phasis gives us an unusual preparation to perceive certain things and to ignore others, or to block off the use of part or all of our sensory apparatus. The hysterical is a living example of the adage, "There is none so blind as he who will not see." This is but an extension of what is happening continually in everyday life. We often hear not what is said but what we want to hear.

8. *Visceral troubles.* One of the most peculiar of visceral troubles, one which has aroused considerable attention and a wealth of description, is hysterical anorexia, which consists in a systematic refusal of food. Janet, with characteristic descriptive accuracy divides the disorder into three periods. The first is the gastric period. In this stage the subject acts as though he had a simple disorder of the stomach and is often diagnosed by physicians as having gastric ulcer or some similar disorder. He is placed on a strict diet and by this means is enabled to eat practically nothing. The second period is the period of struggle. The relatives get tired of fussing with the subject because they begin to suspect that he is overdoing his symptoms. He, in turn, is thereby forced to be more insistent upon his ailment and to refuse with greater vigor to eat. "It is in this period when such persons hide victuals in their pockets, fill their cheeks and throat with them, to go and spit them out in the lavatory, when they learn to vomit immediately what they have just swallowed, etc."¹ In the third stage they become emaciated because of a lack of nutrition and become bedridden.

Such a symptom is often found to be due to an unusually strong emotional reaction to some food in particular or to eating in general. Many little children develop food fads because of some emotional conditioning. The reason for the continuation of the symptom is that it enables the person to avoid, in many instances, the real issue behind the fad and at the same time to divert the attention of others from the real struggle being enacted in the personality. It is very

¹ Pierre Janet, *loc. cit.*, pp. 231-232.

easy to be led astray by the reasons that the individual gives for his refusal of food.

Janet says: "I knew a girl of eighteen who died in consequence of her abhorrence of turnips, which she had contracted when at school. To this end she refused to eat anything, saying that everything smelt of turnips. . . . The following observation of Charcot is famous: while undressing a patient of this kind, he found that she wore on her skin, fastened very tightly around her waist, a rose-colored ribbon. He obtained the following confidence: the ribbon was a measure which the waist was not to exceed. 'I prefer dying of hunger to becoming as big as mamma.' . . . The authors who have observed such ideas seem to me to be inclined to exaggerate their importance. This is what certainly happened to Charcot, who used to seek everywhere for his rose-colored ribbon and the idea of obesity."¹

It is absurd to think that a person would starve in order to keep from getting stout or in order to avoid the smell of turnips. These overt expressions are merely indicative of a more remote conflict, they are used to hide a more serious issue and if one is to understand the nature of these symptoms the underlying conflict must be sought.

Visceral disorders may take a great variety of forms. Swellings, pains, and aches in a thousand varieties have been found and defy accurate description. Appendices have been removed because of hysterical pains, tumors and other mysterious conditions have been found to be based on an hysterical etiology. These conditions are extremely baffling to a surgeon who actually may discover swellings upon palpation, only to discover when an incision is made that there is no organic condition to account for it.

9. *Respiratory disorders.* All sorts of queer breathings have been found which, when sufficiently developed, may lead to cries or to supposed speech, such as the historical "speaking with tongues."

"The expiration . . . accompanied with spasms of the glottis, will bring about the most varied cries, the famous *hysterical barks*. You know that they occurred epidemically in the Middle Ages, and

¹ *Ibid.*, pp. 234-5.

that, in the convents, nuns began by hundreds to howl, bark, or mew. It was necessary to threaten them with a hot iron to silence them."¹

"The way in which a breathing disorder may develop as a mask for some unworthy impulse is illustrated by a young man who came to a hospital with the complaint that he could not breathe properly. As soon as he exerted himself in the slightest degree he would pant in a painful way. Yet when this man was off his guard or happened to fix his attention on something else for a time his breathing became perfect. As soon, however, as his attention went back to himself his breathing became rapid and irregular. There could be found no adequate explanation for this peculiar phenomenon. It was later discovered that this strange breathing developed in an odd manner. He had never shown any such peculiarity until one morning when his mother came into his room when he was half asleep and asked him what had been the matter. She told him that through the night she had heard him breathing in a very peculiar manner and that he had been doing this just as she came into the room. He immediately began to exaggerate his panting and to say that he could not understand it. This excited his mother very much. She kept talking about it, called the physician, and tried in every way to unravel the difficulty. Now from side evidence it was probable that this young man had experienced just before the mother came into the room a dream of which he was ashamed. The panting breath was the result of the erotic dream, the content of which he would not divulge, and the mother offered to him a way out by the fact that she fixed her attention on the breathing. What easier way out of an unpleasant situation than to keep her attention on such a trivial thing as the breathing? In this way he was saved embarrassing explanations."²

We have reviewed nine symptoms of hysteria, namely: somnambulisms, fugues, multiple personalities, convulsive attacks, motor disorders, anesthetics, visual and auditory disorders, visceral troubles, and respiratory disorders. A more varied list it would be hard to find, but it must not be supposed that each hysterical manifests all of these symptoms. Some may show one and some a large number. The symptoms may shift, so that at one time one symptom is present, only

¹ Pierre Janet, *loc. cit.*, p. 262.

² John J. B. Morgan, *loc. cit.*, p. 187.

to be replaced by another. No disease organism nor physical injury could account for such a variety and instability of symptoms. It is only when they are regarded as so many possible devices to enable an individual to escape from some dilemma that they become meaningful.

LXVI. SOME THEORIES OF HYSTERIA

If all these things are symptoms of hysteria, how can we get any conception of the nature of a disease which will account for such varied manifestations? Various attempts have been made, and it may be well to review some of them in order to become better oriented in this subject.

256. Charcot's theory of hysteria. Charcot viewed hysteria as a disease entity. This thesis naturally led him to direct his attention to the study of symptoms, to clinical descriptions and to attempts to locate stigmata by means of which he could mark off hysteria from other diseases. As a result of his search for stigmata he drew up a list of physical symptoms supposed to characterize hysteria. Among these were anesthetics, the absence of palate and conjunctival reflexes, retraction of the field of vision, paralyses, contractures and similar disorders. The task of diagnosis was to discover such physical symptoms and to prove that they were inconsistent with other organic findings. The reader will recall that these symptoms are the sort that we have described throughout the text as functional.

Charcot failed to recognize that these symptoms could be learned by the patient. His conception of any disorder was that it was a disease, a thing superimposed upon an individual, with a definite etiology. Since any physical disease has particular earmarks, so hysteria must have its stigmata. His views are generally discredited.

257. Janet's theory of hysteria. Janet's view is that hysteria begins with exhaustion which precipitates a depression. This depression leads to a "retraction of the field of consciousness," as a consequence of which the person is no longer able to perform too complex operations. For this

reason, some operations become split off, leading to an actual dissociation. It may happen that the split-off section is very complicated so that it may control very complex activities even though the patient may not be aware of them when in his ordinary waking state. In this way he explains somnambulisms, the various motor disturbances which Charcot so carefully studied, as well as the sensory disorders usually considered as stigmata of hysteria. In short, hysteria, to Janet, is a failure of integration of the personality.

The significance of Janet's contribution lies in the fact that he took the physical signs of hysteria that had been so strongly emphasized by Charcot and showed that they were the result of mental experiences. He pointed out very clearly that they were identical with the type of thing that could be produced by suggestion in artificial somnambulisms, so that the fundamental thing was not the physical sign itself, but the mental process by means of which it developed. He, in spite of the value of this contribution, left many things to be explained.

258. Babinski's theory of hysteria. Babinski maintained that hysteria is a condition that may be produced by suggestion and removed by persuasion. His interest was centered in the distinction between functional and organic disease. He arrived at his conclusions after he had failed to find any disturbance in tactile, painful, thermal, muscular, and stereognostic senses where he avoided all possibility of suggesting these disturbances to his subjects. He showed pretty clearly that the anesthetics and contractures so faithfully studied by Charcot were not adopted spontaneously but were the result of the patient's willingness to manifest the symptoms which the physician tried to find.

259. Freud's theory of hysteria. Freud believes that the background for hysteria is an unsuccessful attempt on the part of the patient to forget. Having suffered an undesirable experience, one may respond actively to it. Such a response spends the emotion and no ill results follow. If no response

is available the emotional strain is bottled up like so much electric potential. The idea with its unpleasant affect cannot be eliminated by forgetting and must find some indirect expression. In hysteria this expression is in the form of a bodily symptom. Freud coins the term conversion for this process. The mental trauma is converted into a physical manifestation. His method of treatment consists in uncovering this buried memory and giving it adequate expression. This he calls abreaction. The expression need not be of any specific sort. The mere fact that the memory comes forth and the patient goes through a violent emotional scene, such as crying, or through speech, is often sufficient to remove the tension as well as the conversion symptom.

This mechanism of repression, or forced forgetting, is not confined to hysteria but is the background of many pathological mental processes. The factor which characterizes hysteria is the tendency to convert the repressed affect into a bodily symptom.

He further contends that the facility for converting the repressed affect into a physical symptom is determined by some early childhood "damage," usually of a sexual sort. These early trauma are forgotten and may not have a marked effect upon the individual until some post-adolescent shock revives the past experience, not consciously, and leads to the liberation of the affect associated with the infantile shock. The significance of these earlier experiences lies in the fact that when they are revived by a later experience the affect is stronger than in the original experience. The infantile experience then acts like a fresh experience with the distinction that the emotion is more vivid, while the memory of the experience is unconscious.

In other words, Freud tries to show how the soil is prepared so that the adult shock has the effect that it does. Because of the infantile experience the subject has set up an unusual inhibition against anything relating to the underlying experience so that the slightest approximation of a

recurrence will bring about a violent emotional outburst. The restraint of these seemingly illogical emotional reactions may then tend to show themselves in the conversion symptom.

The main objection to Freud's theory is that he seems to regard early memories as stored up, like so much dynamic energy, waiting to be released at some later time. Such a conception of memory is highly fanciful and contradicts what we know of learning and memory in general. Every experience that a person has does modify his personality and determines his later reactions to some extent, but the change is not in the nature of any stored energy. If a boy has been frightened by a dog when an infant, his later reactions to a dog are modified. These later reactions are not due to any explosion of pent-up fear of a dog which has lasted indefinitely, waiting a chance to get out, but may be explained by the fact that he has learned to react differently from what he would if he had never been frightened.

In other words, hysteria can be explained on the basis of learning, or conditioning, just as any complex mental reaction can be so explained. Hystericals are individuals who have learned to solve their problems, to get what they want, and to influence others by the adoption of some bodily illness. Having learned the habit, they continue to use this method.

LXVII. PERSONALITY OF HYSTERICALS

Since hysteria is essentially the habit of becoming ill in order to gain some end, let us examine the type of personality in which such a habit develops so that we may be better prepared to analyze the development of the specific symptoms.

260. Hystericals behave like spoiled children. They are used to having their own way. If they chance to desire something they will not be content till they get it. No matter how trivial the thing may be they will, figuratively speaking, move heaven and earth to get it. Their getting it may cause the discomfort of dozens of others, near and dear to them, but that seemingly makes little difference. They will have their way.

261. They are objectively oriented. They are not content to retire into themselves in order to obtain satisfaction. They can have no satisfaction in isolation. Their emotions must get an outlet by expression toward others. Consequently, they are very likely to take an emotional attitude toward all whom they know. They either love or hate everybody. As a result, their satisfaction becomes selfish because they are not content with their own isolated happiness but it must include everybody they know. They may wish a fur coat. They will not be happy until they obtain the cherished article. But, having obtained it, they require that everybody express appreciation of it. They must find their own happiness reflected in others. The whole world must laugh and weep with them. They are ego-centric but they must at the same time be the center of a circle that radiates and includes all their acquaintances.

262. They are suggestible. Being keenly sensitive to the opinions and reactions of others they are also easily swayed by others. They are confident of the loving attitude of everybody toward them and if they happen to be deceived, as often happens, they are hurt beyond measure. Gain their confidence and they will believe in you without reserve.

263. Their values are affectively determined. Love and hate are their criteria for truth and falsehood. Logic may be used to verify their attitude toward life, but it is ruthlessly distorted if it seems to interfere. What looks like a perversion of logic is simply a failure to see relations that may interfere with this affective judgment.

We would emphasize our view that these personality traits which combine as a background for the development of hysteria are based on the subject's previous experience. They are all normal when not found in excess and even the combination of those enumerated need not lead to any dire results. It is this combination in an individual who is brought face to face with a particular type of difficulty which leads to the development of hysteria. But hysteria must be regarded as the entire process. It takes a peculiar succession of situations

to bring out a definite condition of hysteria and the disorder can only be understood when we see clearly not only the type of person upon whom the disorder is engrafted but the nature of the circumstances that brings it about.

LXVIII. THE DEVELOPMENT OF HYSTERIA

The development of hysteria in the stress of war offers illustrations of the mechanism of its development in relatively simple forms. Besides, the men in whom it developed had been relatively normal before their entrance into the war. For these reasons, it may be valuable to study the mechanism of war hysteria to get clearly before us the steps of development. The successive steps may be outlined somewhat as follows:

264. Stages in the development of hysteria. 1. *Desire to escape from an unpleasant situation.* The wish to get out of the active service was present in many of those who were in the thick of the fray. It assails all of us when things are transpiring contrary to what we should desire. To such a wish to escape various adjustments may be made. The desire for something different furnishes the background for all life's changes and may lead either to a normal or an abnormal adjustment. In the army situation the wish to escape became stronger than happens in civil life and in addition certain methods of adjustment were denied. If we do not like a situation in ordinary life we can, at least in many cases, devise a way of escape. No honorable way of escape is offered to the soldier.

2. *Suggestion of a way of escape.* Faced with a dire calamity the soldier is open to suggestions as to a means of escape. Now comes the parting of the ways. The soldier of high ideals and especially the officer, to whom the other soldiers look with respect, cannot take any degrading suggestion. They may manifest great anxiety because of the emotional strain, but they can take advantage of no excuse to escape. The only honorable escape for such a person is death, so he will either continue to face the situation as best he can or expose himself in the hope of being killed.

To the one of lower ideals the suggestion is likely to come in seeing some comrade carried back from the lines because of a wound or illness. Practically all cases of war hysteria had the desire for escape in this manner.

"The men who develop hysterical symptoms are privates whose ideals are not so high, and who do not have to make decisions for themselves. Their responsibilities begin and end with obedience to orders. . . . Not unnaturally then, we find these men seeking to gain release from the situation they dislike in a way which is incompatible with the higher standards of the officers. They look for some valid excuse for absence from the firing line, and so, almost universally, hope to be wounded in some way that will incapacitate them from active service. I have found either this wish for a 'Blighty one,' or else thoughts of some physical disease, in the history of every hysterical case, except one, that I had the opportunity of examining. The exceptional patient did not seem sufficiently intelligent to give an accurate history."¹

3. *Accidental escape through the suggested channel.* The next step is usually the accidental occurrence of an injury which brings about the accomplishment of his wish. The pain from the wound is mild compared with the agony of fear which he has been suffering. He actually enjoys his wound or his illness. Although the ride in the ambulance may fill him with physical agony with every jolt, this agony spells release, each pang is a cry of freedom. He hopes it is a really bad wound and that he will not have to return.

4. *Fear of return to unpleasant situation with recovery.* Recovery brings to him the possibility of return to the front. He feels that his furlough to paradise, the hospital, is about to end and he wishes that he would not get well. He has nothing to gain by recovery and everything to gain by continued illness. Continued illness is his only escape.

5. *Exaggeration of symptoms.* The desire to remain ill makes the patient exaggerate his symptoms. No bright smile of hope adorns his face when the nurse or physician makes rounds. His injured leg is abominably weak, he has lost feeling in his arm, or he cannot see.

¹ John T. MacCurdy, "War Neuroses, 1918, p. 89. Reprinted by permission of The Macmillan Company.

6. *Symptom with no cause.* Finally, when organic recovery is complete, he may still have the symptoms which were present in the illness. In other words he has developed a well-rounded case of hysteria, a disorder which looks like a physical ailment but which has no physiological background.

265. Distinction between hysteria and malingering. It may seem that such a situation would be simple malingering, a conscious attempt to deceive the medical attendants and officers into the belief that he had an injury when as a matter of fact he did not. It is often very difficult to distinguish the malingerer from the one whose symptoms are the result of an emotional urge which he does not recognize. The true hysterical is very likely to be frank about his wish to escape service, but does not see the connection between this wish and the continuation of his disability. The malingerer is more likely to hide the fact that he wishes to escape service. The fact that the hysterical manifestation develops so often on the basis of an organic disability makes the distinction even more difficult. There may be enough residual disability to deceive the cleverest neurologist. Often the hysterical symptom is simply an exaggeration of an organic disorder rather than a completely functional derangement.

It should be clearly understood that hysteria, whether in the war or in civilian life, is not a deliberately planned and conscious "way out." It is because the conscious self shrinks from the adoption of tricks that the unconscious mechanisms produce the symptoms which we have described. The adoption of hysterical symptoms should never be taken to indicate that the victim has low ideals. If he had low ideals he would try trickery or any foul means to get what was desired. Because he has high ideals he finds himself confronted with an impossible situation. The mechanism which comes to his rescue is always an unconscious one or we do not have hysteria.

266. Illustrative case of war hysteria. The sequence of steps in hysterical development is well illustrated in the following case:¹

¹ John T. MacCurdy, *loc. cit.*, pp. 105-6.

"This patient was a private, aged 25, who had distinctly low ideals. He fought for six months and claimed to have enjoyed this first period of fighting. It was terminated, however, by an accident when he fell into a deep dugout, fracturing both his ankles, and suffering frost-bite before he could be taken back to the hospital. This experience seems to have given him a distaste for the war. He was back in England for three or four months, and then did not wish to return to France so soon. Even on the way back he began to be frightened at the prospect. He was kept for two months in barracks and then went up the line. He approached the trenches feeling quite anxious and, on arrival, got immediately into a panic but was saved from further difficulties by being wounded through the thigh almost at once. This was a minor injury, but it necessitated his remaining in a hospital for a couple of weeks. This hospital was exposed to occasional shell fire and the patient found that he was constantly starting at the noises and now and again had nightmares of fighting, although he would sleep through many nights without any disturbance whatever. He was then sent back to his base for some time, where he had no more nightmares at all, but was still 'jumpy' when any particularly loud noise would occur. A fear of going back to the line had by this time become a settled part of his character. He was returned for three weeks to the trenches, during which time he was constantly in fear but developed no symptoms whatever. This brief period of fighting was again terminated when he received some superficial wounds from fragments of a shell, and this time he was fortunate enough to be sent back to England for five months. He returned again in May, 1916, and fought until September. During this time one gathers that he tried hard to work up the symptoms of appendicitis and trench fever, but was never able to convince the medical officer that there was anything serious the matter with him. He was frightened, of course, but always slept well and had no nightmares. In the middle of September he saw one of his comrades run over and crushed by a tank and, for the first time, he felt horror. From then on any sight of blood affected him. Two or three hours after this unpleasant experience he was shot in the right forearm (another flesh wound), which caused his removal to a dressing station and then to a rest camp. He was in the latter for two weeks, during which time he felt constantly afraid of returning to the trenches and was very loth to get better. From the rest camp he was sent to the base to join another battalion, and was then thrown into the line again. He was there for three days, during which time he suffered considerably from his horror of bloodshed and from his constant fear. He was therefore much re-

lieved when after only three days' fighting he fractured his left collar-bone and left wrist. He was sent back to a casualty clearing station, and was only too glad to give a pint and a half of his blood for transfusion as he was rewarded for this by being shipped home to England. After a few weeks his left arm came out of the splint, when he discovered (probably not without satisfaction) that his arm was paralyzed. He remained without the use of this limb for five months, during which time all kinds of treatment were attempted. He was then sent to a special hospital, where simple methods of reëducation resulted quite quickly in the steady return of strength to his arm. It is interesting to note that once his hysterical paralysis began to improve he developed some nightmares."

Here we have an illustration of a man escaping from the horrors of service on five different occasions by a wound of some sort. Most of them were of a minor nature which accentuated the suggestion that injury was a good way to escape. Hence, it was an easy thing for a man of his make-up to continue the situation which brought the desired result.

The different forms which these hysterical disabilities took in the army were quite varied. Mutism, stammering, deafness, paralyses of various types, tics, spasms, blindness, anesthesias and hyperesthesias are some of the common forms. For the reason that the symptoms are so diverse the explanation cannot be found in the symptoms themselves any more than we can explain hysteria in civil life by the symptoms. One must look beneath the symptoms to the causes. The basic cause is the wish to escape an unbearable situation, which factor is strengthened by the training that the person receives in the adoption of illness as a means. The news that the armistice had been signed cured more cases of hysteria than all previous treatment combined.

LXIX. TREATMENT OF HYSTERIA

The following discussion is not designed to teach the reader to treat hysteria, but a critical consideration of the methods that have been used will place the whole subject in a clearer light, and will indicate how the development of hysterical personalities can be checked by proper educational methods. The

methods may be grouped under the general terms of punishment, suggestion, analysis, and reëducation. We shall consider each in turn.

267. Punishment. One form of punishment that has been used has been to give the subject such a violent shock that his reflex action to this intense stimulus would convince him that his symptom was not genuine. The stimulus could be a pain stimulus or a fearful situation which he would react from. For example, a patient having a paralysis of both legs would be placed in a narrow passage-way. He would be placed on his feet and partially supported. Suddenly the attendant would apply to his back an electrode of such potential that he would receive a violent shock. The patient would emit a yell of pain and, in attempting to escape the shock, run down the narrow passage, his only means of egress. Having reached the other end and safety he had convinced himself and those observing him that he could run.

While this method works at times if the stimulus is violent enough, it sometimes fails. It certainly is too drastic to be recommended for common practice. Besides, in some cases one cannot be certain that the disorder is functional and to apply such treatment to one who may turn out to have an organic disorder is certainly undesirable.

Other less drastic punishment methods have been used, but with little success. For example, a woman who had an hysterical head twitch which made her head twist violently to the right, was treated about as follows. At the right side of her head, close to her cheek, was placed an electrode, so that if she moved her head to the right she received an electric shock. This checked the movement to the right, but she immediately developed in its place a movement to the left. When an electrode was placed at each cheek, she developed a twitch of her right arm, so that an apparatus had to be contrived whereby she was punished when she moved her right arm. This only served to make her twitch her left arm.

Such experiments have demonstrated convincingly that if the cause of the maladjustment is not removed it is of little

value to punish the individual in such a manner that he must discard his symptom. He will merely develop another.

268. Suggestion. Both waking and hypnotic suggestion have been used in the treatment of hysteria but with disappointing results. The objection to suggestion is similar to that which we have given to punishment, namely, that it is directed toward the removal of the symptom rather than to discovering and treating the cause. Spectacular cures have been reported to have occurred as a result of suggestive treatment, but investigation of the later life of such persons usually shows that, unless the suggestion was directed toward some basic attitude upon which the symptom was based, the subjects developed other symptoms even more troublesome than the ones of which they were "cured."

A good statement of the case against the use of suggestion in the treatment of war hysteria is as follows:

"It has a grave defect psychologically in that it is aimed at the removal of symptoms rather than causes. To the uneducated soldier the symptom has come from nowhere and, if it is removed by the suggestion of electricity or the more direct suggestion of hypnosis, it leaves him through the agency of a miracle—consequently his mind is strongly imbued with the idea that such things can happen, with the not unnatural result that they do happen again. What should be aimed at is much more the training of the patient to control the workings of his mind, steadily combating the idea that there is anything miraculous or lawless about the functions of his body which have gone wrong."¹

The same objection holds in reference to the use of suggestion in civilian life.

269. Analysis. The study of hysteria in military life is instructive in that it furnishes examples of the development of hysterical symptoms in a very simple manner and from a causal background that is easily recognized. Our study has shown us that the significant thing is not the symptom but the wish behind the symptom. The symptom is simply an unconscious scheme adopted to bring about the fulfillment

¹ J. T. MacCurdy, "War Neuroses," 1918, p. 94. Reprinted by permission of The Macmillan Company.

of the wish. In the army the wish was not far to seek. One could be sure that the dominant wish of the soldier was to get out of active service. The wishes that might be back of a symptom in everyday life are of different forms and express themselves in such diverse ways that the explanation of them is not so easy.

The psychoanalysts have emphasized the importance of sex wishes in the development of hysteria. It is quite probable that the sex motif is important, but, even if this hypothesis should be granted, the forms of expression of the sexual impulse are so numerous and variable that to state that hysteria comes from the sexual urge is to say little of specific value. Let us illustrate what we mean. Suppose we find a man who eats with his knife. If we ask, "Why does this man eat with his knife?" One might answer, "Because he has a craving for food." This answers part of our question. It states that a man eats because he craves food, but it leaves out the most important part, which is, why does he eat in the particular fashion observed? He would not eat if he did not crave food, but there is another reason for the particular manner in which he eats. He *learned* to eat with his knife. To state a primal urge does not go far toward explaining behavior.

The same principle must be considered in studying hysterical symptoms. It is true in most cases that hysterical symptoms are connected with the sexual urge. If a man did not have a desire for affection from his fellows he would not develop hysteria. The question is, however, "Why did he develop this particular means of getting affection?"

We have seen this question partially answered in the study of war hysteria. When a spoiled person, who is objectively oriented, who is suggestible, and who is highly emotional, accidentally encounters a means of escape from a distressing situation, he is very likely to take the suggestion and use the means that have been offered to get what he wants. Usually the observer does not see through the ruse because his attention is centered on the symptom and so the subject escapes

detection. This success teaches him to adopt the same procedure or a similar one the next time a dilemma arises. The reason that the observer is so easily misled is that any sickness always carries an appeal to sympathy and it would seem heartless to ignore illness.

Once this procedure is adopted everybody concerned usually becomes an unwitting accomplice in aiding the subject. The physician treats the symptom and often suggests others. The loved ones shower attention on the sick person and if it is a specific thing that is wanted it is usually secured. Even if the ruse is suspected, it appears to be easier to gratify the desire than to put up with the discomfort of illness. Have you ever heard a mother say, "We really must get Mary a car, she will get sick if she does not have it"?

Another thing that characterizes hysteria is that the subject himself does not know that his symptom is a ruse. Usually he feels that the thing he wants should not be demanded because it is contrary to his own moral ideals, or because its acquisition would be an injustice to others. Therefore, he cannot use conscious trickery to get it. For this reason, the motivation must be unconscious to the subject—he is innocent of the tricks he is using. Hence, to deal with such a person the motivation must be uncovered and analyzed.

In many cases of hysteria the motivation behind the symptoms is more apparent to the outside observer than to the victim of the symptoms. If this is so it is possible to get the confidence of the subject and through intimate talks with him get him to understand the nature of his difficulty. The technique that has been most successful for uncovering such conflicts is the method of free association, which has already been described (Section XXI). A conversation in which the subject is encouraged to talk freely is really a free association method, provided the examiner keeps from directing the conversation. In many cases of hysteria such "free association" is more effective than a formal "free association" because the latter may impose a feeling of restraint and lead to even greater inhibitions.

270. Reëducation. And now, knowing the cause of the trouble, the question arises how we can help the victim out of his dilemma. A general plan of reëducation is called for, some of the essentials of which are:

1. *The subject must be taught to obtain a better evaluation of his own motivation.* Hysteria is usually backed by a desire for something which seems unworthy. It is the attempt to ignore such unworthy desires that leads to the symptom. Since they are usually selfish desires the individual must be taught that he is merely in a childish stage of development. Acknowledgment of a childish desire is not a call for remorse, it is a challenge to growth. By such reasoning a person can be taught to view his motives with equanimity.

2. *He must be taught to analyze the different possible ways of getting what he desires.* He will see that his symptom was one method, and a very poor one, and at the same time will be able to select another which he can adopt as a substitute. The objective is to teach the patient to adjust consciously to his difficulties. The reason that the symptom arose lies in the fact that he was afraid to make an adjustment at the time of the original situation. He avoided difficulty by an attempt to forget. This attempt to forget led to the disintegration of the personality we found present in most of the symptoms that have been described in an earlier part of this chapter. Integration means a recognition of facts as they are, even though they may be painful, with the adoption of a definite reaction to them.

271. Summary. To sum up the situation very briefly, hysteria is a spoiled child trick. The patient becomes sick in order to get what he wants. The illness does several things. It diverts the attention of others from his real selfishness and they grant his desire unwittingly. The patient feels that he deserves the attentions he gets and thus avoids the self-opprobrium that would come if he insisted upon his wishes, with no excuse for their gratification. The true hysterical is, consequently, fooling himself as well as others.

It may be thought, when the matter is summed up in this

manner, that the best treatment of such persons is to make sure that they do not get what they want. This does not follow. Denial simply aggravates the desire and leads the patient to the development of more intense illnesses until he does win. If a boy wants candy, you do not cure him of his desire by placing before him a box of sweets and telling him that he cannot have them. Such a procedure simply whets his appetite. You arrange matters so that he can get only as much candy as is good for him, that he gets it by other means than tricks, or you provide him a suitable substitute.

The same principles hold with the treatment of hystericals. Forceful and arbitrary denials of the wishes behind their symptoms is totally inadequate and tempts them to use other tricks. See that he gets what he wants, if it is at all possible, but see that he gets his desires gratified by straightforward means. If his wishes are impossible, provide him with an adequate substitute.

Our whole discussion of hysteria has indicated that the prevention of hysteria is an educational problem. If we teach children that their desires are shameful, that they should not admit to themselves that they want things which are forbidden them, we are teaching them self-deceit and paving the way for the development of the indirect expression of the conflicts which such teaching establishes. The integrated child is the one who is taught to face consciously his own impulses, to recognize the restrictions imposed upon him by external facts and his own ideals, and to make a conscious adjustment of every lack of harmony between these.

IMPORTANT TECHNICAL WORDS

amnesia. Loss of memory.

anesthesia. Loss of sensibility.

anorexia. Want of appetite without loathing of food.

etiology. The assignment of a cause or reason.

fugue. A flight. Used to designate an extended sleep-walking episode where the subject does not appear abnormal to superficial observation.

hysteria. The resolution of a mental conflict by means of the adoption of some disease symptom.

lacuna. A gap or break.

malingerer. One who feigns sickness to shirk duty.

somnambulism. Sleep-walking episode.

viscera. The internal organs, especially those of the trunk.

PROJECTS FOR FURTHER STUDY

1. Make a study of the history of witchcraft, noting how well the description of the witches fits into the symptomatology of hysteria.
2. Sketch the rise of the different hysterical epidemics, especially those of the Middle Ages.
3. Study the different forms of faith healing. Can you get enough facts to warrant the thesis that hysterical disorders are the only ones cured by such methods?

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CHAPTER XIV

DISORDERS OF REGRESSION

When mental conflicts make it seemingly impossible to progress in personality development, some individuals tend to revert to a level of mental integration, normal at an earlier stage, but which at the present time is unsuitable. This tendency is called regression. We shall first examine the extreme forms of disorders which result from this tendency, we shall outline the personality traits of the person who tends to regress, learn how the extremes develop from mild beginnings, and finally attempt to discover some means of training which will prevent the extreme disorders which are based on the mechanism of regression.

272. Illustration of the mechanism of regression. "The tendency to see only the glowing part of the past has been very aptly called by Dr. Frederic B. Knight, 'The Old Oaken Bucket Delusion.' When we were children we hated to get water with the old well-sweep. It hurt our backs; we skinned our knuckles; we almost froze in the winter. Heavy! The thing weighed a ton even when it was empty! We simply loathed the moss that added to its weight. We just ached to get away from the farm and to see life. The future distant scene was the thing that looked pleasant to us then. Now, after we have seen the rough part of life, the golden age lies in the past, because we have distorted the whole thing and see only the pleasant parts. Even the old heavy bucket that we hated so much looks pleasant in contrast to the hardships of the present. So, tired of life, and seeing nothing but trouble ahead, we go back to the 'good old days' and sing:

How dear to my heart are the scenes of my childhood,
When fond recollection presents them to view!
The orchard, the meadow, the deep-tangled wildwood,
And ev'ry loved spot which my infancy knew!

The wide-spreading pond, and the mill that stood by it,
The bridge and the rock where the cataract fell,
The cot of my father, the dairy-house nigh it,
And e'en the rude bucket that hung in the well—

The old oaken bucket, the iron-bound bucket,
The moss-covered bucket that hung in the well.

The following case extract illustrates this. A young girl was in love and was very anxious to marry. The young man she loved was not ready to marry. He wanted to run around and have what he considered a good time for a while before he settled down. This led the girl to fear the consequences of marriage with such a care-free youth and, aided by the disapproval of her fiancé expressed by her relatives and friends, she tried to decide that she would stay single. Yet she could not bear the thought of remaining single indefinitely. She was in a strange dilemma; she wanted to marry and she was afraid to do so. This led to the wish that she did not have any of the tendencies toward love life. If she were only a child again she would not want to marry and the trouble would be at an end. So she tried again to be a young innocent girl who knew nothing of love. She took the same attitude toward the whole affair that she would have taken when she was a pre-adolescent girl, and she seemed to get satisfaction from this for a time. When this satisfaction did not continue, her physiological maturity eventually forcing her to recognize that she was a woman, she attempted to commit suicide. After gaining insight into what she was doing, the girl adjusted her attitude, took a forward view instead of wishing to revert to a childish stage, and has made a satisfactory adjustment ever since."¹

We see in this everyday illustration the essence of regression, which may be defined as the tendency to solve the problems of life by reverting to childhood. This tendency may be found in all degrees from a mild and transient type to extreme and permanent forms. Since it is very common, a true insight into human nature is impossible without a knowledge of this mechanism, a descriptive and analytical study of which will be undertaken in this chapter.

¹ John J. B. Morgan, "The Psychology of the Unadjusted School Child," Copyright 1924, by The Macmillan Company, pp. 144-146. Reprinted by permission.

LXX. FORMS OF EXTREME REGRESSION

As an introduction to our study of regressive disorders, it may be well to consider the various views that have been advanced as to the nature and causes of regression. We shall keep oriented in this discussion if we hold before us the fact that a regressive reaction is essentially a retreat from conflict.

273. The dementia praecox concept. In studying the regression tendency we encounter its exaggeration in a typical mental disorder which has for a number of years been called dementia praecox—so called because the essential characteristic seemed to be a mental deterioration, or dementia, beginning early in life (about adolescence) and leading to a rapid disintegration.

The term *dementia praecox* was coined by Kraepelin, a German psychiatrist, who has devoted much energy to his attempts to classify mental diseases according to their symptomatology. He found a large group of patients whose main symptom *seemed* to be a mental deterioration, who had been called dementias. Since no anatomical lesion could be discovered to account for the loss of intellectual capacity some of these were thought to be of functional origin. With the discovery that dementia paralytica was an organic disease, one great group of dementias was very definitely excluded from the functional group. Today dementia paralytica is not diagnosed without some definite evidence of organic deterioration and a syphilitic etiology.

The elimination of dementia paralytica (sometimes called paresis) from the functional dementias left a large group still unaccounted for. Kraepelin called these dementia praecox, thinking that it was a specific disease which developed in early life and which led to rapid mental deterioration. Upon more careful study of the cases whom he considered to have dementia praecox, he found very great differences in symptoms and consequently subdivided dementia praecox into specific types. This subdivision has continued until he found what he considered to be ten types.

The diagnosis of these types by means of a study of symptoms is practically impossible, so that most psychiatrists confine themselves to four main types; namely, simple dementia praecox, hebephrenic (adolescent mind) dementia praecox, catatonic dementia praecox, and paranoid dementia praecox. Upon close study it has been found that these four are so different that they can scarcely be considered in the same disease category, so that the tendency has been to discard the concept of dementia praecox altogether.

274. Objections to term dementia praecox. Other more weighty reasons have contributed to the disrepute into which the term is falling. It has been found that the dementia in dementia praecox is not at all a true dementia, but that it is really a disorder of personality integration. Besides, the disorder does not necessarily begin in early life as the term praecox implies. The incidence of the disorder ranges from fourteen years to over fifty years.

In spite of these objections heroic efforts have been made to save the name, largely because the field of psychiatry has been dominated, until recently, by Kraepelin's theories, and because of the high regard which his followers entertained for him. For instance, White argues: "It might be satisfactory to think of dementia praecox not as a psychosis in which the factor of deterioration appears early, in other words, a psychosis in which the deterioration is the precocious symptom, rather than an individual in whom the psychosis is precocious."¹ This "reasoning" is obviously an attempt to twist the facts to make them fit a name, whereas we should select a name to fit the facts.

Since the term originated from a radical misconception of the true nature of the disorder it seems best to discard it, instead of trying to preserve it by confusing logical verbalisms.

275. Schizophrenia² as an alternate term. Bleuler has advocated the substitution of the term schizophrenia (meaning split mind), contending that the outstanding characteristic

¹ Wm. White, "Outlines of Psychiatry," Washington, 1926, p. 191.

² Pronounced: skiz'ô-frên'ia.

of the disease is a splitting of the personality. At the same time Bleuler contends that we should rid ourselves of the idea that schizophrenia is a single disease entity. He uses the term in the plural (schizophrenias), because there are a number of disorders manifesting a splitting of the personality, the different forms being based on entirely different personality adjustments.

Bleuler's selection is a happy one because it keeps before us the fact that the disorders it embraces are primarily disorders of the entire personality, and avoids the implication that dementia is an essential characteristic. We are at once confronted with the question as to how inclusive this term should be. Should it include all failures of personality integration? If so, it would embrace hysterias as well as the disorders formerly called dementia praecox. We believe it would make for clearness if schizophrenia were limited to those failures of integration, or cases of progressive disintegration, where there is no organic deterioration sufficient to account for the disorder, but where the cleavage is so marked that there is no known way of bridging the gaps. This, it will be recognized, excludes hysteria, for we have found that in somnambulisms, both natural and artificial, it is possible to bring out the dissociated portions of the personality. To be sure, this is a relative distinction, but this relativity is inevitable; for as we have pointed out, all groupings of personality merge into others.

276. Theories as to the nature of schizophrenia. A number of very conflicting opinions as to the nature of schizophrenia have been advanced. Some of these deserve our consideration.

1. *Arrested mental development.* According to some writers schizophrenia results from an arrest of mental development. The theory seems to be that each individual starts his career with a certain potential, which, in normal individuals is sufficient to tide them over the crises of life and to enable them to progress mentally until some disease or atrophy carries them to the grave. In some individuals the potential

energy seems to be deficient so that they progress normally to a certain point and then cease further progress. The theory has little to support it. Some investigators have thought they found cerebral atrophy in cases of schizophrenia, but hardly in a definite enough fashion to furnish any clear substantiation to this hypothesis. Furthermore, most cases show, not a stationary condition when the alleged potential energy is consumed, as the theory would suppose, but a definite regression. Finally, the theory fails to account for the striking emotional changes which are characteristic of the disorder.

2. *Autointoxication*. Kraepelin, believing the disease to be primarily a disease of adolescence, and noting the relationship of the symptoms to such physiological conditions as puberty, disturbances of menstruation, child-bearing, and the climacteric,¹ thought the disease to be one of autointoxication, in some way related to the physiological functioning of the sexual organs. This thesis has not been disproved, but, on the other hand, there has not been sufficient evidence to substantiate it, in spite of a vast amount of research directed toward this end.

3. *Vicious mental habits*. Adolph Meyer has advanced the view that schizophrenia is built upon a background of vicious mental habits. He was led to adopt this view through the consideration of the observation that although, in many cases, there seemed to be some infection, trauma, or evidence of relationship to sexual functioning, in a similar number of cases such causes were lacking. He says:

“Every individual is capable of reacting to a very great variety of situations by a limited number of reaction types. The full, wholesome, and complete reaction in any emergency or problem of activity is the final adjustment, complete or incomplete, but at any rate clearly planned so as to give a feeling of satisfaction and completion. At other times there results merely an act of perplexity or an evasive substitution. Some of the reactions to emergencies or difficult situations are mere temporizing attempts to tide over the difficulty, based on the hope that new interests would crowd out what would be fruitless worry or disappointment; com-

¹ The change of life from active maturity to old age.

plete or incomplete forgetting is the most usual remedy of the results of failure, and just as inattention and distraction correct a tendency to overwork, so faultfinding with others, or imaginative thoughts, or praying, or other expedients, are relied upon to help over a disappointment, and, as a rule successfully. Other responses are much more apt to become harmful, dangerous, uncontrollable. What is first a remedy of difficult situations can become a mis-carriage of the remedial work of life."¹

On this hypothesis, that conduct originating as a defense mechanism may be organized into a habit system, he shows how schizophrenia is a continuation of particularly vicious defense reactions. This view is rapidly gaining ground so that today we tend to look upon what has been called schizophrenia, not as a specific disease, but as a form of personality disintegration caused by pernicious reactions to difficulties which the patient has encountered.

By pernicious reaction is not meant an essentially unworthy reaction, but one which results in disharmony to the individual. We should remember that our complex civilization imposes ever increasing burdens upon the developing life, in the face of which the marvelous thing is that so many individuals are able to make satisfactory adjustments.

4. *Diverse emotional habits in two types of schizophrenia.* While Meyer thought that the characteristic vicious habits were largely intellectual reactions, there has been increasing evidence to support the hypothesis that the vicious habits are largely emotional in nature. The following study evidences the emotional character of two of the main types of schizophrenia, namely the paranoid and the hebephrenic.

Lewis² studied the physical characteristics of a number of schizophrenic patients and found that the paranoid³ type had very different characteristics from the hebephrenic⁴ type. The physical characteristics evidence different emotional re-

¹ Adolph Meyer, "Fundamental Conceptions of Dementia Praecox," *Brit. Med. Jour.*, 1906.

² "The Constitutional Factors in Dementia Praecox," *Nervous and Mental Disease Monograph*, No. 35.

³ Characterized by delusions of persecution.

⁴ Hebephrenic means adolescent mind. For description see Article 284.

action types. The hebephrenic die of emaciating diseases, such as pulmonary tuberculosis while the paranoid die from vascular accidents. The hebephrenic heart is one-third less than the normal heart, the decrease in size being of the nature of an arrest in growth; the paranoid individual shows a heart weight greater than the normal because of a compensatory hypertrophy. The gonads of the two types are likewise different. The hebephrenic person presents varying stages of regressive atrophy, while the paranoid shows areas of tubular atrophy with normal areas and hyperplastic tubes which indicates a compensation for focal defects. The adrenal cortex of the hebephrenic shows atrophy while that of the paranoid presents the appearance of compensatory over-development. The changes in the thyroid gland are in harmony with those already mentioned.

These findings indicate that these two types of schizophrenia are not of the same nature. One (the hebephrenic) manifests regressive changes and the other (the paranoid) compensatory adjustments. This corroborates a point of view which had already been advanced as a result of clinical study of the different types. We believe that this distinction indicates characteristics which are basic for a study of the two forms. The hebephrenic is a regressive disorder, indicating essentially an attitude of surrender or failure; while the paranoid is a compensatory disorder indicating an attitude of defiance or antagonism to difficulty.

The reader will recognize that the above manifestations are all connected with organs involved in emotional activity. The heart, lungs, adrenals, thyroid, and gonads are all under partial control of the autonomic nervous system and are intimately concerned with the emotional life of the individual. In line with the suggestion from these findings we have the records of the behavior of the regressing and compensating types manifesting two diametrically opposed types of emotional response. The evidence is fairly strong that the regression is emotional in nature and that compensation is largely emotional compensation in those cases diagnosed as

schizophrenia. Whether the physical change causes the emotional reaction, or the continued emotional reactions cause the physical change we need not answer.

5. *Regression as an emotional reaction.* The fact that regression is largely an emotional reaction cannot be too strongly emphasized. Such a regression carries with it motor capacities to such an extent that one is often tempted to reëducate the patient to recover the motor function which is most apparent. The fact that such education is not successful has led observers to consider regressed patients as intellectually deteriorated. The deterioration is primarily emotional and we cannot educate the emotions by teaching the patient some simple motor process. We are frank to say that at the present time we know very little about emotional education. It is in this field that psychology has its next great contribution to make, but such contribution will not come until we recognize that the education of the autonomic habit patterns probably does not follow the same laws as the education of intellectual patterns.

This evidence fits in with the basic symptoms of schizophrenia as ordinarily described, namely, that they are affective in nature. It may be that at a later date some definite organic etiological (causal) factor may be discovered, but so far as we know now it appears to be a disorder built upon habit reactions which are essentially affective. If an organic background is found it is pretty likely to be in the endocrine (ductless gland) system.

In extreme forms of regression the individual may live out the characteristic patterns of the age to which he has regressed. He will play simple games, read childish books, talk with a babyish whine, be interested only in childish occupations and demand the care that a child would claim. One woman who regressed to the infantile level toddled about the ward of a hospital mumbling incoherent baby talk, whined for what she wanted, and spilled her food as awkwardly as would an infant.

In mild forms regressive bits of conduct may be observed

in otherwise well-balanced individuals. A grown woman will take an hour off to get out her dolls and play with them. Another will have a "treasure chest" which she periodically examines and which is filled with trinkets of her childhood. A father will enjoy being a boy again on Christmas and have a grand time playing with the toys he bought for his son. The latter are essentially the same in nature as the severe types. The danger comes in where the individual is so disgruntled with the present and so delighted with the past that the regression becomes permanent and he does not return to stern reality after his little flight into childhood.

277. Characteristic reactions of different forms of schizophrenia. Faced by a difficulty one may do any of several things, or may combine these diverse types of response in varying proportions. He may retreat from the difficulty, he may fight it, he may use some subterfuge to solve the dilemma, or he may alternate between these various reactions. The retreating reaction is essentially the mechanism of regression, the fighting is the one that naturally leads to compensation, while an alternation between regression and compensation gives rise to a dual attitude which has been called ambivalence. Retreating reactions, compensating reactions, and alternating reactions are all found in cases usually placed in the schizophrenic group. The adoption of a subterfuge has already been considered in our discussion of hysteria (Chapter XIII).

1. *Simple schizophrenic reaction.* The response of the simple schizophrenic to difficulties is primarily one of indifference. He is a drifter who takes things as they come. Since he has not made any effort he avoids the stigma of failure. One cannot be blamed if he has not tried. Simple schizophrenia is a failure to progress rather than a regression. Such an individual never has been anything but a child. See Article 283.

2. *Hebephrenic reactions.* It is in this form that regression is seen in its characteristic features. The individual builds no defenses against his difficulties. He has retreated from conflict and fails to see that there is anything to be

disturbed about. He goes back to lower and lower levels of adjustment, may act as a little child who takes absolutely no responsibility in life.

In everyday life we may often observe this mechanism in less aggravated form. A girl will go off to college (a symbol of striking out for herself) and upon graduation will return to her "mamma" to take up life where she had previously left it. She expresses great sorrow that she ever went to college, saying that it robbed her of her childhood and all the "beautiful" things that went with it. She plans her future very carefully so as to avoid responsibility and rationalizes her conduct by such statements as "Mamma needs me" or "Papa is getting old and I must make his last years happy ones." See Article 284.

3. *The catatonic reactions.* The catatonic type of schizophrenia shows two characteristic reactions which may alternate with each other. At first he may make a supreme effort to suppress the undesirable elements that enter into his conflicts. If this succeeds he may make a good adjustment with part of his personality completely blocked off from what is apparent. If he fails in this attempt at repression he may revert into the second characteristic, that of an intense stupor. The catatonic may then be said to alternate between intense struggle and complete surrender to his difficulties. We shall discuss this reaction in detail when we come to study alternating attitudes. See Section LXXX.

4. *The paranoid reactions.* The paranoid is a compensatory reaction. He responds to his difficulties by building up a very elaborate system of rational defense. This compensation usually takes the form of projecting his troubles and blaming them upon others in the environment. An illustration of this type of reaction has been given in Article 127. See Section LXXVII.

From this brief analysis of the different ways in which the four principal types of schizophrenia respond to conflicts it is evident that they are radically different from each other. It also lends weight to the view that the fundamental thing

in none of the forms is intellectual deterioration. Hence the term dementia as used in the earlier name dementia praecox is decidedly a misnomer. We have pointed out the differences between the forms because the question has often been asked, "What is the tie which binds them together to such an extent that they should be grouped under the same term, namely schizophrenia?" The answer is that they are so different that they should not be classed together. It is for this reason that we are treating the simple and hebephrenic types as regression disorders, the paranoid as a compensating disorder and the catatonic as an episodic or alternating disorder.

LXXI. PERSONALITY CHARACTERISTICS OF REGRESSIVE INDIVIDUALS

Since the regressive mental disorders are primarily disorders of personality we should know upon what personality characteristics they are built. In this section we shall describe the traits of these persons. They are introvertive, non-suggestible, emotionally insufficient, docile, and have a peculiar form of absent-mindedness.

278. Introvertive. As we have pointed out in our discussion of the emotions, affective development proceeds from very simple patterns, usually stimulated by simple organic processes, to more and more complex patterns, which are brought into play by numerous external stimuli. We have shown that this development is not produced by any storage of energy which, after accumulating, has to spill over and attach itself to anything that happens to be in its path; but the development is the result of increasingly complex patterns in the autonomic nervous system.

Normally, one has emotional reactions to primitive situations as well as to those that have come to acquire meaning through training. An introvert is one who, as this training proceeds, learns to respond more strongly to stimuli centering around his personal life than to those coming from external situations, particularly from other persons. If this distinction is kept in mind we shall avoid the notion that either the extrovert or the introvert manifests anything reprehensible. The difference is simply the result of a different sort of training.

The introvert, if he meets difficulties too profound for his assimilation, tends to develop a different type of psychosis from an extravert. The introvertive personality is essentially the shrinking personality. He retires into himself because the majority of his emotional reactions are centered around himself. If he should essay objective, social reactions and be successful in such attempts, he is insofar modified toward extraversion. With each succeeding rebuff he continues his adjustment or orientation to himself. In other words, introversion is peculiarly a characteristic of the one who has learned to surrender rather than fight, while extraversion is the reaction of the one who is stimulated to fight any difficulty which confronts him. Thus, introversion and regression are very closely related. After all, we live in a real world and to attempt to retire into an inner world of our own is an extremely unsatisfactory adjustment.

279. Non-suggestible. The suggestible person is the one who is continually trying new things. He gets into a difficulty and will take a chance on almost anything that comes his way to release himself from the dilemma. The non-suggestible person, faced by a difficulty, becomes suspicious of anything different from what is customary. Instead of looking around for a solution in the way of a new device or trick, as the hysterical personality does, he immediately reverts to some type of reaction which he has already tried. If he sees himself worsted he attributes his difficulty to having left the beaten path. His wail is likely to be, "Oh, If I had only not tried this! If I had only stayed home! If I had not taken that man's advice!" and the like. He takes his failures as an object lesson against taking any one into his confidence. He learns it is easier to fail than to try new things.

The non-suggestible individual may pride himself upon the fact that he is not swayed by every new fad. But a little scrutiny will reveal the fact that his extreme conservatism is not based on a rational analysis of the merits of the new as against the old, but is rather the result of his fear of leaving the stronghold of conservatism. Any change makes

him afraid of what is to come next. The non-suggestible is the one who possesses "cut-and-dried" mental processes, who has probably accepted nothing new since his adolescence, and who counts a thief and a robber anyone who attempts to change in the slightest particular his conceptions of life in any of their aspects. One young lady of twenty-five was so afraid that any of her views would change that she attended the church of the most conservative minister in the large city in which she lived and then complained that he was radical.

280. Affective insufficiency. Since emotions are the drive to urge us on to new adjustments, the regressive individual usually has become afraid of his emotions. All they are good for is to get one into trouble. If one could have no emotions, he could placidly go on his way and life would be serene. This is the typical reaction of the prude who is afraid of herself. In this connection, the observer must use care in distinguishing between the emotionally controlled type of person and the one with emotional insufficiency. The one who is quiet may have a tremendous emotional drive, but may be making a great effort to control any manifestation of emotions. Such a person usually does show his emotional energy by little overt expressions which he is unable to control. The regressive person, on the other hand, develops an actual frigidity. He makes no emotional response at least as far as response to social situations is concerned. It is quite likely that what has happened is that the emotions are built into egocentric patterns. However, the organic findings referred to (Article 276, Paragraph 4.) indicate also that in later stages there may be an actual emotional insufficiency.

281. Lack of aggressiveness. This shows itself in both the motor and mental realm. The individual is primarily of the type characterized by James as tender-minded. The compensating individual is exactly the opposite. He is stimulated by opposition to fight, the regressive individual to retire. The regressive personality believes and lives the adage, "Discretion is the better part of valor."

But the regressive individual is flattering himself when he calls his withdrawal from the opportunities and conflicts of life by the euphemistic term discretion. His discretion is nothing more than a fear of meeting a danger squarely. The snail who keeps within his shell may thereby avoid some necessity for caution and possible injury but, on the other hand, he sees little of the world within his shell. The regressive individual, with his lack of aggressiveness never gets a portion of life's pleasures that one would covet.

A young man of this type was offered a promotion which involved different working hours and some responsibility. He refused the promotion, giving as his reasons the possibility of a break in health because of the increased strain that would come with added responsibilities and possible longer hours. Such a person is of less value in this universe than a machine. It is possible to reconstruct a machine, but you cannot stimulate a "human potato" to do things differently.

282. Peculiar type of absent-mindedness. We have indicated that the hysterical is characterized by a distinct type of absent-mindedness which, when developed to excess, may lead to actual dissociation. The regressive individual, likewise, exhibits a form of absent-mindedness, which, on the surface, appears very similar to the hysterical form. The two are, in spite of this apparent similarity, essentially different. The hysterical, in his absent-mindedness, is living out a solution of his problem, each of his symptoms, or his dreams, has specific meaning, when they are brought to light in connection with his present conflict. On the other hand, as far as can be determined, the absent-mindedness of the regressive individual is an absorption in the most primitive type of affective situation with little relation to any ideational content. Whereas the hysterical may be living in a love dream involving a definite love object, the regressive person is lost primarily in the contemplation of his own bodily sensations.

LXXII. DESCRIPTION OF REGRESSIVE FORMS

We should distinctly understand that the above personality characterization by no means implies that every person with this combination of traits will develop a regressive mental disorder. Such a person, with proper training, may develop normally. We simply wish to get clearly before us the type of person in whom a regression may be built. We shall now describe the different types of disorder that develop upon this background.

283. Simple schizophrenia. This is commonly designated in the literature as simple dementia praecox or dementia simplex, although this term, as we have indicated above is meeting with more disfavor as the nature of the disorder becomes better understood. We prefer the term simple schizophrenia.

1. *History of development.* The diagnosis of this disorder is usually based on a characteristic history.

(a) **EARLY NORMALITY.** The simple schizophrenic individual, as a child, usually showed promise of being a normal, well-adjusted citizen, progressed in school normally, seemingly got along with his fellows, took an active part and interest in school and social activities and was generally regarded as a normal child in every way.

(b) **EMOTIONAL CHANGE.** Without anybody, apparently, being able to explain the reasons or even noticing, for a time, the difference, conditions change. The child begins to lack interest in things, he becomes seclusive, cares little or nothing for social activities. His teachers complain that he has become lazy, that he is failing in his work and usually try the traditional methods of coaxing and discipline with no avail. Often he is quite inactive, is apparently dreaming while others are actively interested in their environment. As a reaction to the attempts of his teachers and friends to stimulate him he may either grow sulky or irritable or both in turn.

Now this change does not constitute enough evidence to make a diagnosis of simple schizophrenia. Many young people

at the time of adolescence show the effect of difficulties of adjustment incident to this period. Most persons get over this period with but few residual effects. What distinguishes the simple schizophrenic is that he continues to show the reactions of this period throughout the rest of his life. Consequently, it is only after a long continued display of these reactions that he can be diagnosed.

(c) PERMANENT INERTNESS. What happens when one, for a period of years or for the remainder of his life, appears lazy, uninterested in his work or in society and is indifferent to the things which stimulate the normal person? He becomes a ne'er-do-well. The last stage in the history of these patients is, then, a long drawn out career of shiftlessness. They become hoboes, prostitutes, pseudo-geniuses, cranks, and eccentrics. They harm no one but they never get along. They infest employment agencies, are usually pitied and become the wards of social service agencies. Secure a job for them and, for no *reason* at all, but with any one of a thousand excuses they quit and come back to ask you to help them get another. If it happens that they are born in a family where there is sufficient financial support they become the typical "lounge-lizard" or idle "old-maid." With no financial backing they become "happy-hooligans."

Not all persons indicated in the last paragraph can be called simple schizophrenics. It is only when they have shown the first two stages that they can be so diagnosed. They must have shown promise when younger and then stopped normal progress.

2. *Age of onset varies.* The onset need not always come at adolescence. Bleuler¹ gives a case that became critical at the age of fifty. A man who had been a successful teacher, at the age of fifty began to show a laxness in his work. His discipline relaxed and his teaching became so poor that his resignation was requested. Instead of seeing that the trouble was with himself, he demanded increases in salary and entered into litigation "about his rights." At last he threatened to

¹ Eugen Bleuler, "Psychiatry," Macmillan, 1924, p. 433.

thrash the authorities and had to be taken to a clinic for treatment. At the clinic he became calm and after a period of eight months more of reëducation was again discharged without protest. Since that time he has been working for nearly twenty years at subordinate farm jobs. This history indicates at first an attempt at a compensatory reaction with a latter surrender into the typical indifference and retreat of the simple schizophrenic.

3. *Characteristic emotional dilapidation.* The outstanding symptom in all this picture is an emotional dilapidation. Emotions, as we have found, serve to stimulate one to overcome a difficulty. These people get a permanent emotional indifference, a permanent "don't care" attitude. Many normal people say that they "do not care," but beneath it all they do care and show it by continuing to face and fight their difficulties. One does not hear the simple schizophrenic say that he does not care. His actions indicate that he does not.

There are no other symptoms of any importance in this disorder. In the perceptual field they may show a fleeting hallucination, but it is of no consequence. They build no delusions. They have not enough drive to develop any such defense mechanisms.

It is evident that these persons do not show regression in the true sense, but merely a lack of progress after a certain point. The fact that they drift for so many years with no noticeable depreciation indicates this. Because of this slow development, it is often some years before the true nature of the difficulty is recognized, yet they should be classed as regression cases; for, theoretically, no one can remain stationary. The normal line of development is to move forward and, in this sense, any one standing still is getting behind the progression that is characteristic of the normal individual.

284. Hebephrenic schizophrenia. Hebephrenia is a combined form made of Greek words which mean adolescent mind. Although seventy-five percent of the cases develop before the age of twenty-five the present conception of the disorder makes the actual age of onset unimportant. "It constitutes

the big trough into which are thrown the forms that cannot be classed as catatonic, simple or paranoid.”¹

1. *Emotional deterioration.* The most prominent symptom of hebephrenia is the emotional deterioration. This is much more pronounced than in the case of simple schizophrenia. The individual is indifferent to the things in his environment that would arouse any sort of affective reaction in a normal person. On the other hand, with no apparent reason, he is likely to burst forth with a sort of silly laughter. This symptom is what is called intra-psychic ataxia; that is, there is a lack of coördination between the intellectual and the emotional life.

This type of emotional reaction gives the one who has contact with such a patient a very queer feeling. He feels as though he were in a different realm from the patient, he is not able to appreciate what is going on. This we may call a lack of empathy, a lack of ability to feel yourself into the situation of the patient. This lack of empathy is no doubt caused by the fact that, in reality, the patient is living in a different realm. The process active in hebephrenia is a withdrawal from the realities of life, a hiding within himself. The patient builds around himself a barrier that it is impossible to break down by any ordinary means.

2. *Perceptual insufficiency.* In the perceptual field the hebephrenic apparently has a lack of intake. Upon careful examination it can be shown that he does not lack in perceptual ability, but he is not interested in what is going on and, consequently, takes in little of it. His attention is wrapped up in his own associations and he resists any breaking through of stimuli from the outside world. If he happens to be stimulated by something that is in line with his own associations he is more likely to be cognizant of the stimulus.

3. *Hallucinations.* Usually the hebephrenic is actively hallucinated in the auditory, visual, and cutaneous fields. The hallucinations are customarily disagreeable in content. Voices are heard calling the patient vile names and accusing him

¹ Bleuler, *loc. cit.*, p. 426.

of vile and immoral practices. They see disagreeable scenes and feel themselves manipulated by human hands, or fancy animals are manipulating their bodies. These hallucinations form no consistent scheme, but are often bizarre and extremely varied.

The insistent presentation of these false perceptions aggravates their tendency to guard themselves from the inroads from the outside world. For example, we asked a patient of this sort to sit quietly and gaze into a crystal ball. Immediately, she became panic-stricken and refused to look, covering her face with her hands. We could get from her no reason for her conduct, but it was evident that she was guarding her eyes against what she might see in the ball. The hallucinations are all fleeting, fantastic and the patient makes no attempt to explain them.

4. *Delusions.* There are likely to be delusions of a silly character, not firmly fixed nor supported by logic. They are merely childish interpretations that should not be present when we consider the background that the individual has had. They, in themselves, do not form a prominent or important part of the hebephrenic personality. They are the interpretations of the one who is too indifferent to his surroundings to be bothered trying to get any rational explanation of what is happening.

5. *Associational disorders.* The associations of the hebephrenic individual are disconnected and bizarre. They will jump from one idea to another seemingly unrelated idea so that the one who hears them has not the faintest idea what the connection might be. However, if you get some inkling as to the nature of the internal conflict that the person has, you can sometimes fancy the relationship of these various incoherent remarks to such a central conflict. Hence, the assumption seems to be valid that, while the verbal production is without meaning to the listener, it probably is connected with the central ruminations of the patient. Words are used by the normal person to convey meaning from one person to another. If one gets so indifferent that he cares not a whit whether

the outsider gets his meaning or not, but simply expresses a chance association with what he may be thinking upon, it can be conceived what a jumble would be produced. So here, again, we can understand the weird associations by reference to the emotional deterioration. He no longer cares whether he makes contact with others or not. Objectively the associations may be described as incoherent, irrelevant, sometimes stilted and peculiar. The verbal output indicates a poverty of ideas and often the expressions are so meaningless that they lead to neologisms, that is, the coining of new words.

6. *Conduct.* The conduct is what would be expected from the emotional deterioration with its guarding against the outside world. The activities are purposeless and often silly. Left alone they will sit or stand for hours in the same posture. Give such a patient a mop and tell him to polish the floor and he will listlessly push the mop back and forth over the same tiny spot for an indefinite period or will gradually stop and stand quietly holding the mop in his hand. For example, a group of such patients were each given a mop and started on a circular parade, polishing the floor. When some visitors entered the room the patients paid not the slightest attention to them, but continued their parade. The attendant then called, "Drop those mops," whereupon they with one accord dropped the mops on the spot where they happened to be and then stood there like so many toy men. This illustrates the total indifference they manifest toward their surroundings.

7. *Regression.* The hebephrenic, like the simple schizophrenic, makes progress to a certain point. But, instead of staying at the point of highest achievement, deteriorates and regresses to a stage which is represented by an earlier period of his developmental history. This deterioration is primarily an emotional one, but of course this in turn influences other phases of his mental life so that he regresses in all spheres. He may act as though he were a tiny infant, crying in a silly manner, forgetting to talk, and even how to walk. In ad-

vanced forms these patients may sit, curled in a heap, drooling at the mouth, babbling incoherently and creeping on the floor.

8. *Personal disintegration.* The whole picture of hebephrenia may be summed up in the term "shattering of the personality." We say that the patient has regressed to a childhood or infantile level, but this carries with it a misconception. He is not on a par with a child who manifests the same type of conduct that he does, for the reason that the child is preparing to develop, his reactions are learning reactions, he is integrating with each new experience. The regressed individual does not go back to get a fresh start, as some writers have claimed, he goes back permanently.

This brings out a characteristic difference between an hysterical manifestation and the true regression of the hebephrenic. The hysteric retires into some queer, apparently childish, reaction for a time, but is not content to remain there. In time he will become invigorated for a fresh start. The hebephrenic patient, once definitely regressed, is content to vegetate. He is so enthralled with himself that the world has no attractions for him.

This aspect of the disorder has given it a tinge of hopelessness with medical men and makes it apparent that if anything is to be done to stop the ravages of this particular disorder it must be in the development of emotional attitudes which will prevent its development. It is an educational problem and not a medical one. It may be well, in view of this fact, to trace the development of the regressive attitude and show how it may be overcome by timely training.

LXXIII. PREVENTION OF REGRESSIVE DISORDERS

Because of the very nature of regressive behavior, the victim becomes inaccessible, and is very difficult to reach when in an advanced stage. For this reason, prevention rather than cure becomes the important consideration. The main factors to be considered in prevention are: first, an understanding of minor manifestation so that beginning attitudes may be discovered; second, a recognition that regression depends upon a develop-

ing attitude, which implies that the attitude may be changed by proper training; and, third, the discovery of the cause for the regressive tendency with the adoption of training to eliminate it.

285. Early signs of regression should be recognized. Every mental conflict that a person encounters may bring to light varying responses. Each possible response must be understood either as an exact repetition of the type of thing that served on a previous occasion or as a recombination of previous reactions. Before a definite reaction is made there may be tentative incipient reactions which often, when observed carefully, indicate the nature of the struggle the person is having. Such information, when rightly used, may serve as a guide so that the one in charge of the person may influence and guide his responses in the way which would be the most beneficial to him. If we thus obtain evidence that the person is tending to regress we can help to balance his reactions by making a different solution possible. If he is overcompensating, or adopting queer subterfuges we can offer him a better outlet to his dilemma.

In this connection, trivial symptoms are often of great value. The danger in emphasizing them is that the novice is likely to attach too much importance to them and assume that the process has advanced further than it has. For example, a certain woman forgot her married name in a period of absent-mindedness. At another time she played with her wedding ring, pulling it off her finger and putting it back on. Upon returning home one evening she found herself at the door of her childhood home in another part of the city from the home she had occupied since her marriage. When asked about her husband, she customarily went to excess in her praise of him and was very vehement in her avowals of marital bliss.

All these things, coming in the life of one woman, while they are trivial, indicate, because of their cumulative force, that there was probably something wrong with the adjustment of this woman to her marital situation. It indicates that she

needs to understand things better than she does and thus be enabled to adjust to them. It does not furnish evidence, as some novices have been heard to say, that she wants to get rid of her husband and that she should get a divorce. They are merely clues, danger signals, if you please, which should be heeded if the person possessing them is going to avoid disaster. Often the difficulty giving rise to such a symptom or set of symptoms is a trivial thing which could be adjusted if an attempt were made. It is the shirking of responsibility for their significance that makes the trouble.

The importance of regarding such slight tokens as indicators of trouble without jumping at conclusions is extremely important in working with regression symptoms. If trivial symptoms are ignored the disorder progresses to a serious stage before it is discovered. On the other hand we have found that if we suggest to a teacher or parent that a child has introvertive tendencies and she knows that these may lead to such a disorder as hebephrenia, she immediately infers that she has a child who is hopelessly ill or that we are wrong in our observation of symptoms. The observation of minor symptoms does not mean that the child is in a serious condition. We must be able to see the trend that the child is taking without assuming that he has arrived at his destination. In mental disorders there has been too much of a tendency to push a person in the wrong direction. This should be replaced by devoting our energies to getting them on the road to mental health.

286. Recognition of regression as developing attitude.

The diagnosis of schizophrenia (or dementia praecox) is a signal for despair to the ordinary medical man. The reasons for this are apparent. As the patient progresses in his disorder, he withdraws more and more into himself until he merely ekes out an existence or vegetates. He will respond to nothing that the examiner may say to him. A mental case certainly cannot be treated if he will not talk or if he only responds by grunts or incoherent mumbling. Even in the early stages one feels himself barred off from the inner life

of the patient. If he talks the examiner knows his conversation is mechanical and meaningless. He will giggle when there is no occasion for such a response, and, conversely, when you give him something to laugh about he will remain totally indifferent. He cannot even be made sympathetic enough with us to laugh at our jokes.

All this was a great mystery when the disorder was thought to be some specific disease. All the physician could do was to observe helplessly as the symptoms increased in intensity. With the conception that the disorder is based on vicious emotional habits we must assume that these habits had a beginning somewhere in the patient's life. Now, if we can get enough evidence as to the nature of these habits in their incipient stages, and if we know something about emotional education, we may be able in the future to prevent a number of these cases from developing into serious forms.

The notion that the disease begins at adolescence is in all probability wrong. Emotional habits begin long before adolescence. What is nearer the truth is that the child learns to take a regressive attitude when he is very young. This tendency, having been fixed by the time he reaches adolescence, dominates him when he faces the severe adjustments that adolescence entails and, not willing to cope with them, he retires into himself and the vicious work takes a violent leap forward.

287. Begin reëducation early. There is fairly good evidence that we have introvertive tendencies already developed in very young children. The evidence is likewise strong that such types may be changed to balanced individuals by proper treatment. The work in this field has not advanced very far but there is enough positive evidence to give it a very promising outlook.

To illustrate what may be done we cite a case which came to our attention. A boy of six and a half years of age was brought to our clinic by his mother, grandmother, and the school nurse with the complaint that he was feeble-minded. They requested an examination so that they could be sure of this assumption and thus be guided in their treatment of him.

An examination of the boy's intelligence revealed the fact that he was normal in this respect.

Why did they think he was feeble-minded? They reported that he sat listlessly in the class room, paying no attention to what the teacher said, or what the other children did. On the playground he was just as indifferent. He could be found off in a corner all alone, not even watching what the rest were doing. If the teacher or anyone else spoke to him he would answer mechanically. He seemed drawn up into his shell and no one had been able to probe beneath his defensive indifference.

When we talked to the boy these facts were verified. If we asked some question that could be answered mechanically he would respond. Since most of the test situations were of this sort he made a normal record. We discovered, in spite of his apparent coöperativeness, that, when a question had even a remote personal bearing, he would not respond. He would either fail to answer at all, try to divert our attention, or simply remain in total indifference. Here was a boy who showed at this early age the symptoms that are often attributed to beginning schizophrenia. What was back of it?

It was discovered that his mother had unwittingly started this tendency. Before he began to attend school, she informed us, he had been much more alive and playful. After much coaxing she confessed what happened two months after he began his school career. A neighbor boy informed her that her son had done something on the playground that was quite a shock to her sensibilities. When he came home she quizzed him about it, but he at first denied any knowledge of the affair. She coaxed him and teased him to confess to her and, after two hours of continual persuasion, he did acknowledge his guilt. Whereupon, she informed us, with a gleam in her eye and her fists clenched, she gave him the "whipping of his life." She wound up her tale with the remark, "And he has not done it since."

She had successfully conditioned him against the repetition of an act which was pernicious to her, but in doing so she

had made him distrustful and started him on the path toward introversion and withdrawal from others.

We worked with the boy for six weeks, trying to break down this attitude and replace it with one of trust. We made known to him that we knew what he had done. We made him feel that we did not care, that we were his friends and would not punish him for anything he did or said, all in an endeavor to win back his confidence. It was a long, hard struggle but eventually we won. He grew less and less suspicious when he found we had no underlying motive in trying to get him to talk. When at last he was convinced, he changed his attitude entirely. He brightened up in school, he made his grades easily and again joined his comrades in play. The mother was delighted with the result and succeeded in winning back the child into her confidence.

Of course, we cannot argue from this that we cured a schizophrenic patient. But, it is certain that the boy had started on the road to the development of a regressive attitude. We have a feeling that quite a number of children who are judged to be feeble-minded are of this type. At any rate, it suggests that the place to begin treating regressive cases is before they have become established in their inaccessibility, for, once started on the path toward seclusion and hate of others, they soon become so out of touch with their environment that we cannot get to the root of their trouble.

IMPORTANT TECHNICAL WORDS

climacteric. A period in human life in which some great change takes place. Specifically, the change of life from maturity to old age.

endocrine glands. A group of ductless glands which pour their secretions directly into the blood stream.

dementia praecox. Primary dementia. A name applied to a group of mental disorders whose main symptom was thought to be an early and rapid mental deterioration.

gonads. Reproductive glands.

paranoia. Mental disorder characterized by delusions, usually of a persecutory nature.

regression. The tendency to solve the problems of life by reverting to childhood.

schizophrenia. Literally a split mind. Mental disorder characterized by personality disintegration.

vegetate. To live a passive existence and do little but the things necessary to maintain life.

PROJECTS FOR FURTHER STUDY

1. Visit some institution for mental disorders and observe the manifestations of regression that the different patients show.
2. Try to conduct a conversation with a case which has been diagnosed hebephrenic dementia praecox. Notice how difficult a task such a conversation turns out to be.
3. After you have decided about the level of childhood to which a patient has regressed, carry on an extended conversation with him and keep a detailed report of the sort of things he will talk about and his reactions in general.
4. After your return home, find a child of about the age corresponding to the level of the patient and converse with him. Make a report of the differences you find between the child and the regressed individual.

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CHAPTER XV

COMPENSATORY DISORDERS

While the mechanism of regression, which we considered in the previous chapter, is essentially a response of surrender, compensation implies active resistance against yielding to the forces which precipitated the mental conflict. In studying this topic we shall consider how compensation operates, the forms that it takes, the abnormal degrees to which it may develop, the disintegration of the personality to which it may lead, and finally, what may be done to prevent compensation abnormalities.

288. Illustration of Compensation. There is so much said about selfish mothers-in-law that it might be refreshing to hear about one who was as unselfish as could well be imagined.

About a year after the marriage of her daughter this woman came to live with the couple. She at first demonstrated her generosity in a way that was quite gratifying, but which soon aroused wonder in the minds of both daughter and son-in-law. They frequently invited her to ride with them in their car, but she always found an excuse to stay at home. Having exhausted all her excuses, on one occasion, when they invited her rather insistently, she was reduced to the necessity of telling them that she did not care to accompany them for fear that her presence might interfere with their pleasure. No amount of assurance on their part that they would be delighted to have her with them had any weight with her. She stayed home and sent them off. Truly she had been generous, but one can well guess the state of mind of the couple as they

went off alone, permitting the ultra-unselfish mother-in-law to remain behind.

On another occasion she had roasted a ham for Sunday dinner. The meal promised to be a most delightful one until the mother-in-law insisted on taking only a tiny piece of fat, arguing that she had roasted the ham for them and that she wanted them to enjoy it. They countered that they would enjoy seeing her eat some, that there was more than they could eat for days, that they would sooner have it eaten before it was old, but all to no avail. She insisted on her martyrdom and ate the tiny bit of fat. She seemed to be unselfish, but was so painfully so that she made the others unhappy.

Why was this woman so painfully unselfish? Earlier in her life she had been extremely selfish. She had dominated her husband and children for years, her only consideration being the attainment of any whim she happened to acquire. After the death of her husband she had gone to live with her married son, and, carrying on her customary domination, came within an ace of disrupting their home.

Being an unusual type of person, this woman perceived what she was doing and voluntarily left the home of her son and lived for a number of years alone. After quite a mental struggle she acceded to the request of her daughter to live with her and her husband. She went with the definite determination that she would not interfere in the slightest with their happiness. Strangely enough, because of her fear that she might be selfish, she could not strike a balance, but had to go to the other extreme, not realizing that she could make just as much unhappiness by a display of martyrdom as by manifesting selfishness.

This illustrates the characteristic token of compensation. Whenever a person manifests any characteristic to an extreme, consider the possibility of compensation of the opposite trait.

LXXIV. ANALYSIS OF MECHANISM OF COMPENSATION

In order to understand the mechanism of compensation we should examine the nature of the tendency to resist opposition

and the way in which this tendency manifests itself in varying circumstances. Let us keep in mind throughout this discussion that a compensatory reaction is essentially a fighting reaction, even though the fighting may take diverse forms.

289. Why men fight. Fighting is a natural response to opposition, or threatened failure.¹ It is found in the most elementary organism, and varies in complexity rather than in fundamental nature as we advance on the animal scale. In most animal forms, fighting is largely a physical demonstration, but, when we come to human beings, most of the fighting is done by means of mental processes rather than by any external expression of dynamic energy. Just as an animal fights anything which is inimical to its well-being, so a personality fights anything that tends to disrupt it, anything which tends to thwart it or stultify its purposes. If the person has shrewdly analyzed the situation his fighting may be correct and prudent, but often he is in error and his fighting unwise and misdirected. Man has to learn when, what, and how to fight, lessons which many of us never learn well.

Some individuals are more susceptible to the disrupting influences of varying experiences than are others. We have shown that integration of personality involves an adjustment to each experience as it arises. Each such experience, since it modifies the personality, may, in one sense, be regarded as an inimical or beneficent experience according to whether the modification is acceptable or not, whether it is satisfying or annoying. If the criterion of acceptability is good we may expect an ever richer personality to unfold as the years go by. If the criterion of acceptability is unfortunate we may look for the development of a personality twisted or disintegrated in one way or another. Too often we attempt to instill in a child the ideal that it is best never to fight, rather than to teach him to discern the proper occasion to fight. Just as the fighting animal is the one who has been unfortunate in his contacts and so is on his guard against future experi-

¹ John J. B. Morgan, "An Analysis of Effort," *Psych. Rev.*, 1920, 27, p. 104.

ences, so the personality who has been injured in his experiences tends to be on his guard and to fight anything which looks like opposition.

290. Types of resistance. Such fighting may be of two types. One is a frank struggle in which the individual gets a thrill from the conflict. He is stimulated by opposition and at the same time enjoys it. If he should get the worst of it, he is a "good sport" and takes defeat good-naturedly. The other type is the individual who is filled with fear with each new struggle. He dislikes the conflict and fights only because he can see no alternative. In other words, he is the individual who has the same dislike for fighting that the regressive individual has, but at the same time has a greater fear of regressing than he has for fighting. He hates to fight; but, he cannot run, so he must fight. This type of fighter is the one who goes to extremes, fears the issue, and for that reason is excessive in his fighting. This extreme resistance is what leads to compensation. The normal man enters a mental conflict with confidence and makes the best of any situation. The one who compensates lacks confidence, he is driven by fear and not by any sense of adequacy for the conflict. He fights because he must fight.

Man's fighting often takes many curious and disguised forms. We tend to think of a fight as an exchange of physical blows or as a verbal debate, but fighting may take the form of gossiping about our enemies, buying a better car than the one they drive, outdoing them professionally, poisoning their friends against them, imagining what we should like to do to them, wishing and expecting their downfall either in this life or the life to come, poisoning their dog, and the like. In all such reactions, the significant thing is not what we do to our enemies but how our method of fighting affects our own personality. If it becomes twisted as a result of the conflict we have lost no matter how great the damage we have wrought upon our enemy. These same principles apply when it happens to be some mental attitude or tendency within ourselves that we are fighting.

291. How compensation operates. A combat is the background for compensation. Let us see how it operates.

1. *The feeling of inferiority.* The feeling of inadequacy, or the fear of defeat, is certainly a very real factor in the mechanism of compensation. When developed strongly, it leads to an intolerable tension, an urge to be rid of it which dominates the whole individual, and drives him to search for some means of escape.

Most of us, on occasion, have had impressed upon us a recognition of our incompetence in comparison with the accomplishments of others. We can remember the emotions which surged through us when, after a brilliant recitation by one of our classmates, we made a miserable failure. We felt humiliated whether our classmates snickered or showed sympathy. If we have professional ambitions, how small we feel when we see the performance of a professional in our chosen field.

Our cringing moments, painful as they are, are likely to be fleeting. But if we can imagine these feelings persisting and pervading our every thought or act, we shall get some estimate of the misery which is suffered by one who chronically is the victim of an inferiority feeling. Such a person will go to any lengths to rid himself of the misery which is his. In a broad sense compensation covers the violent reactions an individual makes in defending himself against these feelings of inadequacy.

Adler¹ argues that feelings of inadequacy are produced by an inferiority in some organ of the body. He cites many examples to show that in marked cases of compensation there is this factor of organ inferiority and, on the basis of these illustrations, draws the conclusion that it is always present. He makes the reaction a biological reaction, contending that the psychic life comes in and makes up for the deficiency in the physical organism.

We believe that a true organic inferiority, such as his

¹ Alfred Adler, "A Study of Organ Inferiority and Its Psychological Compensation," *Nerv. and Mental Disease Mon.*, 1917.

theory demands is not essential. The notion of inferiority can be developed only by comparison. If one is not comely he does not learn this fact by studying himself in the mirror, but by comparison with other individuals. One learns he is a weakling only when he sees the vitality of another more fortunate person. Hence, the feeling of inferiority is the result of experience, the result of a comparison of one's traits with those of another. For this reason, one need not possess an actual inferiority in order to have a feeling of inadequacy. A boy with an intelligence quotient of 110 may feel inferior if he is thrown only with boys with intelligence quotients of 150 and above.

The following case illustrates this mechanism. A boy was brought to the author's clinic for examination by his mother, who stated that he was mentally deficient. She was afraid that in some mysterious manner she was to blame for this and wanted us to suggest the best course to pursue in his education and in giving him vocational direction. This boy certainly felt that he was intellectually deficient. He prefaced all his responses to test questions with some such remark as, "I am not very good in that." Asked his grade in school he replied, "I am in the fifth but I should be in the sixth, I am not very good in school work." The test gave him an intelligence quotient of 105. He was not intellectually deficient but he definitely felt as though he were, and his mother was sure that he was. We discovered that this child had a sister several years his senior who was unusually bright and who spared no pains to impress this fact upon her younger brother, with the inevitable result that he felt woefully inferior. This is not a rare case. It merely illustrates what is happening on all sides. We judge ourselves not by our absolute or true values but by comparison with others.

Most of us are very poor judges, either of ourselves or of others, a fact which paves the way for many unjustified miserable feelings and which likewise, as a means of compensation, leads us to overvalue some quality in ourselves which a saner view would tell us does not warrant conceit.

Furthermore, our opinion of the relative value of our traits follows no fixed order. One may consider his mental qualities as the most important, another his emotional stability, another his physical prowess, another his pulchritude, or another his avoirdupois. Society and education tend to fix certain relative values, but they are not always successful in this. We cannot assume that if a person is dull that he must feel inferior on this account. By no means do all dull individuals feel inferior because of their intellectual deficiency. We may feel sorry for a person who lacks a quality that we value highly, but many times he does not need our sympathy, for he may not be troubled by his deficiency.

2. *Overcoming the feeling of inferiority.* Keenly sensing his inadequacy, one may fight to overcome it or adopt a scheme to hide it from himself and others. Adler contends that the urge toward such an adjustment is a fictitious goal of superiority that the individual sets up. He calls this goal the "masculine protest," by which he means that the goal of each individual is to be a "man." This is another unwarranted assumption. One does not need to formulate a goal in order to fight against an undesirable situation. Why should we assume that the cat which fights the dog has formulated a fictitious goal of superiority over the canine species before she can fight? She fights because she is angry and afraid, she fights to escape from the undesirable situation, and the outcome is always problematical. We fight our inferiorities because we do not enjoy the odious comparisons which arise as long as the inferiority is present. We crave release from the undesirable tension which the inferiority causes us. From the outsider's point of view there may be a goal, the fighter does not need to image it.

3. *Satisfaction selects the solution.* Almost all individuals who have a definite feeling of inferiority attempt various means of defense and not all end in the same result. We have already seen how some individuals adjust by regressing. They ignore the facts and so obtain release from the unpleasant situation. The fighter adjusts by resisting the situa-

tion which to him seems to produce the feeling. Naturally, if he can excel, he has solved his problem. Hence, it is natural that in many cases the solution should take the form of compensation. If one is weak physically, to develop physical prowess may be a solution, a form of direct compensation. A girl who had a fear that she was developing tuberculosis escaped her feeling of inferiority by developing the greatest chest expansion in her class. The only reason she went to this extreme was that she needed very convincing evidence in order to obtain satisfaction. It is absurd to assume that the victim of a feeling of inferiority reasons that he must excel and then sets about to do it. He is impelled to fight as long as the feeling remains and it usually remains until excellence is achieved, consequently, he cannot rest at any half victory.

The ordinary individual tries various methods of adjustment. The one he tends to adopt, whether compensation or any other form, is the one which happens to bring him satisfaction. If the first solution tried is not satisfactory some other solution is tried, and so on, until a satisfactory, or at least a tolerable situation is reached. Much of the ceaseless striving of humanity is, in essence, a concrete portrayal of this psychological mechanism.

LXXV. FORMS THAT COMPENSATION MAY TAKE

Compensation may take various forms, five of the most important of which we shall describe. The form depends not upon any conscious selection, but largely upon chance. If opportunity for excellence comes in any one of these directions, that is the one that is likely to be cultivated. Observe yourself and your fellows and you will see compensation at work.

292. Direct overcoming of the handicap. If it is possible to excel in the trait in which the person has felt inferior, one has probably made the best solution. Many of life's greatest achievements have been built upon this foundation. We are told that Demosthenes, for example, fought for years to overcome a speech defect and was rewarded by becoming a wonderful orator, an achievement which greatly enhanced

his social value. The danger in this solution lies in the fact that the defect may be so real and so profound that in spite of the greatest efforts the individual fails. Such a failure is extremely bitter and may lead to fatal results. For this reason, one should use care in encouraging this type of adjustment. It must be remembered that when a person is driven by a feeling of inferiority, partial success is equivalent to failure. What may appear to the outsider to be success may not be so for the victim of the inferiority feeling. We cannot expect him to adopt our values in this respect and, unless it is pretty certain that he can excel in the field in which his inferiority lies, he should not be encouraged in direct compensation.

293. Substitution of another trait. The compensation for deficiency in one respect by attempted excellency in another is usually adopted only when the feeling of inferiority is so marked that the subject gives up hope of excellence in the trait or capacity in which he is, or thinks he is, deficient. If this adjustment is made deliberately, with full recognition of the motivation, it usually is rather effective. In many instances, it is adopted without any clear conception as to the reason and in such cases may have dire results.

The subject usually enters upon this plan of adjustment with a desperate urge to succeed. The reason for this urge lies in the fact that he has admitted his failure in one respect and consequently has the feeling that if he fails in this second attempt he is surely lost. This leads to a feverish anxiety to excel in the compensation which he has adopted. Everything will progress to his satisfaction as long as he can convince himself that he is excelling. Let a suspicion enter his mind that he is failing and he will go into a panic and, either give up in despair, or make a still more desperate attempt to succeed.

Actuated by this motive, such a person makes himself hated by those with whom he works because he tries to ride roughshod over all his comrades. Nothing delights him more than to see some one humiliated and nothing makes others hate

him so much as to see the way he delights in seeing their failures. His comrades notice that he is rather queer in the way he does things, but usually they do not understand what is back of his seeming heartlessness and arrogance.

It is very easy to find a boy, who has had impressed upon him the fact that he is weak physically, adopt as a compensation the determination to excel intellectually. If he is bright he may actually succeed in winning the admiration of his teachers and parents; but he carries his success with such ill grace that he loses, more and more, the friendship of his fellows, and becomes ostracised.

Teachers should attempt to forestall any such situation. The reason a boy feels so keenly his disappointment over physical deficiency is because the other boys taunt him. He gains no more respect from the boys by his intellectual arrogance, so, even in his attempted compensation, he is losing in the main issue, which is, of course, to be a person of consequence in his natural group. The teacher should try to make such a boy adjust to his comrades rather than encourage him in his introvertive tendencies merely because he does excellent school work. Perhaps he would not be quite so good a student if he adjusted to the other boys, but he would have a more balanced personality and that is the goal toward which the teacher should guide him.

While one should avoid snap judgments as to the motivation of human behavior, it is possible to note evidence of compensatory reactions in many of those about us. A man who is browbeaten at home is very likely to be domineering, when opportunity offers, to those in his employ. The man who has just been made second lieutenant is the most punctilious in the donning of his regalia, and is far more apt to insist upon correct salutes from privates than the general himself. The executive who is not quite sure of himself is the one who is most anxious to have a private office, with numerous call bells to bring his subordinates running. He demands stationery with his name in a conspicuous place upon it and becomes quite irritated when someone misspells his

name. The guest of a hotel is much more likely to be impressed with the importance of the bellboys and elevator boys than he is with that of the proprietor. If only we could keep before us the meaning of such conduct on the part of our fellows we should get less of irritation and more of amusement from life.

294. Substitution of an imaginary victory. A third type of compensatory reaction is the substitution of an imaginary victory to make up for failure in meeting the real situations of life. It is easy to win a victory in one's imagination. Why face the difficulties of an actual situation when one can have such a glorious time conquering all obstacles in the world of phantasy? To use an imaginary picture as a guiding principle to direct one's energies toward success is highly desirable. To adopt it as a defense against admitting facts is most unprofitable. One need not go far to find illustrations of this type in everyday life, but the following extreme case will show where such a procedure may lead.

Upon making a motor trip through southern Montana, the author encountered an old man living alone in abject poverty on the top of a barren plateau. He had gone west when a boy and had purchased a bit of land upon this plateau with the hope that some day it would be irrigated. He wasted his life upon this hope and was still visioning his wealth when the irrigating waters would make his plateau productive. He told us how a dam was to be constructed in the Shoshone valley which would bring him water. He painted in vivid colors how he would lay out his fields with orchards. He visioned the grain fields so glowingly that one felt that he had a wonderful future if he could only live long enough to realize it. A little inquiry revealed the fact that the Shoshone dam had long since been built, but that his fields were miles and miles away from this project and were far higher in altitude than the dam itself. It would have been cruel to disillusion this old man, even were such a thing possible, but how futile to spend a whole life waiting for the fulfillment of an impossible dream?

Inveterate novel reading often cultivates this type of compensation. The young girl who identifies herself with the heroine who goes through thrilling, but impossible, experiences is poorly preparing herself to meet life as it is. The same thing may be said of the person whose sole accomplishments are the imaginary ones into which he projects himself as he watches a movie hero or reads a detective story. Such imaginary thrills lead to a species of psychic dissipation, less actual achievement, the need for more imaginary thrills and so on in a vicious circle. Imaginations should lead to productivity not to mental intoxication.

The way to prevent a child from developing such a tendency is not to bring him to reality with a jolt, but to teach him that a taste of real conquest is more comforting than the satiety of a futile dream. Teach him the joys of success and he will not fly to imagination for his pleasure.

295. Blaming others for failure. To blame others for our failure is probably the most pernicious type of compensation. It is pernicious because it brings so much satisfaction to the individual who adopts it, because it is so hard to deal with, and because it is usually accepted as a legitimate excuse for failure by those who hear it expressed.

It begins in relatively simple forms. The child, when accused of breaking a rule, excuses himself by saying that the other boy made him do it. If he fails to get a job for which he applied, it is not because he is poorly qualified, but because the boss had a relative whom he favored. Politics, business, everything in life is organized by graft and our poor victim of failure is too noble to stoop to such means. If he is asked to state specifically any evidence of such graft he is at a loss to do so, but hides behind meaningless generalities.

Strangely enough, he is usually pitied and an attempt is often made to find the one who is guilty of such oppression. A teacher sidetracked by any such excuse is only fostering in a child a most pernicious habit. Instead of searching about to determine whether the statement is true, she should concern herself with such questions as: "Why is he trying to blame

others? In what is he failing that he should adopt such tactics? Can I help him to succeed so that he will not need to use any such excuse?" If she can give him a taste of success she will find that the tendency to blame others will wane.

296. Reforming others. The one who is a failure may gain some satisfaction from the obvious fact that, no matter how deficient he may be, there are others who are still more inferior. We always judge ourselves, not from any absolute standard but by a comparison of ourselves with others. It is not so important to know how much money one has as to know that one has more than his fellows. Even though a girl may be homely she will feel superior if she is less homely than her friends.

Such satisfaction is increased if the comparison happens to be in the moral realm. Since differences are so intangible in this field it is necessary to adopt some method to convince oneself and others that the difference is there. A very good plan to accomplish this is to try to bring the other people up to one's supposed level. The fact that a person is engaged in such a task implies that he is on a higher plane than those he is trying to reform. This form of compensation has the added advantage that, at the same time it is convincing evidence that he is of a nobler order than most people, it gives him a mighty urge to retain his position. He dares not err in the slightest or he would become a laughing stock. While some forms of compensation are weakening to the one who adopts them, this type has a strengthening factor. This is not meant to imply that it is the best form of adjustment, for, while it is advantageous to the one who adopts it, the fact that reformations may be motivated by such mechanisms makes for disturbing cross-currents in the flow of human progress. The reformer thus motivated can often be detected by the fact that he is inconsistent in his conduct.

These different types of compensation should make clear to us the basic mechanism of this form of adjustment to threatened failure. We are now ready to examine some rather

extreme forms of mental disturbance that result from an overdevelopment of compensation.

LXXVI. ABNORMAL DEVELOPMENT OF COMPENSATION

The following discussion will be much clearer if we keep several important facts about compensation in mind. (1) It is always a fighting reaction. The fact that one fights indicates that he is at least threatened with failure and feels his strength slipping. (2) A feeling of inferiority is always back of a compensation reaction. (3) Another point is that the fight is not against the weakness but against the factor which is supposed to produce the weakness. We shall discuss seven such factors. If the person can be made to adjust to the weakness itself he will probably make a better adjustment than compensation offers, but he compensates to save himself the pain of confession of his weakness without having something to offset it.

297. Reaction against supposed ignoble heritage. The first objective factor which people blame for their inferiority, which we shall discuss, is supposed ignoble heritage. The notion that one's parents may not be one's real parents is very common. "Am I your really own child?" is a very common question. The causes for such doubts are not far to seek. We see adopted children kept in ignorance of their parentage. We hear whisperings of babies being misidentified in maternity hospitals, of babies being left on doorsteps, and the like. What assurance have we that our position is not a similar one? Such doubts may arise very readily.

Various things conspire to make us dissatisfied with the parents we have. Such experiences may lead to a wish, at times, that we had other parents than the ones we now have. Such a chance wish is strengthened by the emphasis placed upon the importance of heritage. We find many children building imaginary pictures of parents of a very noble sort, which is a defense against the admission that they are rather common individuals. If their parents are of the sort they imagine, they are genuinely noble persons. Such visions are usually hidden by the children who harbor them, because,

if they give expression to them, they are immediately reprimanded in no uncertain terms. Get the confidence of children and it is surprising how frequent such phantasies are.

Now, if one is going to select parents different from the ones that are in the home, it is only natural that a lofty selection should be made. It follows, when such a phantasy is adopted, that it usually involves an increasingly high selection. A child may begin by choosing some neighbor to whom he takes a fancy. But he soon discovers that the neighbor has flaws of character and he must adopt some more perfect individual. This leads to the selection of some great character and often finally of God himself. In almost every psychopathic hospital in the country can be found one or more individuals who claim that they are of divine birth. Some of these people are content with a mild insistence upon their delusion. Others take steps to convince others that their belief is real and may become active in drawing followers who sustain them in their belief.

That such a delusion of personality transformation should become very firmly fixed is not surprising, for it can be seen that the only way to correct it involves an admission, on the part of the patient, that he is inferior to the personality his delusion has enabled him to adopt. His delusion has its inception in an attempt to escape from such an admission, and, unless some vastly better solution is offered, he probably will adhere to his false belief.

We believe that such a delusion can be checked if the treatment is begun in time and if care is exercised to use gentle means. Usually one who comes into contact with such a person even in a very early stage, uses the very brutal method of trying to convince the individual that he has grave defects and points to these as evidence that his belief is false. Such rough methods only serve to drive the person more vigorously into his delusional system.

When a teacher finds a child who is beginning to express grave doubt as to her parentage, who is getting an excessive thrill by dreaming of adoption into some royal family or in

Cinderella stories, she should recognize the beginnings of this compensatory mechanism. The solution is not to tell the child that such phantasies are bad, but to make life so happy that she will not want to be a different personality from what she is. Teach such a child that, after all, it matters little who our parents are. It is what we make of ourselves that counts.

298. Reaction against ignoble impulses in self. It is always a shock to one of high ideals to discover that he has impulses that do not conform to those ideals. Where do they come from? He wants to discover some source outside himself and readily arrives at the conclusion that such impulses are due to the suggestions of others. The natural compensation for such a deduction is to become more careful in accepting suggestions from others. This results in an extreme negativism. The way to guard against the influence of others is always to resist them. When told to do one thing, he does the opposite. Just as suggestibility develops when we learn that it pays to take suggestions, so negativism develops when we learn that it pays to resist them.

That such a tendency develops very early in life is quite probable. A little child of six who was of this type was brought to the author's clinic. We asked her to come into our laboratory because we wished to give her an intelligence test. She almost yelled at us, "No." Finally, finding that persuasion was useless, we succeeded in getting her into the laboratory only by force. We then asked her to put the blocks in a form board and were greeted with the same response, "No." After trying a number of tests, with the same results, she was permitted to play around as she pleased, except that we had the door fastened so that she could not get out. After a time she came back to the first form board and began to play with the blocks. We said to her, "Don't you touch those blocks." She replied, "I will, too." She then performed the test satisfactorily. She began to play with another test and was told to let it alone. She again rewarded us by doing the test in a creditable manner. In

this way, by telling her not to do things, we gave her a fairly complete performance test.

This attitude on the part of so young a child was probably caused by some mistreatment on the part of others. It might readily be overcome by discreet training of a different sort from that to which she was accustomed. Where the maltreatment takes the form of unethical suggestions which strike the individual's weaknesses the need for resistance becomes exceptionally strong. The negativism is due, not so much to the fact that the suggestions are unethical, but to the fact that the person feels that he is none too strong to begin with, so he must run from the slightest suggestion or succumb to his weakness.

There is a great tendency on the part of those who deal with children to attempt to break them of negativism by force. Such children must be taught obedience, we hear, and if a child says, "I won't," it is considered an indication that he needs some severe discipline. Discipline is just what he does not need. He needs encouragement so that he will be able to control the thing in himself of which he is afraid. If this is accomplished he will not have to guard himself so strongly against outside suggestions.

299. Resistance against supposed persecution. In our discussion of delusional development (Chapter V) we have shown how the notion of persecution by others takes hold of a person. We shall not repeat the mechanism of the development of delusions of persecution, but shall point out how the urge toward such a growth is the inferiority which the person feels. The feeling of inferiority is first compensated by a feeling that others are to blame for shortcomings. At first it is quite probable that the child regards the hindrance he receives at the hands of others as more or less accidental, the result of the ordinary give and take of social contacts.

Shortly, unless the child is properly treated, this explanation becomes inadequate. It is really a confession that one is incapable of meeting the difficulties which all must encounter. A more satisfying view is that one is really a genius,

a fact which others should recognize. From this it is not difficult to develop the notion that they do recognize this, a fact which makes them afraid and jealous of the power of the genius; a feeling to which they react by plans to keep him from using his great powers to the fullest extent. By such poor logic he not only can keep his self-esteem, but view his failures as evidence that they are persecuting him because of their fear of him. If these people are bent on persecuting him it is a frank admission of their fear of him. What better proof of his superiority?

Delusions of persecution have long been regarded as errors in ability to reason or errors in judgment. As long as they were so regarded they were considered incurable disorders. As a matter of fact, they are not errors of reasoning at all. They indicate a type of reasoning which is far too subtle for the ordinary individual, and it is because of this that they form such a powerful weapon for the subject to use. All who observe him are sidetracked into a critical estimate of his reasoning ability, a thing about which he is little concerned, and pass over unnoticed the thing he is hiding, namely, his inferiority. Remember, if you hear a person complaining that another is persecuting him, even though there may be some truth in the story, the reason for the complaint is not primarily to get the other person punished, but to convince the bystanders that the accuser is worthy of such persecution.

We all recognize this principle when a little child, caught at some prank, says that some boy made him do it. We do not, because of such an excuse, begin to examine the reasoning ability of the child, or even spend much time trying to ascertain the extent of the other boy's influence, but we try to teach him to adjust to his own mistakes without blaming them on others. Why do we not, when we find the same thing in an adult, use the same methods?

The author has tried applying the theory that lies back of this discussion to several cases and has found a reasonable degree of success where failure had been the rule. In one notable example, a young man came with the complaint that

he was being persecuted. He opened his account by stating that he had been to a number of psychologists and medical men, but that they all told him his story was imaginary. After finding that we were interested he consumed two hours telling elaborate tales of how he had been hounded from place to place by a marvelously clever organization who were intent upon his destruction but never quite able to accomplish it. After he was through (Perhaps it was only a resting place. We never found out.) he asked, "What do you think of it?" We replied, "It is all very fascinating, but what strikes me is that you seem to take it all so seriously." He jumped as though he had been shot. "It is serious," he replied, "that is what I have been trying to get across to you all this time." "But," we answered, "the serious part is not what they have done, it is that you are beginning to fear that you might weaken under it." In other words, what we did was to bring the issue directly back to himself. He had tried for two hours to get us interested in his enemies. We showed him that we were more interested in him than we were in his enemies. The fact of importance is not that one has enemies, it is what one does about it. When he began to look at the whole problem in this light he mastered himself, and having mastered himself, the delusion disappeared. A more detailed account of the correction of a delusion of persecution has been given in Article 127.

Everybody in this world is injured more or less by others. Such things are inevitable. As one person has phrased it, "This world would not be such a bad place in which to live, were it not for people." Some of this abuse is intentional and some accidental, but it makes no difference what the motivation may be. The significant thing is how we behave under adverse treatment. Proving that the other person had a malicious motive is a poor method of compensating for our failure to face our difficulties. It is easy to criticize but the better plan is to learn from the foibles of others how to integrate better and to enrich our own lives.

300. Resistance against odious comparisons. Excellence in any trait is a relative thing and can be estimated only by means of a comparison between individuals. The feeling of inferiority can for this reason be regarded as proceeding from either one or both of two sources, namely, our own deficiency, or the excellency of others. Compensation can take the form, not of exalting ourselves, but of degrading others, and the end result, a raising of our relative status, will be the same in either case.

The urge for authority is probably a compensating mechanism based on this background. Such individuals crave executive positions and make the most tactless rulers that one could well find. A good way to determine whether a person has such a tendency, that is to develop such a compensation, is to vest him with a little authority and notice how he behaves under it. Any tendency to compensate will be shown by an assumption of dignity and authority out of proportion to the weight of the office. The person soon loses sight of the fact that an executive position is for the purpose of increasing coöperation and productivity and thinks that its main function is to have his subordinates bow and scrape before him. Most of the pleas for obedience that we hear are expressions from a supposed executive who insists upon manifesting his authority, having lost sight of the fact that obedience is a secondary product of mutual coöperation.

On the other hand, we have persons who do not try so much to exalt themselves as they do to degrade others. This leads to the well-known practices of gossiping, scandal-mongering, "muck-raking," and all the other forms that defamation of the reputation of others may take. The reason that such things are practiced with impunity to the one most interested in spreading such vilifying news is that, in too many cases, they are able to find things which are partly true. The hearer is at once absorbed by the news and the slanderer escapes unnoticed. We seldom realize that the person engaged in such work is the greatest loser. One such person was heard to

make a confession to this effect: "I have spent so much time digging up scandal and have viewed life from this angle to such an extent that I have no confidence in anyone. I envy the person who has never seen this side of life. I wish I could trust some one. I have lost all that is worth while." A great majority of scandal-mongers are, however, too stupid to recognize the mechanisms in themselves which lead them to gossip, or to appreciate how thoroughly they spoil their own lives by this practice.

In its early form this mechanism finds expression in what children call "tattling." They carry tales in order to convince their teachers or parents that they are good. Too often they are encouraged in this by the ones to whom they carry their tales, but in the last analysis this form of compensation is most destructive. Even the one who employs a "stool-pigeon" has no respect for him.

301. Reaction against feeling of debility. If a person has been unduly impressed with his lack of productivity he may compensate by attempting to excel in the contribution he makes to permanent progress. He longs for recognition as a creative genius. Such an attitude is fostered by fond parents prating about how they are anticipating the greatness of their children.¹ The child is led to believe that the only way he can retain the affection of his parents is by the achievements his parents hold before his eyes.

Unfortunately, for such persons, the road to productivity is a hard one to travel and these persons are likely to become discouraged at the number of routine and seemingly useless things that must be accomplished before they can hope to do anything original. They try to convince themselves that the genius is the one who is different, so they refuse to con-

¹ Parents are very prone to project themselves into their children. If parents are of moderate success such projections take the form of lofty ambitions for their children. In such cases the ambition is not "for the child's good," as we hear so glibly stated, but is a form of display for the parents, a compensation for their own failures. The same mechanism applies when we attempt to gain glory vicariously by bragging about our "blood."

form in school, will not do any routine task and live in a queer anticipation of the adulations of their fellows when at last they produce their "masterpiece."

If success does not crown these dreams, the gap is often bridged by the creation of the delusion that they have already "arrived." They are not recognized because they are ahead of their age, they are so great that they are not appreciated. Hence, these persons can be heard voicing their complaint that they are not appreciated. Did anyone ever hear a true genius complaining about lack of recognition? Truly enough, some have not been recognized until after their death, but such persons were the ones who had the least to say about it.

One form that an extreme compensation of this type takes is what has been called inventive paranoia. The victim of such a disorder is always on a feverish search for some new thing which will astound the world and win him fame and riches. About the only value of most of their contributions is to give employment to patent-office clerks.

302. Reaction against restraint. The feeling of inferiority may be felt to be due to the fact that one is unfortunate enough to live in a civilization where too much is made of legal restraint. Instead of projecting one's failure upon certain individuals who will not permit free expression of his real powers he blames it on the restraints imposed by law. These people may be heard crying for freedom. They preach that there should be no inhibitions of any sort, little realizing, or failing to recognize that such freedom would soon play havoc with the whole of society and end in their own destruction.

This attitude is the result of the type of discipline to which the child has been subjected. If he has been under some arbitrary person, notably one who uses discipline with others in order to compensate for his own feeling of weakness, restraint is not a reasonable thing, but simply a vicious scheme to kill spontaneity. The victim of such unwise restraint submits because he is forced to do so, but longs for the time when he can break loose. An attitude of this

kind soon develops into a tremendous hatred for law and order, which to its possessor is synonymous with the treatment he has been given so unwisely. The law appears to be an agency for catching the one who does not conform. Ask such a person, for example, why he does not steal and he will tell you because if he did he would get caught. He has not the slightest conception of honesty as a mutually beneficial social bargain.

The natural result is that when a person so trained gets into a situation where vigilance is relaxed he goes to extremes of dissipation and lawlessness. The friends of the unfortunate person are amazed and decide that they must increase their restrictions because the person has demonstrated that he cannot be "trusted." Such a procedure is the very worst thing that could be done, because it only serves to accentuate the impulse to break loose at the next opportunity.

If unfortunate experiences with restraint have been combined with hate for others it may lead to a disorder known as litigious paranoia. Here the person thinks that he is being abused at the hands of others and takes steps to use the most effective weapon that he knows and brings lawsuits against his supposed persecutors. Should he happen to be encouraged by a victory early in such a career, or should he see some other person benefited by such proceedings he is very much likely to become strengthened in this course. The courts are full of chronic prosecutors.

303. Reaction against evil in abstract form. This reaction leads to the adoption of the mechanism described above as the compensation of a reformatory sort. It is illustrated by the following case:

"A young unmarried preacher—a High Church Episcopalian—several years ago gave promise of being a very successful man, but now, through a number of peculiar characteristics and contradictory forms of behavior, seems about to ruin his career. When he first accepted the position in which he is serving, his impression upon his congregation was striking—most of his people thought him remarkably capable. That impression has been entirely

changed within one short year because of his abnormal attitude in relation to sex. His sermons show that he is personally and vitally concerned in the message that he is delivering. He gets very much in earnest, pounds the pulpit, shouts, goes almost into a frenzy in the storms against sin, which to him is a synonym for any form of sex conduct. Practically all his sermons are of this type. He is calm and almost uninteresting when he deals temporarily with any purely theological theme; but is intense when raging against dancing, short skirts, flapperism, bobbed hair, rouge, and vice, which to him all belong in the same class. So violent is he in his antagonism to any form of courtship that he forbids the young boys and girls of his parish to walk home from church together. If any young girl disobeys this injunction she is barred from being confirmed. It must be a choice with her whether she will give up all social relations with men or give up confirmation. In order further to protect innocent girls from male wiles, he himself often escorts them home from service, giving them each a kiss upon parting. In spite of the fact that he raves against immodest dress, his room is decorated with pictures—some of which are advertising posters—showing girls clad in scanty apparel.

“He seemingly has a Herculean task to ward off the advances of all the spinsters in the parish. He will come home, for instance, and almost in a frenzy begin to denounce a certain woman who has had the temerity to invite him to some function. He will throw up his arms and almost scream in his denunciation of her wiles in thus trying to seduce him. Finally, he will become calm and accept the invitation. However, despite his acceptance, he will act in a boorish and churlish manner to the imagined seducer. His hostess, on these occasions, naturally thinks him rude and resents his needless rebuffs. He thus makes himself hateful in order to repel advances he merely imagines. He seems to take delight in defaming the characters of innocent girls in his congregation. He selects some especially attractive girl and talks about her in the most degrading manner to others of his ‘fold’ without grounds for so doing. In one such instance, this scandal-mongering came to the ears of the girl’s relatives and he was confronted with it by the girl herself. He had absolutely nothing to reply, but since that time, has seemed afraid of this girl and avoids her as if in terror. He carries a pistol to protect himself from imagined pursuers. There is probably mental justification for this for he actually has injured many persons. As a matter of fact, however, no one has made any threat to do him bodily harm. When he meets those whom he has defamed he becomes unctuous, flattering, and fawning in a sickening fashion. Although he seems to think

that all his parishioners are vile he takes little apparent interest in their spiritual uplift or salvation, in spite of his eloquence against vice; and when called at night to visit the bedside of a dying parishioner, he has been known to refuse to go and to show no concern upon learning of the neglected individual's death."¹

This case illustrates reformatory paranoia. The man is evidently taken up with his own internal conflicts and defends himself by ill-directed attempts at reforming others. This type of mechanism in lesser degree is often at work in persons who merely impress us as disagreeable or chronic busybodies.

LXXVII. COMPENSATORY DISINTEGRATION

Compensation is a defense reaction which, if carried to excess, may lead to a disintegration of the personality. This is particularly true of the delusional compensation found in paranoia. Since such delusions are hard to correct when firmly established, the obvious inference is that compensatory disorders should be corrected in their incipient forms.

304. Compensation involves disintegration. Compensation indicates a failure in integration. Integration involves a frank meeting of every situation which affects the personality. It requires an adjustment which gives due weight not only to the condition requiring adjustment but to all that has gone to make up the individual. Disintegration is an apparent indication that the difficulty has not been faced squarely: it implies that its victim has not accepted things as they are. An attempt to escape facts, or fear of reality, is what leads to the excessive emotional urge behind the compensating activity which we have found to be so characteristic of this type of adjustment.

305. Kinds of paranoia. The most advanced form of compensatory disintegration is that found in paranoia. Paranoia is the general term applied to conditions characterized by delusions of a persecutory sort. (1) Where there are no other distinct symptoms in addition to the delusional system it has

¹ John J. B. Morgan, "The Unadjusted School Child," Copyright 1924, by The Macmillan Company, pp. 155-6. Reprinted by permission.

been called true paranoia. (2) Where the personality seems to be disintegrated and the delusions are not so well systematized the disorder has been called paranoid dementia praecox. (3) Where the delusions of persecution seem to be incidental to some other condition it has been called paranoid state.

In the author's opinion, such attempted distinctions are more confusing than valuable. We have outlined the mechanism (compensation) which we believe accounts for paranoia as well as the different forms that compensation may take. The significance of the disorder is the same whether it is the only symptom that is apparent, whether it is a concomitant of some other conditions which seem to be more dominant in their manifestations, or whether the delusions are so bizarre and unorganized that one is led to assume a disintegration of the personality, which was supposed to be characteristic of dementia praecox.

306. Compensation may be precipitated by other disorders. Suppose, for example, that in a particular type of organic disease, such as paresis, where the main factor is a destruction of the brain tissue, we find delusions of persecution or delusions of grandeur. Such delusions cannot be regarded as a characteristic of this disease because other cases of the same disease do not show any such symptom. If one has learned to adjust to his difficulties by a delusional compensation the onset of a disease may make this mechanism show itself more clearly. Hence, the symptom is not a characteristic of the disease, the disease simply aggravates the peculiarities of the individual. Unless a person tended toward such a compensation in his normal life it would not come into prominence in the disease. Suppose, with a remission of the disorder the delusional compensation disappears. This simply indicates that the person, having recovered partially, has no immediate use for the mechanism.

307. Folly to ignore early attempts at compensation. This principle may be applied very effectively in personality training. We are prone to excuse any person's idiosyncrasies

when they are under any peculiar stress, such as a temporary illness. It may be legitimate and wise not to hold him too strictly accountable for these, but we should not blind ourselves to their significance. They show the tendencies that the individual possesses and if they are of an undesirable sort we can, with the knowledge thus gained, take steps to give him a better means of adjustment after the period of stress is past. Because the peculiarities disappear with the stress we are inclined to think all is well. When the subject is not in difficulty, we do nothing; when he is showing his peculiarities because of the temporary stress nothing can be done. Such procedure is similar to that of the man who said that when it was not raining he did not need to repair his leaky roof and when it was raining he could not.

308. True paranoia as a compensation. The true paranoid is the individual who shows no other symptoms, whose story sounds consistent and its fictitious character can only be detected by outside evidence. What does such a condition indicate? Probably that the delusional system is sufficient in his case for effective adjustment. His difficulty disappears as long as he maintains his belief in his delusions. But such a situation does not indicate that the man is well adjusted. There is no predicting when the defense will break down and he will be forced to adopt some additional means of defense.

LXXVIII. TREATMENT OF COMPENSATION

We have, throughout the chapter, inserted hints as to the methods of handling the individual who compensates. We wish to gather up these threads and state them again because they need emphasis.

309. The characteristics of the individual who compensates. We shall know how to treat this mechanism when we know very definitely what sort of person it is with whom we are dealing.

1. *He is self-centered.* The person who compensates is concerned largely with himself. He must take himself very seriously or he would not be so determined to overcome any

handicap which may be thrust upon him. His attention is centered upon himself, so he thinks that others are likewise vitally interested in his success or failure. He covers his selfishness by picturing the tremendous loss that will accrue to society should he fail. Failure seems to him to be out of the question. He does not ask, "Shall I succeed?" He tells himself that he is succeeding.

2. *He has failed in some respect.* According to Adler the failure of the individual who compensates is in some physiological mechanism, some organ of the body. We do not believe that this is essential. Intellectual and moral success means so much in the present civilization that failure to measure up to standards in these realms brings the most acute type of agony and feeling of dissatisfaction.

The failure need not be a real one. If the individual falls short of an artificial standard which he has established, although this is regarded as anything but failure to others, it is viewed most depreciatively by the subject.

3. *He is not consistent.* He will not admit that he has failed though he feels that he has. This inconsistency is behind every compensation. In a sense this may be a praiseworthy attitude to take. It is but carrying out the determination which we hear praised so highly—"never give up." We are not disparaging this attitude. It may be one worth cultivating. But the normal man who fights with the determination not to give up is fully conscious of the degree of success he is achieving. It is this insight which gives him balance. The man who compensates is "fooling himself." He is trying to convince himself by his compensatory mechanism that he is farther toward success than he really is. Determination to succeed does not preclude a proper evaluation of one's status.

310. Correction implies early detection. Once a compensatory mechanism is firmly established it is very difficult to treat. This means that it should be detected in its incipient stages. How may this be done? A very simple rule may be applied here. Whenever any extreme of conduct is noticed,

look for a compensatory mechanism. If a person is extremely arrogant, consider a compensation for a feeling of insufficiency. If a person is extremely unselfish, consider a compensation for undesirable selfishness. If a person is too angelic in his conduct, suspect an attempt to submerge a tendency to be bad. If he is excessively bad, if he shows that he is trying to be bad, look for a reaction against a fear of being a "goody-goody." While such assumptions may not always be correct they furnish working hypotheses. It is surprising how often they turn out to be correct.

311. Reëducation. Every case of compensation requires individual treatment and generalizations may lead to error. There is one principle which may be assumed to hold in most cases, in spite of this danger. A person who has compensated needs encouragement rather than discipline. The natural tendency is just the reverse. If we find a boy who is excessively bad in school and tell the teacher of this boy that he needs encouragement, she is inclined at first to ridicule us and to think that we have failed to understand him. Where such a procedure has been adopted, in spite of its seeming inappropriateness, it has met with remarkable success. One of the worst boys we ever had in our clinic at Northwestern was considered to be of this type. He was a source of great annoyance to the teacher. He would talk out in class, abuse the other boys, was impudent to his teacher and was a general nuisance. He had been subjected to the most rigorous discipline and kept getting worse until he was expelled from school. We asked the teacher to try an experiment with him, to give him a legitimate opportunity to show what he could do. She feared that he would run away with the school if she began any such procedure and tried it only because she was desperate. At first it took all the patience and tact that she had but in a short time she won. He became one of her staunch supporters and coöperated in any project she suggested.

The actual procedure to be adopted varies with each situation, but one successful plan, already reported, is as follows:

"A teacher of the first grade had a very troublesome boy in her class, who defied her in every possible manner. His father punished him and various attempts were made to correct him, but with each attempt he grew in favor with the rest of the boys. The scheme was finally devised of organizing a fraternity, whose standard was self-control. In order to make it sound imposing, it was called the 'Gamma' fraternity, and each member had the privilege of wearing a distinguishing pin. Anyone in the class who showed self-control was admitted to membership and could be dropped when he lost self-control if the rest of the children agreed that he had violated the standard. The first boy elected was the uncontrollable boy and in turn, through the course of a few weeks, everyone in the class was enrolled. The change in the boy was remarkable; he had been bad to gain social approval, now he was good and 'self-controlled' to gain the same end."¹

Compensation indicates a fighting tendency on the part of the one who adopts it. Such a reaction is much more desirable than the giving up which leads to regression or the adoption of some subterfuge such as we find in hysteria. However, the energy expressed by the compensating tendency has to be carefully directed or its final results are just as pernicious as those of regression. Physicians have confessed their inability to cope with an advanced case of paranoia: the only hope lies in prevention. We have tried to show that its development is an educational problem. It is not a disease, in the ordinary sense, but a failure in personality integration which could be prevented by proper training in adjustment. Every case of compensation, whether it has advanced to the stage which warrants the diagnosis of paranoia, or whether of a simpler form, spells faulty education. The urge to conquer defeat is a valuable urge. Direct it and it will lead to achievement. Let it become perverted and it will lead to one of the most pernicious mental disorders that we know.

¹ John J. B. Morgan, "The Unadjusted School Child," Copyright, 1924, by The Macmillan Company, p. 46. Reprinted by permission.

IMPORTANT TECHNICAL WORDS

compensation. The mechanism whereby a person hides a defect in one respect by attempted superiority either in the same or in another trait.

idiosyncrasy. A characteristic peculiarity.

inferiority feeling. A feeling of unworthiness in comparison with others.

integration. Such a combination of constituent parts as to form a unitary whole.

masculine protest. Adler's term for the fictitious goal an individual sets up for himself.

paranoia. Mental disorder characterized by delusions, usually of a persecutory nature.

phantasy. An imaginary representation.

PROJECTS FOR FURTHER STUDY

1. Get acquainted with the mechanism of compensation in its extreme form so that you will be able to recognize it easily. For this purpose visit an institution for the insane and have demonstrated to you some cases of paranoia. Try to understand the significance of their stories.
2. From a daily paper extract the things that people have done and see if you cannot interpret a number of them as possible compensatory activities. Are the misdeeds more easily explained in this light than the laudable ones?
3. Try to recall all the things that you have done that have been out of the ordinary in any way. Can any of these be explained as compensations? Have they been of the beneficial type or the reverse?
4. By an analysis of the compensations that have occurred in your own experience try to determine which form you tend to use. Use this information as a basis to develop more balance and poise.

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CHAPTER XVI

EPISODIC DISORDERS

Some individuals, instead of manifesting a consistent type of reaction tendency, adopt what appear to be inconsistent reactions at different times. These episodic reactions we shall discuss in this chapter. The three most striking of these are the manic depressive cycles, the catatonic excitement and stupor, and the periodic outbursts of the epileptic. A study of the personality behind these reactions will make them appear less inconsistent than their superficial observation suggests.

312. Illustration of mania. "A young girl used to build imaginary pictures of what her future life would be like. She had visions of ideal love affairs, more or less platonic in nature but mixed slightly with eroticism. She would spend a large part of her evenings fitting herself out in fancy lingerie and parading before the other girls in the boarding school where she was a pupil, to gain their plaudits. All the time that she was doing this she was imagining what her future husband would exclaim concerning her beauty in similar situations. Her ideal seemed to be some sort of imitation of a Turkish harem where she would give esthetic dances before the man of her choice and receive his commendations and compliments upon her grace and beauty.

"Sadly enough, her dreams never came true. She married at the age of seventeen, found in a week that her husband was nothing like her ideal, and regretted her marriage. Nevertheless, she did not separate from him for seven years. During all this time she describes herself as having felt like a dead person. She had before her marriage felt 'like a bird in a tree'; then she felt as though someone had shot her and she had fallen to the ground and had been dead ever since.

"About the time of her separation her father had wrecked the family finances, and in order to replenish the family exchequer

she arranged a cold-blooded marriage with a man twenty years her senior. She explained that this second husband agreed to marry her in order to help the family financially. She says that she never loved him and was never in sympathy with his manner of doing things. His temperament is of an extremely practical sort; she is fanciful and poetic. She likes to vary life's program, but he has fixed habits that cannot be changed by a hair's breadth. She says, for instance, that she can tell the day of the week by the tie he wears. He has one for each day and keeps them carefully piled with the next day's tie always on top. She has no real satisfaction in her marital relations and everything he does irritates her. She wants to be complimented upon her personal appearance, but when she 'dolls' herself up he does not even notice it.

"From this unpleasant situation she escaped by reverting in phantasy to that happy state where all is joy and happiness. While in the hospital she actually lost connection with her surroundings and lived the life that she had always wanted to live. She was extremely playful in the way she had been when a girl. Clad in thin airy clothes, she delighted in dancing before the victrola. She felt as though she were 'bubbling over.' She would playfully watch her chance and run toward the men's ward, and would be led back laughing as though it were a great joke. All her activity was that of a playful girl of the early teens. She did not care who was around or what they did. She was wholly absorbed in her own phantasies and if she reacted to anyone or anything about her, it was as though they were early acquaintances (misidentifying people in the ward and calling them by other names) or situations in which she had lived at an early age. This state of isolation with her own psychic experiences was very marked and remained consistently uninterrupted for several weeks during the first part of her stay in the hospital.

"Gradually she came to pay more attention to her environment. She would answer relevantly, but would presently take one off with her into her phantasies. She seemed to be actively hallucinated in the auditory and visual fields, but what really was happening was that she was interpreting all visual and auditory stimuli in terms of her phantasies. For instance, on one occasion she had the doctor look out the window in among the trees, where she pointed out and described babies among the leaves and imaginary people in the street.

"Her recovery was very rapid after it once set in, and with some help she gained insight into the mechanism of her trouble. She realized that she had taken this flight because of her unsatis-

factory marital situation. She refused, however, to change the conditions as they existed, because she had no real grounds. Her husband, she said, had been as good to her as he could be. All the trouble was because she was not of his temperament, and she had known that before she married him; so she felt that it was her place to make the best of a bad bargain and do as well as she could. With this attitude she went back home, and has been making an adequate adjustment ever since, that is, for about two years. Before leaving, she said that probably she would let her imagination play at times in order to make existence endurable, but that she thought she could keep it from carrying her as far as it had done. She said that when things became unbearable she probably would go back into another period of phantasy. She laughingly warned us to keep a bed ready for her."¹

This case shows us that a temporary loss of balance can be explained when we know the background of the individual. It is a typical manic flight and illustrates one of the extremes to be treated in the first section of this chapter.

LXXIX. MANIC-DEPRESSIVE DISORDERS

In the hysterical, regressive, and compensation disorders we have studied individuals who have adopted rather definite forms of adjustment which became habitual. There may be recurrent periods in all of these, but with added stress the person tends to revert to the same mechanism of defense each time. In the manic-depressive reaction the individual goes from one type of response to another of a diametrically opposed sort. It is for this reason that disorders of this type are more benign than the former ones. The fact that the individual does not have one fixed type of defense makes it easier to help him to adjust; he can readily be induced to change from one type of defense to another because his reactions are so unstable.

313. General characteristics of manic-depressive disorders. Manic-depressive disorders are so named because they involve alternations between two conditions which are the extreme opposites of each other. In the condition of mania

¹ John J. B. Morgan, "The Psychology of the Unadjusted School Child," Copyright 1924, by The Macmillan Company, pp. 98-101. Reprinted by permission.

an individual is very active in the motor realm, his mental processes are quickened and he is emotionally excited. In the depressed condition he is slow in his movements, his intellectual operations are retarded and he is emotionally depressed. These two diverse processes may be viewed as exaggerations of what is found in normal individuals.

314. Degrees of mania and depression. The normal individual has swings of mood which of course carry with them corresponding swings in the intellectual and motor realms. As long as these swings are not extreme and not too rapid the person is considered normal. If we let the two horizontal lines of Figure 28 represent the boundaries of the normal

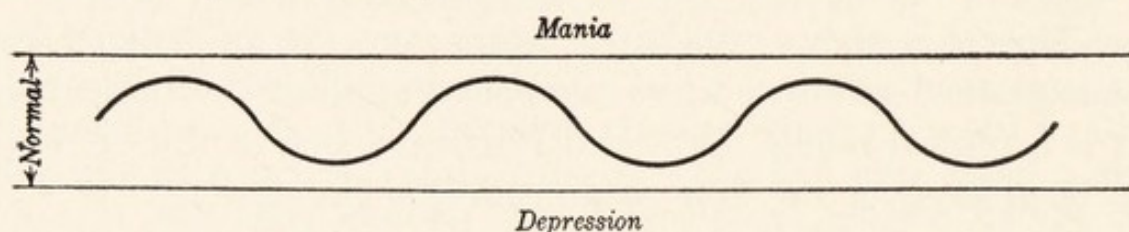


FIG. 28. DIAGRAM TO ILLUSTRATE NORMAL EMOTIONAL SWINGS

The space between the two horizontal lines represents the range of normal emotional swings between elation and depression. Distance from left to right represents the flow of time. The curved line between the horizontals shows how emotions may swing over a considerable range and still not pass our arbitrary limits of normality.

range and movements from left to right represent the flow of time, the wavy line between the boundaries would indicate a possible change in a person's emotional reactions as he moved along through life's successive experiences.

Any breaking across the line above or below (which, of course, are artificial and arbitrary boundaries whose exact position cannot be determined in any case) would indicate abnormality. Since the extent of deviation above or below the border lines may vary it has been customary to attempt to distinguish these degrees. They are represented in Figure 29. The mildest degree of mania is called hypomania. The next degree is acute mania, and the most extreme form is called hyperacute mania.

The depressions are classified in order of severity; simple retardation, acute melancholia, and stuporous melancholia.

315. Sequence of mania and depression. The actual form of the life line that one follows in relation to successions of mood may be quite varied or quite stable. Some persons seem to follow a straight course remaining midway between the boundaries. Most persons vary somewhat as a reaction to the different situations that they confront. If, in such a mood, changes are a response to environmental conditions, they are not likely to form any definite or regular sequence. In some cases of mental disorder the changes seem to come irrespective of stimuli that would ordinarily be considered adequate to cause mood variations. Even in these cases it is the exception

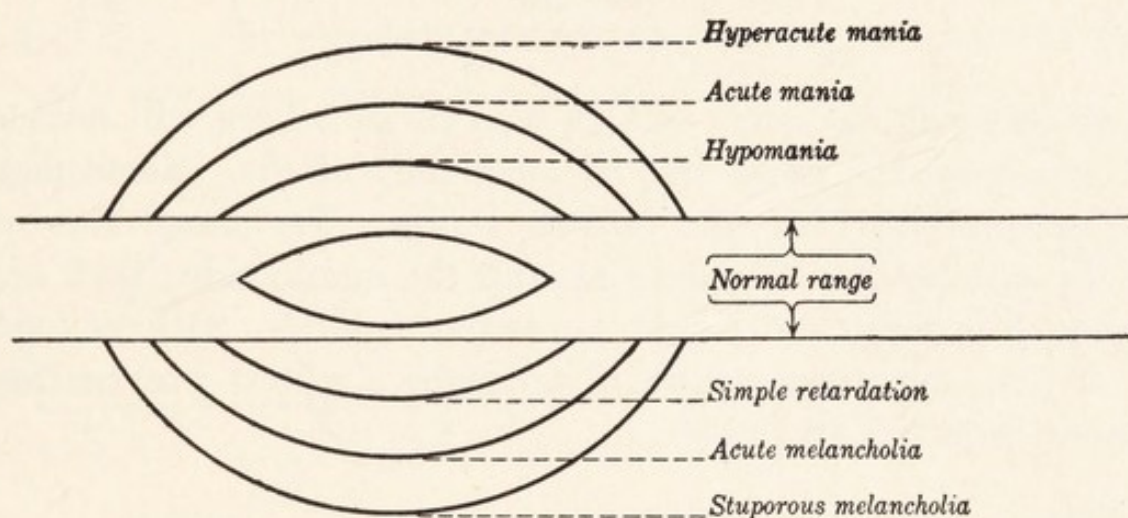


FIG. 29. DIAGRAM OF DEGREES OF EMOTIONAL SWINGS

Any swing which does not pass the horizontal lines may be considered normal. Above the boundary we may distinguish three degrees of emotional elation. Hypomania is the mildest, next comes acute mania, and the extreme degree is hyperacute mania. Below the boundary are also three degrees: simple retardation, acute melancholia, and stuporous melancholia.

to find any definite sequence. Different types of mania and depression (or melancholias) and combinations of both have been segregated, but the student should be warned against the idea that they come in any regular sequence or that the presence of a rhythm in the past forecasts any continuation of such rhythm in the future.

Where the person has repeated spells of mania with no abnormal development of depression it is called recurrent mania. This sequence is illustrated in Figure 30. Where

there are repeated spells of depression with no abnormal manic attacks it is called recurrent melancholia. This is illustrated in Figure 31. In many instances the individual swings from mania to depression. Some types of successions of this sort are illustrated in Figure 32.

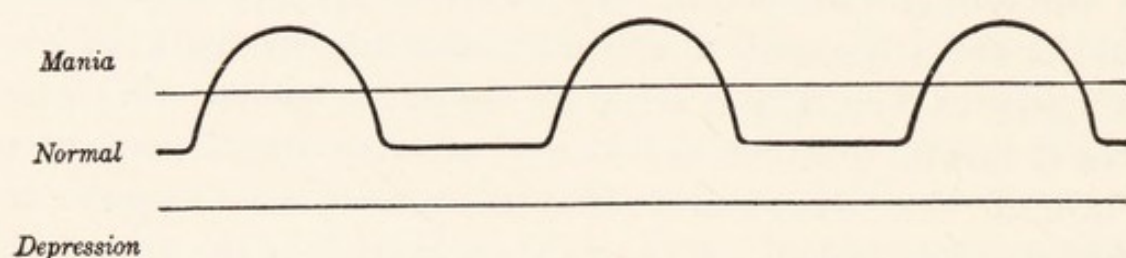


FIG. 30.
Diagram of recurrent mania.

Observation of one's self as well as of others will enable us to discern the mood line of most individuals. Some may fluctuate only within the normal limits. The mood line of others may tend to fluctuate around the manic side; they are happy, hilarious, active and somewhat volatile. Others tend toward the depressed area and upon the slightest provocation become dejected and quiet.

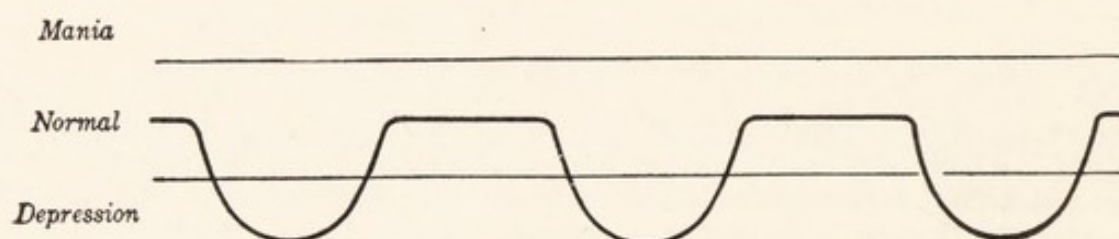


FIG. 31.
Diagram of recurrent depression.

316. Description of mania. The dominant characteristic of mania is excitement. This excitement expresses itself in the emotional realm by hilarious good-humor, excess irritability, and responses of an extreme emotional sort to mild stimuli. It carries over to the motor realm so that manic individuals are continually doing something; such as running about, dancing, waving their arms, and so on. They are incessantly talking and from all appearances their thought processes are unusually rapid. They simply cannot sit still.

That they are in close touch with their environment is shown by their extreme distractibility. They are diverted by the slightest stimulus and flit lightly from one subject to

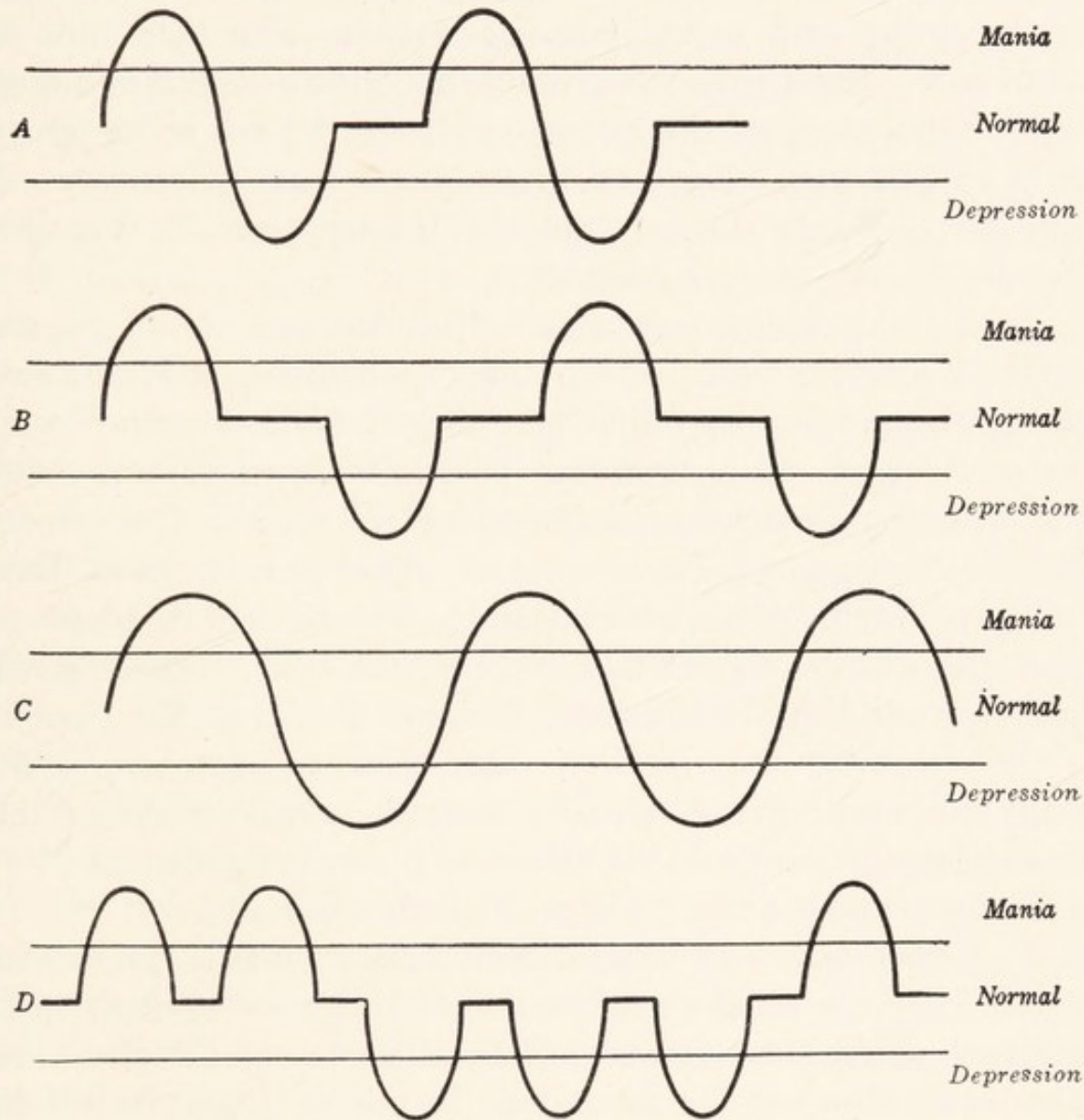


FIG. 32. SCHEMATIC DIAGRAM OF VARIOUS SEQUENCES OF MANIA AND DEPRESSION WITH NORMAL CONDITIONS

- A. Mania—depression—normal—mania—depression—normal—and so on.
 B. Mania—normal—depression—normal—mania—normal—depression—normal.
 C. Mania—depression—mania—depression—mania.
 D. Normal—mania—normal—mania—normal—depression—normal—depression—normal—depression—normal—mania—normal.

another. This contact with reality is further shown by their response to people. They are quite aware of the presence of strangers and will “show-off” in great style when people are

watching. This is quite the opposite of the regressive type of activity that we learned about in Chapter XIV. For example, if a severe type of manic person is shown to a class it can almost be predicted that he will select some individual in the group and make personal remarks either to him or about him. Such remarks are usually quite pointed and may be complimentary or the reverse; such as: "Isn't she a pretty girl? I like you. You are the meanest man I ever saw. I hate you. Where did you get that pretty tie? Is that girl married?" and similar comments.

In all this manic excitement the observer sees a person having a glorious time. The patient has thrown off inhibitions and is doing what we might be doing if there were no social restraints upon us. Attention is spontaneous, flitting from one situation to another without control. Ideas flow freely with no attempt at logical sequence. They furnish good illustrations of true "free association." The patient is likely to pray one minute, swear the next, sing the next, and sob after that. In all this the observer does not feel that the patient is very far away from reality. One tends to have some sympathy for him. We can easily imagine ourselves doing the same things if we made no attempt to control ourselves.

Let us examine the different degrees of mania.

1. *Hypomania*. In the mildest form of mania, known as hypomania, the most significant symptom is a marked restlessness. This may show itself in a continual activity. In some cases this activity is useless, in others it may result in marked productiveness. An example of the former is where the person busies himself about his room. He will make his bed, empty his bureau drawers and repack them very carefully, clean the floor, then begin to remake the bed, repack again his bureau drawers, clean the floors and then begin all over again.

One woman of this type began to clean the house for company that she was expecting in the evening. In the course of her cleaning she found some dust under the front cover of the piano, and removed this part of the piano so as to

make a thorough job of her cleaning. Having removed the cover, she found that she would have to take off another section, then another and still another. This continued until, in the evening, when her husband returned home, he found her in the front room with pieces of piano strewn all about the room. She was still engaged in cleaning the piano!

In other cases simple hypomania may drive the individual into activities that are of value. A person of this type in such periods, can, because of the diminution of critical control, make a better speech, write a better book, or construct a better article than would be the case were he in a more poised and controlled condition.

Whether the activity will be productive or unproductive depends largely upon the background of the individual. If he is so proficient in his particular profession that it is a natural activity for him to engage in, his activity is likely to be of the productive sort. He does good work almost automatically. If he has no such background the activity takes the form of any random thing which happens to suggest itself.

2. *Acute mania.* In acute mania the excitement is more marked. The patient makes trouble for himself and others by his violence and usually has to be taken care of by those who can control him. The illustration in the first part of this chapter is a case of acute mania. A very common characteristic of this condition is to fit every stimulus into the central dominant ideas of the moment. People will be misidentified. The slightest resemblance between a stranger and a loved one will precipitate a caress of the stranger by the patient. It is not an unusual occurrence for such a patient to rush up to the physician, throw her arms around his neck and cry, "Oh, my long-lost husband!"

All the activity is like the actual living of a dream. The environment is interpreted in terms of this dream, which gives rise to hallucinations and delusions. The latter are not of the systematized sort that one finds in paranoia (Article 305). They are adhered to as a defense which is rationally

supported, but will change in character in the same manner as the content of a dream will change suddenly from one form to another. The patient has literally escaped from his troubles and lives out the things that he would like to have exist. If meaning can be read into this whole process it often gives a definite clue as to the nature of the trouble which precipitated the disorder.

3. *Hyperacute mania*. In hyperacute mania the patient becomes very violent. He may become destructive, fight those who seem to oppose him, tear his clothing, throw furniture, and act like a wild beast. The excitement may be so great that he will not take time to eat. Food placed before him is thrown about like the other things that come in his way. If the excitement takes the form of anger he will at times become dangerous, but it is an excitement that is just as dangerous to himself as to others. He will tear out his hair, bang his head against the wall and injure himself in various ways. The dream has passed into an actual delirium where the environment is an incident.

The characteristics that are common to all degrees of mania are (1) emotional exaltation, (2) increased activity, and (3) acceleration of the flow of associations.

317. Description of depression. The depressions are just the reverse of the manic attacks. The patient becomes stuporous, lacks activity, is slow in his thinking, will not talk and will sit around for hours at a time in the most utter dejection that can be imagined.

1. *Simple retardation*. The mildest form is that of simple retardation. The patient may explain that he has had trouble of some sort. Often there has been no real cause for sorrow so he will invent one. He will cry at times or merely sit in a state of dejection. Ask him a question and he will answer, but slowly, with indifference, and in a low voice. At other times he will merely sit with folded hands and do nothing. He is incapable of effort of any sort, will not read and will not work. In short, the person acts as though there were nothing in life worth while. It is not unusual to find

a bereaved person enter a state of this sort and continue, as in a daze, for long periods.

2. *Acute melancholia.* The emotional depression in acute melancholia is more pronounced. A marked symptom is the increased slowness of response. If a question is asked the patient will sit as though he did not hear, but if the questioner is patient enough he may finally give an answer. By actual timing such patients have been found to wait as long as two minutes after a question is asked before replying. One feels that they did not hear and the answer, when it does come, is somewhat of a surprise.

They may sit and weep for long periods, in some cases accusing themselves of all sorts of absurd things. They will state that they have sinned, but when questioned as to the sin they are often unable to give any coherent explanation that would account for the extreme depression (Article 114).

3. *Depressive stupor.* In this extreme condition the patient loses all contact with his environment. He becomes unconscious of his surroundings, must be tube fed or he will die of starvation. He cannot be made to speak at all and is totally unresponsive.

318. Interpretation of manic-depressive disorder. Kraepelin formulated the concept of manic-depressive insanity as a definite disease entity. His main reason for so doing was that both the manic and the depressed phases appeared in the same individual. The fact that a person can rapidly swing from a manic condition to a depressed condition made him feel that they were related. As a matter of fact they are related, but not in the sense that they are the manifestations of a single disease. They are diverse expressions of the same mental struggle that the patient is experiencing.

1. *It is a defense reaction.* We have seen how the hysterical patient escapes his difficulties by the adoption of some trick, he diverts his own attention and the attention of others from the main issue to the symptom of some physical disorder, which disorder, in reality, may exist in a mild form, or may not exist at all. In the regressive disorders we found

that the person escapes by retiring into himself. He refuses to fight and so seemingly wins his battles. The compensation disorders indicate the overemphasis of something in which the person can excel in order to cover a real or imagined defeat in another realm.

In the manic-depressive reaction we find an individual who tries to solve his troubles by a vicious attack upon the things which seem to be causing them. He cannot adopt a subterfuge, he cannot retire into himself, he cannot substitute something else, so he makes a direct attack and backs it with all the emotional fervor he can muster. He may not win, but the very fight is a relief. If it only impresses him further with his weakness by leading him to greater defeat then he may go into the opposite state of depression. He gives up with just as much excess as he fought.

White calls the manic phase a "flight into reality." He says:

"The great activity can be understood as a defense mechanism. The patient appears, by his constant activity to be covering every possible avenue of approach which might by any possibility touch his sore point (complex) and so he rushes wildly from this possible source of danger to that, meanwhile keeping up a stream of diverting activities. He is at once running away from his conflict—into reality—and trying adequately to defend every possible approach. On the other hand, a study of the manic productions will disclose the fact that they refer to, they reanimate, so to speak, longed-for situations of the past, the memories for which have been repressed. So in this sense the mania is an ambivalent (having a dual force or aspect) reaction, rushing into reality on the one hand but on the other developing, under the cloak of the hyperactivity and flight of ideas, a wish-fulfilling drama in which the forbidden thoughts come to expression."¹

2. *It occurs in the extravertive type of person.* The patient is in touch with situations as they are. His conduct is a straightforward, combative type of reaction and the manic-depressive extremes are merely indications that he had

¹ William A. White, "Outlines of Psychiatry," Nerv. and Mental Dis. Pub. Co., 1926, pp. 154-155.

not been able to conquer the difficulties, even though he has fought them, and hence he fights more strenuously.

3. *Recovery is usually spontaneous.* Even the extreme types of the disorder are likely to be followed by recovery. In most cases treatment consists in taking care of the individual so that he will not injure himself or others, and giving him adequate nourishment as well as removing any condition which might be a weakening influence. With such care all that the physician can do is to wait patiently until the attack has spent itself.

4. *It is the breaking forth of pent-up emotions.* The person has restrained himself so severely that the manic attack can be viewed as a breaking forth of the emotional urges he has not permitted to show themselves. This breaking loose of emotional life acts as a purgative after which the patient feels greatly relieved; fitted, so to speak, to start all over again and put up another fight until things again become unbearable. The depression is the overpowering feeling of chagrin at one's helplessness in the face of urges which apparently become too strong for resistance. When one has tried and feels that he is failing, it is often a relief simply to give in for a time and admit that one is worsted. The hopeful thing in these cases is that both of these extremes are usually temporary. The surrender is a partial one which acts as a period in which to recuperate, a period of preparation for the next struggle.

319. Prevention of recurring attacks. Since we have learned to regard the symptoms of these cyclic attacks as evidences of maladjustment of some sort the period of normality between attacks has been utilized to help the individual to adjust to his troubles in a different and better manner. He cannot be made to adjust when in the midst of a manic or depressed episode, but when he is able to look at things rationally, an analysis of the total situation may be accomplished and if an adjustment is effected any future attacks may be forestalled.

These cycles do not come suddenly in the life of an indi-

vidual as out of a clear sky. They usually show a history of minor cycles of mood out of proportion to the environmental causes. These are indicators of a possible later and more severe break. If those who have charge of children observe those under their care they can discern these types. Such extremes of exaltation and depression should not be ignored, but an attempt should be made to discover why they have them. There is always some underlying reason not at first apparent. If teachers could help these children to a different type of adjustment it is certain that many cases could be kept from our hospitals. Such preventive work would likewise relieve the burdens of a large number of persons who never would get into our hospitals but who, without proper guidance, are doomed to live tense and often very painful lives. The tendency has been to excuse such children by labelling them unstable and passing them by. A minor instability is a sign of a minor lack of adjustment. *To call such a person a name (unstable) does not excuse the one who has him in charge from the responsibility of effecting a better adjustment.*

Sometimes the incipient sign of these cases is not a minor alternation in mood, but too much poise. Too much control, as evidenced in such extreme poise is often evidence of undue repression of spontaneity. It is a bad sign when a child is so afraid of himself that he dares not let out a hilarious laugh when occasion warrants it or give vent to a good cry when such a cry would be a relief. Most of the trouble springs from too much emphasis upon emotional restraint. Find a suitable way in which a child can express his emotions, teach him to get an outlet in this direction and he will not be so likely to go to peculiar extremes.

LXXX. CATATONIC EXCITEMENT AND STUPOR

We have seen that a dominant characteristic of manic-depressive disorders is the close contact that the patient keeps with his surroundings. It is a disorder that comes only with a typical extravertive individual. We may find a similar

alternation of excitement and stupor in an individual who is dominantly introvertive, but in such cases the nature of the symptoms is quite different. These latter forms are called catatonic excitement and catatonic stupor respectively.¹ Since catatonia is derived from Greek words which mean a letting-down of tension, the name seems to be somewhat of a misnomer. We believe a better term would be introvertive excitement and introvertive stupor. The two forms are likely to alternate in the same individual in somewhat the same manner as mania and depression alternate in the extravertive individual.

320. Introvertive (catatonic) excitement. Superficially the excitement of the introvert may appear similar to that of the manic (extravert) person. Closer examination will show marked differences.

1. *Emotional reactions.* The emotional life of these persons has no relation to the environmental situations of the moment. For this reason, some observers have said that this condition is free from any emotion.² It seems nearer the truth to assume from their conduct that they do have emotional responses but that they are subjectively aroused. One can but imagine what might be back of such emotions. The patient does not give any coherent explanation of them. For example, one patient would walk up and down the floor wringing his hands and repeating interminably: "It is not so. It is not so. It is not so." While this is apparently an emotional response it was never learned what was back of it. At best it seemed to be superficial, for it could easily be interrupted by irrelevant remarks by the examiner. It appeared to be a sort of automatic, stereotyped acting out of an emotional reaction with no depth of feeling behind it.

2. *Senseless activity.* In the case of manic excitement one can appreciate what the patient is trying to do. His wild activity is related to the surroundings. The excitement of the

¹ These conditions are called catatonic dementia praecox, according to the Kraepelinian diagnostic scheme, but we have already seen that dementia praecox is a conception which is more confusing than helpful.

² A. J. Rosanoff, "Manual of Psychiatry," Wiley, 1920, p. 236.

catatonic is wholly senseless and for that reason may be dangerous. The patient will shout, throw himself about on his bed, or go through other wild movements. These are likely to be repeated in the same form over and over again. The patient will rock backward and forward, nod his head, make fantastic maneuvers with his hands or go through some other absurd activity.

"Often the patients assume an affected or dramatic air. Their gestures, manners, and fantastic dress frequently survive the period of excitement and persist through the quiet periods. . . . Some patients will hop on one foot for months instead of walking; others will invariably respond to all questions by the same phrase; still others will not eat their food without first mixing it up into a disgusting mess; others, again, will walk back and forth on a short path all day long, taking alternately a certain number of steps forward and the same number backward. Such examples could be multiplied indefinitely. Most frequently these peculiarities in the conduct of the patient are purely automatic and remain inexplicable."¹

3. *Verbigeration*. The patient may repeat the same phrase over and over again.

"One patient was asked: 'What is that you say to yourself?' He replied: 'Locks and keys, keys and locks, locks, keys, keys, locks, locks, locks, keys. . . . You know some of the attendants might get hold of me and punch me. Locks, keys, keys, locks, locks, keys, keys, locks. You know if they was to run across me making too much noise they might hurt me.' 'What do you say locks and keys for?' 'Just to enjoy myself. You know there are times when there is nothing doing, and I have to do it to pass away the time, and you might just as well say something as nothing.' 'What did you say the other night to the students?' 'Told them about locks and keys.' 'What else?' 'Myriads of us keep growing in numbers, also in largeness; locks and keys, keys, keys, locks, locks, keys, keys, locks, locks, keys, keys, locks. Myriads of us quick-foot through, ev-er no mat-ter. Locks, keys, keys, locks, locks, keys, keys. Myriads of us ev-er full us as keep lives giant's growths, ev-er lives giant's keeper, ev-er no mat-ter.

¹ A. J. Rosanoff, *loc. cit.*, p. 237. Reprinted by permission from John Wiley & Sons, Inc.

Locks, keys, keys, locks, locks, keys, keys, locks. Lives giant's wealth, health and pleasures, ev-er no mat-ter." ¹

4. *Impulsive acts.* Patients of the catatonic type will suddenly and with no warning commit acts of violence and for this reason are sometimes dangerous. One patient who had been in a stupor for years suddenly jumped from his bed, hit an attendant such a blow that he broke his jaw, then went back to bed and remained in a stupor for another period of years. The manic excitement, it will be remembered, is a sort of playful activity. The manic may suddenly injure some person who happens to get in his way but there is nothing vicious about it. The catatonic patient cannot be understood, because of his internal orientation, so that one cannot predict what he will do. It is dangerous business to attempt to play with a catatonic.

321. Introvertive (catatonic) stupor. The catatonic stupor is not an emotional depression such as we find in the manic depressive individual. One gets a feeling that the patient has so retired into himself that he is like a machine. A patient in this condition may be pushed around as one would push a dummy. He presents the symptom that we have described as waxy flexibility (*cerea flexibilitas*). Their arms, legs or other parts of their body may be placed in the most grotesque positions and they will maintain them indefinitely. They will repeat automatically what is said to them (*echolalia*), or will imitate what they see others do (*echopraxia*). Stand in front of such a patient and clap your hands and he will begin to clap and will continue after you have stopped. Say, "La la la la" and he will take it up and carry on until finally it will die out because of lack of momentum, just about the way a freight train might stop with no brakes applied. They operate much the same way as one of those toy engines that you give a push and which keeps going because of the balance wheel in its mechanism.

In the more advanced stages of this stupor the patient will remain absolutely motionless and speechless and has to

¹ William A. White, *loc. cit.*, p. 209.

be tube-fed. In this condition he often becomes resistive (negativism) and will oppose any attempt to make him move or act in any manner. Rosanoff¹ gives a good description of a patient of this type:

"She shows marked negativism. When spoken to she will give no response, showing absolute mutism; she resists systematically all attempts at passive movement; to open her mouth, to flex an extended limb, or vice versa. The command to open her eyes results immediately in a spasm of the orbicularis muscle. Refusal of food is at times complete, and then the patient has to be tube-fed; at other times it is partial, the patient taking only liquid food which is poured into her mouth by means of a feeding cup and which she then swallows readily. One day, without any apparent reason, she ate spontaneously a piece of bread which she took from the table. For two days she thus took bread, cheese, and chocolate, but persistently refused everything else. Later she relapsed into the former state and now takes none but liquid food which has to be poured into her mouth. Her sensibility appears to be normal, but all reaction is annihilated. Painful pricking with a pin causes slight trembling, but no cry, nor any movement of defense. In the stuporous phases the patient lies in her bed, completely immobile. Generally this immobility is dominated by negativism which is manifested by the same traits as those observed in her excited phases. . . . When standing she remains motionless, yet she will walk mechanically as soon as she is pushed. When invited to sit down, the patient slightly flexes her legs and makes a movement as though starting to sit down, showing that the command is understood; yet she will go no further, but remains standing. When taken by the shoulder and slightly pushed, she sits down without trouble."

322. Mechanism of catatonia. From this description it can be seen that the mechanism of catatonia is quite different from that of the manic-depressive disorders. In the latter the defense takes the form of alternately fighting and giving up in despair. In catatonia the patient has fled from the difficulties which precipitated his trouble. He turns from the environment into himself. His resistance is a resistance against any outside impression. When excited, it is an excitement that springs from a subjective source and not from

¹ A. J. Rosanoff, *loc. cit.*, p. 241. Reprinted by permission of John Wiley & Sons, Inc.

any environmental stimuli. When he is stimulated from the outside his obedience is that of a machine or a toy.

White interprets the disorder as an extreme attempt at repression of the source of difficulty. If the repression is finally successful the patient may make a social adjustment with the inimical part of his personality permanently blocked off. If this is impossible the patient may remain permanently in the catatonic condition, most likely becoming more and more stuporous with only occasional periods of excitement.

323. Prevention of catatonia. These cases all have a background of mild beginnings, and this is the time to do preventive work. If teachers and parents are to detect the symptoms of this disorder in its early stages it will necessitate a careful study of the nature of the emotional cycles of the children in their care. If the excitement and depression are highly emotional in nature and if the child gives other evidence of being extravertive then the procedure should be, as was indicated above, to help him adjust to his source of conflict. If on the other hand the evidence points to an introvertive reaction, a sort of senseless activity or meaningless stuporous withdrawal from the environment, effort should be directed toward making the individual more extravertive. This can be accomplished by managing affairs so that it will be to his advantage to mix with others. Teach him to get pleasure from his social contacts and, insofar as this is successful, he is being guarded against any tendency to withdraw into himself.

LXXXI. EPILEPSY

The term epilepsy means "seize upon," the meaning being derived from the old conception of the disease as a "seizure" of the patient by some malignant spirit. This conception of the epileptic fit as a seizure has long since been discarded. The name is now applied to disorders characterized by recurrent episodes of the sort to be described.

324. Grand mal. The typical epileptic fit. The episodes that characterize epilepsy are quite varied and may not fol-

low literally the following outline, but in well-developed forms, which are called grand mal attacks, the sequence of events is of the order about to be presented.

1. *Preliminary signs.* Most epileptics have signs which they sometimes recognize themselves as the precursors of a fit. In other cases their friends are able to discern the indications of an oncoming episode. In the older literature on epilepsy these signs were called the "aura," which term is a relic of the older conception of the disorder as a "seizure." "Aura" means an emanation, a sort of vapor which was supposed to proceed from the individual to indicate the presence of the spirit who was about to take possession of him. The term is now used as a synonym for "warning."

These preliminary signs are quite varied. The patient may see flashes of light (photomata), may hear buzzings (akoasms), may have a feeling of giddiness, or queer convulsive reactions of the viscera. He may be filled with fear or ecstasy, may become very alert in his thought processes, highly imaginative, or may become drowsy. He may tremble, parts of the body may jerk, or he may run about in circles.

These preliminary activities, while they are extremely varied, as the above enumeration indicates, are fairly constant for each individual. For example, one woman could tell for some time in advance that her husband was going to have a fit because of a change in mood, which began very gradually but continued until he became quite irritable. She could indicate by the pitch of irritability just about when to expect the break. To be able to predict the attack is of value, especially to a teacher who has an epileptic in her class. She can save herself and the class unpleasant shocks if she sees the approach and makes preparation for it.

2. *The tonic stage.* The "aura" is followed by a tonic contraction of all the muscles of the body. The beginning of this tonic stage may produce a peculiar scream in the following manner. Since the muscles concerned with expiration are stronger than those of inspiration and those that close the glottis are stronger than their antagonistic muscles, the glottis

is reduced to a slit and the air forcibly expelled as the state of tonus is increased. This produces the classical epileptic scream. With the complete development of the tonic stage the patient drops like a log with no regard for danger, and with total loss of consciousness. In some cases this may lead to severe injury. One woman came to the hospital all burned and scarred. She had reached over a hot stove just as the fit came upon her and had fallen upon it. Others will fall down steps, will bump their heads on hard projecting objects, and otherwise injure themselves.

The tonic stage lasts from but one to two minutes.

3. *The clonic stage.* A clonic convulsion is an alternate contraction and relaxation of the musculature. When this supersedes the tonic stage the patient thrashes about in a very marked manner. This rhythmic contraction and relaxation has some particular effects that should be noticed. It whips the saliva into a foam by movements of the tongue combined with the vigorous mouth breathing. In addition to this, the clonic movements of the jaws may cause the patient to bite his tongue. One can safeguard against such injury by placing a soft object, such as an ordinary eraser, between the teeth.

There is nothing that can be done to hasten the end of the attack. One can simply take care of the patient to prevent his injury of himself or damage to his surroundings. The clonic stage lasts but a few minutes.

4. *The period of coma.* The clonic stage is likely to pass into that of coma, or deep sleep, which may vary in length from several minutes to several hours. After awaking from his sleep the patient usually feels very much worn out and "used up," a thing that would be expected from such violent activity.

325. Petit mal. Minor epileptic episodes. In many cases, attacks which are presumably epileptic in nature do not follow the full course outlined above. These minor attacks have been called petit mal. It is quite likely that a number of these are not true epilepsy, but are functional "escapes from

reality," the result of some idea or situation coming to the surface which is too painful to bear and from which the individual escapes by a minor lapse of consciousness.

In these forms there may be minor motor disturbances and some dizziness, but the subject seldom falls or goes through the other phases of the major "grand mal" episode.

The following incident illustrates the transient nature of a petit mal attack. One day as the author entered a baker shop, another customer quickly passed him at the door. As the author approached the counter the woman attending the store rose from a chair with a bewildered sort of expression. She looked at her hand and said, "How did I do that, I wonder." Her hand was bleeding. She then related that she had just waited on the customer who had left, had felt rather dizzy and had sat down. She had not the slightest notion how she cut her hand. All this had happened in the brief space of time it took for one customer to go from the counter to the door and for the other customer to walk from the door to the counter. Whether or not this was a petit mal attack of epilepsy we have no assurance, but it is the sort of thing which we find in such attacks. The loss of consciousness was not marked enough to cause her to fall over, but she sat down in her chair as a result of feeling faint and dizzy. The presence of the cut indicated a true momentary lapse of consciousness.

326. Epileptic equivalents. There are individuals who have recurrent episodes which do not involve any loss of consciousness, do not involve any fit in the real sense of that term, but because of their recurrent nature, because they occur in those who are known to have epilepsy, have been called epileptic equivalents. We shall describe some of the most important of these.

1. *Attacks of irritability.* The individual recurrently becomes very ill-humored, fault-finding, and irritable. This irritability occurs in spite of the fact that external things have been moving in their normal channels. The friends of one subject to these spells learn to expect them and stay away

from him or smooth things over until the spell is past. Such a spell may be precipitated either by an organic irritation or by some mental irritation which the individual has been trying to ignore. Any one knows that, if he has some irritating skin lesion which he cannot relieve, he may try to be cheerful for a time and may hide from his friends the fact that the irritation is present, but, finally, at some trivial occurrence the irritability will express itself as an unreasonable reaction against some trivial incident. The same thing may happen when one is trying to ignore some mental irritant. This is probably the explanation of epileptic spells of irritability.

2. *Spells of furor.* Some individuals have recurrent attacks of great excitement during which they may commit acts of violence, brutality, and even homicide. Such attacks, as epileptic equivalents, are precipitated by trivial events. For example, a man who was known to have epilepsy, was one day up in a tree picking cherries. A neighbor came along and yelled in fun, "Hey, come down out of there." The man came down in a hurry, grabbed a club and chased the man who had called to him. He was so angry that he probably would have done the man bodily violence had he caught him.

3. *Epileptic delirium.* An epileptic delirium may precede an actual fit, follow it, or take the place of it. In such a delirium the subject has a clouding of consciousness. He wanders about in an automatic way and may get into all sorts of vicious conduct because he lacks the control which normal persons exercise in their contacts with life. After the delirium he usually has a complete amnesia for what transpired during the delirium.

A boy of this sort was brought into our clinic with the complaint that he would wander away at night and had been caught in several burglaries. It was discovered that he had no recollection of what happened on these trips. Several times he was found fast asleep in some factory into which he had broken. At one time he was traced and found sitting propped against a tree along the lake shore. He was taken

home and put to bed, but the next morning had totally forgotten the whole episode, including the trip home.

4. *Dipsomania*. Dipsomania is a name applied to periodic and impulsive alcoholism. In many cases of dipsomania we are dealing with a form of epileptic furor. This is evidenced by the fact the drinking comes with a peculiar urge as well as by the fact that the effect of the drink upon him is to promote acts which are similar to those performed in the usual epileptic delirium. These individuals lose control with the first drink, become vicious or hilarious as the case may warrant, or commit almost any sort of crime. In such cases the alcoholism is no doubt the result of the epilepsy rather than the cause of the uncontrolled episodic drinking.

327. Personality of epileptics. Thus far we have considered the episodes that are characteristic of epilepsy. It must not be presumed that they are superimposed upon an individual who is otherwise normal. The individual who is subject to these periodic attacks has a personality which is quite distinctive. We are of the opinion that this personality is the most important characteristic of the disorder and that the episodes are simply unusually intense expressions of this personality.

1. *Irritability*. One of the most prominent characteristics of the epileptic personality is irritability. The epileptic personality will react violently to the slightest irritation and will tend to carry over his ill-humor into other situations in a very childish manner.

2. *Lack of control*. The epileptic lacks control in all realms. If he likes a person he becomes very affectionate. If he hates a person he is equally uncontrolled in his hate. He will go to extremes in religion, in his eating, in work, in play, in everything in which he engages. This characteristic sometimes shows itself very early in life in that the young child fails to learn to control his natural functions. Hence, persistent nocturnal enuresis, if accompanied by other indications of lack of control, may indicate the beginnings of an epileptic personality.

3. *Persistence.* Once an epileptic gets an idea he is very likely to adhere to it very tenaciously and attempt to carry it out at all odds. He treats opposition in much the same manner that one would expect a spoiled child to treat it. He is as likely to persist in some trivial, senseless pursuit as in some activity that has worth. It is a blind persistence.

328. Nature of epilepsy. It has become increasingly clear of late years that epilepsy is not a specific disease. We have seen how the description of what is called epilepsy leads us into a study of fits of various types, of queer attitudes, and all sorts of inexplicable bits of conduct. There is no doubt that these episodes are end results from various and diverse causes. Instead of epilepsy as a single disease entity there are various forms of epilepsy.

1. *Organic epilepsies.* A number of these are clearly caused by organic diseases. Various types of injury to the cerebral cortex may cause spells of unconsciousness of an epileptiform sort. The effects of such poisons as alcohol and lead may lead to irritating injuries and hence produce epileptic episodes. There is no doubt that syphilitic deterioration of the cortex and arteriosclerosis (hardening of the arteries) may also cause such spells. In such cases the disease is usually progressive, the dementia is marked and the patient may end in a condition of gradual decay or in status epilepticus, a condition where one paroxysm follows another in extremely rapid succession. These various sources should indicate to us pretty clearly that an epileptic fit is merely a symptom and tells us very little about the cause of the disorder. It may come from a number of different sources.

2. *Psychic epilepsy.* It is quite likely that there are forms of epilepsy which are independent of organic causes. These probably include those cases where there is no intellectual deterioration and are most clearly apparent where the epileptic episodes are an exaggeration of the personality that we find in the individual in the interim between fits.

It is this type of epilepsy that is of peculiar interest to the psychologist and the educator because it is a character

anomaly. Some forms of psychic epilepsy are no doubt hysteria rather than epilepsy. The individual adopts the epileptic fit as a means of obtaining his desires. It is a form of trickery and as such is an hysterical manifestation. Such cases can usually be discerned by the fact that they are more likely to stage their fits when they have an audience, to fall in places where they will not be injured, and otherwise to protect themselves.

Other forms of psychic epilepsy are evidently the bursting forth of pent-up emotions which have been restrained to the breaking point. The irritability may be understood as warnings that the person is about reaching his limit of repression, and such irritability is an indication that the barriers are leaking and about to break. In these situations, the subject does not permit himself to vent his anger against the real object or cause of his repression, but against some irrelevant object, probably because of tremendous fear of the real cause of his trouble. This mechanism is illustrated by the man who kept a mule for the sole purpose of using it as an object upon which to vent the anger he could not express directly when he became irritated with his wife. If such outlets are satisfactory the person may not have a complete fit. If they are not, the tension may grow until the fit is precipitated. In this manner we have an explanation of the relation of the epileptic equivalents to the major forms of attack.

At times, such indirect outlets for irritation are insufficient. The unrecognized cause of the tension increasing to the breaking point the patient, as White¹ expresses it, "takes a flight into unconsciousness."

When a child is found who lacks control in various realms, who is a glutton, who has persistent enuresis, who has a violent temper, who goes to all sorts of excesses, one should suspect a personality developing on the epileptic basis. The usual treatment for such a child is attempt to teach him control by means of increasingly rigorous discipline. This merely

¹ Wm. A. White, "Outlines of Psychiatry," Nerv. and Ment. Dis. Pub. Co., p. 290.

furnishes fuel for the child's lack of restraint. It stimulates him to fight the harder. The more valuable procedure would be to uncover the struggle which the child has not dared to face. Adjust this difficulty and his apparent lack of control will cease. Force him to control himself, when he is mal-adjusted, by increased discipline and he will break forth with a more violent lack of control in some other realm.

IMPORTANT TECHNICAL WORDS

- aura.** The minor symptoms which often precede the full development of a major epileptic episode.
- benign.** Of a mild type or character.
- catatonic.** Literally a diminution of tension. It has been used to designate the alternating excitement and depression which may characterize the introvertive type of person.
- clonic.** Pertaining to the convulsive movement which results from alternate contraction and relaxation of the muscles.
- coma.** A state of profound insensibility from which it is difficult or impossible to rouse a person.
- depression.** A condition characterized by emotional dejection, motor inactivity and slowness of thought.
- enuresis.** An involuntary discharge of urine.
- epilepsy.** A disorder characterized by episodic attacks in which the subject loses consciousness and exhibits characteristic convulsive movements.
- eroticism.** Amorous sentiment.
- grand mal.** A major epileptic episode.
- hypomania.** The mildest form of mania.
- mania.** A condition characterized by emotional exaltation, motor activity and accelerated associational activity.
- melancholia.** A state of profound emotional dejection.
- petit mal.** A minor epileptic episode.
- verbigeration.** A repetition of words or phrases.

PROJECTS FOR FURTHER STUDY

1. Our study should be giving us a better understanding of ourselves as well as of others. Insight into human nature does not consist of any uncanny insight into abstract traits but ability to observe and see the significance of behavior. These projects should demonstrate this fact.
If the different members of the class know each other very

well, the following work can be done by the class as a group. If they are unacquainted, small groups of persons who are well acquainted should be made the basis for the work.

- a.* Have each member of the group rank all the members of the group (himself included) in order of merit from the best to the poorest, in each of the following abstract traits: 1, Originality; 2, Judgment; 3, Refinement; and 4, Integrity. Make a study of the variation in rankings and the amount of agreement between the ratings of one's self and the ratings of others. Note here the tendency in making these rankings to fasten the abstract trait to some concrete bit of conduct in order to make a judgment.
- b.* Following the procedure used in *a*, make rankings on the following bits of behavior:
 1. Degree to which person makes himself seen or heard when in a group.
 2. When a project is suggested, the degree to which person enters into it.
 3. Degree in which person responds to a humorous situation. (If possible, select a specific instance.)
 4. The number of movements made per unit of time when sitting quietly with no special stimulation.
 Compare the variability of these ratings with those of the abstract traits.

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CHAPTER XVII

MENTAL HYGIENE

In this chapter we shall learn that the proper place for mental hygiene is in childhood, when the individual is still plastic enough to yield to the educational measures which may be provided to enable him to overcome any peculiarities he may manifest, and to help him to develop a well-balanced personality. We shall describe various attitudes which may indicate the need for further investigation and finally point out the definite procedure which may form the basis of a program for any school system to insure the mental health of its pupils.

329. Illustration of value of educational mental hygiene.

A certain boy of about eleven was observed by his teacher to exhibit several forms of unusual conduct. He first came to her attention because of a fight he had with another boy. Instead of punishing him for fighting she began to investigate the background for the fight.

She discovered that he did not get along with any of the boys. He seldom fought with them, but rather stayed away from them. He expressed dislike for most of the boys in his class, for the school, and was, in general, very bitter in his attitude. The boys, on the other hand, thought he was "nutty." They teased him, called him names, and would not admit him to their games. He was poor in his class work, although his intelligence was somewhat above normal, and he hated school, longing for the time when he would be old enough to leave its rigor. His ambition, as he stated it, was to get even with the boys who had tormented him.

The attitude of hate on the part of this boy, the teacher rightly felt, was more important than the settling of a mere boyish fight. She began a more intimate investigation of his personality and surroundings. She discovered that he was the only son of a widow who had been in this country but a few months when he entered school at the age of six. She brought him to school in clothes which were different from those of the other boys and thus made him an object of ridicule. He went home after his first session with tears and protests against returning to school. The mother, to protect him, accompanied him to school and took him to the very school door. The close of each school session found her waiting at the school door to accompany him home. In turn the boys ridiculed her, which added to the boy's resentment and fear. This motherly protection was continued until a year before the fight which precipitated the investigation.

These facts indicate that through a period of years this boy had developed a great fear of the other boys. His only safety was to cling to the mother who protected him from their tormenting jibes. As he grew older he became ashamed of this attitude, his fear turned to hate and he determined to get even with them. It was this situation which precipitated the fight.

Most of this information the teacher secured from the boy himself, after she had won his confidence and had demonstrated to him that she was his friend. Having secured this background, she decided that she must teach the boy to adjust to the other boys. In getting his confidence she discovered that he was very congenial and knew that there was no reason except his hateful attitude why the boys should not like him. She set about to modify this attitude and to get him into good terms with the rest of the boys.

She found that the one whom this boy hated the least was one of the leaders in his group. By a little adroit conversation she induced our subject to say something nice about this boy and then proceeded to tell the leader what had been said. This drew forth a complimentary remark in return,

which she duly reported to our subject. This made each boy think well of the other.

She then managed to get each of them to do a good turn for the other, keeping herself in the background and arranging things so that the boys received all the credit. She arranged it so that they were thrown together in games and work. In these ways she developed a friendship between them. From this beginning she spread the interrelations until our subject had several friends in the class. Soon friendly relations developed in other directions without her help and by the end of the year the boy was happy, had a number of comrades, was well thought of by most of the boys, and was doing better work in school. The boy's attitude of hate toward others had disappeared.

This typifies the sort of thing that any teacher may do if she has a little insight into human problems and is willing to look beyond the immediate incident to the personal background of the ones who present problems. How much of a disaster she averted in the life of this boy it is impossible to say, but when we understand that many serious mental maladjustments have just such a beginning we are inclined to believe that such work is of inestimable value. The first duty of a school teacher is to be a genuine and understanding friend of every pupil in her class.

LXXXII. MENTAL HYGIENE AND EDUCATION

Mental hygiene, beginning as a humanitarian movement, grew into a medical problem; but it has since developed into a more comprehensive program, which includes the proper adjustment, through education, of every phase of the individual's life.

330. What is mental hygiene? The modern mental hygiene movement began as a humanitarian program designed to make life more tolerable for those who had succumbed to mental disorders. This naturally took the form of providing better housing for these unfortunates, more kindly means of treatment, and the development of a more tolerant viewpoint on the part of the public in general.

It soon became apparent that pleasant living conditions were secondary to the development of greater skill in treating these individuals from a medical standpoint. Great progress has been made in those disorders which have a definite organic or disease etiology, but medicine failed to throw much light on the great mass of disorders which have now been classed as functional disorders. A disease, to the medical man, was some morbid condition caused by a definite factor, such as a poison, bacterial invasion, physical injury, morbid cell growths, or similar conditions. A mental disorder which showed no such physical findings was as baffling to the medically trained man as it was to others. For this reason the first endeavors of the mental hygiene movement did little to alleviate functional mental disorders.

The reason for the limitations of this point of view is that it considers only failures of adjustment on the physical, chemical and neural levels, and omits from consideration failures of higher neural integration and social adjustments. With the recognition that one may develop points of view—attitudes toward himself, toward others, and toward social conditions—which may lead to complete disintegration, has opened a vast new field for the operation of a new preventive technique. If the reader has consistently studied the various disorders we have described, he will realize how extreme disorders may be traced to early developments of wrong mental habits, or the failure to integrate attitudes adequately, each of which may apparently be normal. He will see that mental hygiene for cases of this sort is purely an educational problem.

Mental readjustment for the one who has failed to adjust on the higher levels involves a reëducation program designed to substitute better habits of thought and conduct for the faulty ones. For the one who is just beginning to show a lack of proper integration mental hygiene means educational guidance of a sort which will prevent a complete break.

331. Phases of a rational mental hygiene program. A complete mental hygiene program must include and control

every factor which has a bearing on the individual's adjustment. Since there is no phase of his personality which does not have some effect upon such adjustment every phase of his life must be considered. Broadly viewed these may be divided into the following large groups.

1. *Physical health.* Since mental and social adjustments may be influenced by one's physical condition this phase of personality must be carefully studied. Logically it should be considered first because it offers the most easily recognized and most tangible approach. Even if a physical condition may not be the most important causal factor, the fact that it may be contributory is sufficient reason for never passing over an uncorrected one. Consequently, it is the practice, and a very sound one, to make sure that a thorough physical examination is given to every individual who has any signs of adjustment failure. For example, it would be absurd to blame a child for inattention, and to attempt to teach him habits of attention in school, if he had a hearing defect which made all his auditory impressions vague and muddled. But, it would be just as gross a mistake to assume, after ascertaining that his hearing was normal, that every possible cause for inattention had been considered after a physical examination of his ears, and condemn him as perverse because he would not attend. If the maladjustment remains after every possible physical condition has been corrected, we can be sure that something else is wrong and should take steps to ascertain the nature of that trouble.

2. *Social health.* A person's philosophy of life, his ideals, and conduct are largely determined by social factors. A complete understanding of an individual necessitates a thoroughgoing analysis of the social relationships he has encountered as well as the effect that these have had upon the development of his attitudes toward the problems of life.

In studying the social health of an individual care needs to be exercised lest the examiner be led to a mere evaluation of objective factors. The important thing is not so much the social conditions under which he has lived, but how these

conditions have affected his personality. We hear a great deal about the pernicious influence of bad companions, of poverty, of divorce, of being the only child, and like conditions; but these circumstances may have either a beneficial or a detrimental effect upon an individual. It is a question of how the person has responded to these social factors. A boy with a drunken father may become so disgusted with his father's conduct that he is impelled to lead a sober life. The same social condition may lead to social integration or social maladjustments. Too often our social histories are mere narrations of specific conditions with no evaluation of their influence on the individual concerned.

3. *Mental health.* Since mental life is the integration or coördination of the total personality, *a person who is mentally healthful is one who is balanced and integrated in all phases of his being.* What does such balance involve?

(a) BALANCE IMPLIES CONTINUAL ADJUSTMENT. Mental balance is not a static condition, but involves continual adjustment to each new phase of life. Each experience is a lesson which teaches us how to make a better response the next time a similar situation arises.

(b) BALANCE IMPLIES VARIED REACTIONS. Each person must learn specific ways of meeting each new dilemma which he encounters and since each situation is different the better adjusted individual uses different types of defenses with varying situations. Defense reactions are normal, but the balanced man does not adhere to one type: he has a number of different defense reactions. The unbalanced individual may often be observed trying to adapt one type of defense to all varieties of situations. There is no one solution to all of life's problems.

(c) BALANCE IMPLIES AN ENTHUSIASTIC OUTLOOK. The balanced man looks upon life as a game which he plays with all the skill and enthusiasm he can bring to bear. He is gratified by success and stimulated by failure. The unbalanced man regards it as a vicious struggle, and either feels

himself to be on the losing side, or has an overwhelming fear that he may be the ultimate loser.

The desirable personality, on the whole, reaches out to live as much as possible. It does not avoid difficulties by inactivity. The object of mental guidance should never be toward idealizing conformity but to teach each individual to live the fullest life. We do not wish to lop off outstanding traits, but to make them a valuable and vital part of an integrated being.

It is such a balanced individual that the mental health program tries to develop. It is obvious that such a development must begin with the infant and carry through life. It develops integration not by means of any mysterious agents but by means of a definite educational procedure which conforms to psychological principles.

LXXXIII. MENTAL HYGIENE CHANNELS

In line with the development from the conception of mental hygiene as a medical problem to mental hygiene as an educational problem, the agencies through which work has been done have been gradually shifting from purely medical agencies to training which involves the child at an increasingly earlier age. We shall consider the various channels for mental hygiene in this order.

332. Mental hygiene in hospitals. With the awakening of interest in the prevention of mental diseases our institutions for the custody of the "insane" have been changing into hospitals devoted to a scientific study of the nature of the different disorders as well as to the treatment of such cases as could be helped by medical methods. Whereas entrance into such an institution has been, in the past, regarded as a fatal and permanent separation from the world, it is now being regarded as is the entrance to any hospital. The patient enters because he needs special care and in many instances may be assured that he will be given the benefit of the latest scientific treatment. Strenuous efforts are made to rehabilitate the individual so that, in some manner at least, he may

be able to be paroled and finally discharged to take his place in society once more. In fact, we no longer speak of the insane or the crazy. We speak of the mentally sick just as we do of the physically sick.

333. Mental hygiene clinics. Work in hospitals has led to the recognition of the fact that if many of these cases had been treated in time their entrance to an institution could have been avoided. To supply the need for such treatment clinics devoted to the care of mental deviations have sprung up all over the country. To such clinics those with minor mental troubles may come with no fear that any stigma will be attached to them. They are treated with the same consideration and with the same thoroughness as any one with a physical disorder is treated. The success of these clinics has been phenomenal. How many have been kept from commitment to a custodial institution through treatment at the clinics no one can say, but the number is doubtless very large and is continually increasing.

334. School clinics. Work in clinics has further demonstrated that many who come there should have had a different type of treatment earlier in their lives. As has been indicated repeatedly through this text, histories of such cases show that the troubles of which they complain dated back to some wrong adjustment earlier in life. The real place for a clinic is not in public life, to rehabilitate wrecks, but in the schools to reconstruct individuals before the trouble has advanced appreciably. Preventive work rather than remedial work is the aim. Consequently, clinics, which have been called child guidance clinics, have been established to care for the child of school age. Most of these clinics have been established in such a manner as to coöperate closely with schools. The fact that they have been found so much more valuable than clinics dealing with adult cases has led to various suggestions as to future development.

One suggestion has been to establish a clinic in every school. This of course would be a very costly program, but if it were the ultimate solution, cost would not be a deterrent.

Another consideration has led to a different type of development. Even in the school it has been found that cases of maladjustment have a history of wrong training in the home previous to their entrance to school. Why wait until the child shows indication of maladjustment in the school? Why not begin mental hygiene in the home before he enters school?

335. Behavior clinics. An answer to this question has been offered in the opening of habit clinics for the guidance of mothers in the mental habit training of their children. To such clinics mothers are invited to bring their infants with the same motive that impels them to take their infants to welfare stations for physical aid. Specialists in such clinics can give advice to mothers as to how to prevent such things as temper tantrums, negativistic behavior, pouting, mannerisms, food fads, and many other habits which are likely to lead, if uncorrected, to more serious disturbances.

336. Parent-teacher education. Logically this development has pointed to the crux of the whole situation, which is the education of parents and teachers so that they can give their children proper mental training as well as proper physical care. In other words, the program of mental hygiene is admittedly one of education which has been carried farther and farther back into the development of the child until most energy is now being directed toward normal development of mental habits in infancy rather than correction of wrong mental habits in later life. The work of mental hygiene is no longer a task for physicians but a task for parents and teachers. Physicians and psychologists can act as advisors in this work but the real task is the educational work which must be carried forward by the ones who have the child in charge day after day, and hour after hour.

LXXXIV. MENTAL HYGIENE IN SCHOOLS

An adequate program of mental hygiene would supersede clinics, whose function it is to correct disorders. The school is the logical place for such development, so that it may pay us to survey what is being done and what prospects appear before us in this direction.

337. Beginning school at an earlier age. When school was considered as a place for intellectual training alone the child was not permitted to enter school until such time as it was thought he could assimilate and retain instruction of an intellectual sort. This age was usually placed at six years. Since we are beginning to realize that education involves training in emotional attitudes, personality habits, and the development of social behavior it has been felt by some that it would be profitable to supervise such training in the younger children.

At first this work was done as an experiment and for such experimental work pre-school laboratories have been established. In a few of these the work has deteriorated into a place to supervise the physical growth and nutrition of the child, but most of them have a broader vision of their function.

The need for such early training by experts is accentuated by our tendencies toward small families and congested housing. Where families were large and the child had opportunities to give vent to his energies in various ways he was likely to be more free to develop socially, physically, and emotionally into a more normal being than under conditions which so often prevail today. Consider the difficulty of being a normal boy in a city where for miles in all directions there is no tree that can be climbed without breaking the law; where for many more miles there is no brook into which a fish line can be dropped; where there are no chores to be done; and where, if he lets out a "whoop" his mother is informed that her boy is disturbing the neighbors and that she must keep him quiet or move. If there are but one or two children in the home, if they are living in rather confined quarters their contact with others is limited to a very few individuals. Any emotional disturbance or peculiarities that are present in any member of the family are, for this reason, more easily focused on the developing child in the home. We are all more likely to become balanced individuals if we can be influenced by a greater range of individuals.

Any unfortunate condition that may exist in a home accentuates such focalized influence. There are probably no more cases of domestic tension now than existed in the past but the influence of such conditions is more pronounced. We are beginning to realize that a plastic child gathers the significance of strained situations and incorporates them into his attitudes toward life in a way that we once thought impossible.

Even where the home conditions are ideal it is coming to be felt that the child is developed more wholesomely if he can be given a breadth of influence that would be impossible in a small family group in cramped quarters. For reasons of intellectual development and physical training there is no need for advancing the range of school training to the earlier years: for reasons of wholesome personality development it is becoming increasingly apparent that this advance is an advantageous move.

338. Training teachers in mental hygiene. To bring the child into the school at an earlier age would be futile unless teachers are trained to carry forward this broader conception of child training. If they do not understand the problems of mental hygiene, but look upon education as a form of discipline, it would be better for us to delay the exposure of the child to their influence. Training the child for mental health does not consist in teaching him to conform: to wash his face when told to do so, to be neat with his toys, to drink his orange juice without comment, to perform specific acts to the snapping of the fingers of his teachers or the ringing of a bell,—“lovely” as such immediate conformity may appear to the visitor to the pre-school laboratory. The training of the teacher for the real problems of mental hygiene is not a training in teaching technique, it is a training in the understanding of human nature and its problems.

A knowledge of the pitfalls of human adjustment, together with insight into their causes and development, is essential to an understanding of human nature. Fortunate is the child who is taught by one possessing both such understanding and

ability to use it without ostentation. It is a much harder task to develop a balanced personality than it is to teach skill in reading, arithmetic or geography; but there is no doubt that the former task is vastly more essential. One measure of success of the teacher today is not only how well her pupils pass academic examinations, but what sort of personalities she turns out from her school. The greatest problems of mental hygiene have fallen to the lot of the teacher and she cannot escape them, even if she would do so. Most teachers are not trying to escape the task, but are trying to gain more insight so that they can carry on this work effectively.

LXXXV. INDICATORS OF NEEDED ADJUSTMENT

Since it is necessary to detect deviations in their early stages, it may be well to indicate some of the things which in themselves are not of serious import but which indicate an attitude which may become pernicious. It should be remembered in each case that it is the correction of the basic attitude rather than the overt symptom that should be attempted. Our list is not exhaustive, but should suggest other similar attitudes which might indicate beginning maladjustment.

339. Attitude of hate. The attitude of hate toward others is usually an indicator that the child has been maltreated in some respect, although the maltreatment may easily have been unintentional. Hate may not show itself openly but often is indirectly expressed by little, mean things that seem to give the child a keen delight. Or, again, he may not do anything mean to the other children but may passively sit by, waiting until some one suffers, whereupon he can be observed convulsed with silent and half-hidden glee.

Such hate may be directed toward one individual, toward a group of persons, such as toward teachers, the other sex, policemen, a particular girl, and the like, or toward everybody indiscriminately. The breadth of reference is not a true index of the extent of the injury that the child has received. One bit of injustice, fancied or real, may lead to a generalization. For example, one boy, having been reported to his mother, was mercilessly beaten. As a result he developed

a tremendous hatred toward everybody. In another instance, an attitude of hate which looked very similar to that of the boy referred to, developed in a girl because almost the entire school which she attended shunned her as the result of a reported theft.

While one may hate without developing a serious maladjustment, this attitude is one of the primary requisites for the development of delusions of persecution, and when in an advanced stage is one of the most pernicious types of disorder that we encounter. Hence, it should be noted, studied carefully, and attempts made to remove the basic cause.

A readjustment of this attitude cannot be accomplished by moralizing or by forcing the child to assume an attitude of friendliness which he does not feel. Hate is best treated indirectly and not by idle conversation about the relative merits of hate and love. But the indirect treatment presupposes an accurate knowledge of the specific developmental causes.

Suppose, for example, that a child hated all his classmates because he fancied that they considered him dishonest. (The situation would be of the same order if they did consider him dishonest.) Such an attitude could be corrected by covertly bringing things to the point where the other children did trust him and where he became convinced of their trust.

340. Attitude of cruelty. The observer cannot discern the true nature of cruelty from the mere fact that a child has hurt another. Concomitant circumstances must be considered in the attempt to understand why the child was cruel and what satisfaction he derived from being cruel. It may be the result of an outburst of anger, it may be the retaliation for an injury received, or it may indicate the beginnings of a sex perversion. This latter is especially to be considered if the child seems to take undue delight in the actual suffering of his victim. If the latter is thought to be the background, a rational program of biological training would be the best procedure. If one of the former situations was involved a reconstruction of the hostile attitude should be attempted.

341. Tendency toward introversion. The tendency toward introversion is often apparent in very young children in that they tend to go off by themselves and pout upon every difficulty they experience. They learn to enjoy themselves most when alone and may become totally indifferent to others. Such a tendency, if not checked, is very pernicious for it is the groundwork upon which is built the extreme regressive disorders, in which the patient loses contact with reality, and is hard to cure because it is hard to get through his "shell" of defense to his real personality. Childhood is the time to catch this tendency and to supplant it with a more social attitude. This should not be done by forcing the child into social contacts, as is so often attempted. He should be placed in situations where he will be sure to derive more pleasure from his contact with others than he derives from staying by himself. Do not make it an obligation for him to be with others. Make him feel that it is a privilege. If the child persists in shunning others it is probably due to some early attitude he has been taught to develop in the home or elsewhere and the specific procedure to be followed comes naturally from an understanding of how his introvertive attitude started.

Teachers often unwittingly teach some of their pupils to become introverts. One very prominent tendency in modern education is to stress speedy reactions to flash cards and other devices. With this method the quick child is encouraged and the ones who are not exceptionally clever in this procedure are permitted to drop behind. How can such children maintain their self-respect? By turning their thoughts inward and dropping away from the social situation. When this happens the teacher, who too often is bent on exploiting a few children to demonstrate her teaching ability, condemns the child as dull. The solution for this situation is not to condemn the child as introvert, but to change a system which is obviously destined to make a certain percentage of the class develop non-social attitudes. We have lauded the effects of competition upon a few individuals but have neglected to

note the effect on the majority who do not excel in such competitive methods of education.

342. Tendency to exaggerate illness. A child usually gets much sympathy when he is ill or hurt and he may exaggerate his suffering in an attempt to get such sympathy. It forms the soil for the development of the more intricate forms of conversion hysteria and the functional disorders that are associated with it.

A common method of ridding the child of this tendency is to withhold any attention when he complains of pains and aches. Too often this simply acts as a stimulus for him to pretend even greater physical agony until he actually does get the sympathy he craves.

The development of this symptom indicates that he does not get the love he wants. See that he gets it without the necessity of resorting to any ruse. It is not the wisest plan to cure a child of eating candy by starving him to death; neither is it a good plan to cure him of the ruse he has adopted to get love by giving him none. Fill the child with good food and he will not crave candy; give him plenty of affection and he will not be forced to become sick to get it. The yearning to be loved, with its manifestations in secondary forms, such as to be a person of consequence, to be noticed, and to feel wanted, is one of the strongest urges in human life. Do not think a child will be deprived of these without a struggle to get them in one way or the other.

343. Tendency to blame others for difficulties. This tendency to blame others is often not regarded in a serious light by adults, and too often is actually fostered through taking the suggestion of the child that another, not he, is to blame for various situations that arise. It is one of the basic traits behind the development of paranoia, the disorder which blames all troubles on the persecution of others.

We are so anxious to fix blame that we give it too much importance in the eyes of the child. When a difficulty arises and the two principals each try to fix the blame on the other it is best not to take sides at all, but carefully to analyze

the situation and see that neither child is punished or that both suffer equally. Even if the child is right in getting the blame fixed upon the other he is taught to adopt this method in future situations where the blame is not so apparent, if the search for the blameworthy one is the thing emphasized. It is more important to get an attitude of fair play than it is to fix the blame for some specific event.

344. The tendency to rationalize. This tendency is often unwittingly cultivated by the premium teachers and parents place upon good excuses. As these excuses become more involved they are classed as reasons and are regarded with the same reverence as are all intellectual processes. Such "reasons" are so effective in convincing others that our conduct is justified, that it is not long until the child extends his use of this method to convince himself that he has good reason to do the thing he wants to do.

Rationalization is so satisfying to the individual who indulges in it, and is so convincing to the outsider that it is very easy for the child to develop it to an extreme degree. It furnishes one of the most difficult barriers for the understanding of motivation that we encounter. It is the great support of intolerance. When we are dogmatic in our teaching we are lending support to rationalization in the pupil. The best way to safeguard young people against this mechanism is to teach them that there is always another side to every question than the one they have seen fit to sponsor. It is often very illuminating to watch the reactions of a person, after he has given a long list of "reasons why" he did some particular thing to which you have listened sympathetically, when you ask very kindly but firmly, "That is all very true. I understand that those things entered into your conduct, but now tell me the *real* reason."

345. Tendency to daydream. One should not assume because a child sits listlessly idle that he is daydreaming. Such conduct may indicate an emotional depression, the behavior of a person who has few ideas of any sort, or the posture of one whose mind is busily engaged in weaving fantasies.

When it can be ascertained that the person is dreaming it is almost always sure evidence that he is dissatisfied with things as they are. The parents or teachers of such a child may insist that he has everything that he could wish, but often the dissatisfaction is of some intangible sort that only comes to the front when one gains the implicit confidence of the child.

It may be of a mild sort and pass away when the present difficulty has been removed or it may become converted into a chronic attitude. It is only in this latter case that it becomes very serious, but this is serious enough a condition to warrant his being taught the joys of real life by those who have him in charge. If he is shown some satisfaction from life as it is he will never be content with dreams. This is the only cure we know for daydreaming.

The modern school has so many phases that there is plenty of opportunity for each child to find enough satisfying and thrilling things to supply his interests. Such satisfying interests will make daydreams unnecessary.

346. Attitude of fear. Fear indicates unfamiliarity with the thing feared. There are a few things that the child should fear until he is able to cope adequately with the situation. An instance of this is crossing the street. As the child grows older and learns how to cross a busy thoroughfare the fear is supplanted by sensible precautions. If he shows unusual fears of many things it indicates that he has not had opportunity to acquire the experience he should. In other words, it usually indicates that his supervisors were afraid of the thing which the child fears, and because of the adult fear the child has been prevented from sufficient experience. To be sure, some painful experience may be at the root of an abnormal fear but such a fear can usually be dissipated by discreet training. Where it cannot be so removed the indication is that the manifest fear is used to cover the basic fear of some hidden thing. In such cases the real fear must be unearthed and treated.

347. Attitude of suspicion. Very often with a rude shock a child learns that he cannot trust some person in whom he had implicit confidence. If he takes this awakening with reserve, and does not generalize to the assumption that one cannot trust the motives of anyone, he is making a rational adjustment. If he becomes bitter, he may assume the attitude of suspicion toward everybody. This attitude forms one of the foundations upon which to build false ideas of persecution and evil influence. Once adopted it is so satisfactory that it is hard to eliminate. It is a good teacher who can train her children to adopt a balanced attitude between that caution which is needed for self-protection and that suspicion which would hold everybody aloof for fear of their evil influence.

348. Suggestibility. One needs to take hints from those capable of giving advice. There is nothing pernicious in the fact of suggestibility itself. It is only when an individual does not learn discretion in accepting it that trouble may ensue. This discretion does not involve a careful consideration of every item of advice received so much as it does a preparatory study of the individual who gives it.

It is often assumed that if a person is intelligent he will not be over-suggestible, but it has been found that there is no close relationship between intelligence and suggestibility. Statistical studies have shown this and the reader is no doubt familiar with typical instances indicating this lack of connection. If a child is too gullible the pranks of his comrades often serve as a balancing factor. These may, of course, be carried too far and unbalance the gullible individual, but are more to be supervised than prohibited.

349. Tendency to regress. Very early the child may show a tendency to escape present hardship by the wish that he were an infant again. He may not say this in so many words but his babyish conduct is enough of an indication that he prefers being a baby to becoming grown. Too often such behavior is cultivated by the doting nurse or parent who has obtained such delight in caring for the helpless infant that

she welcomes again the opportunity of caring for him as though he were still an infant.

Another form of this tendency is seen in the child's tendency to brag about past exploits or to live them over again in his imagination. Hard as it may seem, the only incentive for progress is dissatisfaction with the past and present. Make it easy to regress and that path will be traveled. Block the path backward, and make the present unpleasant, and the only exit is ahead. In most cases adults do not need to make the child dissatisfied with the past or present, it is accomplished by the child's comrades. The only warning that needs to be uttered is to avoid thwarting the child's progress by protecting him from the things that would drive him ahead.

That this is an important safeguard is manifest in the serious nature of the regressive disorders. Few individuals are as hard to arouse as the ones who are content to remain babies emotionally. It is only rarely that the normal person should experience very much interest in "living the old days over again." It is a harmless pastime to keep memory books, but it is a bad sign when we spend too much time and take too much delight in rereading them. If perusing them tends to make us more satisfied with the present or to urge us to better things ahead they are justified. If the result of such reading is to make us wish we were again "back there" they indicate a pernicious tendency.

Every individual *must* learn that he cannot relive what has passed. It is a fortunate thing that we are disappointed when we try. We have all heard the disappointment expressed by some one who has revisited his "old home town," or gone back to the class reunion. He moans, "Things are not as they were when I was a boy." Such a person may be sad because he finds that he cannot regress in actuality. If at the same time he learns that he cannot regress in imagination he has learned a vital lesson.

If teachers make each day more inviting than the one before, not by means of contrast with the preceding day, but, by adding new interests each day she is training her pupils

to progress. When this gets to be a habit they will not tend to regress.

350. Feelings of inferiority. A feeling^a of inferiority is not a feeling of chagrin over what has passed but a fear of incapacity to meet the future. To be sure the past failures may provide the foundation for this attitude but the distinction is important in indicating the remedy to be applied. The child does not want consolation for what has happened, he wants assurance that he will succeed in the future.

Such feelings may have justification in that there is a real handicap which the child recognizes. In that case all that the teacher can do is to help the child to become reconciled to the existing condition by providing a substitute achievement. If the feeling has no justification the teacher can provide opportunities for the child to succeed and thus enable him to regain his self-confidence.

One difficulty in the way of properly evaluating a feeling of inferiority in a child is that, in some instances, he has already begun to overcompensate for it and shows in his behavior an extreme aggressiveness and arrogance in the trait in which he feels inferior. This excessive conduct should be recognized as an attempt on the part of the child to hide his supposed inferiority and an effort made to give him a balance. This balance is not secured by thwarting his attempts but by directing them so that they have a more healthful tone. Under no conditions should such a child be ruthlessly "deflated" as one individual described his method of dealing with such individuals. Such a "deflation" is equivalent to pushing a drowning child's head under water. The difficulty is that we fail to recognize arrogant conduct as a supreme effort on the part of its owner to overcome a feeling of failure or inferiority.

351. How to detect other unusual attitudes. The foregoing twelve attitudes are given to indicate the type of tendency that might lead to mental maladjustment. Others might be described and will surely be found by the observant teacher. A safe rule to follow in the search for trouble indi-

cators is: **When any child is habitually markedly different in any respect from the rest of his group he needs further study.**

Upon such study it may be found that the peculiarity is not significant of any pernicious trend, may even be to the child's advantage. Our rule is not to be used as an index of a wrong adjustment but as a cue to select the individuals who should be observed a little more closely than the one who has no outstanding differences.

352. Danger of overdevelopment of one attitude. Furthermore, let it be clearly recognized that a reaction of hate, suspicion or any of the rest of those we have named is not in itself the serious feature. There are few individuals who have not reacted in some of these ways at one time or another. The significant and dangerous factor is when one reaction becomes so habitual that it is adopted on all occasions to the exclusion of others. When one type of meeting a situation so dominates the behavior that it is apparently overplayed it indicates that something is wrong. Consequently, it is a much more serious condition to find a child who shows only one attitude than it is to find one who shows a large number. Some are more pernicious than others, but even a pernicious reaction may be balanced if one uses others to offset it.

LXXXVI. SCHOOL PROCEDURE

Since the school is the crucial place to carry on a definite program of mental hygiene, it may be well to outline specifically how the various steps should be carried out in dealing with any case that comes to the attention of the teacher.

353. The teacher should endeavor to understand the child. By means of the regular tests of the school she should get all the information available. She should fit this in with her observations of his behavior and attempt to get some rational explanation of the peculiarity she observes. We believe that the competent teacher is better qualified to do this than anyone else because she comes into the closest and most prolonged contact with the child.

This search should not take the form of hunting for flaws. The teacher should regard the child as a puzzle, a problem which she must solve if possible, and for that solution she needs all the information she can get. Any teacher, who, after finding a few items that are not to her taste, makes the statement, "Well, I have convinced myself that he is peculiar and that he has no business in my room," has no place in the mental hygiene program. Any second class teacher can take care of easy children. It takes the first class teacher to care for the difficult ones. It is in the solution of such problems as are offered by the unusual child that one will find the fascinating charm of teaching.

If the teacher can help the child to solve his problems without going any further she has done a valuable service. Many problems are aggravated by making too much turmoil about them. But the teacher should be frank enough to recognize when she has not solved the issue and be willing to ask for advice. She will thereby learn how to do better the next time.

354. The school counselor. Every school should have connected with it some person, who in some cases may be a regular teacher or principal, who has an unusual amount of tact in dealing with children, who has some insight into the nature of the mechanisms that have been discussed in this book, and who can get the confidence of the children. When a teacher finds a problem she cannot solve, this counselor should be consulted.

Reference to such a person is much better than rushing the child off for an examination to some one who has the reputation of dealing with queer persons. Such a procedure will make the child and his comrades think that something serious is on foot and will vitiate the purpose of the examination. The child should be made to feel that the counselor is his friend, should be led to confide in her, and be willing to accept her advice and aid. It should go without saying that such confidences must be held sacred and the child never

made to suffer in any manner for anything he confides to the counselor.

355. Central reference clinic. There will be a few cases who are too difficult for the combined efforts of the school counselor and teachers. In such instances reference to a central clinic, manned by specialists should be the next step. In such a clinic all phases of the case may be studied, a diagnosis reached and plans laid for the child's reconstruction.

Reference to such a clinic should not be regarded by the school as freeing them from obligation. In most cases only the clinic can make recommendations, but the reconstruction work has to be carried on through the school.

356. Conclusion. In conclusion, let us remember that mental adjustment is a continual process. Having passed one crisis in our lives none of us can say, "Now, I am adjusted for good." Having met the issue which has just passed and having kept our mental balance through it, we are prepared to meet the next experience. Mental adjustment, in short, is meeting each situation in a manner that will enable us to maintain our personal integrity, that will link us closer to our fellows, that will benefit rather than injure any of them, and that will make us a little more confident of our ability to meet the next surprise which awaits us. Furthermore, the adjusted individual does not anticipate the future with foreboding, but with confidence, knowing that what has passed has made him more capable of meeting what lies ahead.

PROJECTS FOR FURTHER STUDY

A general project is to make a survey of the attitude toward mental hygiene that exists in your community and the work that is now being carried on which might be included in a mental hygiene program. Each member of the class may work on an independent part of such a survey, or the work may be done in groups. After the material is gathered, it should be assembled and a general program of development outlined for your community.

Suggested approaches are as follows:

1. Is anything being done in connection with the schools?
2. May any part of the legal procedure be considered as leading toward the mental reconstruction of the criminal?
3. Are there any clinics which deal with mental cases? If so, just what are they doing?
4. Is there anything done to take care of the mental health of persons suffering from bodily ailments in your hospitals?
5. If there are any hospitals for chronic diseases, such as tuberculosis or cancer, is there any attempt to keep them mentally fit?
6. What are the religious organizations in your community doing in this direction? What directly and what indirectly could be considered as mental hygiene work?
7. Are there any clubs or lodges doing any mental hygiene work, or any work that could be indirectly placed in this heading?
8. Do places of amusement contribute directly or indirectly to mental hygiene? Is there a definite aim on the part of the management in this direction?
9. Prepare a questionnaire designed to get an expression of opinion on the fundamental issues in mental hygiene, and get responses from the influential individuals in the community.
10. Having found what the individuals in your community think mental hygiene is, and the extent of their information or ignorance upon the subject, outline a definite program designed to educate the public to the needs of mental hygiene. Design this program so that it would gradually work up toward the development of mental hygiene organizations that would best serve the needs of the community.

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INDEX

- ABNORMAL PSYCHOLOGY: benefits from study of, 28-32; deals with symptoms, 21; definition of, 9.
- Absent-mindedness: in schizophrenia, 520.
- Acute mania, 569, 573-574.
- Acute melancholia, 569, 575.
- Adjustment: chemical, 5; difficulties of, 7; levels of, 5-7; living as, 3-4; neural, 6; physical, 5; social, 6.
- Adler, Alfred, 538.
- Adrenal glands, 230-231, 266.
- Affect, 107, 179, 266, 427.
- Affective failure, 374-375.
- Afferent fibers, 107.
- Agraphia: definition of, 149; description of, 119.
- Akoasm: definition of, 67; description of, 53; in epilepsy, 584.
- Alcohol: hallucinations from, 98-99.
- Alexia, definition of, 149; description of, 119.
- Allopsychic delusions, 174.
- Amaurosis: definition of, 67; description of, 43.
- Ambitions: as fixed ideas, 131.
- Ambivalence: definition of, 266; description of, 264-265.
- Ament: associations of, 121; definition of, 221.
- Amentia: definition of, 346; types of, 318-323.
- Amnesia: definition of, 221, 504; for acts during hypnosis, 202; localized, 205-206; of impression, 189-191; of reproduction, 191-192; systematized, 204-205.
- Ancestry: delusions of, 164-165.
- Anesthesia: definition of, 67, 470, 504; functional forms, 58-64; inconsistency of, 163-164; induced by suggestion, 60-62; in hypnosis, 448-450, 461; in hysteria, 484-485; variable nature of, 62-63.
- Anger: persistence of, 242-243; types of, 239-243.
- Animal magnetism, 445, 470.
- Anorexia, 486, 504.
- Anthropomorphism, 221, 427.
- Anxiety: as personality trait, 381; causes of, 245-247; description of, 244-247.
- Apathy: definition of, 221; description of, 239-240.
- Aphasia: analysis of, 116-118; definition of, 149; reëducation of, 120; simulation of, 121; tests for, 118; types of, 117-119.
- Argyll Robertson pupil, 276
- Association: abnormal activities of, 121-129; abnormal constellations of, 129-132; abnormal types of, 116-132; dearth of, 121-122; disorders of, 109-150; illustration of rambling, 109-110; in hebephrenia, 525-526; inhibition of, 114-115; methods of studying, 136-147; nature of normal, 110-112; significance of

- abnormal, 133-136; utilization of, 112-114.
- Astasia-abasia, 205.
- Astereognosis: definition of, 67; significance of, 58.
- Astigmatism: definition of, 67; description of, 38.
- Ataxia: definition of, 307; description of, 279; tests for, 280.
- Atonicity, 276-277.
- Attitudinizing: in rigid catalepsy, 287.
- Audition: decreased acuity, 51-52; disorders in, 51-55; increased acuity, 52-53; in hysteria, 485; qualitative changes in, 53.
- Aura, 584, 591.
- Autoeroticism: definition of, 266, 392; development of, 251, 254.
- Autointoxication, 511.
- Automatic acts, 296.
- Automatic writing: recall by means of, 198-199.
- Autonomic nervous system: description of, 225-231; organization of, 226-227; segmental division of, 227-231.
- Autonomic tensions, 357-358.
- BABINSKI, 61, 62, 490.
- Bechterew, W. V., quoted, 442.
- Belief, 166-167.
- Berkeley, W. N., quoted, 322-323.
- Bestiality, 260-261.
- Blanton, Smiley, quoted, 298.
- Bleuler, Eugen: 77, 510, 522; quoted, 99, 100, 125, 264-265, 269, 524.
- Blindness: functional, 45-49; mental deficiency caused by, 328; unilateral, 47-49.
- Blocking: definition of, 149; of associations, 123-124; in amnesia, 205; in association test, 140, 144.
- Bones: deformities of, 317.
- Braid, James, 446-448.
- Brain spot hypothesis, 16.
- Bramwell, J. M., quoted, 447, 448, 449, 456, 467.
- Burnham, William H., 216.
- Burr, C. B., quoted, 80.
- Burt, Cyril, quoted, 295, 314.
- CANNABIS INDICA: hallucinations from, 99-100.
- Cannon, W. B.: 225, 230; quoted, 231.
- Carpenter, W. B., quoted, 87, 95, 109-110, 181-184, 206-207, 407.
- Catalepsy: definition of, 307, 470; description of, 284-288; rigid, 285-286; significance of, 286-288.
- Catatonia: definition of, 591; excitement, 279-281; mechanism of, 582-583; prevention of, 583; schizophrenic type, 516; stupor, 581-582.
- Censor, 413-415, 428.
- Cereae flexibilitas, 284-285.
- Cerebro spinal fluid in hydrocephalic, 319, 346.
- Character: deterioration in paretic, 325-326; example of breakdown of, 1-2.
- Charcot, J. M., 61, 489.
- Chiasma: definition of, 67; optic, 44.
- Chorea: definition of, 307; description of, 290; explanation of, 291; organic type, 281.
- Cilio-spinal reflex, 275.
- Circumstantiality, 126-127, 149.
- Clinic: at Northwestern University, 54, 64; behavior, 601, 615; child guidance, 27-28; mental hygiene, 600; organization of, 19; school, 600-601.
- Clinical criteria of intelligence, 315-317.
- Clonic convulsion, 585, 591.
- Cocaine: hallucinations from, 99.
- Color blindness, 43.
- Coma, 585, 591.
- Compensation: abnormal develop-

- ment of, 547-558; analysis of, 535-541; definition of, 392, 564; disintegration from, 558-560; disorders of, 534-564; forms of, 541-547; illustration of, 534-535; in personality development, 374, 381-382, 384, 387; treatment of, 560-563.
- Complex: definition of, 134-135, 149; development of, 135-136; making fetich of, 148.
- Compulsion: definition of, 149, 307; description of, 289-295; relation to obsession, 132, 289, 292-293; relation to phobia, 292; specific types of, 293-295.
- Condensation in dreams, 416.
- Conditioned reflex: complex explained by, 135; definition of, 221; inhibitions produced by, 216-217.
- Contracture, 284, 307.
- Convulsions: definition of, 307; description of, 280-281; in hysteria, 483-484.
- Coördination: and personality integration, 355; lack of motor, 279-280.
- Cornea, 308.
- Corneal reflex, 274.
- Cortical, 399, 428.
- Cramp: writer's, 304.
- Cranial segment of autonomic nervous system, 227-231.
- Cranium: deformities of, 316; of hydrocephalic, 319; of macrocephalic, 320; of microcephalic, 318.
- Cretinism, 322-323, 346.
- Crile, George W., quoted, 225, 243.
- Cruelty, 263, 266, 393, 605.
- Crystal gazing: recall by means of, 202-204.
- Curiosity: as a perversion, 263; as a trait, 376.
- Cutaneous sensations: components of, 45; description of, 55-58; types of, 56.
- Cynical persons, 377.
- DATA: classification of, 18; collection of, 18; evaluation of, 18.
- Davies, S. P., quoted, 341, 344-345.
- Daydream: tendency to, 544-545, 608-609.
- Deafness: functional, 52; illustration of functional type, 33-35; mental deficiency because of, 54-55, 328-329; organic, 51-52; suspicions developed because of, 53.
- Debility: reaction against, 554-555.
- Deep sensibility: description of, 56.
- Defense mechanism, 179, 221.
- Defense reaction: delusions as, 171-173; hallucinations as, 102-104; manic-depressive conduct as, 575-576; symptoms as, 22.
- Deformities: anatomical, 316-317; in juvenile paretics, 324.
- Delayed reaction: in association test, 138.
- Delirium, 587.
- Delirium tremens, 100.
- Delusions: analysis of, 165-173; as defense mechanism, 171-173; bizarre, 156-157; content of, 159-165; correction of, 175-179; course of, 158-159; definition of, 107, 152, 179; description of, 153-159; hallucinations and, 96-97; hypochondriacal, 162; in paresis, 14; in schizophrenia, 525; irrational, 156; material of, 173-175; mental deterioration in, 173; nature of, 151-153; nihilistic, 161-162; of grandeur, 163-165; of persecution, 162-163; of self-accusation, 160; permanent, 159; systematized, 153-154; transient, 158; unsystematized, 154-156.
- Dement: associations of, 122.
- Dementia: definition of, 221, 346; epileptic, 326; pseudo, 327-329;

- syphilitic, 324-326; types of, 323-329.
- Dementia præcox: definition of, 508-509, 532; objections to term, 509.
- Demoniacal possession: theory of, 10-13.
- Depression: definition of, 591; degrees of, 569, 574-575; description of, 237-238, 274-275; in delusions, 158, 161.
- Deterioration: in delusions, 173; in parietic, 325.
- Diefendorf, A. R., quoted, 289.
- Dipsomania, 295, 588.
- Discrete stimulus: method of free association, 137-142.
- Disintegration: in hebephrenia, 527; in paresis, 325-326; of personality, 350-351.
- Disorientation, 207-209.
- Displacement in dreams, 416.
- Distractibility, 125.
- Doubt: psychology of, 167-168.
- Dramatization in dreams, 416-417.
- Dreams: as personality indicators, 418-427; characteristics of, 405-409; example of childish, 394-395; free association tests with, 145; hypnotic, 462; theories of, 409-418.
- Drugs: as causes of dreams, 420; in hallucinations, 98-100.
- Dwarfism, 317.
- EAR: deformities of, 316.
- Economic standard of intelligence, 312-313.
- Egocentric, 384, 393.
- Egoism, 378, 384-385.
- Elation: description of, 236-237; in delusions, 158.
- Emotional patterns: formation of, 231-235; innate forms, 232-233; learned reactions, 233-234; spreading of, 234-235.
- Emotions: disorders of, 223-267; examination of, 265-266; in association tests, 141; in catatonia, 579; in delusions, 152, 156; in hallucinations, 102; in hysteria, 477, 493; in manic-depressive, 577; in personality integration, 234; in personality types, 378-383, 384, 390-391; in reasoning, 169-170; in recall, 192-193, 197; in regression, 514-515, 519, 524; patterns of, 231-235; swings in, 238-239.
- Eneuresis, 590, 591.
- Epicritic sensibility, 56, 67.
- Epilepsy: definition of, 591; dementia, 326; description of, 583-591; episodes of, 583-586; equivalents of, 586-588; feigned by David, 11; irritability in, 240-241; nature of, 589-591; personality in, 588-589.
- Episodic disorders, 565-592.
- Erogenous zones, 250-251, 266.
- Euphoria, 237, 266.
- Exhibitionism: as a trait, 376, 385; definition of, 266; description of, 262-263.
- Exorcism, 13.
- Experiment, 19-21.
- Expressive apparatus: disorders of, 296-307.
- Extravert: definition of, 149, 393; description of, 386; manic-depressive as extreme of, 576-577; types of personality, 389-391.
- EYE: deformities of, 316; disorders of, 37-45.
- Eye muscles: disorders of, 40-42.
- FACE: deformities of, 316.
- Facilitation: definition of, 149, 221; relation to recall, 214-216; suggestibility explained by, 434-436.
- Falsification: retrospective, 209-210.
- Familiarity: feeling of in strange places, 206-207.
- Family relationships and personality, 362-373.

- Fatigue, 98.
- Fear: abnormal, 223-225; as a personality trait, 387, 609; forms of, 243-249; of other sex, 259-260; relation to anger, 243-244.
- Feeble-mindedness: changing criteria of, 337-340; delinquency and, 340-341; education and, 343-345; inheritance of, 341-343; present problem of, 345-346; treatment of, 337-346.
- Fetich, 308.
- Fetichism, 261-262, 266.
- Fever, 100.
- Fighting, 390, 536-537.
- Food: refusal of, 487.
- Forgetting: in association test, 140-141; in dreams, 408-409; in everyday life, 193-195; pathological, 195-197.
- Fovea, 49, 67.
- Fox, C. D., quoted, 481-483.
- Franz, S. I., 134.
- Free association: continuous stimulus method, 142-145; conversational method, 220; definition of, 149, 428; discrete stimulus method, 137-142; emotional indicators, 265; illustration of, 109-110; tests of, 137-142.
- Freeman, Frank N., 332; quoted, 313, 314.
- Freud, Sigmund: 490-492; quoted, 402, 412-413.
- Fugues, 479-480, 504.
- Functional view of mental disorders, 15-17.
- Furor: epileptic, 587.
- GALTON, FRANCIS, 329-330.
- Galvanometer: in detecting emotions, 144-145, 265-266.
- Ganglion, 227, 266.
- Gedankenlautwerden, 91.
- Genius, 329-330, 326.
- Gigantism, 317.
- Gilliland, A. R., quoted, 71, 468.
- Gonads, 513, 532.
- Goodhart, Simon P., quoted, 101.
- Gosline, H. A., quoted, 23.
- Grand mal epileptic fit, 583-585, 591.
- Grandeur: delusions of, 163-165.
- Guessing device: for aiding recall, 220-221.
- Gustatory sensations, 65, 67.
- HABITS: cause of schizophrenia, 511-512.
- Hallucination: as defense mechanism, 102-104; auditory, 89-92; characteristics of, 87-89; definition of, 107; development of, 96-97; distinguished from illusions, 97; examination of, 105-106; explanation of, 98-104; illustration of, 69-70; in hypnosis, 461; in schizophrenia, 524-525; kinesthetic, 95; of pain, 95; of smell, 94; of taste, 94; treatment for, 104; visual, 92-94.
- Hart, Bernard, quoted, 134-135, 205.
- Hate: as personality trait, 388, 604; description of, 264-265; relation to love, 264.
- Health: mental hygiene and, 597-599.
- Healy, William, 294.
- Hebephrenia, 513, 515-516, 523-527.
- Hedonism, 221.
- Helmholtz: apparatus for detecting muscae volitantes, 42.
- Hemianopsia: definition of, 67; description of, 43-45; types of, 45.
- Heritage: reaction against, 547-549.
- Hermaphroditism: significance of, 527-528.
- Herring-Binet test, 334.
- Homocidal mania, 295.
- Homosexuality: as a personality trait, 378-379; definition of, 266, 393; significance of, 258-259.

- Hospitals: for mental diseases, 26-27; mental hygiene in, 599-600.
- Howell, William H., quoted, 396-397.
- Hunger: in dreams, 420.
- Hunt, E. L., quoted, 278, 279.
- Hydrocephalic, 319-320, 346.
- Hyperacute mania, 569, 574.
- Hyperesthesia: sexual, 260, 266.
- Hyperkinetic, 383, 393.
- Hypernesia: definition of, 221; general, 188; specific, 188-189.
- Hyperopia, 37, 67.
- Hypertonicity, 276, 462.
- Hypnoanalysis, 453-455.
- Hypnosis: as an anesthetic, 448-449; functional paralyses and, 281; hallucinations produced in, 101; history of, 445-455; illustration of, 430-431; methods of inducing, 455-458; nature of, 445-455; psychological analysis of steps in, 458-465; questions about, 465-468; recall by means of, 199-202; sleep in, 399-400.
- Hypochondriacal delusions, 162, 179.
- Hypokinetic, 383, 393.
- Hypomania, 569, 572-573, 591.
- Hypotheses, 19.
- Hysteria: anesthesia in, 61-62; blindness in, 49; definition of, 505; description of, 475-489; development of, 494-498; functional nature of, 475-477; illustration of, 472-474; major, 478-489; minor, 477-478; personality in, 492-494; suggestibility in, 432; theories of, 489-492; treatment of, 498-503.
- IDEAS: fixed, 131; flight of, 125; persistent, 130-131.
- Idiot: definition of, 346; measured by tests, 336; social definition of, 315.
- Idiot-savant, 310-312, 320-321, 346.
- Illness: as a defense mechanism, 494-498, 607; as personality characteristic, 370-371.
- Illusion: correction of, 85-86; definition of, 107; nature of, 83-84.
- Images: hallucinations as projections of, 101.
- Imagination: as a compensation, 544-545.
- Imbecile: definitions of, 315, 346; measurement by tests, 336.
- Impulsive acts: of catatonic, 581.
- Incoherence: definition of, 149; description of, 127; in dreams, 406.
- Indifference: emotional, 237.
- Inferiority complex, 357, 389, 538-541, 564, 612.
- Inhibition: definition of, 149, 221; of associations, 114-115, 125, 143; of memories, 193; relation to memory, 214-216; result of conditioned reflexes, 216-217.
- Insomnia, 402, 428.
- Instinct: definition of, 393; theory of, 356.
- Integration: definition of, 393, 564; force behind, 356-358; nature of, 354-356; of personality, 391-392.
- Intellectual deficiency: clinical types of, 318-329; illustration of, 310-312; measurement of, 331-337; treatment of, 337-346.
- Intellectual types, 374-378.
- Intelligence: abnormalities of, 310-347; criteria of, 314-318; definitions of, 312-314; measurement of, 331-337; supernormal, 329-330.
- Intelligence quotient, 336, 346.
- Interest: lack of causing amnesia, 212-213.
- Interpretation of dreams, 417, 419-427.
- Introversion: as a personality trait, 606; deterioration in, 327; in schizophrenia, 517-518.
- Introvert: catatonia in, 579; definition of, 149, 346, 393; descrip-

- tion of, 386; types in personality, 386-389.
- Inversion: sexual, 257-258.
- Irritability: as a personality trait, 380-381; caused by restraint, 241-242; description of, 240-241; in epilepsy, 240-241, 584, 586, 588.
- JANET, PIERRE: 204, 446, 479, 489; quoted, 45, 46, 47, 51, 63, 195-197, 198, 282, 283, 286, 290, 298, 432, 438, 440, 447, 486, 487, 488.
- Jastrow, Joseph, 405.
- Jastrow's rabbit-duck figure, 84.
- Jealousy: as personality trait, 369-370.
- Jones, Ernest: 168; quoted, 194, 213, 220-221, 223-225, 245, 296, 417.
- Joy: excess of, 235-237.
- Judgment: in delusions, 152; nature of, 165.
- Jung, C. G., 357, 385, 418; quoted, 137, 140.
- Juvenile paresis, 324-325.
- KELLER, HELEN: education of, 328.
- Kempf, Edward J., 357; quoted, 363, 371, 372-373.
- Kinesthetic sensibility: definition of, 67; description of, 57; tests for, 58.
- Kinetic: definition of, 393; personality types, 383-385.
- Kleptomania, 294-295.
- Knee jerk: significance of, 275.
- Kraepelin: classification by, 14-15; dementia præcox concept, 508-509, 511.
- LENS: defects in, 42.
- Libido: definition of, 393; theory of, 356-357.
- Love: development of, 249-253; involvement of sex in, 252; of same sex, 257-259; of self, 249-250, 253-254; parental, 252-253; perversions of, 253-264.
- MACCURDY, JOHN T., quoted, 495, 497-498, 500.
- Macrocephalic, 320-321, 346.
- Malingering, 496, 505.
- Mania: definition of, 591; degrees of, 568; description of, 570-574; illustration of, 565-567; sequence of, 569-570.
- Manic-depressive disorders: characteristics of, 567-568; degrees of, 568; sequence in, 569-570.
- Masochism, 263, 266.
- Mayer, Edward E., quoted, 69-70.
- Melancholia, 569, 591.
- Memory: abnormalities of, 181-222; a process, 186-187; conscious and unconscious, 187; definition of, 184-185, 221; examination of, 217-220; explanation of disorders of, 210-217; for recent events, 218-219; for remote events, 219; functional loss of, 181-184; nature of, 184-187; permanence of, 185-186; recovered in hypnosis, 453-455; types of disorder, 187-210.
- Memory span: definition of, 221; measured by digits, 24, 217; measured by sentences, 218; tests for, 217-218.
- Mental age, 335-336, 346.
- Mental diseases: hospitals for, 26; methods of prevention of, 27-28; social importance of, 25.
- Mental hygiene: channels for, 599-601; education and, 595-599; illustration of, 593-595; National Committee for, 27; school as center for, 28, 601-604, 613-615.
- Mental tests: classification based on, 335-337; criteria of, 317-318; development of, 331-332; group, 334-335; individual, 332-334; program of, 335; types of, 332-335.
- Mental twist hypothesis, 16.
- Mesmerism, 445-446, 470.
- Meyer, A., quoted, 16, 512.

- Microcephalic, 318-319, 346.
 Mirror-writing, 306.
 Moll, Albert: 446; quoted, 430-431, 456-457.
 Mongolian, 321-322, 346.
 Morality and dreams, 406-407.
 Morgan, John J. B., 168, 453, 536; quoted, 71, 127, 151-152, 290-291, 381-382, 468, 472-474, 488, 506-507, 556-558, 562-563, 565-567.
 Moron, 315, 336, 346.
 Motor disorders: 268-309; functional, 281-296; illustration of functional, 268-269; in hysteria, 484; sources of, 272-273.
 Mühl, Anita M., quoted, 306.
 Multiple response: in association tests, 138.
 Muscae volitantes, 42, 67.
 Mutism, 33-34, 297-298, 308.
 Myers, Charles S., 78; quoted, 75.
 Myerson, Abraham: quoted, 476.
 Myopia, 37, 67.
- NARCISSISM, 254, 266.
 Narcotic sleep, 399, 428.
 Negation: delusions of, 161-162.
 Negativism: as a personality trait, 388; definition of, 470; in schizophrenia, 518-519; opposed to suggestibility, 431-445.
 Neurological, 133-134, 149.
 Neurone, 149.
 Night terrors, 424-425.
 Nihilistic delusions, 161, 179.
 Nonsense syllables, 221.
 Normality, 7-10.
 Nymphomania, 260.
 Nystagmus, 40-41, 67.
- OBEDIENCE AND HYPNOSIS, 459-460.
 Obsessions, 132, 149, 289, 308.
 Oedipus complex, 254-257.
 Olfactory sensations, 64, 67.
 Omens: dreams as, 411-412.
 Ophthalmoplegia, 41-42, 67.
 Organic sensations, 65.
 Orientation, 207-209, 221.
- PAGE, HERBERT, 61.
 Paralysis: definition of, 308; description of, 277-278; functional, 281-284.
 Paranoia: as a compensation, 560; definition of, 179, 532, 564; described, 513, 516-517; types of, 558-559.
 Paresis: adult, 325-326; definition of, 308, 346; discovery of cause, 14; juvenile, 324-325; speech defects of, 301; writing defects of, 303.
 Parmelee, M., 431.
 Patella, 275, 308.
 Pedophilia, 260, 266.
 Perception: disorders of, 69-108; genetic basis of, 72-74; insufficiency in hebephrenia, 524; nature of, 70-72; normal, 70-74; sensory contributions to, 74.
 Performance tests, 334.
 Perimeter, 49.
 Peripheral vision, 49-51, 67.
 Persecution: delusions of, 159, 162-163; reaction against, 550-552.
 Perseveration, 129-130, 139, 149.
 Personal reactions: in association test, 139.
 Personality: analysis of, 349-393; definition of, 352; development of, 359-373; integration of, 391-392; motor expressions of, 307; multiple, 480-483; nature of, 351-358; types of, 373-391.
 Perversions, 253-264, 266.
 Petit mal epileptic fit, 585-586, 591.
 Phantasy, 112-113, 564.
 Pharyngeal reflex, 274.
 Phobia: definition of, 149, 266; explanation of, 248-249; relation to obsessions, 132, 289; types of, 247-248.
 Photomata, 584.
 Plantar reflex, 274.
 Polydactylism, 317.
 Postures: in catalepsy, 287.

- Presbyopia, 39, 67.
 Prince, Morton: quoted, 198-199, 203, 391-392.
 Problem solving: analysis of, 113-114.
 Protopathic sensibility, 56, 67.
 Pseudo-dementia, 327-329.
 Psychiatry, 14.
 Psychoanalysis, 134.
 Punishment: as treatment for hysteria, 499.
 Pupillary reflex, 275-276.
 Pyromania, 295.
- RATCLIFF, A. J. J., quoted, 394-395, 406, 408, 410-411, 420.
 Rationalization, 168-171, 179, 608.
 Recall: definition of, 221; devices to facilitate, 219-220; emotional blocking of, 192-193; experimental, 197-204; peculiarities of, 192-204.
 Recognition, 206-209, 221.
 Recurrent mania, 570.
 Recurrent depression, 570.
 Redintegration: definition of, 150; impartial, 126-127.
 Reëducation: of emotions, 149; in organic disorders, 133-134; in paranoia, 562-563; in schizophrenia, 530-532; in treatment of delusions, 175-179; in treatment of hysteria, 503.
 Reference: delusions of, 159.
 Reflexes: autonomic, 225-226; deep, 275-276; definition of, 67, 308; examination of, 273; in functional blindness, 46; skeletal, 225-226; superficial, 274-275.
 Reforming others as compensation, 546.
 Refracting media, 37-40, 67.
 Regression: definition of, 533; disorders of, 506-533; extreme forms of, 508-517; illustration of, 506-507; personality in, 517-520, 610-612; prevention of, 527-532; types of, 521-527.
- Relaxation: as aid in free association, 144.
 Repression, 213-214, 221, 380, 383-384, 389.
 Respiratory disorders in hysteria, 487-488.
 Restraint: reaction against, 555-556.
 Retardation, 123, 150, 569, 574.
 Retentivity, 221.
 Reverie, 112.
 Ribot, Th., quoted, 354-355.
 Rigidity: in hypnosis, 461-462.
 Ritualistic acts, 291-292.
 Rorschach ink blot tests, 145-147.
 Rosanoff, A. J., 579; association test, 141-142; quoted, 580, 582.
- SACRAL SEGMENT OF AUTONOMIC NERVOUS SYSTEM, 228-231.
 Sadism, 263, 266, 393.
 Satyriasis, 260.
 Schizophrenia: definition of, 533; forms of, 515-517, 521-527; origin of term, 509-510; theories of, 510-515.
 School counselor, 614-615.
 Scientific method, 17-19.
 Scotomata, 43.
 Self-accusation: delusions of, 160-161.
 Semi-circular canals, 40.
 Sensation: disorders of, 33-68; dreams related to, 405-406; educational significance of, 66-67.
 Sense-deprivation, 329.
 Sensory acuity in hypnosis, 462.
 Sherrington, Charles, 114, 214, 271, 276, 435.
 Sidis, Boris, quoted, 101.
 Simple schizophrenia, 515, 521-523.
 Skin: deformities of, 316-317.
 Sleep: effects of loss of, 400-402; functional paralyses changed by, 281; kinds of, 399-400; nature of, 396-399; psychology of, 402-404.
 Sneaking personality, 388-389.

- Snellen: letters of, 48.
- Social: criteria of intelligence, 314-315; failure, 375; personality types, 385-391.
- Somatic, 179.
- Somnambulism, 404, 425-426, 428, 460-463, 470, 478-479, 505.
- Southard, E. E., quoted, 16-17.
- Special ability tests, 334.
- Speech: disorders of, 296-302; organic defects of, 301-302; parietic, 301; poverty of, 122.
- Stanford-Binet test, 333-334.
- State hospitals: development of, 26.
- Stereognosis, 58.
- Stereotypy, 130, 150.
- Stern, W., quoted, 314.
- Stigmata of degeneracy, 316-317, 346.
- Störriing, Gustav, quoted, 89, 91, 92, 93, 96, 162-163.
- Starch, Daniel, quoted, 433-434.
- Strangeness: feeling of in familiar place, 207.
- Stuporous melancholia, 569, 575.
- Stuttering: development of, 299; explanation of, 299-301; incidence of, 298.
- Suggestibility: as a personality trait, 390, 610; balanced with negativism, 443-445; definitions of, 431-434, 470; development of, 436-445; extreme, 438-441; learned, 437-438; nature of, 431-436; of hystericals, 493; subjective nature of, 441-443.
- Suggestion: in therapeutics, 451-452, 500; post-hypnotic, 463-465; recall aided by, 200-201; symptoms produced by, 49.
- Sully, James, quoted, 88.
- Superficial associations, 140.
- Suspicion: as a personality trait, 382, 610.
- Swift, E. J., 188.
- Symbolic acts, 295.
- Symbols: definition of, 107; emotions concealed by, 81; symptoms interpreted by, 81-82; use of, 80-81.
- Sympathetic segment of autonomic nervous system, 227-231, 266.
- Symptomatic acts, 296.
- Symptoms: classification versus analysis of, 14-15; indirect causes of, 65; interpretive, 23; manifest, 23; nature of, 21; quantitative, 24; sample of, 22-23; types of, 23-24.
- Synapse, 150, 266.
- Syndactylism, 317.
- Synesthesia: as a school problem, 79; definition of, 107; examples of, 76-77; nature of, 75-76; theories of, 77-79.
- Syphilitic dementia, 324-326.
- TABETIC GAIT, 57.
- Tantrums, 241.
- Taylor, W. S., 453, 479.
- Teeth: Hutchinson's, 324.
- Terman, L. M., 333; quoted, 314.
- Tests: classification based on, 335-337; development of, 331-332; group, 334-335; individual, 332-334; program of, 335; types of, 332-335.
- Ties: definition of, 308; description of, 290; explanation of, 291; motor, 281.
- Time: distortion of in dreams, 408.
- Tongue: fissures of, in Mongolian, 322.
- Tonic convulsion, 584.
- Tonus, 276-277, 308.
- Trauma, 212, 221, 266, 470.
- Travis, L. E., 300.
- Tredgold, A. F., 321; quoted, 310-312, 316-317, 320, 322.
- Tremors, 279, 308.
- Tuckey, C. L., quoted, 268-269.
- VARENDONCK, J., quoted, 102.
- Verbigeration, 580-581, 591.
- Viscera, 505.
- Visceral troubles in hysteria, 486-487.

Vision: disorders of in hysteria,
485-486; functional defects of,
45-51.

Visual field: narrowing of, 49-51.

Vitreous humor: defects in, 42.

WANDERLUST, 293-294.

Wasserman test, 324.

Wells, F. L., quoted, 78.

White, Andrew, quoted, 10.

White, William A., 166; quoted,
325-326, 509, 576, 580-581, 590.

Wiley, M. M., quoted, 403-404.

Wishes in dreams, 395, 417-418.

Witches, 11-12.

Woodrow, H., quoted, 329-330.

Woodworth, R. S., quoted, 74.

Word-hash, 127.

Writing: automatic, 198-199;
cramp in, 304; disorders of, 302-
307; incoördination in, 302; mir-
ror, 306; parietic, 302-303; pecu-
liar output of, 302-305.

YAWGER, N. S., quoted, 93-94.

ZONES: of retina, 48.





