

The evolution of feeling / by Charles S. Myers.

Contributors

Myers, Charles S. 1873-1946.

Publication/Creation

New South Wales : Australian Association of Psychology & Philosophy,
[1923?]

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"THE EVOLUTION OF FEELING"

BY

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FROM

THE AUSTRALASIAN JOURNAL OF PSYCHOLOGY AND PHILOSOPHY

Vol. I., No. I., March, 1923.

PUBLISHED BY
THE AUSTRALASIAN ASSOCIATION OF PSYCHOLOGY AND PHILOSOPHY,
ROYAL SOCIETY'S HOUSE, ELIZABETH STREET,
NEW SOUTH WALES,
AUSTRALIA.



THE EVOLUTION OF FEELING.

IN the lowest organisms two forms of affect are early recognisable—"ipsi-affect," colouring self awareness, and "actu-affect," colouring self-activity. The ipsi-affects express the relation of the primitive self to organic movements; the actu-affects express its relation to locomotive activity.

When such a simple organism finds itself in a favourable environment, one of two results may occur. A condition of enhanced organic vitality may ensue, developing the ipsi-affect of *exhilaration*. Or a condition of rest may ensue, developing the ipsi-affect of *ease*. In both cases there arises a certain harmony of organic processes. In the one it is at a high level, and the contractile substance, by means of which the locomotion of the organism is carried out, undergoes strain or contraction; whereas in the other the organic harmony is at low level and the contractile substance undergoes relaxation. In consequence an actu-affect, one of increased or diminished self-activity towards outward movement develops, directed in the one case to appetite and becoming (attractive) *interest*, and in the other directed to the avoidance of change and becoming *contentment*.

So, too, when such an organism finds itself in an unfavourable environment, an external reaction of strain or of relaxation may result. In the former case the condition is one of unrest, and the ipsi-affect is one of *uneasiness*; in the latter case the condition is one of reduced vitality, and the ipsi-affect is one of *depression*. In both cases an internal discord or disorder of organic processes occurs, that discord being at a high level when the locomotor substance of the organism is in a state of strain, and at a low level when it is in a state of relaxation. With the progress of mental evolution there will be experienced in the one case a feeling of increased self-activity towards outward movement, directed to aversion, i.e., an actu-affect of *repugnance*, in the other case a feeling of relaxed self-activity, directed to the avoidance of change, i.e., an actu-affect of *apathy*.

We see, then, that alike when the environment is favourable and when it is unfavourable, an increased or a decreased

tendency to outward movement may occur. The state of strain comes to be characterized by an ipsi-affect of exhilaration or uneasiness, according as the environment is favourable or unfavourable, i.e., as the organic state is one of high-level harmony or discord. Similarly the state of relaxation comes to be characterized by an ipsi-affect of ease or depression, according as the organic state is one of low-level harmony or discord.

Let us call these four main conditions, under which ipsi- and actu-affects arise, S +, R +, S —, R —, using S and R for strain and relaxation, and + and — according as the environment is favourable or unfavourable. Then we may express their relations by the following:—

FAVOURABLE ENVIRONMENT.

Strain (S+) Enhanced Vitality, Exhilaration (Gladness), Interest
Relaxation (R+) Rest, Ease (Bliss), Contentment

UNFAVOURABLE ENVIRONMENT.

Strain (S—) Unrest, Uneasiness (Distress), Repugnance
Relaxation (R—) Reduced Vitality, Depression (Sadness), Apathy

It is clear that the state of relaxation before a favourable situation, evoking R +, finds its antagonist in the state of strain before an unfavourable situation, which evokes S —. The relaxed state before a favourable situation implies a contentment which continues so long as the situation remains favourable. It is recognisable in ourselves in passive sensuality and in day-dreaming; it is characterized by a total disregard of the future, by the complete absence of desire to initiate bodily activity. The ipsi-affect of ease, becomes raised to a mental state which we are wont to term *bliss*. Contrast now the antagonistic state of uneasiness, S —, which is characterized by active withdrawal from the unfavourable environment until the latter becomes favourable. As the state of ease is marked by an absence of outwardly directed activity, so the state of uneasiness is characterized by its presence—in the form which we have come to recognise as the impulse of aversion. As the consciousness primarily resulting from general organic discord becomes more and more developed, this ipsi-affect of uneasiness gives rise to the mental state known to us as *distress*. The reaction of withdrawal becomes linked with impulses to restore the favourable environment, i.e., it is ultimately connected with desire for change in order to secure that environment, the desire arising from the obstruction offered to those impulses. This behaviour of withdrawal may, I venture to suggest, even take the form of a contraction of synaptic processes in the higher nervous

system, preventing the integration, the actual experience by the self, of the discordant situation or idea, and thus producing the phenomenon known as "dissociation" by a process of active disintegration.

From the standpoint of neuro-muscular function, the state of strain, when the organism is confronted with an unfavourable situation ($S -$), finds its antagonistic state in one of relaxation attained when the environment is favourable ($R +$). But from the standpoint of the behaviour of the organism in response to its environment, the complement to aversion is the process of appetition, which is exhibited in the state of strain toward a favourable environment ($S +$). In this state of appetitive strain we can recognise the possibilities of a development towards conditions specially favourable to synaptic functioning, in which association of the experience is facilitated instead of, as in aversion, being inhibited. The organism comes to feel a desire to seek and act upon, not to withdraw from, the situation or the object. Meanwhile the ipsi-affect of exhilaration connected with the high-level activity of organic harmony evolves into the mental state of *gladness*. On the other hand, the functional antagonist to this $S +$ is $R -$, in which the organism, as it were, "gives up the ghost," succumbs to reduced vitality, inertly maintaining this condition. Instead of leading to a state of gladness, the ipsi-affect of depression gives rise, in the course of evolution, to the mental state of *sadness*. It is conceivable that just as the active form of response to an unfavourable environment ($S -$), may produce an active disintegration by synaptic withdrawal, so the devitalising character of the relaxation response to an unfavourable environment ($R -$) may produce passive inhibition or synaptic blocking—an exaggerated refractoriness due to lowered vitality of the nervous system.

We have thus been able to recognise in the behaviour of primitive organisms to their environment certain accompanying shades of affect, toning the awareness of self and self-activity, which in their further evolution may conceivably give rise, on the ipsi-affective side, to the psychological antitheses of gladness and sadness, bliss and distress, and on the actu-affective side to interest, repugnance, contentment and apathy. Bliss and sadness imply relaxation; gladness and distress imply strain; while interest and repugnance imply strain; and contentment and apathy imply relaxation.

I venture to think that such a classification will help us to group the various feelings which have been evolved with the increasing complexity of consciousness. It is clear

that the relaxed state in which the organism bathes or wallows in its situation (R + and R -) is consonant with the developing feelings of happiness, security, passive ecstasy, phantasy on the one hand, and of quiet melancholy, grief, despair on the other. It is not less obvious that the process of active strain (S + and S -) is capable of leading, on the side of appetite and interest to the feelings of hope, expectation, curiosity, familiarity, and when conjoined with gladness to the feelings of joy, lust, affection, anger, confidence, certainty and coming success; whereas on the side of aversion and repugnance we can range the feelings of disgust, loathing, contempt, scorn, dislike, strangeness, bashfulness and surprise, and starting from distress gain those of sorrow, fear, anxiety, disappointment, uncertainty, threatened failure, doubt and diffidence. In certain feelings we can discern a conflict between members of these different classes; thus in wonder a conflict between the S + of curiosity and the S - of surprise, or in jealousy a conflict between the S + of anger and the S - of fear. No simultaneous conflict within any single feeling seems possible between the R + and R - affects.

Within the limits of this paper, it will be impossible to present more than the briefest outline of the way in which I conceive the evolution of such feelings to have taken place. We may reasonably conclude that the development of the actu-affects which become in ourselves contentment, apathy, interest or repugnance is of secondary importance, relatively to the ipsi-affective form recognised in ourselves as bliss, sadness, gladness or distress, which is associated with harmony or discord of organic processes at high or low level. This conclusion is, however, by no means identical with Freud's view that a later reality principle can be contrasted with an earlier pleasure principle. Bliss and gladness, sadness and distress, occur in the R and in the S conditions. They arise in relation to the state of the entire organism—how the self is affected by the environment, whether it suffers ease or exhilaration or uneasiness or depression. The ipsi-affect of exhilaration cannot be considered as later than that of ease, although, doubtless, it takes a more prominent part in the course of evolution and development. Probably ease is the more common form of the primitive ipsi-affect experienced *in utero*; but even in the earliest infantile life the more active form plays an important part, e.g., in seeking the mother's breast and in otherwise bringing the organism into relation with the external world. It seems absurd to suppose that in infant life the reality principle is totally absent. On the other hand, the S form of negative affect is essentially primitive,

the R form involving the organism in danger and being indeed a likely precursor or at least a warning of approaching death.

Thus, with the progress of mental and bodily evolution a generalised form or pattern of visceral and somatic reaction, innately directed to some purposive end, becomes associated with a definite kind of ipsi and actu-affect. The affect comes largely to be the "meaning" of the reaction to the self. That meaning arises when there is undue obstruction to or facilitation of the passage of the environmental stimulus over into the reaction, owing to higher control or to higher maintenance of the reaction. When the passage occurs immediately without this higher interference, there is no affect, except such as may arise from the organic consequences of the reaction, which always amplify and complete the vague meaning experienced at the moment when the first performance is being initiated.

Consequently the particular feeling that develops is by no means wholly dependent on the particular visceral or somatic expression. Its character or meaning depends rather on the general character of the situation that confronts the subject and on the general purpose of the reaction. Thus, too, the greater the higher control over visceral and somatic expression, the more profound becomes the feeling experienced; while a certain reduction of that control may develop an intenser feeling owing to the greater contribution thereupon made through the effects of the expression. We may indeed distinguish two kinds of ipsi-affect, the pre-expressive and the post-expressive. And we may conclude that no feeling is ever completely experienced for the first time until its expression has occurred, and that on subsequent occasions, it arrives at relative maturity without needing such post-expressive contribution.

How these affects develop into the higher feelings can only be vaguely outlined here. The actu-affect develops into a variety of "attitudes," cognitive and volitional, characterized by very generalized forms of response. Broadly different kinds or qualities of acts, whether of the self or affecting the self, come to acquire specific feelings of attitude. Thus, looking at the future, based on past experience, brings a feeling of expectation. The receipt of experience consonant with or contrary to past experience brings a feeling of familiarity or strangeness. Ease or difficulty of decision brings a feeling of certainty or doubt. The facilitation or obstruction offered to the attainment by the self of its ends gives rise to the feeling of confidence or diffidence in a given direction. The valuation of the self in relation to other selves evolves the feeling of

superiority or inferiority. Interest in or repugnance to the new evolves the feeling of curiosity or its converse.

At the higher intellectual level, the ipsi-affects of ease and depression pass into happiness and unhappiness of the self. They were relatively devoid of appetite or aversion. On the other hand, the ipsi-affects of exhilaration and uneasiness, which are intimately associated with the self-activity involved in interest in and repugnance towards external objects, ultimately yield those feeling tones of pleasure and displeasure that come to be objectively applied as qualities of sensations, objects and ideas. When through cortical lesions objects are no longer describable as pleasant or unpleasant, there remain merely the self-experiences of gladness, distress, etc. Conduct comes to be determined by the subject's now highly complex "character," which is in turn largely founded on the "values" of objects and ideas. These values depend on the "sentiments" formed in connexion with objects and ideas.

The sentiments arise through the innate organization of tendencies to emotions and instincts about objects and ideas. *Pari passu* with this organization two new feelings, the "sentiment feelings," make their appearance, those of "like" and "dislike," based on the affective tone of interest and repugnance. They are partly innate (*cf.* parental affection) and partly acquired (*cf.* filial and social affection). They prompt one or another of a system of emotion feelings and acts or of instinct feelings and acts according to the situation in which the object or idea is experienced. In consequence of such feelings evoked through the activity of the sentiment systems, the original sentiment feeling, beginning as little more than interest or repugnance develops into like or dislike of some object and hence into regard, respect, affection, love, devotion, hate, contempt, etc.; while within these sentiment feelings the emotion feelings and instinct feelings acquire special forms, such as jealousy, envy, ambition, pride, vanity, etc. Thus the sentiment starts with a vague specific feeling and grows by the emotional or instinctive experiences which it prompts.

Each emotion feeling similarly has a specific feeling based on the affect aroused through the organization of the emotion system about a series of instincts and higher reflexes, and it grows through the various instinct and reflex feelings which it prompts. But like the sentiment feeling, the specific feeling of each emotion is independent of the kind of more elementary response that it evokes. Each emotion arises as an integration of various instincts and higher reflexes, just as

each sentiment arises as an integration of various emotions and instincts. Thus in response to a situation of danger, which can be solved by escape or defence, any one of the instincts and higher reflexes, (i) of flight, (ii) of seeking protection by concealment, by clinging to the parent, or by rigid or relaxed immobility, (iii) of fighting at bay, may occur. By virtue of such organization of instincts and higher reflexes, the affect of distress becomes raised to the emotion feeling of "fear." So, too, in response to an object which demands rejection, the acts of shrinking, shuddering, cleansing the skin, averting the head or eyes, vomiting and the attenuated forms of nausea, choking, spitting, etc., may, any one of them, occur. The affect of repugnance is raised to a higher power, to the emotion feeling of "disgust."

On the first occasion of its appearance, the emotion feeling, like the sentiment feeling, is doubtless extremely vague and ill-formed. Just as the sentiment feeling of love comes to maturity through the emotional responses of fear, anger, and the affects of joy, distress, etc., so the emotion feeling develops through the instinctive responses and the shades of affect thereby evoked. The special character of the emotion feeling obviously does not depend appreciably on the nature of the particular instinct evoked. The latter will differ according to the result of the conflict between the various alternative instincts integrated within the emotional system, and according to other conditions which determine, for example, whether an individual shall become red or white with anger, whether his skin shall sweat or be dry in fear, whether his heart-beat shall quicken or slow, his blood pressure rise or fall, during the activity of any one emotional system. The special emotion feeling is dependent rather on the general character of the situation which confronts the subject, and on the common purpose of the alternative instinctive reactions. Fear and disgust, for instance, are typically connected with escape and rejection, anger and lust with hostile attack and sexual possession, respectively. Into each pair the original affect enters, of distress or repugnance in the one, of gladness or interest in the other.

So at length we reach the instincts which we have discovered integrated within any given emotion. Clearly, the same instinct or higher reflex may be integrated within more than one emotion, although (as we observed in the case of emotions integrated within the sentiment) generally its character and reaction become modified in the process. Thus the instinct of self-display, with its special instinct feeling, is

common both to anger and to the sexual emotion; fighting is common to fear (fighting at bay) and anger; crying is common to extreme joy and sorrow. The emotion, like the sentiment, also comes to contain not only an opposition of elements but a succession of elements. Each instinct has its own instinctive feeling, based on its affect of gladness, interest, repugnance, etc. So far as they occur in separation from the emotion systems, the individual instincts contain within them the rudiments of intelligent activity. They are, to a certain extent, variable, plastic and modifiable by experience. They, in turn, are composed of differently integrated antagonistic and successive responses, those of the higher and lower reflex systems. On the first occasion of its experience each instinct develops its own peculiar innate instinct feeling, determined by the tendency to act so long as to secure a certain end. Like the emotion feeling, the instinct feeling depends for its full development on the experience resulting from the act. But, when by a single experience an instinct feeling or an emotion feeling or a sentiment feeling has incorporated the feelings arising from its expression in activity, it does not need on a second occasion to await the slow process of expression before it can be experienced in its now more fully developed form.*

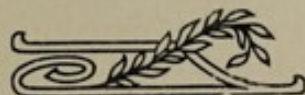
And so finally we reach once more the reactions of the most primitive organism itself, where the affect, corresponding to our gladness, sadness, bliss, distress, interest, repugnance, contentment, apathy, arises not through the special kind of organic or bodily response, but is the psychical equivalent of the innate general purpose, the control of the organic and bodily activity in relation to the environment, and receives additional feeling as a consequence of that activity. This condition is exemplified in our higher reflexes (e.g., vomiting, sneezing, etc.) which are partly under self-control. The stimulus evokes a condition of organic discord (or harmony), which, owing to the integration within the system of the reflex, of certain controllable actions, and in virtue of their results, develops an affect of distress (or gladness), etc. The lower reflexes (e.g., erection of hairs) which are wholly beyond control and never occur through any conscious impulse, only affect the self by the organic sensations they evoke through the reaction. These produce a state of organic harmony or discord—the most primitive and the most fundamental equivalent of affect we are able to trace.

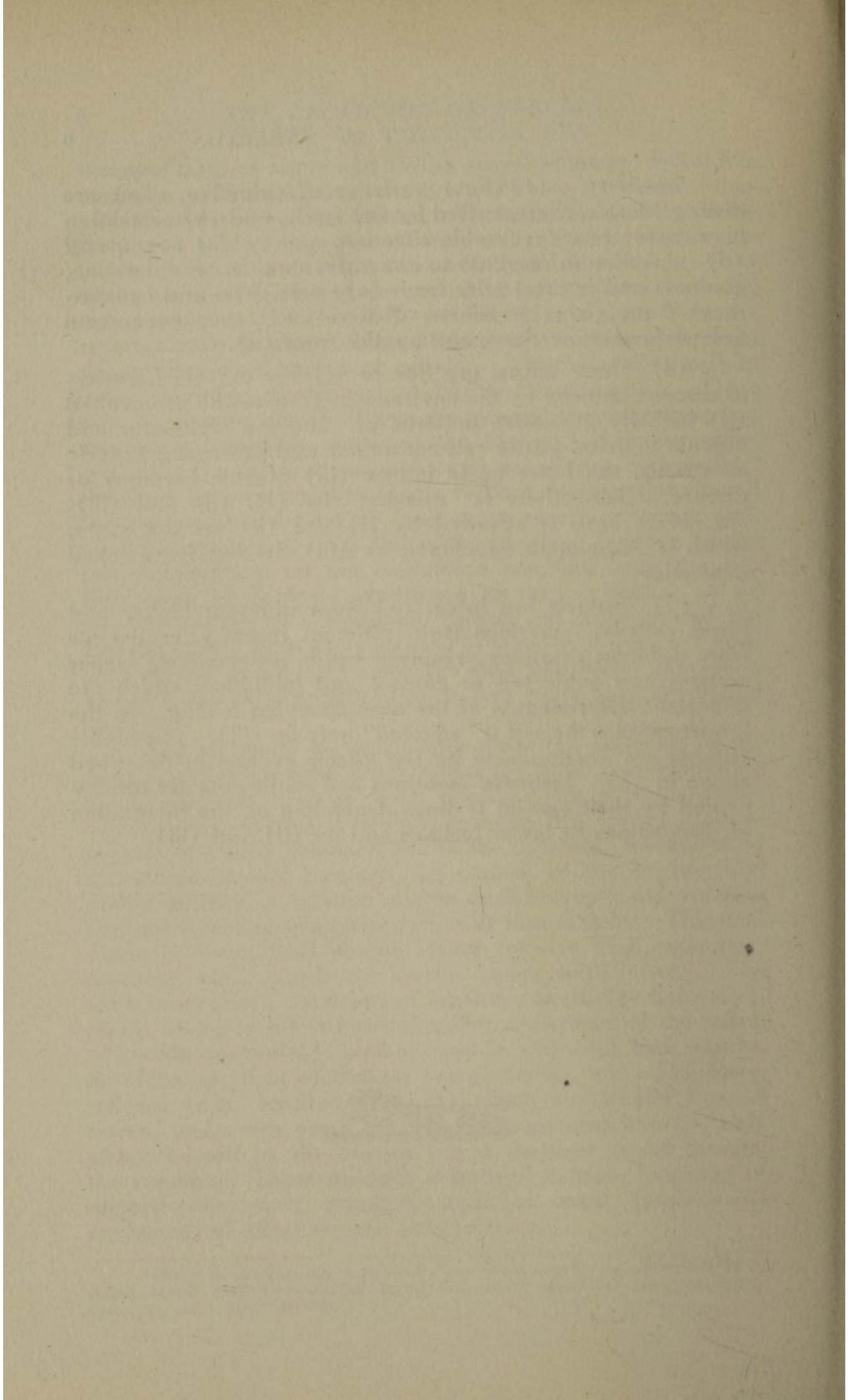
*Hence an emotion *once experienced*, can conceivably be re-experienced by an animal almost wholly deprived of organic and bodily sensibility (*Cf.* Sherrington, *Proc. P.S.*, 1910, lxvi. 390-403).

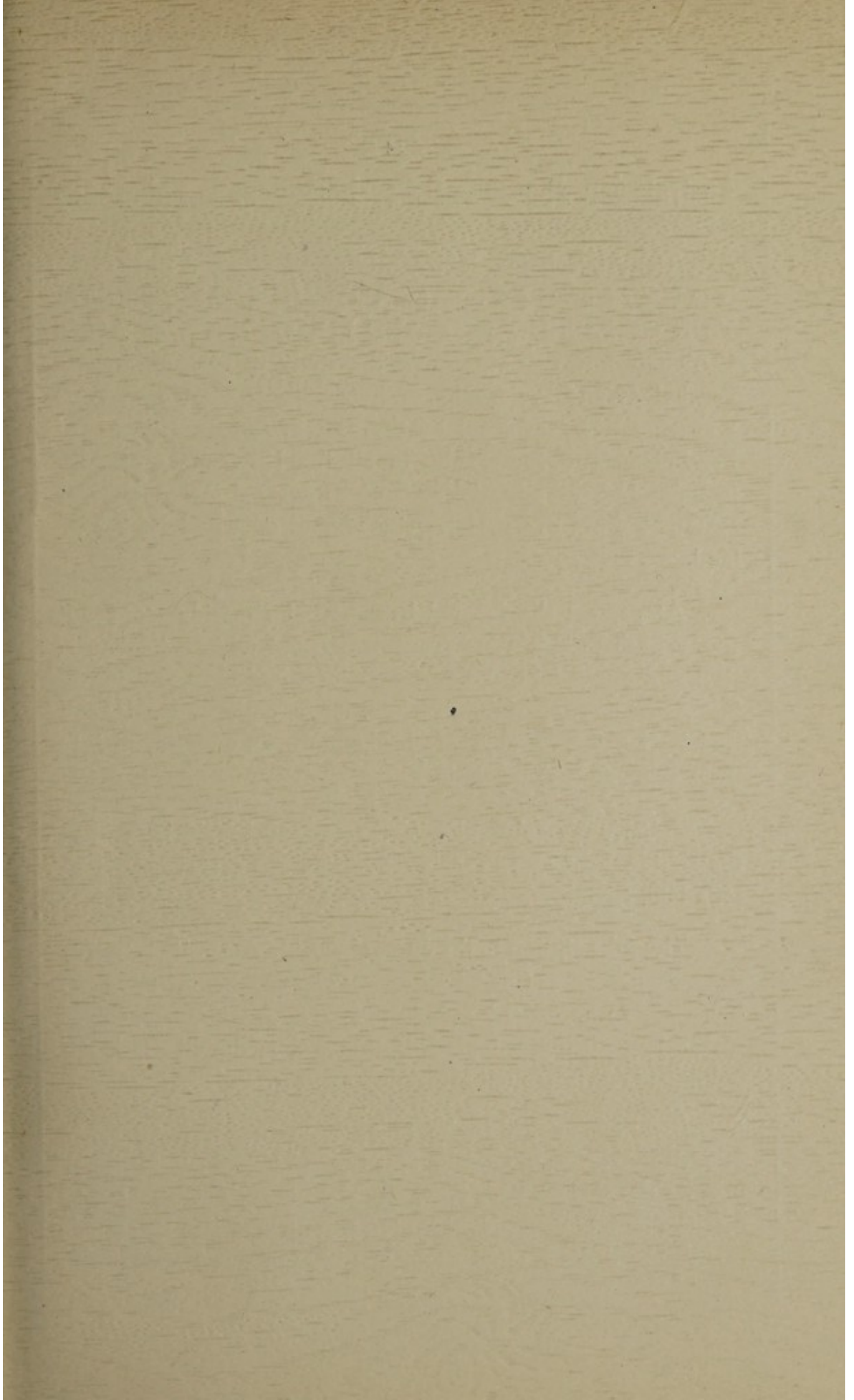
Summary.—(1) Four varieties of primitive affect are distinguishable, characterised by (a) strain, and (b) relaxation in response to a favourable situation, and by (c) strain, and (d) relaxation in response to one unfavourable. Exhilaration, gladness and interest arise from (a); ease, bliss and contentment from (b); uneasiness, distress and repugnance from (c), depression, sadness and apathy from (d).

(2) These affects are due to (i) the organic harmony or discord induced by the environment; wherewith are evoked (ii) innately purposive patterns of out-going locomotor and organic activity, partly self-controlled and producing organic sensations; the latter again induce (iii) organic harmony or discord. Self-activity is "affected" by (i), (ii) and (iii). An innate basis is afforded by (i) and (ii) for the affect, which is completely developed by (iii) derived from actual expression.

(3) Instincts are integrated from different higher and lower reflexes, emotions from different instincts, sentiments from different emotions organized within progressively higher systems and subjected to control and inhibition, which are important determinants of the accompanying feeling. In the lowest reflexes the self is "affected" only by (iii). The higher reflexes are accompanied by the affects evoked as described above in (2). Instincts, emotions and sentiments are accompanied by their special feelings depending on the integration of dispositions to lower feelings and on (ii) and (iii).







T H E

Australasian Journal of Psychology and Philosophy

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