
Thesis on Psychological Meaning with special reference to Logical
Meaning.

Submitted by,

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Degree of Ph. D. conferred on 24th March, 1927.



Outline of discussion.

- (1) An introductory section dealing with;
 - A. A brief summary of the various viewpoints.
 - B. Historical orientation of the subject.
 - C. An examination of the critical terms, Psychological;
" " " " and Meaning.
- (2) An analysis of experience at the primitive levels with a critical discussion of the psychological act, and its motivating factors.
- (3). Meaning at the Perceptual level, involving a critical analysis of the factors entering into and constituting perceptual experience.
- (4) Two short notes on Attention and Affective association.
- (5) Meaning at Ideational level, with a discussion of imaging and imagination.
- (6) A section on Experimental evidence.
- (7) Meaning at the Conceptual level, and higher thought processes of judging, comparing, and reasoning.

Introduction.

Our purpose is to give a description of psychological meaning as it emerges in, or gives value to experience; to discover through investigation of its origin and development what are its fundamental psychical qualities; and, thereafter, to trace its growth and nature in the various and increasingly complex stages of psychical integration which are characteristic of our mental life.

The importance of our enquiry can hardly be exaggerated.

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V. Welby says: That attention has already been called in an article in Mind (N.S. Vol. VII nos. 17 & 18) to the strange fact that the very condition on which all forms of study depend, that which is vaguely called their meaning - that very meaning, which is to intelligence the cardinal quality of fact - remains for us a virtually unstudied subject." That statement may and does call for some modification at the present time. Considerable work has been done in this field, not only in this country, but also in America and Germany. The work, however, has been chiefly in the analysis and study of the higher thought processes. Experience has, in most cases, been considered as fundamentally cognitive. The tendency has been to study the subject more from the logical than the psychological standpoint: The analytic rather than the genetic method has been employed. It is the objective pattern of knowledge rather than the processes on which knowledge depends that has dominated the enquiry. The explicitly intelligible is considered the highest, and, in many ways, the only avenue of exploration. Feeling, for example, and all that it involves as an ultimate phase of experience, and without which knowledge itself is impossible, is, if treated at all, given but a minor place. It is essential, therefore, to give a new orientation to the subject of meaning, and study it from a more genetic

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stand-point.

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Reymert, says, A survey of older and recent literature and experimentation on meaning discloses, first of all, that the meaning of meaning is psychologically rather obscure at present, and further, that the topic almost invariably has been approached from the more or less preconceived notions of mental organisation - as embodied in the fundamental doctrines of the various schools - and that apart from the indirect studies on children's drawings, evolution of vocabulary, mental growths, etc., we have no direct ontogenetic attack. That statement made by a recent investigator in this field of psychological enquiry confirms the need for, what we may term, a more organic study of the entire subject. It is strange, as V. Welby, suggests that, while psychology has made astonishing progress in the study of the various aspects of mental life, the very core of all experience, - that on which the very study of all mental life depends, - should be in such an unsatisfactory state.

It will help us considerably, in the successful orientation of our study, if we set forth, briefly, the various points of view from which the subject has been treated. We cannot understand the term psychological without describing in outline, at least, the theories at present in the field, and indicating our agreement with, or departure from, them. This will, at least, make evident some of the pressing difficulties of the investigation; - the pressure, let us say, of philosophical bias on one hand, and of biological bias on the other.

(a) Briefly stated the points of view are as follows:

(1) That which takes meaning to be purely and ultimately cognitive; a point of view, which we shall find to be more logical than psychological. The fuller implications of this view we shall unfold in the course of our discussion.

(2) One in which, owing to biological influences, the extreme intellectualism of the first is modified, and a place given to the affective aspect of mental life. This change, however, while marking a stage in the liberation of psychology from logical presuppositions still considers

1 Martin.L.Reymert.Ohio., The ontogenetic aspects of Meaning.

International Pscyh.Congress 1926.

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meaning as more or less fundamentally cognitive in nature. "Conative interest," to use a term employed by Prof. Mc Dougall in his "Outlines of Psychology," is given a place. It is, however, more a subordinate and contributory than a determining place in the nature of meaning. The general cognitive stand-point remains unaltered.

(3) The third point of view, which we would term the "Sensationalistic," is that advocated by James, and later by Titchener. Meaning is, from this stand-point, always sensational, particularly kinaesthetic. In the writings of Titchener this view-point is a very considerable advance in the intimate study of the subject. It points us back from the extremely external aspects emphasised by the two former views to certain organic factors without which no real insight into the problem is possible.

Reymert,¹ says that as the result of his investigations by far the most dominating factors conveying meaning were almost invariably kinaesthesia, or movement, or bodily activities (as apparent from the retracing of figures, suggested movements, etc) the more difficult the stimulus, the younger the child, the more kinaesthesia. While we admit that, in our judgment, this view gives a more intimate approach to the subject, we shall advance reasons for our dissent from it.

(4) The fourth and last view-point to be stated is, in our opinion, the one that indicates the real emancipation of psychology from the limitations of philosophical presuppositions, and the more organic, and truly psychological study of behaviour. In this view meaning is found to be affective rather than cognitive. A true description of experience is found not in any analysis of any external pattern or structure of knowledge, however exact, but in a comprehensive view, which realises the vital importance of the organic or subjective aspects of behaviour, and finds the wants, desires, and tendencies of the organism itself motivating factors in all activities. We are, therefore, from this view-point compelled to a more organic study of the whole of experience.

1 Reymert, see previous page, 3

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This brief outline of the various theories of meaning that hold the field at the present time is, we admit, but a short summary and, as it stands, totally inadequate. It is meant, however, to serve rather as an introduction to more searching enquiry into the psychological background of the study, and the more accurate description of the critical terms in our thesis. Before we can come to any real grip of our subject we must be clear on what is implied in the terms "Psychological" and "Meaning."

(C) A study of the critical terms: "Psychological."

What do we understand by a psychological enquiry into meaning? Despite the advance made, in recent years, in the study of psychology, and its emancipation from the dominance of metaphysics, the enquiries into, what are termed the intellectual processes, are still shadowed by philosophical presuppositions. The bifurcation of the organism into mind and body, and their relegation to *separate* universes of enquiry, which is characteristic of the Cartesian philosophy, is still casting a somewhat sombre shadow over psychological study. Mind is viewed as an entity separate from the body, and both are amenable only to their own principles of explanation, yet maintaining some mysterious connection with each other. Mental operations are viewed and studied apart from the organism whose experience they constitute. The result is a rather hopeless, one-sided view of the psychological nature of behaviour, especially on its intellectual side. This dualism, says a recent writer on philosophy, "with which modern philosophy starts in Descartes and from which, in many quarters it has not emancipated itself is probably most manifest in its psychological bearings, which has become more a study of a single phase of mental activity than a real recognising of the organic nature of experience as involving the total reaction of man as an organism. The consequence of this view is that intellect is viewed as a spectator, and results in a bias that considers intelligence or even experience as fundamentally cognitive." This a fairly accurate statement of the position in

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relation to meaning, and is influential in the determination of the point of view indicated in the first theory set forth in our previous section.

We simply point out at this stage that experience is never, nor can it be independent of the organism whose behaviour we are investigating. The concrete fact for science and philosophy alike is not the union in some mysterious fashion of two separate entities, body and mind. We may, as Dr Drever points out, frame hypotheses, which go beyond the facts, in order to account for the facts psychologically. For example, we may find it necessary to talk of mind or of soul in order to account for the facts of experience, but neither mind nor body is for psychology a distinct entity opposed to each other. Both phases are, no doubt, quite legitimately segregated and distinguished for the purpose of specific enquiry, but neither, in itself, can give a complete or adequate account of the facts of human experience. Take away body or mind and you have no experience. The two aspects can be stated not as body and mind, but as organism and situation. The dualism thus stated is not the old separation of two distinct entities, but two aspects of a whole, which we call experience. The dualism is resolved by the integrative action of the conscious process, and that action embraces more than the purely cognitive aspects of mental activity.

The view stated above leads to a more concrete and correct psychological treatment of the subject of meaning. The tendency to take knowledge and examine it in cross section, leaving out of account the organic processes through which knowledge is acquired, has obvious limitations, and can never be more than a study of a particular aspect of experience. It is this difficulty we encounter in many of the studies of the thought processes. For example, no one, who has read Prof. Spearman's "Principles of Cognition", will gainsay the amount of hard thinking and valuable work revealed therein, but one is left with the uncomfortable

1 Instinct in Man. Dr Drever. p 83.

2 Paper on the nature of Consciousness. Aristotelian soc, Feb. 16 th 1925. Dr Drever.

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feeling that the assumptions on which the book is based have not been adequately examined, and that a discussion of processes anterior to any he mentions is essential to a complete elaboration of the subject.

There is, however, despite the persistence of this rather arid intellectualism, the emergence, in modern study of thought processes, of a more concrete ground of psychological enquiry, and this is due to the influence of biological science.

With the extensive prosecution of biological research the whole nature of psychological enquiry, and the study of human behaviour have been changed. The organic point of view is gradually gaining ground, and the necessity of the inner or subjective aspect as essential to a complete understanding of experience is more widely held. The evolutionary standpoint is generally accepted.¹ Mind presupposes living bodies both in the order of evolution, and as a condition of growth and existence here and now. Prof. S. Alexander holds that mind as a new quality or level of existence in the order of evolution comes into being with living bodies possessing, however rudimentary in form, a nervous system. It is now more or less agreed that conscious behaviour cannot be construed as the guidance of a bodily machine by a separate soul somehow mysteriously attached to it. The most original thinking is made possible by, and grows out of, the whole organised system built up through conscious and unconscious experience.² The purely intellectualistic standpoint has been modified to meet this demand from the biological side, and feeling has been given a more prominent place.

It is here that we find the second theory of meaning, as stated in our previous section, coming into being. What is termed Conative interest the life urge of the organism, has been given a place in the study of meaning. As stated this term is used by Prof. Mc Dougall in his work entitled Outline of Psychology, but with him the recognition of this factor seems in no way to invalidate the claim that meaning is fundamentally cognitive.

Prof. Stout would, in all probability support this conclusion. In his 1. Matter, Life, Mind, and God, Hoernlé, pl54.

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Manual he states that it is conation that gives unity and continuity to the mental process, and that meaning - the acquirement of meaning depends on the unity and continuity of the conative process. That is not untrue, but it seems inadequate. Stout, himself, in a previous page speaks of interest, and this is affective. It is difficult to conceive of cognition being influenced by conation except in and through affection. We shall return to this point.

The third main influence colouring and determining a new attempt to define or redefine psychological meaning is that of Psycho-pathology: - what may be termed the medical aspect of modern psychological study. This is also the result of biological influences. The schools of Psycho-analysis and Psycho-therapy have, as a result of their researches, directed attention to the inner and affective aspects of reactions and response. Students have been led to look elsewhere than the purely cognitive for the determining factors in human experience. While no one can or will dismiss environment as an altogether negligible factor, the reaction of an organism is held to be determined primarily not by the environment, but by the life-forces of the organism. Environment is a modifying, not the determining, factor in the behaviour. Motivation *lies* in the needs of the organic life - its appetites and tendencies. Take memory, for example. Memory is organic, and recall is something more than the tracing of nervous connections in the physiological structure of the organism. That is but the mechanism. Recall is based on interest, and interest is not a matter of sensation, but relative to the organic needs. It is affective more than cognitive.

These varied influences and points of view, a short study of which seems to have led us a little away from the main theme of our thesis, are critical to a real understanding of the psychological nature of our enquiry. They indicate to us this vital point. We are on solid ground when we regard individual experience, which is the concrete fact for

^{See:}
1 Experimental Psychology - Collins and Brewer p 186 F

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investigation) : as the integration of the organism and situation through a process which is conscious, and psychological explanation as one in terms of conscious purpose. Such a definition carries with it a recognition of the organic processes, which, while not in themselves conscious, are influential in behaviour. Organic behaviour is more than physical organisation, its development more than physical growth, and in it factors not amenable to physical explanation are present. The development consists primarily in the growth of internal arrangement rather than external embodiment, a qualitative rather than a quantitative process, in the course of which specific functions arise and take their place in the economy of the mental life. These are named, Conation, Affection, and Cognition. We come to distinguish them, but none is separable though distinguishable. The study of the intellectual processes is a distinctive study, and we would do violence to a description of psychological meaning if we limited our enquiry to one aspect alone.

We must find meaning in that which gives quality or value to the activity itself- value in and for the organism, and relative to organic needs. Reflection, which is a characteristic activity of the thought process, is not something divorced from the organic activity. It is a characteristic activity at a certain level. There must, however, be something on which to reflect- some meaning, or else thinking were itself impossible. This meaning is of the very texture of experience, and any enquiry into its nature involves the study of more than the cognitive aspects of mental life.

A further insight into the purely psychological nature of our enquiry will be given in the discussion of the other critical term in the title of our Thesis:- that of Meaning.

A discussion of the second critical term: Meaning.

It is essential to relate the term "Meaning" to what we have set forth as the psychological nature of our enquiry, and make clear the distinction between psychological meaning and logical meaning. L.A. Reid, says, There are two senses of the word meaning (of course there are many more) but here two are to be distinguished. First, what we may call the objective meaning - we speak of the meaning of a thing. I mean that thing. That is what we may term, intention, and that seems to be the sense in which Prof. Mc Dougall uses the term in his discussion of meaning in his "Outline of Psychology." Science is mainly engaged in explaining particular phenomena by shewing their significance within a system. The relation between things and a mind is a very difficult thing to justify without entering into a discussion of the biggest questions in metaphysics. Second, there is what we may call subjective meaning. Meaning in this sense is a function of mind directed towards reality." The terminology used by Reid is epistemological, but the distinction is suggestive. Generally speaking there are for us two senses of the word meaning: the psychological and the logical, and if they do not exactly correspond to the distinction given above, our quotation gives us a clue.

In the first place let us look at what some of the leading Psychologists have to say on the distinction between psychology and logic. Woodworth, says, Logic cares nothing about the explanatory processes which lead up to experience, but confines itself to inference alone, and its validity. Stout holds That logic is concerned with the norm or ideal to which all reasoning should conform. Logic has for its field the distinction between truth and error, not the process by which the fact itself arises. It is to show how thought must proceed to represent its object correctly. This, by the way, seems to be the point of view worked out so thoroughly by Prof. Spearman in his "Principles of Cognition", and makes his discussion more epistemological than psychological. Bosanquet states quite Knowledge and Truth. L.A. Reid. Chap. 2. pp 35 & 36.

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 3 Outlines of Psychology. Woodworth. pp 6
 4 Manual of Psychology Stout. pp 4, 5, 6.

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frankly that in logic we have passed from a study of psychical processes in which we discover actions and affections, which must be studied if we would discover what, after all, are the actual conditions of experience. ¹ Bosanquet makes it quite clear that knowledge is for logic something quite apart from the mental processes by which it is acquired. It is something given, a realm apart, and its laws are not subject to psychological investigation. If that be so, then no one studying the process would think that there is any other end in view but the interrelations of the elements of thought themselves. That is a fairly common fallacy in many of the psychological treatments of the thought processes. The procedure of thought is examined in cross-section. There is a study of relations within a system of knowledge, and ^{each} section is analysed into its component parts. Even where the attempt is made to trace development, this is confined to showing the necessary steps in the evolution of thought. No one studying the analysis would gather there is any essential relationship with the living reality of a human being. We are not foolishly dismissing logic. We are simply trying to distinguish what is essential to our enquiry. Logical meaning has to do with a highly articulated and systematised body of knowledge, and the relationships within that system, and of that system to others within the whole of experience. It has to do with validity. Psychological meaning has reference to the processes by, and in, which experience itself is possible. Psychological meaning is that which constitutes the response of the organism to a situation an experience at all, and, on which, knowledge itself ultimately depends. In the growth of experience, and in the economy of our mental life there are developed processes ^{in which} we arrive at the more highly articulated body of knowledge in which logic takes its place. We shall trace ~~the~~ growth in the course of our study.

Pillsbury sums up a discussion of this topic in the following words.

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That the attitude of logic is essentially different from that of psychology is evident from the different division that it makes of the reasoning

1 Essentials of Logic. Bosanquet. pp 3 and fol.

2 Psychology of Reasoning. Pillsbury. Chap. i pp 16 ff.

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operations. In fact the attitude of logic towards reasoning indicates that the terms refer more to the product of mental operations than to the operations themselves. Formal logic, at least, is mainly concerned with thinking as it is expressed in words. In consequence the outward operation alone is considered. The psychologist makes reasoning one operation among many; the logician, or at least several modern logicians, deny that thinking ever goes on in the mind that the psychologist investigates. Bradley and Bosanquet, and more recently Husserl, make the latter assertion with great emphasis. The former two men accept Mill's definition of consciousness as accurate, and, when they find no possibility of a satisfactory explanation of reasoning in Mill's system, insist that it must go on in some higher realm that is apart from the individual consciousness, although somehow related to it. It is against all direct evidence to assume that thinking does not go on in consciousness. We cannot have any psychological investigation apart from the processes on which knowledge depends."

It is certainly quite impossible to have any investigation of psychological meaning apart from a study of the organism's behaviour in relation to presented situations, and that involves a study of processes.

We contend, therefore, that it is essential to any clear investigation of this subject of psychological meaning to distinguish between the logical and psychological content of the term.

We do not, while urging the foregoing distinction, make logic and psychology antagonistic. They are not. The one is anterior to the other. It is nonsense to say that a thing is true for psychology and false for, say, metaphysics to which logic is closely allied. The fact is that the centre of interest is different, and the point of enquiry in psychology more primitive or antecedent. In our ordinary vocabulary we have words which denote distinction in the process of meaning. We refer to words like meaning and significance, and it may help in our study ^{if we} investigate what exactly is the experimental content of these terms.

1 Psychology of Reasoning . Pillsbury. Chap 1. pp 16 and ff.

Meaning and Significance,

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In quoting L.A.Reid, we said that meaning had, at least, two main aspects: one in which it implied relations within a system, and the other in relation to the organism. The latter is, we think, more correctly described as "meaning", and the former as "significance". Lloyd Morgan draws a somewhat similar distinction in an article on what he terms "Meaning and Significance" in the Journal of Experimental Pedagogy, Vol, 3. 1915-60

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In this article Lloyd Morgan restricts meaning to the perceptual field, and significance to the conceptual. The distinction is, in our judgement, not quite so clear-cut. There is really no sharp line of demarcation. The more complex and developed psychical process known as conception is not a phase of experience from which perception has vanished, or in which it has no place. In the same way meaning is not a phase of experience that has no definite relation to significance. It is antecedent to significance, and is presupposed in it. Meaning has to do with, and marks, a more primitive level than significance. There is a primitive "worthwhileness" in a reaction which is particular and organic in its reference, and that is really "meaning". In the development of experience there is a further meaning in relation to that past experience, and thus there is built up a higher process in which we pass beyond the immediate to other related, and it may be anticipated, experiences. The experience is thus significant within a wider field of reference. The phases thus denoted are complementary, not separable. Dr Drever, says,

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" We must distinguish clearly between meaning strictly so-called, and the more developed secondary meaning, which ought to be called significance. Significance is a pointing forward to other related experience or experience. Hence it is always the outcome of experience. It implies some antecedent meaning. We may speak of the acquirement of significance -

1 Knowledge and Truth. L.A.Reid pp 25& 26.

2 Journal of Experimental Pedagogy. Vol 3 1915-6.

3 Instinct in Man Dr Drever. p 131.

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There is a psychical integration which is inclusive of more than the immediate present.

An examination of the acquirement of meaning as described in Prof. Stout's Manual will bring out more fully what is implied in our distinction.

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Primary retentiveness, he says, "is correlated with primary meaning. We may sum up the last section as follows. In all processes having appetitive or conative continuity and consisting of a series of distinct steps a cumulative disposition is formed, which is the product of antecedent mental change, and a cooperating factor in succeeding mental change. 2. The after affect of the preceding mental change is not reproduced, but simply persists or is retained. 3. Its persistence in no way involves the persistence or resuscitation of the specific items of sensation or mental imagery which have contributed to form it. These do not persist, but only their effects. If we denote the specific items of sense-experience, or, it may be, of ideal imagery, by a, b, c, d, then a, b, c, d, by no means adequately symbolises the process as a whole. For when b occurs, the resulting state of consciousness is the joint product of b and the persistent disposition or after-effect left behind by a. Similarly, when d occurs, the resulting mental state of consciousness is due to d in cooperation with the persistent disposition left behind by a, b, and c. We may denote the after-effect of a by m_1 , the after-effect of a and b by m_2 and so on. The whole series may then be represented by a, bm_1 , cm_2 , and dm_3 . This after-effect is called m and the m represents the relation of the specific items b, c, d, to the whole of which they are a part, a peculiar character which belongs to them in virtue of their being part of this whole. Now the only general word, which is at all appropriate for expressing this kind of consciousness, is the word meaning or significance."

The quotation is rather long, but it is necessary for our purpose, and indicates what is exactly our point in arguing for the distinction between "meaning" and "significance." What Stout sets down as meaning is really

1 Instinct in Man . Dr Drever p 131

2 Manual of Psychology Stout. Chap 2. p 91.

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significance in our understanding of the term. There is, in the primary reaction, a particularity and distinctiveness, which, in its initial stages has a feeling of "worthwhileness." It is this which constitutes the reaction an experience at all. There is in what Stout terms the antecedent mental change a meaning, and each successive reaction which forms the steps in the cumulative disposition ~~is~~ not without this primary meaning. Every reaction of the organism on its environment means a modification of the organic life; a step in adaptability, the prosecution of some activity to a definite end, and, as such, has meaning. The meaning is not something that follows on experience, or is acquired by it; it is that which constitutes an experience at all. This is not what Stout means by the "Acquirement of meaning." That is really significance, and is, no doubt, acquired in experience. The primary meaning, which really belongs to the individual acts as such, and which constitutes such acts experience, is found in the relation of impulse and situation, which is an expression of the needs of the organism, and the affect is really the factor giving content and value to the concrete act. This point will be more fully discussed later.

Prof. Mc Dougall in his "Outline of Psychology" raises much the same point, but in a very different fashion. He is quite emphatic in his ¹ declaration of what is to be understood by psychological meaning. "To perceive an object is to mean that object, and no other. So long as I mean that object, it matters little what sensory or imaginal qualities enter into my experience." Or, again, "We cannot describe meaning otherwise than in the terms of the object we mean: we can only say I mean this or that object." This ^{is} far from a satisfactory psychological description of meaning. In fact, no attempt is made to give a psychological description. The qualities, sensory or imaginal, may not in themselves enter ⁱⁿ the experience, but they are not mere negligible factors in the experience. They are evoked experiences, which are qualifying any situation, and thus, to get at the psychological meaning, we must do more than say "I mean that thing." To say "meaning" is simply this intentional form of experience is to give no indication of how such a stage has been reached. It is really a bald

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statement of a late rationalisation of experience, which ignores the stage in psychical integration of situation with organism out of which experience is built up. We cannot, except as a matter of convenience, externalise an object in this way. The object I mean is an object the value of which to me is found in experience, and, if, through experience, I am able to objectivate to the extent of pointing and saying I mean that, the achievement of that stage is the end of a long process. Prof. Mc¹ Dougall in another place says "Experience is not made up of things; it is a process, and perhaps, in all cases, a train of activity". On that view it is difficult to see how any psychology of meaning can leave uninvestigated ~~the~~ organic motivation of this activity. A situation is attended to because it is interesting to the organism, relative to a felt need, and it is there we must seek for the psychological meaning. We reserve the wider term 'significance' for the wider and more relational content of the term.

We pass now from the introductory and preliminary discussions to an analysis of the psychological act. If, at times, our discussion has seemed to lose sight of our distinctive quest, it is due in large measure to the necessity of making clear our use of terms, and the many difficulties attending any discussion of the subject of meaning.

1 Outline of Psychology. Mc Dougall. p 39 and ff .

Second Section.

The Thesis in this Section is that Psychological Meaning in its primary nature is ~~False~~ Affective not Cognitive.

Our argument is an examination of the Psychological Act to prove our Thesis.

" We define Primary meaning as the feeling of relation between an object or a situation, and an impulse towards that object or situation, that feeling being described as interest or worthwhileness," 1

1 Dr Drever's Instinct in Man. Chap 6. p133.

" Meaning..... does not seem to us to reside in the stimulus but rather in a relation between stimulus and response- of a phenomenological nature.2.

2. Martin,L, Reymert. Ontogenetic aspects of Meaning,p3.

There is, in one of Dr Drever's books the following significant sentence:
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 Man is primarily a doer, rather than a knower, and his knowing is for the sake of and with reference to what he is doing, or intends to do.

Living is a definite kind of activity, and the whole of experience is determined by this activity, yet this activity does not arise out of experience. It is the ground of experience. This fact points us back to certain energy-sources if we would discover the origin of the psychological act. These energy-sources have been defined in various ways, as "Libido", "Elan Vital", "Conative urge", etc. Jung, says, All psychological phenomena can be considered as the manifestation of energy in the same way as physical phenomena are already understood as energetic manifestations since Meyer discovered the law of the conservation of energy. I call it Libido using the word in the original meaning of the term, which is by no means sexual. From a broader point of view Jung's term is practically synonymous with Bergson's "Elan Vital". Its manifestation is through instinct. We may criticise Jung's statement that this energy is subjectively conceived as desire, finding it essential to distinguish a craving, which is, more or less, purely biological, from desire, which is a more highly complex and psychological state. The same may be urged in more or less degree against the other definitions, but their very presence impress upon us the need for a new orientation of the analysis of experience.

In any analysis of experience we find three principal factors:
 (1) The organism with its inherited structure, tendencies, etc., through which the life-urge is manifested. (2) The environment in which the organism lives and moves and has its being. (3) The resultant response of the organism to the environment. Though thus described we must not think there is anything static about experience. Life and its activity cannot be expressed in static terms like sensations, ideas, and concepts. The term must be dynamic. The failure to realise this lies at the back of most of the errors of the faculty and intellectualistic psychologists.

1 Psychology of Every-day life. Dr Drever. p 19.

2 Analytic Psychology Jung. p 231.

We must escape from the temptation to think of the organism as passive. The first step in the activity is initiated by the life-impulse of the organism. The environment is the medium of the expression, or satisfaction, or modification of the impulse. The older, and perhaps more common academic, way of stating the order of experience as stimulus or sensation, organism, behaviour, should be set aside. We would suggest as a more correct order, and one more in keeping with modern psychology, organism, stimulus, behaviour. The former suggests too strongly what we have termed the danger of passivity; the animal or human moves only when tickled. Such a position is quite out of keeping with modern science. The stimulus is not the determining factor in the activity; it is the modifying factor. The determining factor is the life-impulse of the organism expressed in its needs, appetites, and tendencies. John Galsworthy in his novel, "A Saint's Progress", has a very suggestive illustration of this point. One of his characters is pictured looking down at a baby lying in its carriage. The man looks for some time, and then asks the following question: "What do they think about?" The answer made by the mother is, "they think only when they want something." That is an arresting and suggestive statement by one of our most thoughtful writers of fiction. The statement itself is not fiction, but a thoughtful and provocative interpretation of a situation.

It is necessary, then, if we would give an adequate account of behaviour, to turn our attention to the appetitive and instinctive tendencies. It is there we shall discover the pathway to an accurate description of psychological meaning. There are, in every organism, original and nativistic endowments through which the life-impulses manifest themselves. While it is true, as Carlyle says, that a man is more than a pocket edition of his ancestors, it is equally true that every human being arrives on this planet with a definite structure and endowment that determines that he should behave in a definite manner.

1. A Saint's Progress. John Galsworthy. p 361.

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He is a member of the race, and, in a very real sense, the heir of all the ages, moulded and shaped through long evolutionary periods into specific and determinative form. He is not unequipped for the struggle of life. He has tendencies, which modern psychology call instinctive, and which are experienced as impulses. Each is accompanied with, what we may term, interest. These instinctive tendencies, experienced as impulses, and through which the life-energy manifests itself, are capable of being distinguished as appetitive and reactive. The first term denotes the organic aspect. The appetitive tendency originates in the organism in an affective experience, and is represented in hunger and thirst, and the like. They mark certain affections of the organic life. The second, the reactive tendencies, are more or less relative to the objective aspects of experience, and refer to some object or situation. But, while both aspects are thus distinguishable, they really combine to form the complete act of primitive behaviour. The psychological explanation begins with the life-impulse as its datum, and traces the process through which satisfaction is gained.

The starting-point, therefore, in the activity, is a state of dissatisfaction in the case of any one of the instinctive tendencies; a dissatisfaction, which maintains a state of disturbed equilibrium, until satisfaction is achieved. The state of dissatisfaction arising, say, in the case of the instinct condition of hunger, or sex, results in a lowering of the threshold for the relevant stimulus. It is difficult to describe behaviour, either animal or human, apart from some such hypothesis. Take the illustration of the Steat in pursuit of its prey. The initial point in the activity is not the presence of the prey. There is first the dissatisfaction arising in the appetitive tendency of hunger, and the arousal of the hunting instinct. The search for prey is thus initiated. The threshold is lowered for the entrance of the appropriate stimulus, and this appears in the form of the rabbit. Watch the animal as it pursues its prey, and we see that the affectivity thus aroused sustains the activity, and gives value and content. The activity thus described is

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not without meaning in and for the animal. This meaning cannot be described in terms of the objective factors. It is found in the relation of impulse to situation, a felt relation of "worthwhileness." What is it that is worthwhile? Is it the object or situation, or a certain action, or a situation arising from the action? It is really all three in a certain sense, but the sense will depend on the degree of psychical integration. There is present a certain interest which is really the primary meaning.

We are not concerned, at present, with any further analysis of the behaviour described above. Our purpose is really to prove our contention that the environment is not the determining factor. Jennings says, in support of this point, "Activity does not require present external stimulation. A first and essential point for the understanding of behaviour is that activity occurs without specific external stimulation. The normal condition of the Paramecium is an active one with its cilia in rapid motion. It is only under special conditions that it can be brought to rest. The organism is active, and its activities may be spontaneous so far as the present stimulation is concerned. The spontaneous activity, of course, depends finally on external conditions in the same sense that the existence of the organism depends on external conditions. Reaction by the selection of excess movements depends largely on the fact that movement is not itself produced by the stimulus. We admit that the life-impulses are derived from, or, at least, are not independent of the environment. So is the very life of the organism. The life-impulses are derived from the metabolism in the organism, and this, in turn, is contingent on what the environment gives, but what we insist on is that psychology begins with the life-impulse as its datum, and it is concerned with the mental routes along which the impulse expresses itself."

This rather long and laboured analysis of the primary nature of activity changes the emphasis as we have stated from the purely cognitive to the affective aspect of the behaviour, and indicates the region in which to look for the true nature of what we term psychological meaning: a psychological quality, which is, we hold, the primary tissue of experience itself.

1. Behaviour of Lower Organisms. Jennings. Chap. 16.
2. Nature of Intelligence. Thurstone. p. 23.

Another avenue of approach to a psychological description of the primitive behaviour is that given by Rignane in his, Psychology of Reasoning. He approaches this subject from his own particular angle. "1" If we reserve, he says, " the term affective tendencies for that particular class of organic tendencies which appear subjectively in man and animals as desires, or appetites, or needs, and are subjectively translated both in man and the animals as non-mechanised movements completed or incipient, then a whole series of the principal affective tendencies thus defined, may at once be reduced to the single fundamental tendency of each organism towards its own physiological invariability. We see, for instance, that hunger, the most fundamental of all affective tendencies is really nothing more than the tendency to maintain or restore the qualitative and quantitative condition of the nutritive circulating medium, which will make possible a continuation of a stationary metabolic state. The difficulties in this statement are two-fold. First, Rignane's description of the affective tendencies is too vague, and savours too much of a purely biological one. It would be better to say that the reaction arises through the arousal of the affect, and the expression of the impulse is thus affectively coloured. In every instinctive reaction there is the presence of the affective quality. There is instinct-feeling. Second, While, admitting the statement about the tendency to recover or restore equilibrium, we would point out that this is never a static state. It is dynamic. We would also free ourselves from the grouping of the affective tendencies under any such generic term. Our real point in quoting Rignane is not, however, to enter into any detailed criticism of his biological bias, but rather to indicate that, even allowing for that bias, there is a confirmation of our previous argument on the critical nature of affective tendencies in the determination of behaviour, and the subject of psychological meaning.

It is futile to argue that there is no meaning in the initial response. The very term used by Rignane, "restored equilibrium", implies a qualitative change in the organic life, and this must be of
 1 Psychology of Reasoning. Rignane. Chap. 1. 4pl, and ff.

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the nature of meaning.

We would hold, then, that the primary form of meaning) that which itself constitutes the reaction an experience at all - must be sought in the relation of the felt impulse, due to the life-energy expressing itself through one or other of the instinctive tendencies, with the situation, and issuing in satisfaction or dissatisfaction. The earliest conscious experience seems to be altogether inexplicable unless it is a reaction to something more than simply presentations. The reaction must be to a meaning. The stimulus may be provocative of a reaction, which, so far, as the organism is concerned, may be without content, though not without some modifying effect on its structure. The behaviour, that is, may be more or less mechanical. But, in relation to the impulse, behaviour takes on a very definite psychological quality. The impulse tends to the lowering of the threshold, and a more or less particularised form of attention. Interest is created through a relationship between impulse and situation, and the whole response is regulated and coloured by a definite affective tone. The whole response issues in a satisfyingness or dissatisfyingness, which constitutes for the organism the meaning of the act. It is this qualitative content which constitutes the act an experience. Instinct experience may be the cognition of an object or situation never before cognised because of the instinctive interest of the situation, and this the result of a felt relation between impulse and object and vice versa, but, if the object has meaning, there must ~~be~~ surely be a reference to something that is not in the object, but in us. Suppose that by a miracle a fully developed intelligence suddenly fell passionless, was moved by no desire, felt no pleasure or pain, hoped nothing, feared nothing, loved nothing, and hated nothing. Would it not straightway tend towards extinction and dwindle like a flame deprived of air? It would surely go out, and with it its world.

1. Instinct in Man. Dr Drever. p.134.

2 Principles of Understanding. Sturt. p.294.

If we turn, again for a moment, to our illustration from the novel of John Galsworthy we shall see, more fully, what is implied in our argument. The child is never purely passive, whatever the appearance may suggest. There are certain metabolic changes going on in the organic life, and, though these may be strictly termed physiological, there is, as a result, certain states of dissatisfaction arising in one or other of the instinctive tendencies. These lead up to, and issue in, some form of behaviour. There is, what Rignano calls, a disturbed state of organic equilibrium, a restlessness, and the consequent hunt for the relevant stimulus. Pleasure and unpleasure are present in some degree. It is surely beside the mark to argue that these bi-polar expressions of feeling are not motivating factors in behaviour at this primitive level. The presence of the relevant stimulus arouses the affect, and there is the condition we term instinctive interest operative in the response. It is there, we hold, the primary meaning is found.

We can approach the subject from another point of view. If we turn to Lloyd Morgan's book on "Instinct and Experience", we find therein the discussion of the behaviour of a moor-hen, which is suggestive in this connection. His whole argument as to the origin of experience centres round the development of the experience of the moor-hen. We have three stages mentioned. [At the time when the little bird was struggling out of the cramping egg-shell we have the time when the first experience arose. When there came what we may regard as the initial presentation, generating initial responsive behaviour in the earliest instinctive acts, accompanied initial emotional tone, coalescent to form what I have ventured to call the primary tissue of experience. This is the birth of experience. Of swimming experience it had none, Racial preparation had, however, fitted the tissues contained within his black fluffy skin to respond in a quite definite manner. In the first act of swimming there was afforded to its experience a specific presentation, a specific

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response, a specific emotional tone, all coalescent into one felt situation. There was the moor-hen swimming in the stream. Sensory presentations through eye, ear, and skin from the various organs concerned in the behaviour, from the internal viscera, from the whole organic make-up, these together with a supplement of factors of reinstatement gained during two months of active vigorous life constituted what I conceived to be the actually existent experience at the moment. Then comes along the blundering puppy, and the moor-hen dives.!

Our concern with this illustration is not a discussion of the relation of instinct to intelligence; it is rather with the nature of meaning in the various steps of the experience described. There is as Dr Drever suggests² no coalescence of Puppy presentation with the behaviour experience. There is conative unity and continuity working out the interest of the situation and psychical integration. Puppy presentation does not seem to describe adequately the first part of the experience. There was cognition of an object puppy, determining and determined by an instinctive impulse, the origin of which must be sought in the race history of the moor-hen, with the felt interest, or primary meaning arising from this relation. That is the point we are making. The primary meaning of the reaction, even at two months old, as at other stages, is in relation of impulse to situation. It is not in the stimulus, nor in a primary sense in relation to the wider context of experience. At every stage indicated the reaction has its primary meaning, and, in the later stages, there is, what we may term, derived meaning, which is the result of experience. At each step there was the behaviour of the moor-hen determined by the felt relation to situation, the primary meaning or interest, and in the later experiences there is a secondary meaning acquired in experience. Meaning is never given by some sort of incomprehensible back-stroke from the resulting behaviour experience.

1. Instinct and Experience. Lloyd Morgan. 193.

2. Instinct in Man. Dr Drever. p. 134.

Note: The use of the term 'derived meaning' in this and following pages is the outcome of a discussion in which Dr Drever used the term to describe what is a definite step between primary meaning and significance.

this short discussion on what we may term, for want of a better word,
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 preperceptual activity is essential to the investigation of our sub-
 ject in perception itself. The fuller elaboration of what we have termed
 "instinct interest" will be given as we proceed. We close this section
 by giving what we consider an accurate description of primary meaning.

Dr Drever in his "Instinct in Man" defines primary meaning as follows:
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We define primary meaning as the feeling of relation between an ob-
 ject or situation and an impulse towards that object or situation, that
 feeling being described as an interest or worthwhileness. Some such
 definition is essential if experience is to be described at all. This
 meaning is not acquired through experience, but constitutes the very
 basis of experience. This position, we hope to find confirmed by our
 study of the higher levels of conscious activity. We pass now to a
 study of meaning in perception.

1. Note. This term is not to be confused with the term preperception
 which, while firmly fixed in psychology, is never too clearly defined.
 In some writers, preperception means complication, a purely perceptual
 process, in others it refers to certain transitional processes towards
 ideation. We are referring to a stage of experience which may be more
 clearly described as instinct-experience, but, as such experience is
 influential and determinative in perception, we have used the above term.

2 Instinct in Man. Dr Drever. p.133.

Meaning in the Perceptual process,

- (1) A discussion of the terms, Situation, Response, and Experience, This is to give a clearer description of terms we have used in the last section.
- (2) A statement of the factors involved in the process of perceiving.
- (3) Perception and Affection.
- (4) A discussion of the concept Sensation, and an examination of the 'Gestalt' theory.

Situation, Response, and Experience.

In the last section we repeatedly employed the terms, situation,
 " response ,and experience. It is necessary, before we proceed with a
 discussion of meaning in perceptual experience, to define those terms
 a little more clearly. The word "situation" implies something more than
 a mere generalised conception of environing conditions which surround
 the organism. These we found were, more or less, in continual pressure
 on the organic life, yet could not be considered as the prime factor
 in the determination of behaviour. We found that there is on the organic
 side a definite structure, which determines that the organism will behave
 in a certain definite manner. The life expressing itself through the
 inherited structure has a definite kind of expression. It is not a mere
 blundering aimless attack on environing conditions, but is guided by
 some specific tendency. ¹ Even the most undifferentiated total-response
 is quite other than a gross attack on the whole environment. Though it
 be but a sort of lunge into the unknown, the occasion for such an act
 is always something more or less articulate amid the mass of stimuli
 which the environment is capable of affording. Thus organisms respond
 to light, heat, or pressure, but not to a chaotic mixture of all three
 stimuli acting at once. Just as the behaviour of the organism is
 patterned - if only by virtue of the fact that the organism is a definite
 structure, the members of which cooperate as a whole - so the situation
 is patterned. This statement suggests the stand-point of the Gestalt
 school, a position which we shall examine later. Meantime, however, we cannot
 omit some reference to it. Ogden, from whom we are quoting, continues
 as follows: ² The latter portion, which speaks of the situation being
 patterned, is not so obvious as the one in which we speak of the organic
 structure. We have too long looked on the situation to which the organ-
 ism responds as so many discrete stimuli. It is against such a position
 we have protested in our introductory section. The situation, which is the
 the objective aspect of the psychological act is *patterned*, and related
 to the impulse that impels to action. The situation is not something

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disengaged from the organism and its behaviour, but something which participates as a member of the organic pattern of response.¹ The regulation of the external environment is, in fact, only the outward expression of the regulation of the internal environment. An organism and its environment are one. The situation, then, is not any situation, but a situation organically related to the impulse, and its *value* lies in the manner in which it satisfies the impulse.

Response.

The response, which may be stated as the outcome of the relation between the impulse and situation, has a twofold relation. It is related to the organism whose reaction it constitutes, but this relation is not a merely general one. It is specific, and is related to the instinctive tendency evoked or active. That makes the response, on the organic side, one with distinctive colouring. Even, though, by the growth of experience, and the emergence of higher and more complex levels, this may seem to be obscured, it is never absent.

On the objective side there is a relation to what we have defined as, situation. Here, again, we have to note the specific nature of the relation. As stated above the situation is not a series of discrete stimuli, nor is it a generalised and unselected pattern. It is determined in a very real way by the nature of the instinctive tendency which is seeking satisfaction. The whole is really an organic whole. The core of the situation-response is, not so much a thing that is discerned as, something enjoyed. This immediately points to the feeling aspect, and indicates the affective nature of the behaviour. The response is not, any more than the situation or the impulse, a haphazard thing, but something controlled and guided by these two, ^(impulse and situation) to which, indeed, it is organically related.

1. Organism and Environment. Haldane. J.S. pp 93&99.

Experience.

Experience is the third term in the circuit we have set at the top of this section. In discussing these terms it is well to remember that they must not be taken in any static sense. They are simply terms used to denote what is a dynamic and developing life-activity. Haldane's quotation given above indicates that in a primary sense the organism and the environment are one. Distinction, due to the development of higher mental processes, is still distinction within a whole. Any distinctions which we have made are such, Stimulus and response are not separable from but distinguishable within experience, They are factors in, and have a determinate place in, the experience, but in themselves they do constitute the experience. What then completes the circuit? In our last section we said that the stimulus-response has as its core something not so much discerned as enjoyed: a felt something. This satisfaction of some instinctive interest *or feeling* is, in a very real sense, the primary meaning of the whole *and* constitutes the act, ^{an} experience. There is a modification of the organic life. It is richer by so much.

Let us be quite clear on this point. From the foregoing it is evident that experience is a synthetic product. There is the life-energy manifested through the inherited tendencies, and there is the environment. We have indicated these two in stimulus and response, but there is the integration of the two by a process that is mental. The product is an unique product. To speak in the terms used to denote the different aspects of mental life, one would say that conation and cognition, standing as they do for the life-urge and the objective situation, are not in themselves sufficient to account for, or to produce, experience. There is the third element which differs essentially from both these. There is the affective, ^{aspect,} It is this element that completes the circuit, and ~~which~~ gives what we term primary meaning to the whole, and, thus, is constitutive of experience.

Our whole argument in this section may seem to be unqualified individualism. But it is part of our contention that meaning in a primary sense, and in a true psychological sense, is individual. Ogden

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 says Facts are discovered in and through experience, and to deny a scientific status to experience on the ground that it is always an individual phenomenon is to deny validity of objective facts, which must first be observed before they can be formulated into a scientific system.

We must remember we are discussing the genesis of experience not the later and more highly organised mental processes in which reflection of experience is possible. The fuller elucidation of the differentiation within experience, through mental growth, comes later in our discussion. Meantime we have reached a clearer understanding of what is implied in our terms.

1. Psychology and Education. Ogden. pp 115, ff.

In our last section we discussed the inner aspect of experience- the energies and impulses with their characteristic mode of expression that mark behaviour on its subjective or organic side. We found that the inner core of the situation-response was a feeling of "worthwhile-ness passing into satisfaction. This we contended constitutes the primary meaning, and was that which really made the act an experience. It was affective in nature. We now turn to perception, to that which is usually designated the first conscious experience of situation or object. It is well to remember when we are discussing this phase to note what we have said about the circuit of the psychological act and the terms used. All knowledge, it is said, is based on direct or indirect apprehension of objects or situations. This apprehension depends on the present effect on the sense organs of such objects or situations. These are the usual academic descriptions of the initial points in the perceptual process. It is however, a total misunderstanding of the subject to think of perception as isolated or separate from those aspects of behaviour which we have already discussed. It is not really adequate to describe a percept as the impression made by an object acting on the sense-organs. Such an account would be psychologically valueless. The object on that basis would not be perceived at all. Our experience at this level, as at other and higher levels is coloured by our past experiences, by the setting or context which is relative both to the subjective and objective aspects, and by our purposes and aims at the time. It is very questionable if we should employ any such term as sensation. Situation is not as we have seen simply made up of discrete stimuli. We shall discuss this point later in a statement of the "Gestalt" theory. Meantime we can make our point clearly by saying, that there are numerous occasions every day where the sense-impressions are entirely without any conscious effects, and to *them* no attention is given. The lowering of the threshold which gives the

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necessary condition for the entrance of the impression is not due primarily to the intensity or duration of the stimulus. These, we admit, are influential, and may determine attention, but there are organic conditions and an experimental background which have more to do with the response than any quantitative nature of the sense-stimulus. There is always, in a study of mental processes, an insurgent danger of isolating a phase of experience from the inner organic purpose which is the core of behaviour.

1 Prof. Spearman, writing, in this connection, says " That, before any cognition at all comes into play, there must occur certain events, which are not in themselves cognitive, but only the soil out of which cognition springs. These precognitive events have themselves two distinct stages of which the first is prenatal altogether, being purely physical and physiological. Then follows the second stage, which indeed is mental, but not cognitive. The physiological processes in the sensorium by some mysterious means generate sentient states of mind. Such states are, at starting, merely lived, not known. But surely these states are influential in the whole we call experience even at the perceptual level, and a study of them must enter into any psychological description of mental process. It is not sufficient to dismiss them in any such cavalier way. It may be that Prof Spearman does not feel that analysis of such states is necessary for the purpose he has in view. We cannot leave the matter there. It seems to us that to get any real understanding of the growth of experience it is incumbent on us to trace it genetically from its primitive beginnings. We may pluck a percept out of the soil from which it springs, and give a description of it in terms of sensation and response, but it is not a full description. Perception, in point of fact, is, like all other psychical processes, an integral part of the larger whole of experience. An impression is attended to because it interests the subject, affecting it pleasantly or painfully, and so has acquired practical significance. Merely cognitive significance has not place at all at this level.

1 Principles of Cognition. Spearman. 241

2 Psychological Principles. Ward. pp.143.ff.

The main point we are making is this:- that in perception there are more than two main factors. Here as elsewhere there is an inner view-point which is essential to any adequate explanation of the experience. In discussing this point Dr Drever says: On analysis the experience will be found to contain as least three factors. (A) A felt impulse, (B) a visually apprehended object or situation, and (C) a feeling of interest or worthwhileness, passing into satisfyingness. This is in keeping with the quotation from Ward, "the situation is attended to because it interests the subject." The situation or stimulus is but one aspect of the perceptual experience, and no number of sensations, however intense, will yield the other, which is really the essential element in the reaction, and constitutes the act a perception. In our every-day experience we find this verified. Perception is not a mere blundering process in which through appeal to the sense-organs of any stimulus certain situations or objects are cognised. It is a process related to and integral in experience, is guided and determined by experience. No one disputes the modifying nature of the sensory-pattern, but it is important to note that reaction to any sense impression is determined only indirectly by the sensory-pattern. The meaning of the sensory-pattern, which lies in the relation of the object or situation to impulse, - a relation which we defined as interest- is the determining factor. It is surely absurd to ignore this inner, impulsive, affective side, and content ourselves with the analytic description of the sensory-pattern.

There is another point of view from which we can approach this subject. Ogden, in an interesting section on the Aesthetic nature of perception says: Long before we are able to think about life in general and about its problems we are guided in the pursuit of ends that are not comprised within the cycle of a single perception. And this guidance is afforded not by discernment but by feeling. The conformity of any specific event to the impulses and demands of life as a whole is felt even when it is not discerned.

The guidance is afforded by feeling. That is entirely in

1 Instinct in man. Drever. p 133.

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3 Psychology and Education. Ogden. p 131, and fol.

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keeping with our analysis. There is the primary worthwhileness or meaning, and it is that which really constitutes the primary aspects of the perceptual process. It is not, we admit, the whole process. There are meanings acquired through experience, and thus the act of perception may and does possess primary and secondary meaning. We speak of this secondary meaning as derived meaning, arising as it does from past experience or experiences. But such derived meaning, present though it be, in no way invalidates the claim that apart from the first or primary meaning the process of perceiving is incapable of explanation. The readiness to perceive this, or that, or something else, points to a selective factor, the roots of which go back to and lie deep in the instinctive nature of man. The contribution of the background of experience, and man's impulsive tendencies are, in no wise, negligible factors in perception. The fact that we are ready to respond to some things and not to others is not due to any mere growth of habit. That explains very little. We must for the selective factor go back to the instinctive tendencies themselves.

It is really the failure to take this genetic and organic view that has hampered and distorted so much of our study of the higher thought processes, and coloured so many of our theories of meaning with logical presuppositions. Perception of an object or situation, if it is to be more than a mere that, must be shot through with value, and this in relation to the life-interest. In short, perception is really perception of meaning, and this we hold is, in its primary nature, due to affective factors.

Affection and Perception.

It will be profitable for us, before proceeding further to discuss in more detail the affective factor in the perceptual process. It will help in making clear our thesis of affective meaning. From the point of view of analytic psychology perception is, at the core, a sensory phenomenon to which the phenomena of affection and imagery are added. That does not imply that

1. Psychology and Education, Ogden. p. 131.

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 affection is either logically, or in time, ~~a~~ process posterior to the sensory phenomena. The explicit side we can analyse and describe in such terms as sensory phenomena, but the implicit or inner aspect is not so easy to describe. These are not perceived, although integral to the process of perception. It is this implicit side that is the affective. By its very nature it is difficult to describe, In all experimental work on the thought processes it is the elusive factor that we find quite impossible to observe. The mere non-observance, however, is not an evidence that the affective factor is absent. In any purely cognitive description of the percept we have but the skeleton of experience. One finds this over and over again in the work undertaken in the laboratory. It always falls on the subject side. If, however, as we have stated the readiness to respond goes back to and lies deep in man's instinctive nature it is evident wherever that ~~is~~ is stimulated or active affective factors are present. It is these which give glow and colour to the perception, and in our view furnish the primary meaning.

An illustration of the affective factor in the perceptual process is found in H.J. Watt's "Sensory basis and Structure of knowledge." He says, "1 A situation must be brought about that prompts the animal to move of itself, and the outcome of the movement must be sooner or later the satisfaction of some appetite or instinctive tendency, Sight and sound, etc, by merely varying together do not form percepts. There must be some current of nature, reflex or spontaneous action, in which the sensations of sight and sound as well as movement may run out and so become the conditioning stimulus in the primary current of action. It is admitted that all parts of the psycho-physical mechanism are autonomous and contributory, but the largest part—the really determining part comes from the instinctive tendency. This is simply a statement indicating the central place a ~~passional~~ ^{has} element in the total behaviour.

1 Sensory basis and Structure of knowledge. H.J. Watt. 204.

Sensation and Perception.

Much of the difficulty and controversy about perception has arisen because of ambiguity in the terms employed. The most ambiguous is that of "sensation". This term is really typical of the philosophical bias that has coloured so much of psychological enquiry. It is extremely difficult to arrive at any exact definition of the term. That combined with the fact that it has an atomistic flavour makes one feel that it would be well to discard it altogether in psychological study. In an article in the American Journal of Psychology, vol. 33, no. 2., R.M. Ogden raises this question under the form of a discussion entitled: "Are there any sensations?" He is, of course, arguing from the stand-point of the Gestaltpsychologie. The suggestion is certainly of interest. The term certainly must either be revised in content or else discarded altogether in the interests of accurate psychological terminology, and that for various reasons.

In the first place it is more or less a term borrowed from philosophical discussions. Prof. Spearman says ¹ "The concept of sensation arose out of a metaphysical difficulty, and can be traced throughout the history of philosophy from the sophists to the present day. How, by some means, to capture the absconding real thing is, of course, the task of philosophy, and various have been the paths of attempt. After outlining these attempts he says, ² "to meet the difficulties the plan usually adopted by psychology, and even by common-sense in its tolerant, all embracing and nothing reconciling way, has recourse to this concept of sensation. It is taken as being some kind of state into which the stimulus brings the subject, but by this conversion it becomes sensory experience: that is to say something lived undergone, enjoyed and the like. The other definition (as knowledge) seems to have arisen only through popular confusion. There we have one indication of the difficulty, and an attempt at a definition. If we turn to one who writes as a philosopher, ³ Prof. Kemp Smith, we find that sensation has a twofold content, that is, we can distinguish two aspects; the process of sensing and that which is sensed, ^a sensum."

¹ Principles of Cognition. Spearman. p 43.

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³ Prolegomena to an Idealist theory of knowledge. Kemp Smith. p 44.

These are some indications of the difficulties of definition on what we term the epistemological side. We do not fare much better on the psychological side. In many cases the philosophical bias is evident, and we get an atomistic point of view quite out of keeping with experience. Moreover the term suggests too much the passivity on the organic side, which we found to ~~be~~ quite opposed to a true description of experience.

¹ Stout, in his Manual, indicates another psychological difficulty. He speaks of the feeling-tone of sensation, or in later editions, of the same work, of the affective-tone. The feeling or affective phase we hold falls on the subjective side, and unless we interpret sensation as indicating some state into which the stimulus brings the subject we cannot see how the phrase can stand.

Or again, the term has led to an externalisation that yields an intellectualistic view-point in which the organic nature of experience is, if not lost, at least, obscured. The term is altogether so unfortunate, in its history and content, that it would be well to leave it aside altogether. The psychological act is adequately described in the terms we have discussed such as, situation, response, and experience.

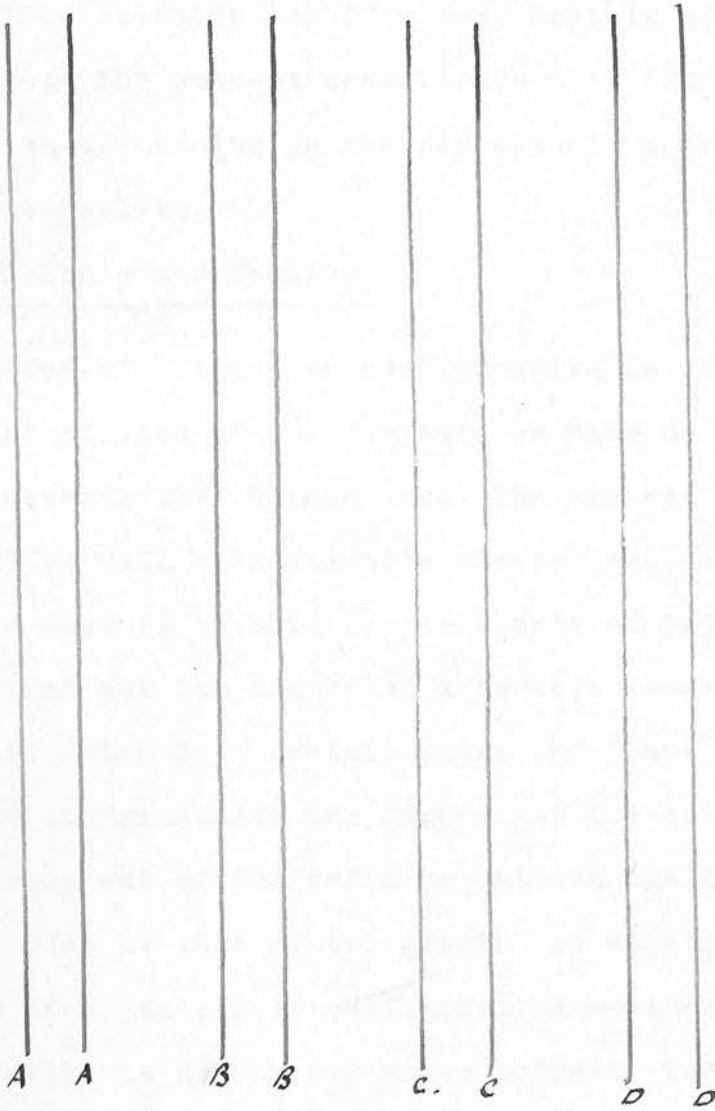
In mentioning Ogden's article on "Are there any sensations?" we said that his discussion centred round the Gestaltpsychologie. We find there an additional confirmation of our argument. The main protest of this school is against the suggestion that a percept, or for that part any mental state, or piece of behaviour, is nothing more than a group of sensations. What is termed the bundle hypothesis is ruled out altogether. An illustration of their argument from the experimental side will make clear the position. This is taken from a recent work by Drs Collins and Drever of Edinburgh university. ² Take for example the "fence phenomenon." Figure (5) given opposite, shows eight lines, aa, bb, cc, and dd, so drawn that the distance between a and a, and b and b etc, is less than the distance between a and b. Sensationally we should get merely eight lines in pairs with the

1. Manual of Psychology. Stout. p 224.

2. Experimental Psychology. Collins and Drever. p.107

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FIGURE .5.



From Collins and Drever. Experimental Psychology. p107.

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Or take a child imitating an adult walking, it is the whole act not a series of discrete or separate movements that is imitated. These illustrations are given not simply to set forth the Gestalt theory, but to indicate how that from this point of view our thesis of affective meaning is confirmed,

This we admit is no part of the Gestalt theory, and it is not to be taken as indicating that Köhler, or any of his school, are likely to accept our conclusions. But the argument set forth confirms our statement made earlier that the presentation itself is not sufficient ^{to provide} the energy ~~that~~ that traces out the pattern. There is the arousal of a definite affective tendency in the appetitive tendency of hunger in the case of the ape. It is not difficult to imagine a state or situation, in which the presence of food will issue, in no behaviour. The presentation remains a mere "that." The inner or organic condition is lacking. The behaviour in the case of Köhler ape is not due simply to the presence of the stimulus food, but to the arousal of the affect, ^{con}sequent on a state of dissatisfaction, in the instinct condition of hunger. It is the affective factor that gives to the synthesis the meaning, and thus leads to or issues in satisfaction.

In closing this section we may say, that while we have analytically distinguished in perception, impulse, interest, and presentation, it is only in abstraction we have done so. In the concrete behaviour the act is a whole and the three are necessary constituents within that whole. To separate out, or to exclude anyone, is to abandon any real attempt at a complete psychological description. If we direct attention only to the objective or cognitional aspect we can give no real explanation of the different interpretations of the same situation by two different individuals, or by the same individual at different times, In relation to every situation, whether we cognise them or not, we experience impulse and interest, and to deny their existence is to deny experience altogether. It is equally futile to

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say they have no determinative part in the meaning of the situation. They are integral and constitutive of the experience as such. Meaning is never given by some sort of incomprehensible back-stroke. It is involved in the perceptual experience from the beginning, and, without it, perception is impossible. Descartes, who at the beginning was criticised for the bifurcation of body and mind, has a very interesting paragraph in his discussion of the passions. He says, "1 the sight of an animal is a perception to which is added the emotion of fear, with the consequent tendency to flight or defence. This process does not involve the intellect. The passions do not proceed from the reason or the will. The full perception of our mental state is rather the effect than the cause of our bodily movements. It is in this realm of the passions, the sphere of affection that we find what is really the meaning of the situation. In perception the reaction is really to a meaning, which is the ground of the experience."

Before passing to the second level of conscious life commonly designated the Ideational level, it is essential, even at the risk of sacrificing unity, to discuss from the affective view-point the processes of attention and association. We are not discussing, in any elaborate way, the psychology of either, but indicating how, in the development of our thesis, the affective factor is central in both. It is difficult to place this discussion elsewhere, and the passage to ideation would be impossible without it. There is really no break in the continuity of the argument.

1. Passions, Descartes. p. 107.

A discussion of the affective factor in Attention, and Association.

The Affective factor in Attention.
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In this discussion we are not, as stated, concerned with any general analysis of the attention process. We are viewing the subject as it is organic to our thesis. Attention is integral to, and lies at the root of, all we have said about perception. As Ward says "a situation is attended to because it interests the subject, and that statement makes it imperative that we should consider that phase of mental life."

The conditions of attention may be conveniently divided into two groups; the objective and the subjective. The objective conditions require little elucidation. The very word attention denotes the presence of cognitive factors. The stimulation of the sense-organs by some object or situation is the external or objective condition of attention. But even that statement requires some qualification. There are, every day, stimulations that fall below the threshold, and do not enter consciousness, and to which no attention is given. That indicates that intensity has something to do with attention. One admits that, and yet the fact that a weak stimulus may by its very nature compel attention, when a stronger may not, points at once to the fundamental nature of the subjective conditions in determining attention. The subjective conditions such as the predominant interest of the moment, and the arousal of some instinctive tendency, have more to do with the direction and the sustaining of attention than the objective conditions. Curiosity, which is an instinct condition, may, if aroused, determine attention to a weak stimulation. Even in the case of a sudden noise the act of attention may be due to the arousal of a certain affective condition, arising from fear or some such instinctive feeling.

From a purely biological view-point attention may simply be the adjustment of the organism to its environment, but the psychological account goes deeper. The adjustment of the bodily and mental attitude is to be in adequate relation to the appropriate stimulus.

When this occurs at the conscious level we say that the organism attends to the stimulus; that the object is interesting to the creature. What after all is an interest, but the readiness to function of an inner disposition or tendency? Our prevailing dispositions, moods, or instinctive tendencies are all effective in determining attention. Mitchell, in his book, "The Structure and growth of Mind", describes instinctive behaviour as the "the instinctive prosecution of the interest of a situation. This interest of the situation does not lie in the objective field, but in the felt relation of impulse to situation. This interest is determining attention."

But not only is the directive nature of attention so determined, sustained attention is due also to the same affective conditions. The illustration we gave of the Steat pursuing its prey supports this view. The sustained attention, which marks the prosecution of the hunt after the prey, is due to interest, and not simply to the characteristic behaviour of the prey. The whole is governed by the interest evoked, and the affective bonds established between the instinctive tendency and the object. The attention alters in focus only when satisfaction is achieved,

A further point, which the same illustration makes clear, is the selective factor in the attentive process. Other objects may and do often cross the path of the hunting animal as it pursues its prey, but these, so far as the Steat is concerned, are non-existent. This is along the line of dissociation at a primitive level. That in no way disputes or minimises the argument for a later and more complex emotional displacement, but it is interesting to note the affect, operating as integral to the attentive process, producing this dissociating effect in the interests of the economy of our mental life.

Rignano in his work "The Psychology of Reasoning", supports this point of view. It is unnecessary to follow him throughout his argument. In his discussion of the relation between attention and consciousness he argues that the impossibility of more than one affective tendency to be operative at any one time results in the impossibility of giving heed to more than

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2. Structure and growth of Mind, Mitchell. p125.
- 2 Psychology of Reasoning. Rignano. *So. Ed.*

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one object at a time. A plurality of stimulations of nerves may co-exist, but they affect consciousness only by ~~turns~~^{we} or one at a time. The reason is that the organism is engaged with each conscious state, and cannot be attending to two things in the same instant. This gives to us the affective background and condition of the focus of attention, Attention is never divided or dispersed. If it is sufficiently intense it will continue to be directed toward ~~a~~ given object. If it is less intense it will alternate from one object to another according to the prevailing interest. This latter condition gives rise to the suggestion of dual attention.

In thus stating, what we consider to be, the determining conditions of attention as interest, and therefore affective, we admit that these cannot be supported by any purely introspective examination. That as a rule, yields only the objective data. To introspect the affective phase is to bring about its disappearance, The particular affectivity gives place to another involved in the act of introspection. The interest has changed, and with it the affectivity. But that admission does not involve the denial of the interest factor in the attentive process. To deny it is to empty experience of any real content, and to leave out of account the directive and the regulative factor in the process of attention. It is not difficult to see how, if this point of view with regard to attention is sound, how it strengthens our argument for meaning as affective.

Affective Association.

Watt, says, in his latest work,¹ "We may place recognition next to perception. But how shall we explain the experience? Part of its explanation consists in merely placing recognition in the system of all experience we call mind, and the rest consists in stating precisely what relation recognition has to its lower neighbour perception. The process of recognition, we may infer, is that in which a percept forming, or being actuated, in connection with one set of energetic sources (appetite, instinct, etc.) suddenly finds itself running in lines of a previously formed percept that admits an inflow of energy from some other source." Watt here touches a point critical to our further investigation of the subject in hand. We are approaching the subject with which he is dealing from a different angle, but it is suggestive, that this writer in discussing recognition, should indicate that, like the percept, it is related to specific energy sources. However high the level of psychical integration we cannot escape from this organic view. Watt, further, states that the energy source activity is the result of a definite stimulation of its own.² Mere presentation in itself is not sufficient to yield the energy that informs the object with the fact of recognition. It is the arousal of a certain interest that opens the sluice as it were, and gives rise to the experience. This process of recognition is based on association, and it is to a discussion of that aspect of mental activity we now proceed.

Ideal representation is based on the reinstatement and recognition of past experiences in the form of images, and that not in isolation, but in a context of relationships. It is necessary in tracing the place of affection in the higher levels to discover its place in the process by which reinstatement takes place: that of association. There is, as Freud, suggests nothing arbitrary or accidental in mental life, and we are not likely to find any adequate account of reinstatement of past experiences apart from enquiry into the organic factors that determine them.

1. Sensory Basis and Structure of Knowledge. H.J. Watt. p.210

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 Conserved experiences are not stored up somewhere in an inactive condition, in a condition of hibernation, so to speak. It must be remembered that they represent modifications of a living system, and partake therefore in its life activity." They are not uninfluential in determining the present activity of the organism. Yesterday is to-morrow, to use rather a cryptic saying. We may divide the year into days, weeks, and months, but time is continuous. We may separate a novel into chapters, or sections, but the story is continuous. There is, deeper than the seeming superficial links, an underlying story or purpose that is the ultimate bond. Association may be regarded by some as dependent primarily on physiological conditions, as being, as James suggests a particular case of the law of neural habit, but that does not carry us very far in a psychological description of the experience.

Stout, in his *Manual*, writing on the associative process mentions two different forms, "similarity" and "contiguity". There are other so-called secondary laws such as primacy, recency, vividness, and frequency. We mention these laws as indicating respectively the more superficial and fundamental laws as stated in the psychological text-books. Neither gives us, what we think, the fundamental factor in the associative process. They do not tell us why or how experiences are significantly related. Similarity on the objective side does not provide a bond uniting two experiences. It is not similarity, but a community of interest that unites. Contiguity, if we accept Stout's addition of interest is much nearer the truth. Dr Drever, however, suggests a more fundamental law of systemic relation, and states the law as follows: "Our experiences based on a contiguity of interest tend to form wholes or systems. The result is that associative bonds are formed between wholes, and their constituent elements, and between the

1. Psychology of Every-day Life. Drever. 113.

2. Manual of Psychology. Stout. p.440.

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constituents and the wholes. The truth is that the fundamental principle² of association is not contiguity in the strict sense, but rather contiguity of interest. The stronger the dominant interest, the conative tendency guiding the whole process, the more selective is the revival apt to be.

The so-called secondary laws are not any more satisfactory. We admit that recency, vividness, etc are conditions favouring recall, but they give us no insight into the fundamental bonds by which experiences are associated. These bonds lie deeper than any of the characteristics marking the immediate nature of the experience as indicated in the laws suggested above. The critical term in all the foregoing statements is that of interest, and it is in the examination of this we shall find the real factors in the associative process.

"¹ of the dominant interest
Stout speaks, of the dominant interest, and says that the stronger the dominant interest the more selective the revival is apt to be. What then is the nature of this interest? It is not found in the objective pattern of the experience; but in the organic needs, and tendencies, and the purposes in view. Here we are in touch with the feeling aspect of mental activity, and guided in our search, for the determining factors, to the affective phase of our experience.

The more acceptable statement of the laws of association is that given by Badouin in his chapter on "Affective Association", in his book, Studies in Psycho-analysis. He states the laws as follows:
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Among the images susceptible of association (by the well-known laws of similarity and contiguity) those, which have a common feeling tone will the most readily become associated. Commenting on this, Badouin says.
"3"
Underlying the associationists doctrine is an implicit postulate that the representative life is self-explicable, that the fantasies of the imagination can be made comprehensible by the study of images. People came to realise that this doctrine was inadequate and arbitrary, and to suspect where the magnet was to be found, i.e., in the affective life. It

¹ Manual of Psychology Stout. p 440

² Studies in Psycho-analysis. Badouin. p 45.

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is difficult to account for the variety, and, at times, what seems to be the irrationality of our experience, unless we turn to this deeper point of view. The analysis of the representative elements in any reproduced experience is never, in itself, sufficient to yield a clue to the magnet that draws experiences into relation and fuses them with each other. The magnet is found in the common feeling tone. Ribot, says ¹ "Representations, which have been accompanied by the same affective state, tend henceforward to be associated. Their affective similarity forms the link between the separate experiences." This is quite a different thing from the law of similarity as usually stated. The fact is that states of consciousness are not linked together because they have previously occurred together, nor because we perceive similarities between them, but because they have a common affective tone. An experiment conducted by the present writer indicates the accuracy of the foregoing argument. A subject confronted with a definite situation found that, owing to strong affective tone, certain features were not only unattended to, but actual dissociation took place.

The process described as dissociation is operative in every-day life, and, while its relation to association may be expressed in negative form, it is in the mental life a positive process. It really strengthens the argument for the place and power of the affect in the processes of reinstatement, and reproduction. We all know that an intense emotional experience has the effect of narrowing consciousness. Certain common aspects of experience are, for the time being, completely inhibited, and other aspects given prominence. We are, ^{Not} identifying emotion with affection, but the latter is involved, and lies at the root of the former. In the whole of experience the affective is not, nor can be it, totally absent. It may, at times, be relatively feeble, but it is never unimportant. In association as elsewhere the dominant interest is that which guides and determines the unity and continuity of the process.

¹ Creative Imagination. Ribot. p 109.

A confirmation of what we term affective association is found in the study of dreams. This is not the place or the occasion to enter into a detailed discussion of this difficult region of psychological enquiry, but the mental activity is not separate from, or different from, that of waking life. River's says, "1 The factors (operative in dreams) are not in-operative in waking life. Their effects are seen in behaviour, and the more superficial ties of the real associative bonds or the value they have for the individual. In dream analysis we discover the deeper bonds. We may find in waking life the presence of what Freud calls the reality principle, or what River's terms the epicritic level holds in abeyance the pleasure principle, or the protopathic level, but the two latter are not absent in waking life, nor are they uninfluential. The point is that that, in dreams, we can discover factors operative in experience, which, in waking life, are often concealed. Dream analysis confirms the thesis of affective association, and it is only on this affective basis that such experiences become explicable. One illustration will suffice. It is taken from Badouin. "2 I awake remembering some fragments of a dream in which I have been guided by a person who was like M. Laederach. In real life this gentleman had played a part in a law-suit in which I had to defend my idea of suggestion, which, it seemed, had been regarded as revolutionary. An obsolete law against magic had been invoked by the prosecution. The affair turned out all right in the end, but had been very troublesome to begin with. In half-consciousness of waking I attempt to analyse my dream, and, first of all, beneath the name Laederach I hear, as if in harmonics, the words Leiderach, Umfrid, Unrat, and Henrath. The strange thing is that the closest auditory association is between the first and the last words of the series, Leiderach and Henrath. It seems to me that Unrat had been called up by Henrath, and Umfrid by Unrat. At the moment of waking I follow the sequence in the reverse order. When I have found Henrath it seems to me that this had been the name of a man, who, when I was quite young, acted as my guide in a foreign town, and cheated me extensively. The happenings in this town constituted my first experiences of serious action on my own initiative; indeed they represented some of the crises in

1. *L. S. Stevens and Unconscious. Rivers -*

2. *Studies in Psycho-analysis. Badouin. p 48. ff.*

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my life, my first vigorous attempts to shake off the dominance of my environment, my first affirmation of my own ideas. The outcome of this affirmation was that I had to be cast off by some of the persons most dear to me. (I then perceive that the guide Laederach of my dream has been condensed with Henrath both as regards personality and name.) But my dream contained a word play on the name Henrath, for the last syllable of this name Rat means in German, adviser, a term, which may well denote a guide. I disparage him by calling him Unrat, for I interpret this as meaning evil counsellor, before I recall that it signifies filth. But Laederach is also evil counsellor, which I express quite simply by break-up the name into two German words, Leider Ach (alas). Thus the deeper affective tie marked by the superficial associations begins to become apparent. The word Umfrid, less intimately linked to the others, on the surface, gives a fuller expression to the deeper ties. Its signification in my mind is the opposite of peace, just as Unrat signifies the opposite of good counsellor. Umfrid is the name of a German pastor distinguished during the war for the courage with which he championed pacifist views, a course of action which led to persecution. Now the ideas, which, at the time, when I had been acquainted with the guide Henrath, had cost me some of the dearest friendships of youth had also been social ideas of a pacifist character, and I had bitterly reflected that one who desires peace begins by sowing strife. A similiar reflection less bitter and more ironical had crossed my mind when I had seen how my ideas concerning suggestion, which were benevolent, and were unquestionably pacific, had involved me in a fight. The affect, which links the four words, dominated my dream. This rather lengthy illustration, worked out with Badouin's usual careful attention to detail, confirms the claim that, in association we must get behind the recognised superficial bonds, to the deeper law of affective association. This has a direct bearing on the thesis that meaning is affective, indicating, as it does, that, even in the more highly complex states, the affect is a central factor. We pass now to the discussion of Meaning at the

Ideational level.

1. Studies in Psycho-analysis, Badouin. p 48.



There is in a recent work, which has come to hand just as this section was completed, a very interesting confirmation of the view advanced in the previous pages. ^{"1} Before describing the technique of word association it is necessary to sound a warning note. When a person responds to a stimulus word such as tree, with the first word that occurs to him, say, rêver, it is correctly assumed that these words are associated with each other in his mind; but nothing is revealed as to the actual formation or process of association which is simply inferred with more or less acumen by the experimenter. Such inferences are dangerous unless they are assisted by careful introspection by the subject, and even then cannot be accepted without reserve since the ability to introspect is a difficult art. But the original association as we have seen over and over again is the result of subjective selection by the person and not the natural selection amongst words themselves. Word associations are objective phenomena due to subjective causes. " We shall see this worked out in more detail when we come to our experimental section. Meantime, it is interesting to note this confirmation of our point that one must look deeper than the more or less superficial bonds for the real process of association.

1. Educational Psychology. Fox. 218.

Meaning at the Ideational level.

In the growth of experience there takes place what we may term the stabilisation of meaning. This is, of course, the product of experience. In our discussion of "Meaning and Significance" we mentioned that there is a "primary" meaning, which constitutes the response to an experience at all; something which is the primary tissue of experience. In subsequent experience there is what we termed "derived meaning." This is acquired through experience. Meaning thus becomes stabilised. There is here, as elsewhere, a gradual development of structure, and there takes place what we term the structuration of meaning. This marks a considerable advance in mental growth.¹ This structuration of meaning crystallises itself out of the various stages of development into a definite symbol-pattern of great stability and duration- to be changed only in time by the superimposition of another symbol. This leads to, what we may term, on the objective side a greater and firmer articulation, and thus leads on to significance. In this the predominance of the cognitive factor often leads us astray in our discussion of meaning itself. The symbol-pattern varies in form in individuals, and also in relation to the context of experience. It is this fact of structuration into symbol-patterns, and thus greater objectivation of experience that leads so often to the treatment of meaning as intentional, and also to the identification of image and meaning, which is characteristic of Titchener's writings on the subject. It would be interesting at this point to trace the structuration in the growth and development of language, and the rise of formal logic, but that is best treated at a later stage, *when we shall consider* the conceptual process. We pass rather to a study of the Ideational process and indicate how this structuration is effective therein, and what bearing it has on the subject of meaning.

1. Ontogenetic aspects of Meaning. Martin. L. Reymert.

International Psychological Congress. p4. 1926.

Feeling and Imaging.

There is, as stated, in the previous section nothing accidental in mental development. The different levels of conscious experience do not just happen, but emerge to meet the growing demands of life, in its relation to, and struggle, with conditions. ¹ Feeling, which is the first tentative step towards supplanting blind struggle among the adaptive tendencies, and which is a regulative factor in all our activities, is not adequate to a complete adjustment of the organism to the environment. In itself feeling does not provide an adequate explanation of our activities.² The affect, which, in point of experience is the initial core of primary meaning, does appear to relate to situations, which are, as a matter of objective fact exceedingly different. Thus the organism mistakenly strives to put an end to a conflict in a manner, which, while perfectly adapted to one situation, is extremely ill-adapted to another. That is a matter of common experience. The conflict is not resolved on the subjective side alone, but in the power to call up the experiences which conflict, and by examination resolve it. Thus comes the image, and we see at once the biological reason for the close connection between image and affect, and the tendencies for images to arise when normal action is arrested. The image represents a new stage in mental development. We see the growing predominance of the cognitive aspect of mental life, which, in the end promises the greater intellectual control. There is a greater objectivation of experience, and the defining of situations within a systematic objective pattern of experience. It is right to note, however, that new specialisations do not shut us off from the earlier and more primitive modes of response. It is easy to see that the growing predominance of the cognitive factor may diminish the feeling phase, but at no time can we say that experience is passionless.

Another point of view from which to approach this higher level is, that apart from the emergence of this power of imaging and reinstatement ^{at} experience would never pass beyond the level of perception.

1. Feeling, Imaging, and thinking, B C Bartlett. British Journal of Psych. vol. xvi part 1. p 16. 1925.

As a merely perceiving self I am bound to this desk, to this room, but with the power of recall and imaging I can live through scenes of past adventures. More than that reasoning becomes impossible. There is an interesting pathological case on record, which indicates the kind of consciousness a purely perceptual one would be. That is the case known as Grashey's patient. His consciousness was purely perceptual, his ideal representation impaired. When asked the colour of snow he could not tell unless actually looking at snow.

It is not essential, however, that we should pursue this line any further. We are simply indicating that mental growth is a growth, and the successive steps in development are not separable, but together form the whole of experience. The emergence of the new is not the destruction of the old. There is continuity in the mental life. The fact that in the interests of our increasing adaptability to our environment new levels emerge is no reason why even at the higher level primary meaning is not present. It is not displaced by either the derived meaning or by significance, but all three are constituents within the more complex stage of experience we have reached. The point we must discuss is the way in which there is a greater objectivation of experience, and the growth of the cognitive factor. There is also the relatively greater detachment from the object or situation, which seems to reduce somewhat the felt relationship between object and organism. This detachment seems to give rise to the idea of a field of knowledge, the meaning of which is really cognitive and relational within a system, and thus independent of the affective element, which we found so characteristic of earlier behaviour.

Hitherto we have been discussing reactions due to the stimulations of the sense-organs. We were in contact with a definitely controlling medium, and the organic relation could not be ignored. Now we are discussing a process, which reaches its end without or independently of the external stimulation. Hence the greater degree of freedom. But, notwithstanding, this detachment of the organism from situation, we find on examination that the real core of the reaction is not without its ^opassional element, its affective colour, and centre.

The Image and Meaning.

We can pursue this investigation in the examination of the nature and function of the image. The image proper must be distinguished from what is known as the after-image. After-images are both positive and negative, and are due to the stimulation of the sense organ. They diminish and fade away. They are really what Stout calls after-sensations, and do not come within the purview of our argument. The primary memory image has the same attributes and aspects as the original sense experience. By that is meant that an imaginal tone has approximately the same pitch as the originally experienced tone. The image is just the reproduction of the original sense-experience in that form, and its function is identical. So far as the mental process is concerned the difference lies in the more complex and highly developed nature of the mental act. The image does not, any more than the original sense-experience or impression provide the energy that issues in the resultant concrete experience. The organic relationship is the same in the one as in the other so far as the immediate content is concerned. The reinstatement of past experiences in the form of image or images is due to some psychological activity, and there is present in, guiding and directing, such activity a central interest, the core of which is passional or affective. I am taking a walk in the country, and I come to a stream. Immediately there is aroused the interest of fishing, and this starts a train of images, which, while in one sense knit together by a law of systemic relation, are nevertheless due to a deep affective bond. The same situation may, so far as the objective elements are concerned, evoke a totally different reaction. The primary meaning even in the imaginal experience is due to interest. There is also derived interest due to experience in the past, and there may be significance in a wider context of relational knowledge. The point is that for me, as for the other, the objective situation, and the reproduction of the past experiences are conditioned by a central interest. It is this felt interest arising from a relation between impulse and situation that gives primary meaning.

We are not, in any way suggesting that the image is the meaning,

Meaning, /

nor do we identify image and idea. The image is only one constituent of the idea; the other and the more important constituent is the meaning. The image is, if we may employ the figure, the vehicle of the meaning. It suggests or plays its part in the experience which has meaning in and for the organism. It is that which gives the image its place and value in the more complex process of mental life which we are studying.

This is, we know, frankly opposed to the position set forth by Titchener. In reply to Buhler's statement that it is impossible to ideate a meaning. Titchener says, " 1 I have been ideating meanings all my life. Meaning is represented in my consciousness by another of these impressionists pictures. I see meaning as the blue-grey tip of a kind of scoop which has a bit of yellow above it (probably part of the handle and which is just digging into a dark mass of what appears to be plastic material. It is conceivable that this picture is an echo of an oft repeated admonition to dig out the meaning of some passage of Greek or Latin. From that passage, and others in the same book it is evident that Titchener analyses meaning into imagery. Sometimes he finds kinaesthetic as well as visual images. " 2 Not only do I see gravity, and modesty, and pride, and courtesy, and stateliness, but I feel and act them in the mind's muscles. Later he says that meaning is originally kinaesthetic. We need not, at this point enter fully into the thesis advanced by Titchener on meaning as originally kinaesthetic. We can, and I think, must admit that kinaesthetic sensations do contribute to the meaning, but that is far from admitting that image and meaning are identical or that meaning is adequately described in terms of kinaesthetic sensation. If we accept the latter, then the former is possible. The image, however, so far as the introspective reports are concerned, may have different meanings according to the differing contexts or circumstances, and to analyse the one into the other is to introduce into our description of experience ^{Some Confusions.} It is probable that anyone with keen visualising or auditory powers may, through vivid imagery come to identify certain images with certain meanings, but that is not the identification of image and meaning.

Experimental Psychology of thought processes. Titchener. p18. ff.

The image is the reproduction in consciousness of past experiences; the mode of reinstatement. It emerges in the growth and development of mental activity in the interests of the increasing adaptability of the organism to its environment, granting a greater range and freedom of behaviour, and also power of distinction within the growingly complex experience. The passional element is, however, never absent, and it is there the primary psychological meaning is found. The structuration of meaning on the organic side, through experience, has at its core the affective phase, and even in the later developments this is always influential.

Imageless thought.

 There is, at this stage, a very pertinent and important question for psychology, and one that is bound up with any discussion of meaning. It is that of imageless thought. A fuller examination of this critical problem will be given in the later section on conceptual process, but meantime we cannot avoid some reference to it. It is not a new problem.

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 It is as old as Aristotle, and the controversy is not yet settled. Aristotle raised the question on an enquiry into the separation of soul and body. His conclusion is that if there is any such separation, and, if the functions of the soul can be carried on apart from the body, then thought was that process, and was imageless. His finding, however is not in support of that hypothesis. He says that, though thought in itself is independent of the bodily organs, in actual fact in human beings thought is never without images, and, as images are not independent of sense-organs, thought, so far as human beings, is concerned, (~~is concerned~~) is not actually carried on without bodily organs. Aristotle, therefore, treating this question from the psychological point of view, indicates that imageless thought is not a fact of experience. Stout in his Manual is quite emphatic, He says, ^{"2} It is quite inaccurate to say that such persons (that is persons who hold that they have imageless thought) think without images, for the verbal image is just as much an

1 De Anima .Aristotle.

2. Manual of Psychology. Stout. 411

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image, in the psychological sense, as the visual picture of the object, t. All the higher processes of conceptual thinking are possible only by means of images, it may be verbal images. Stout in his Analytic Psychology seems to depart from this view. But even a philosopher like Bosanquet says, "1 I cannot recognise of my own experience imageless thought. I believe in all thinking there is imagery." The whole difficulty, in this subject, seems to arise from the tendency to isolate one part of the mental process, and omit the wider organic context, Thinking is not something going on in a realm apart from the organism whose experience it is, and it is difficult to understand how images can be dispensed with. "2 It may be possible to argue that all thought, strictly speaking is imageless, for all thought is concerned with propositions sought or found, in other words with problems, suppositions or assertions. It is intentional not presentational. But on the other hand all thought is concerned primarily and ultimately with images. , that is to say with such of their relations as are relevant to the immediate problem. There is, as Stout states, the verbal image at least. A pure intelligence seems, so far as psychological enquiry goes an ideal as yet unrealised. We cannot, as Sydney Smith, in a humorous aside says, get outsidee our skin and sit on our bones, nor can we get outsidee the organic conditions in which mental life is active, and through which it expresses itself. If, then, as we conclude ²imageless thought is as yet an unproved assumption, the presence of the image in all thinking confirms the presence of the affective factor.

The Image
Image, and experience.

There are one or two further points requiring examination. The mental process of imagining is really two-fold in its nature or reference, It has a direct reference to past experience. It has, through the reproduction of the past, and its relation to the context of present experience, a constructive reference to the future. It is, therefore, constructive as well as reproductive. This function of the imagining process confirms the presence and fundamental nature of the affect. What the

1. Three chapters in Mind - Bosanquet - p. 34 F.
2. Psychological Principles - Ward. p. 301.

the/

psychoanalyst terms the condensation of images lies at the root of the constructive imagination, and implies the presence of a central affective factor. The original and primary nature of meaning, which we found to be affective, is not changed, when, through reproduction, ^{it} ~~an~~ experience is reinstated in the form of image. It is admitted that in a train of images, or in the image appearing in a context of relations, there is a greater objectivation, and consequently a predominating cognitive phase. Meaning thus attains a secondary or significant quality. Descartes, with his pronounced intellectualistic bias says that, once we have joined corporeal action with a thought, the one never presents itself without the other. This implies that feeling is always a factor in recall, and that ^{it is} the general principle of association, that among various images susceptible of association by contiguity or similarity, those which have a common feeling tone will most readily become associated."

Further the train of images is not a mere fortuitous thing. Transitions in the flow, which mark a break or change in the guiding interest are transitions from one train to another, and are determined by the dominant affectivity. I am at a loose end, and taking up a magazine turn over the pages idly until I am arrested by the title of an article on Eskimo traditions, and the discovery of America by Norsemen. This title has for me meaning both primary and secondary. It has meaning because I am deeply interested in old Norse history; it has significance because it is related to events in history with which I am already familiar. Hence before I read the article it has meaning for me both affective and cognitive. As the reading progresses the meaning whole is modified on its affective side by the satisfaction of an interest there, the awaking of a new interest here; on the cognitive side by becoming continually more definite and particularised. The point of this quotation is that the unity and continuity of the process, which is not only reproductive of past experience, but

1. Studies in Psychoanalysis. Bachelard. P. 46.

2. Instinct in Man. Drever. p 139.

but/
 ,through development of new interest,productive of related experience,
 is sustained by an interest,which is primarily affective,and,through
 integration,both affective and cognitive. Our quotation of the
 dream analysis from Badouin confirms this view. In that analysis the
 same fundamental affective interest directs and determines the train
 of the reproduced experiences,and guides in the formation of the
 context of present experiences. The whole experience is capable of
 rational explanation only from the affective side.

Our last point is simply an attempt to make clearer that which
 gives coherence to the experience. In all thinking we are face to face
 with a definitely selected,and more or less coherent train of images.
 This pattern of context is not explicable from the objective side
 alone.The formation of dispositions through past experiences afford
 an insight into the structural aspect of the subject,but it does not
 yield any explanation of the dynamic aspect. The psychical core of
 this disposition,if we trace its growth,is a meaning in and for the
 organism \rightarrow a meaning which arises from a relation of impulse to
 presented situation,a feeling of "worthwhileness". That is the genesis
 of experience and the disposition. In the reinstatement of experience
 there is,as Claparede says, an evocation of this interest core,which
 is the energetic power behind and in the functional aspects of the
 whole process of recall,and guiding and controlling it. Attention to
 this or that image,which is essential in the prosecution of the
 general purpose is due to the primary affectivity. ¹" And it is on

the primary affective tendency that the coherence or the incoherence
 of the intellectual process depends. But what is this intellectual
 process followed and, at the same time, guided and urged by the primary
 affectivity of the state of attention, which it is the function of the
 primary affectivity to render coherent? In its most typical and fund-
 amental form it is nothing else than the pursuit, on the part of the
 1 Psychology of Reasoning. Rignano.p69.

the/

primary affectivity, of a number of events or changes, actually observed or imagined, relative to the object of the primary affectivity. Thus the hunter who follows the game with his eye and sees it disappear into a bush, turns his whole attention on the bush; and the almost imperceptible movement of the latter assumes greater importance in his eyes, because he knows from experience, that it is connected with some interesting fact concerning the game, i.e. the movement of the latter inside the bush, and its expected exit. There is, in this quotation both primary, and derived meaning. The really satisfactory explanation of the whole coherent piece of behaviour is possible only by a recognition of the relation to a tendency that is instinctive, and an interest factor which is affective. The same applies in other fields as Rignano suggests. ²

In the same way the chemist who follows the different occurrences or transformations of a certain substance, and who sees it dissolve in the liquid prepared and heated for the purpose, fixes thence-forward his whole attention on the solution and on every subsequent physical or chemical phenomenon that it subsequently presents, because he knows that it is connected with the substance which is, for him, the object of interest, and which he continues to follow even while it is hidden from sight. The primary affectivity by a process, which is inhibitory, eliminates extraneous factors, and guides the process to a satisfactory issue. Every process is surely in the interest of some end, and is never independent of organic satisfaction. This is not a submission to an hedonistic psychology that implies naked selfishness. It does not, at this level, make pleasure or unpleasure the motivating factor in mental activity. It is rather the expression of the fundamental self tendencies. The sentiment of patriotism, for example, in its sublimest form is not unrelated to the social as well as the individual instinctive tendencies.

1 Psychology of Reasoning. Rignano. p 69

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In the light of our discussion it is not too much to hold that even in the higher process of ideation the purely cognitive point of view yields no satisfactory insight into the nature of meaning. The energy or drive is guided by and relative to what we term the interest of the situation, and is affective. It is the affective factor that gives primary meaning, and is involved in every later significant relationship. .

6. Section on Experimental Evidence.

It is expedient, even at the risk of breaking the continuity of the argument, to turn to the experimental evidence in support of our thesis of affective meaning. The experiments follow the main lines of the discussion. We begin with an investigation of the place and function of feeling in behaviour, and from a study of the primary nature of response, pass to an examination of the higher processes. Such a programme may seem to be too ambitious, but, if we remember that we are conducting a specific enquiry into meaning, we shall realise the limits of our investigation. Our experimental work will, we hope, achieve a twofold purpose. It will, we think, not only prove our thesis of the affective nature of psychological meaning, but also lead up to a discussion of the conceptual process.

The following experiments were conducted in the Psychological laboratory of Edinburgh university, and were spread over a period of six months. The subjects were of two quite distinct classes. One class consisted of male and female students who had a very brief acquaintance with experimental methods; the other consisted of experts, including some honours students and lecturers. The reasons for this diversity in qualification in the subjects are as follows; (1) There is a very real difficulty in assessing the respective values of subjects for work of this kind. It is essential to rely largely on introspective reports, and in this connection the limitations of beginners are obvious. They have not realised the need for, nor acquired the skill, in giving a detailed and accurate account of the factors involved. There is also the tendency to some unconscious qualification of the evidence either from suspicion or nervous apprehension. (2) The experts, skilled in the methods and the art of introspection, are more placid in their approach to experimental work, but they have also some limitations. There is a tendency to bias, and the possibility of giving reports more in accordance with their own theories on the subject treated. The personal point of view has often to be discounted. Introspection on the part of the expert very often borders on inference. Bias may and does.

does/
 often manifest itself in both types. The choice of subjects, however, from both sections enables the operator to check reports, and by comparing the evidence eliminate some of the faults. The difference in the reports by different subjects, and by the same subjects under different conditions and with different apparatus helps to, if it does not entirely, eliminate the personal bias .

Subjective and Objective difficulties.

Subjective difficulties have been partly noted above. They are largely bound up with the individual experience and psychological make-up of the subject. Adaptability, resulting from the repetition of the experiment, does, in the later stages, affect the report. Fatigue, due to the length and the exhaustive nature of the experiment, also interferes with the results.

Objective difficulties.

1" A cardinal failure in experimental psychology is its remoteness from practical life. It is difficult to get, in the laboratory, the conditions operative in ordinary experience. Surroundings are more or less artificial, and the concentration necessary imply a strain, which, if not altogether absent from ordinary life, is not so prominent. This latter condition may, however, prove of value. We may be able to discover factors influential in the field of consciousness, which are often unnoticed in ordinary life. One found, for example, that the ticking of the stop-watch in one experiment was a distracting factor, but its use in checking the time of the response was essential to an understanding of the nature of the mental process.

The foregoing are the more general difficulties operative in all experimental work.

Difficulties incidental to the special type of experiment employed.

In the experiments conducted on the Galvanometer, which form the first part of the report we found peculiar difficulties. The central difficulty

1. Introspection as a method in Psychology. Koffka. British Journ, of Psch.

difficulty

lies in the fact that there are four varieties of feeling. This difficulty is present in all experiments on the affective processes. The varieties of feeling can be enumerated as follows.^{"1}(1) So-called sense feelings; that is agreeableness or disagreeableness attaching directly to the sense experience. This is a primitive level in the whole reaction or response, and cannot be explained apart from the affective toning due to the arousal of some affect. (2) The kind of feeling we call interest with the satisfaction or dissatisfaction involved in the reaction. The feeling varies in tone according as the interest is gratified or obstructed. This we call the primary meaning. (3) The higher or more complex state of emotion and mood in which cognitive factors assume greater prominence. This, of course, demands an enquiry into the affective factors involved. (4) Feelings grouped together as aesthetic feelings and constitute a problem in themselves.

The difficulty facing one on the very threshold of experiments on feeling lies in the fact that it is impossible to introspect a feeling state. It is, however, possible under experimental conditions to discover the influence of affective factors. The vital thing to note is that in investigating the psychological nature of the process involved in any reaction, no satisfactory explanation or description is possible from the objective data alone. All our reports indicate the presence and potency of subjective conditions. These are not always conscious (in some cases they are by their very nature incapable of becoming conscious), but they are influential. Unless we are prepared to accept the extreme behaviouristic position we cannot despite the difficulties set aside the introspective methods. The inner view of the response is not less important from the psychological stand-point than the outer. This rather lengthy introduction is necessary to give the experimental reports a true setting. There are other points which will be dealt with as they arise in the experiments.

1. Note. The outline given follows the main line of that given by Collins and Drever in their book, *Experimental Psychology*, p187.

We pass now to the actual experiments.

Details of the experiments.

Types of experiments,

(1) The Galvanometer; Psycho-galvanic response or reflex.

The free-association method by word presentation was employed in conducting this experiment. Its employment, in this connection, depends on the fact that an emotional disturbance, in response to the various words is recorded in a way that is impossible in the usual free-association method. The emotional excitement is evidenced in certain emotional interference with the response, in the length of time, and in the type of the response.

(2) Free-association experiment by word presentation.

(3) A series of experiments framed on those conducted by Prof. Spearman and reported in his book on the Principles of Cognition. Details of these experiments will be given when we set forth the reports.

Subjects.

(1) Three honour's students, male. These students were expert in experimental work.

(2) Two lecturers in the Psychology dept., Edinburgh university.

(3) Eight students, four male and four female. These were students in their first year of psychology.

The first experiment: The Psycho-galvanic response.

This type of experiment has come into much prominence in the investigation of emotional states. Our aim is not so much a detailed investigation of the emotional state, as an attempt to arrive at the affective and cognitive elements in the response, and to assess, if possible, their respective values, and predominance. It is really an attempt to discover the nature of meaning which, we hold, constitutes the response an experience. There are, we know, certain organic conditions, glandular and nervous, which are more correctly classed as physiological. These do not, however, give any adequate explanation of the behaviour. They may and do indicate the difficult nature of the task. How far any experiment such as the Psycho-galvanic response is capable of yielding satisfactory evidence on the subject of meaning

meaning/

we shall see in the course of our discussion. We can say here that it is helpful in bringing into prominence features in behaviour, which are not noticeable under other conditions.

Apparatus and Method.

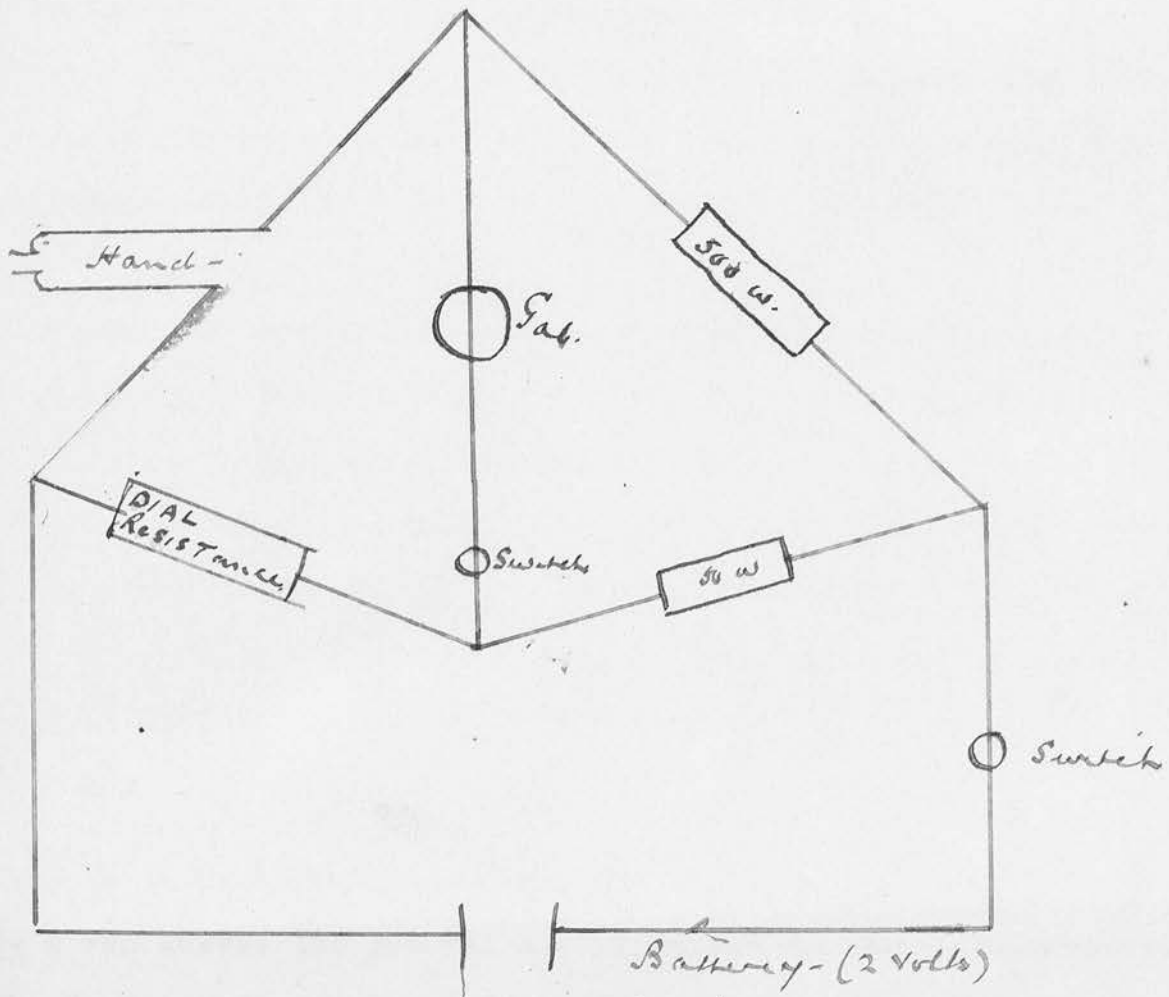
 Apparatus a mirror Galvanometer-see sketch on opposite page .A dial resistance with two constant resistances and a suitable shunt, and a battery. A spot light is thrown on a scale from a lamp and is thus that the amount of the emotional resistance is measured. The electrodes are connected with the left hand of the subject. There is, however, intervening two cloths soaked in salt solution, and the whole is bound with a bandage. The variable resistance was adjusted until the current was flowing through the Galvanometer. The subjects left hand is placed in a Wheatstone bridge and the experiment begun.

Method.

 The subject was seated in a darkened room, so that the quiet essential to the favourable conducting of the experiment might be secured. The left hand and arm bound as stated above was fixed as comfortably as possible. Connection was made with the apparatus so that the body's electrical resistance would be shown by the movements of the spot-light on the scale. This movement was unseen by the subject. The operator gave the stimulus-word, and the subject was asked to respond immediately. The organic disturbance was seen on the scale by the deflection of the spot-light. There is always a latent time between the giving of the stimulus and the swing of the spot-light. This enabled the distinction between deflections due to psycho-galvanic response, and those due to the accidental movements of hands or muscles to be noted. Introspection was taken, before at the time, and after.

Experiment (1)

Stimulus-word.	Response-word.	Measurement of deflection
War.	Blood.	18.4
Dog.	Friend.	8.
Flower.	Summer.	6.
Mother.	Love.	12.6
Study.	Philosophy.	4.5
Fish.	Trout.	6.3



From Collins and Drever. *Experimental Psychology*. p199.

Introspection.

Before. An attitude of preparedness, involving feeling of strain and expectation. Localisation of feeling in the front of the head.

At the time. A sudden appearance of image; then meaning, which brought into consciousness the response word. At other times the meaning seemed to precede the image, but was not without some definite relation to the stimulus-word.

After. The general introspection at this stage was simply one of relief.

There was, however, bound up with that, a feeling of satisfaction or dissatisfaction with the nature of the response.

Before entering on any analysis of the introspection it is right to mention that this subject reported a general attitude of indifference to the experiment. This indifference, however, is not a merely neutral state, but is influential in the total behaviour.

Examination of introspection.

It is essential to distinguish two main features in the introspection given above: the general situation, and the particular mental reaction. The feeling of strain reported in the first introspection is not just relative to the coming or expected stimulus, but to the whole situation. The Conscious attitude of the Wurzburg school is not explicable unless a view inclusive of more than the particular reaction is taken. There is influential, in the behaviour, the wider context, and the response is determined by factors inclusive of more than those present in the actual experiment. The experiment was new; the conditions, ^{surrounding} surrounding the subject, despite every precaution, ^{were} such as to provoke some organic disturbance. These are indicated by the deflections of the spot-light before the major response is made. The point is this that there are certain affective factors due to the operation of certain instinctive tendencies which are influential in the total behaviour. There is a condition not unlike fear in a state of subconscious excitation. This is, no doubt, held in subordination by the specific task, but it is a determining factor in the response given.

The introspective reports confirm the distinction stated.

The more specific or immediate response is not unrelated to the wider context. The report given as the presence of image then meaning seems to indicate that the word appeared first as a mere "that" until the affective interest gave to it a content. Moreover the very character of the response words yield evidence of an association based not on superficial bonds such as similarity or contiguity but on the deeper basis of affectivity. The difference in the measurements are indicative of the intensity of the affect.

Of course the differences in measurements are due to causes other than the immediate organic disturbances. There is the organic resonance of the one experience which may still be in a state of subexcitation, or the reverberations of which are not wholly gone. That is one of the unsatisfactory factors in this experiment. There is also accommodation which ensues in the succeeding stimuli; an accommodation to the general conditions as well as to the particular experiment. But, even when allowances are made for these, the fundamental point of the definite affective quality cannot be gainsaid. Take the response to "mother" which shows a greater deflection than the others. How do we account for that except on the basis that there is a very definite arousal of affective experience which gives content and meaning, and finds its expression in the word love? The primary note is not one simply of a generalised sentiment, but of a particularised experience based on a primary meaning to the subject. There is a wider and cognitive reference possible, and it may be actual in the subject, but it is the development of the former primary meaning.

2nd experiment. Subject B.

Stimulus Word.	Response Word.	Measurement of Deflection.
War	Wounds	17.6
Dog	Roy	8.3
Flower	Garden	9.2
Mother	Home	6.
Study	Books	7.4
Fish	Sea	9.5

Introspection. Before: Feeling of strain, but no localisation.

At the time: There was twice a quite conscious search for response word: then the image appeared and word came. Image reported as present on every occasion. Emotional disturbance was also reported.

After: The same as in A: dissatisfaction or satisfaction according to the nature of the response, yielding place to a feeling of relief.

Examination of the introspection. It is unnecessary to recapitulate the distinction mentioned in our former section. All the responses of B are not critical, and some seem to give little or no indication of any affective tone. It is however unlikely that it is absent from any. The responses where it is most pronounced indicate a state of emotion due to some very disturbing experience. For example, the first response "wounds" carried with it a feeling of almost physical pain. It certainly had a most marked affective tone passing into intense emotional stress. Its primary meaning had distinctive organic reference; its significance was acquired through later experiences. It is easy to dismiss "home" as the response one would expect to "mother" It is a mere matter of co-ordination - but that is a superficial explanation. We must take a more scientific view of association. Co-ordination does not arise from the mere juxtaposition of experiences. Relations are not mere superficial or accidental ties. There is a felt relationship, and this is primarily due to the affective factor. The introspection seems to indicate that emotion is never merely organic resonance, a sort of back-stroke in consciousness of some organic disturbance. It is the product of experience having both primary and secondary meaning.

Subject C.

Stimulus Word.	Response Word.	Measurement of Deflection.
War	Fight	10.4
Dog	Cat	7.6
Flower	Rose	9.3
Mother	Father	5.5
Study	Room	6.4
Fish	River.	15.2

Introspection.

Before: Feeling of strain and expectation.

At the time: A search for response at times and rejection of certain suggestions. A feeling of impatience at delay thus caused. Imagery present in every response.

After: feeling of relief.

Examination of reports.

In this experiment the reports differ but little from those in B, but the difference though slight is not insignificant. The statement about the rejection of certain suggested responses indicates the presence of certain affective factors the nature of which it is not necessary for us to investigate. The point is that here there is indicated a very definite, determining interest guiding and determining the responses.

In summarising the results of these experiments certain main conclusions may be stated. (1) There is evidence in support of Rignano's argument about the disturbance of organic equilibrium. "Every organism is a physiological system in a stationary condition and tends to preserve this condition or restore it as soon as it is disturbed by any variation occurring either within or without the organism." This property constitutes the foundation and essence of all needs or desires of all the most important of the organic processes. All movements of approach, of attack or flight, or seizing or rejecting, are only so many direct or indirect consequences of this very general tendency of every physiological condition to remain constant". That quotation probably goes further than we would care to admit. We would amend it by saying that the situation provokes a general disturbance of organic equilibrium and thereby a generalised feeling of uneasiness which, on the presentation of the stimulus, becomes more or less particularised, and the effort to regain equilibrium finds its avenue of satisfaction in the response made. This is really affective. The equilibrium is, however, not static but dynamic.

1. Psychology of Reasoning. Rignano
P. 1 & Fol.

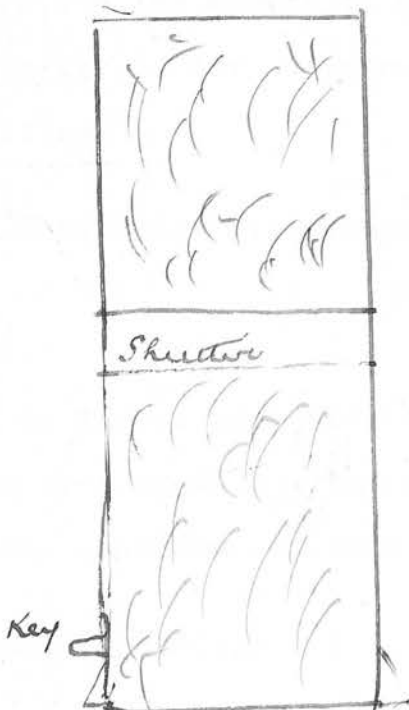
(2) The stress reported in the introspections confirm this, and supports the statement made earlier that the beginning of the act lies in a state of dissatisfaction in the case of one or other of the instinctive tendencies.

(3) The presentation of the stimulus is, in a primary sense, related to this felt need or organic impulse. Its place in any objective pattern is not at this stage present to consciousness. Relationship within a system is a later development acquired through experience. This does not involve any cavalier dismissal of the objective factor in the total experience. That is admitted, but it points to our conclusion that there is a primary meaning which is affective. The reflection which may and does find relational significance in the wider context, and the objectivation of the presentational element is of the nature of a secondary meaning acquired through experience. It is, however, never independent of this affective quality or unrelated to the primary meaning.

Second Series of Experiments.

This series were of the Free Association by Word exposure.

The Apparatus: Exposure shutter of the following type.



The words used were placed behind the shutter, and exposed by the manipulation of the key. A stop-watch was used to check the time between the exposure of the stimulus-word and the response-word.

Method and purpose.

66

The subject was seated in a comfortable position facing the shutter, and asked to take up an attitude as free as possible from strain. The operator informed the subject that the word ready would be given before the presentation of the stimulus-word. Simultaneously with the exposure of the word the stop-watch was started, and as soon as the response was made the watch was stopped. Introspection was taken before, at the time, and after the exposure. No further instructions were given. It was felt that any other suggestions might in some way influence the result.

The purpose in view was to discover, as far as possible, what were the factors entering into and determining the reactions.

The subjects were eight students, four male and four female, all more or less inexperienced in experimental methods.

The words employed numbered ten in each case, and were the same in each experiment. The reason for the similarity is obvious. Comparison of results, and the study of the introspection would not yield any common conclusion if this had not been observed. Concrete words were used with one exception, and the exception was simply to test the amount of tension and dissimilarity, if any, between the abstract and the concrete.

Words as follows.

Page;Lift;House: Sofa: Hill;Long;Stone: Fruit;River;Trail.

The Purpose.

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To discover as far as possible the nature of the associative bonds which the stimulus aroused into activity. Jung, in his association experiments, designates one class as ego-centric, where the response implies subjective

subjective/

valuation in connection with the situation called up by the stimulus-word. It is plainly possible to bring this under the head of inner-association if we recognise two groups of inner-association: Association depending on thought relations, and associations depending on affective relations. This distinction, however, must not be considered an exclusive one. It is based more or less on the distinction we have drawn between primary and secondary meaning, and our purpose is to discover how far the affective is primary, and the manner in which the one develops into and penetrates the other.

Response is always to meaning in and for the organic life, and our point in this experiment is to discover the psychological process in the total reaction. This could be done only by taking into consideration the introspections of the subjects. The obvious connection from the objective point of view may be quite misleading and without any real guidance as to the inner aspect of the subject's experience.

The Experiments.

We have numbered the subjects, and placed them in two groups.

Male students as follows: 1, M up to 4, M.: Female 1, F. to 4, F.

We begin with the male.

1, M.

Stimulus-word.	Response-word.	Time.
Page.	Boy.	3.
Lift.	Electric.	4.
House.	Hunting.	2.5
Sofa.	Lovers.	2.
Hill.	Motor-cycles.	6.4
Long.	Advertising.	3.
Stone.	Boy.	2.8
Fruit.	West Indies.	4.
River.	Twang- Ho.	3.
Trail.	Song.	2.6.

The introspection on this series may be summarised as follows.

Before. Attitude of expectation, anticipation; no feeling of strain

that could be characterised as unpleasant.

At the time.

----- A suggestion of latent energy suddenly released, like trigger action. More or less immediate presentation of image of response-word, but no conscious rejection of any one word in favour of another, except
" " " " "
in the case of motor-cycles and West Indies. Where the response came readily, as it did in most cases, there was a pleasurable feeling.

After. A general feeling of relief summed up in the phrase "That's one

over".

Without making any detailed analysis of this subject's introspection at this point it is useful to state the reason for the delay in the responses
" " " "
to Hill and Fruit. In one case it was the recall of a motor accident, and in the other the fact that some intimate friends come from that part of the world. We shall discuss the analysis later, but it is obvious that here we have inner associations that are both affective and cognitive. The former, however, is primary. Even in the alternation, which evidently took place, there is a conflict of primary and secondary affectivities. Each experience has for the subject both primary and secondary meaning: Primary in relation to some definite affective tone and quality due to felt interest in the immediate situation, and secondary in relation to past experience. Significance is in relation to a wider context.

2.M.

Stimulus-word.	Response-word.	Time.
Page.	Boy.	3.
Lift.	Pat Thomson's	2.
House.	Windows.	4.
Sofa.	Seat.	2.
Hill.	Arthur's Seat.	5.
Long.	Knitting needles.	2.5.
Stone.	Plum.	6.4.
Fruit.	Stones.	2.6.
River.	Forth.	3. 4.
Trail	Forest.	

Introspection.

Before. Feeling of strain, and a general uneasiness which was decidedly

unpleasant.

At the time. Definite image of presented word, but no meaning except in

a few cases. The appearance of the response-word, and this seemed to give
" " meaning to both. Except in the response to Plum there were no alternative
words.

After. Simply the feeling of relief with a pleasure tone.

It is obvious that in this experiment there are associations which can be classified under the head of subordination, and arise from systemic relations. There are, however, in all the presence of the affective factor.

3, M.

Stimulus-word.	Response-word.	Time.
Page.	Book.	3,5
Lift.	Electric.	2.
House.	Corstorphine.	4.
Sofa.	Sleep.	5.4
Hill.	Valley.	7.
Long.	Short.	6.5
Stone.	Road.	3.4
Fruit.	Orange.	6.
River.	Water.	2.9
Trail.	Indian.	4½

Introspection.

Before. Simply expectation.

At the time. A difficulty in concentration due to auditory stimulus

of the ticking of the stop-watch. Word dimply noted at first, then image,
then meaning. No alternations reported.

After. Relief with pleasure tone.

This introspection differs very little from the last.

4.M. Stimulus word.	Response-word.	Time.
Page.	Young man.	/3.
Lift.	Stile.	4.5.
House.	Home.	2.9
Sofa,	Softness.	4.
Hill.	The Law.	3.
Long	Time.	6.5
Stone.	Harrison Park.	5.
Fruit.	Sour.	3.8
River.	Water.	4.
Trail.	Man.	6.5.

Introspection.

Before: Wandering attention to aspects of the general situation such as room apparatus etc. Effort to concentrate.

At the time: The appearance of image and then response; no alternations reported. There was, at times, feeling of arrest and unpleasure

After: surprise at the nature of some of the responses and a feeling of relief.

Second group.

1 .F.

Stimulus word.	Response word.	Time.
Page	Book.	2.5
Lift.	Hotel.	3.4
House	Fire.	2.
Sofa.	Soft.	4.5.
Hill.	Blackford.	4.
Long.	Time.	5.5
Stone.	Black ^l .	4.
Fruit.	Apple.	5.5
River.	Forth ^m .	3.
Trail.	Long.long.	3.5.

Introspection.

Before. Quite pleasurable expectation, and no feeling of strain or wandering
of attention.

At the time. No alternation or feeling of arrest. At times a feeling of some
thing seeking to enter consciousness, then image, meaning and response.

After. Feeling of relief.

2, F.

Stimulus-word.	Response-word.	Time.
Page.	Book.	7.5.
Lift.	Hotel.	4.
House.	Craiglockhart.	5.
Sofa.	Rest.	3.5.
Hill.	Valley.	2.4
Long.	Ruler.	6.4
Stone.	Hard.	2.
Fruit.	Juicy.	3.
River.	Bed.	3.5
Trail.	Track.	4.6.

Introspection.

Before. Feeling of strain, and also distraction by surroundings. There was
a continual effort to concentrate.

At the time. Definite feeling-tone present in all the responses, varying
in intensity. Imagery always present, ranging from tactual to visual.

There was at times a very pronounced feeling of arrest.

After. Feeling of ~~satisfaction~~ that could not be indentified with
simple relief.

3,F.

Stimulus-word.	Response-word.	Time.
Page.	Boy.	4.5.
Lift.	Jenner's	5.
House.	Home.	3.8.
Sofa.	Custom.	4.
Hill.	Top.	5.5
Long.	Time.	4.
Stone.	Wall.	6.5
Fruit.	Sweet.	3.4
River.	Water.	5.
Trail.	Zane Grey.	3.6.

Introspection.

Before. Feeling of strain.

At the time. A felt interest present in most of the responses. Image

often present before meaning. There was, at times, a very definite feeling
of relations, which preceded the appearance of response-word. It was
difficult to obtain any insight into the nature of these relations. The
only statement was that it was a felt one.

After. Feeling of relief, with an appreciable pleasure-tone.

4.F.

Stimulus-word.	Response-word.	Time.
Page.	Book.	3.
Lift.	Boy.	3.5.
House.	Windows.	4.
Sofa.	Sleep.	5.6
Hill.	Top.	4.
Long.	Needle.	6.
Stone.	Whin.	3.5
Fruit.	Stones.	5.
River.	Water.	5.
Trail.	Trail.	4.5.

Introspection.

Before. Feeling of strain.

At the time. Consciousness of arrest, and feeling of unpleasure until response was made. At times there was quite a number of alternatives, but selection and rejection seemed to be quite independent of volition.

After. A definite feeling of dissatisfaction with un-pleasure-tone.

Discussion of the introspections of the whole series.

Some of the results are of little value due, no doubt, to the inexperience of the subjects. The introspections lack detail. On the whole, however, there is sufficient data for a careful study of the nature of association, the presence and absence of image, and the relative value and primacy of the affective and cognitive elements. We can best state our conclusions in the order of the introspections.

Before.

The reports confirm the conclusions reached in the experiments on the Galvanometer. There is a feeling of strain, and the presence of mental tension. This means a disturbed organic equilibrium. There was also, no

no/

doubt, kinaesthetic sensations entering into and colouring the responses. While we do not subscribe to Titchener's view that these kinaesthetic sensations constitute the meaning, we must recognise their place in the content of the behaviour.

The steps which the introspections seem to indicate may be stated as follows. There is an uneasiness producing a disturbed organic equilibrium, and this gives rise to a feeling of strain, and a search for some relevant stimulus. The threshold is lowered for the entrance of the relevant stimulus. The presentation offers a means of satisfaction and the restoration of the equilibrium, and this leads to the relief and the removal of tension. There is therefore an affective factor present in and giving content to the experience.

At the time.

The alternatives reported in a number of cases can be explained only by the presence of conflict between primary and secondary affectivities, as Rignano suggests. The associations which have a common feeling tone or are united in a common interest ultimately triumph. The satisfaction or relief from strain which is sought is not primarily an intellectual one, nor can the response be called, in any intellectual sense, a judgment based on cognitive apprehension of distinction from, or appropriate relation to, the factors in the presented situation. The whole reaction is in line with the dominant interest, and the strongest affective tendency. No study of the objective situation alone will give to us the meaning.

The response is, of course, not unconditioned by the past experience of the subject, as well as by the immediate purpose. This simply implies that both primary and derived meaning are present. In some cases one is more prominent than the other. What we must note is that the reaction involves the relation between situation and the felt impulse towards it, issuing in satisfaction or dissatisfaction, which is essentially affective. The wider, and more developed cognitive significance seems to have little or no place. The interest is the governing factor in the whole response.

After.

There is little to add on this aspect of the introspections. The feeling of relief is simply a return to equilibrium, but not as Rignano holds, a static state.

The third series of experiments.

This third series of experiments were designed to mark the transition from the more primitive levels of behaviour to the more conscious processes or levels of Perception, Ideation, and Conception. The aim was to make the experimental work correspond, as far as possible, with the general argument.

The Apparatus.

The same as in the last; Free association shutter and list of words exposed.

The Method.

This was altered in certain important details. In these experiments certain definite instructions regarding introspection. The instructions were as follows.

Subjective: A. Tone of experience; pleasure or unpleasure.

B. Interest in presented situation.

C. Feeling of organic disturbance; strain, etc.

Objective; A. As something external, cognised.

B. As related to or gaining significance from contextual relations.

C. As actually contemplated, and as far as possible the process issued in judgment.

The Purpose.

The purpose was to discover the steps in the process of objectivation from the initial feeling of uneasiness in which the situation is not so much cognised as felt, to the point when, through psychical integration, the situation becomes more or less that situation, and has a place in a system.

The words used were as follows: Trout; Dog; My; Copper; Daisy; Body; Lion; Money; Sleep; Thrush; Fox.

A stop-watch was used as in the previous experiments.

The subjects

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The subjects.

The subjects in these experiments were both experts in experimental work, capable of giving accurate and detailed introspections of their experiences.

Introspection was taken before, at the time, and after. the presentation of the stimulus-word. The introspections were written by the subjects.

Experiment A.

Stimulus-word.	Response-word.	Time.
Trout.	Fish.	3.
Dog.	Chien.	4.5.
My.	Son.	4.
Copper.	Wire.	1.5.
Daisy.	Flower.	4.
Body.	Mind.	3.4
Lion.	Tiger.	4.
Money.	Gold.	3.
Sleep.	Cow.	5.
Thrush.	Bird.	2.5
Fox.	Wolf.	3.4.

Introspection.

Before. Feeling of strain, localised in front of the head and round the eyes.

At the time. Attempt to criticise the appearance of the word, then nothing except a vague feeling until response-word appeared. The immediate task seemed to be the compelling of response. Image and meaning seemed to come together.

After. Relief.

General in line with instructions given.

Consciousness of unpleasurable feeling with distinct organic sensations at the beginning. Then came vague apprehension of something presented, but no definite content. The effort to realise the meaning of the stimulus-word seemed to bring the response-word, and relation was noted. This seemed to give objectivation to the whole situation. General feeling one of alertness.

Alertness./

The stimulus seemed to provide an avenue of escape from a general organic uneasiness. The steps in judgment seemed as follows: General attitude of expectation; then appearance of stimulus-word which seemed vague and indeterminate until some experimental context emerged into consciousness. This meant greater objectivation, awareness of object, awareness of meaning in relation to context and arising therefrom.

Experiment: B.

Stimulus -word.	Response-word.	Time.
Trout.	Fish.	2.
Dog.	Cat.	5.4
My.	Boy.	2.5
Copper.	Wire.	3.6
Daisy.	Field.	4.5
Body.	Mind.	2.
Lion.	Beast.	3.
Money.	Power.	4.
Sleep.	Bed.	3.5
Thrush.	Mavis.	4.3
Fox.	Hound.	2.8.

Introspection.

Before: Strain; wandering of attention. As experiment advanced a greater readiness to respond and diminution of strain.

At the time.: Saw word at first but without any meaning; then apprehended the concrete meaning and associated word appeared. At times the response was made without any awareness of contextual relation.

After: Satisfaction was the usual state at this stage.

General Introspection.

Organic sensations undoubtedly felt, and unpleasure was the usual tone. There was a feeling of tension as if obstruction has taken place, and a definite attitude of waiting. The *first* appearance of word was as

as/

a rule without meaning, but it relieved tension, and released activity towards a satisfactory end. Following the meaning of the word came context and then satisfaction.

These introspections are significant from various view-points. We shall trace the development suggested in the instructions given.

Subjective.

1-----

There is what we may term a certain organic uneasiness. Activity seems to have begun before any stimulus-words are given. The general situation of the experiment itself has evidently something to do with the state of disturbed organic equilibrium, but there is nothing of the nature of perception at this stage. This organic disturbance is not without influence in the later response. There is on the organic side a search for the appropriate stimulus, which will restore the equilibrium. The impulses, which are active, are subject to no willed control. This is clearly a precognitive state. The starting point in the activity is a state of dissatisfaction in the case of one of the instinctive conditions, and this is maintained until satisfaction is attained.

(2)

The aspect of expectation is really of the nature of an adaptation, and involves kinaesthetic and other organic preparation for the response. It is indicative of the fact that the reaction has already commenced. Cognition is at first a mere " " that without anything we can call meaning. It compels as it were the focussing of attention with the end of prospective satisfaction in view. The primary meaning is found in the relation between impulse and situation, the feeling of " worthwhileness ", and ensuing satisfaction. It is an interest condition.

Feeling, however, as indicated previously is an insufficient guide, and this compels a greater cognitive concentration on the presented situation, and thus objectivation. It is here we find position in context of other, and related experiences. This is the secondary meaning acquired through experience.

(3)

There is further in the introspections given a suggested confirmation

confirmation/

of Marbe's conclusion that all experience may become judgments if it lies in the purpose of the experiencing subject that they should accord either directly or indirectly with the objects. Nor is this antagonistic to Watt's definition that judgment is a sequence of experiences whose procession from the first term of the stimulus has been determined by a psychological factor now past, but persisting as an appreciable influence. All Watt's experiments are judgments.

The only qualification one would make on the foregoing is that there are influential within the conscious experience, either of relation to stimulus to response, or of response to context, factors which are affective in nature, and which constitute the primary meaning. The "Aufgabe" (which the Wurzburg school mentions) - the problem - is present in the stimulation of the cognitive or recognitive aspects of the whole. Here also the interest factor is present sustaining and giving unity to the whole. It may not indicate the means by which a satisfactory end is reached, but it implies the end.

(4)

Our final conclusion from this experiment in relation to our thesis is this. The meaning of the perceptual situation is primarily in relation to my aim, or purpose, or need of the moment, and is defined in consciousness as the interest of the total situation inclusive of both organism and presentation. This interest is the dynamic element in the activity. Meaning is in the relation of situation to the organism, or of the situation as a part to the whole of which it is a part, or of the situation as part of a whole to other parts within the whole. The whole is a whole in cognitive meaning or significance only through the fundamental organic relation - through the primary meaning or interest.

The third and final series of experiments were framed partly, at least, on a series reported in Prof. Spearman's book *The Principles of Cognition*, chap., XLV pp, 217 and fol.

In introducing this section of his book, Prof. Spearman says, That he is giving the promised evidence that in good truth the primary mental effect of any kind of sensory stimulation is what may be properly called a mental state. In this problem we shall have to consider the tremendous problems, as the origin, nature and function of objectivity. We recognise the subtle and critical nature of the investigation and agree with Prof. Spearman when he says that the mere number of subjects engaged is not nearly so important as their introspective ability. We limited the number of subjects to two, but the two chosen were observers of high intellectual ability, skilled in experimental work and capable of giving a clear account of their experience.

The first, and not the least critical of tasks, was to get a clear understanding of the terms subjective and objective. To secure this the following instructions were given. These instructions are taken from Prof. Spearman's book, page 220.

Subjective.

- (1) Connected with the perception or idea of any part of the body.
- (2) Connected with the idea of the mental self, or ego, or personality.
- (3) Actually constituting the state of consciousness.

Objective.

- (1) Connected with the apprehension of anything external to the body.
- (2) Meaning anything other than itself.
- (3) Localised in space.
- (4) Indicating a purely cognitive relation—contemplated, intuited, confronting you, put before the mind.

The characters specially under investigation are (3) subjective, and (4) objective.

The following objects were used: A match-box placed near enough to observe to engender stereoscopically solid appearance. A mouth-harmonium to obtain auditory sensations. A small flat cork for tactual sensations. This was pressed firmly on the surface of the hand. Mixed tactual and organic sensations were secured by the pressing of a cushion very firmly, (a) over the top of the head, and (b) down on the abdomen.

The immediate purpose was to determine how far objectivity is modified by differences in sensory quality, or of intensity, or clearness.

As a contrast subjectivity was exemplified by the pleasure derived from the pure tone of a musical word in rapid succession upwards. This was supplemented by unpleasure secured by the last tone being replaced by a crashing bow on a tin-box.

The reports on this experiment were practically the same as Prof. Spearman's. A. Visual sensations were more objective than sound. B. Sound more objective than touch, and C. The organic sensations revealed little or no objectivity, simply a felt experience.

Where we found a real and challenging factor in this experiment was that variation in clearness was not due to anything connected with the stimulus or the different parts of the sensory field, but to certain definite subjective factors. This we think critical in the experiment, and demanding investigation. Spearman seems to ignore this altogether. It may be that he thinks it does not come within the scope of his particular investigation, but it is certainly necessary in any psychological analysis of experience. The variation, according to our observers, was due to the presence of affective factors. There was reported, at times, a certain conflict of feeling and interest, and a tendency to dwell upon the situation provoking the strongest affective tendency. Peripheral elements in the sensory field were as objective as those more central, but the objectivity was induced by the distraction such elements introduced.

It is only fair to say that Prof. Spearman was not, at this stage, in his experiment seeking so much the process of objectivation as the observed differences of sense intensity and clearness. He simply states the facts. But the facts are not, in themselves, the real indications of the subjective and objective factors. These we find in the reports on the process of objectivation. For our observers these seem to lie in what Jung calls the ego-centric associations.

Second experiment.

The second experiment we conducted along the line of Prof. Spearman's work was that of distraction. This consisted of two series.

First.

The observer became as absorbed as possible in reading, while simultaneously the mouth-harmonium was played.

Second.

The observer gazed at a sheet of coloured paper about two feet in front of him, while simultaneously he added together sevens aloud, 7, 14, 21, 28, and so on up to 203.

The reports were as follows. First series.

A. I found the musical distraction sufficient, at times, to reduce the reading to a mere visual image of words without any meaning. There were times when the sound was the only thing in consciousness, and others, when it formed, as it were a back-ground interfering with the reading according as intensity varied or the tune was ^{an} changed. Subjectivity and objectivity varied. At times the reading proved the greater interest, and then objectivity was pronounced, and, at other times, the music was predominant. These objective variations were correlated to variations in subjectivity.

(B)

This observer reported that the sound was throughout predominant, and the distraction very pronounced. The reading was reduced to a mere form of visual images with no meaning. Sound was, as a rule, his state of consciousness. Objectivation was simply that of music, and accompanying it there was a certain aesthetic enjoyment.

Second Series.

A. No distraction caused by colour. The addition seemed to proceed automatically. I stopped at times to check an addition. This arose from a desire for accuracy. There was no contemplation of colour. Colour seemed to be a mere ^{" "}that without any qualitative content.

(B) Distraction very pronounced, and the greatest possible difficulty was experienced in carrying out the counting process. There was considerable alternation of attention, and objectivity varied in a remarkable degree. Pleasure and unpleasure were present throughout. On the whole the experience was disagreeable. In the end colour was the sole constituent of consciousness. It was contemplated.

This ended the experiments along this line. We realised we had, by no means, exhausted the possibilities of work in this connection, but the data gathered seemed adequate for our purpose. From the reports of the observers it is obvious that ~~to~~ give a psychological account of the experiences it is essential to examine the subjective factors. An analysis of the objective situation alone is not sufficient to yield a complete description. Sensory intensity may, and does, distract, but there is something deeper than that. There is a subjective interest factor that takes command. Clearness is not due simply to any quantitative nature of stimulus, but rather to a qualitative factor, which, through relationship not only to the experimental context, but to the organic interest, determines the predominant element in the whole reaction.

In the report of the second observer we find a dissociation of the addition sum, and any explanation of such a fact goes back to and finds its root cause in some affective tendency. We cannot account for the differences in the respective responses on the part of our subjects on the objective basis alone. The situations, so far the external features are concerned, are alike. The responses are different. Why? Is it not because there is a difference in interest. ^{"1} Experience is determined by the nature of the experiencer as well as by the nature of the presented situation. The one cannot be understood apart from the other, and in the elementary case this reduces itself to instinctive conditions on one hand, and that which is commonly

commonly/

" "1
denoted by sensation on the other". Experience as carrying and implying meaning involves both in relation to each other. With the growth of psychical integration in the developing experience both sides develop, and the relation expands in meaning inclusive of more and more until in human beings it is or may be inclusive of things actual and possible. Analyse the most elaborate process and we come inevitably on the two poles of experience. The affective can never be eliminated, nor can the experience be described from the cognitive aspect alone. The distinction between primary and secondary meaning is a distinction within a whole we call experience.

Fox on experiments on Preperception.

In the July issue of the British Journal (vol, XV) there is an article by Charles Fox on preperception, and an account of experiments which he conducted. It is interesting in this connection. We admit a difference in purpose, but so penetrating is this subject of meaning that it ramifies every field of psychological enquiry. We shall give the article as it stands making our criticisms and comments in relation to our own subject.

(see article enclosed.)

At the very outset we find it essential to differ from his narrow definition of perceptual activity. He says "in summarising the results of previous experimental investigations on perception in order to discover the nature of attention Prof. William James, came to the conclusion that three factors were involved; namely the process of adjusting the sense organs, ideational preparation, and the inhibition of irrelevant movements and ideas. He considered that in voluntary attention, the process of inhibition was merely incidental and not an essential part of the process. It is evident that conscious inhibition presupposes attention, and, therefore, cannot, without circular reasoning account for it. The accommodation of the sense-organs, although necessary for sensorial attention, and probably present in ideational activity, is a matter for physiology and need not concern us further. In

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any case, such adaptation is only a favourable condition of attention. We are left, then, with the ideational preparation or perception as the distinguishing feature of the attentive process. We need not pursue this quotation further at this point.

The first criticism is this. We cannot dismiss inhibition, either unconscious or conscious, as merely incidental. We found in our experiments that such inhibitions were determinative in the selection and guiding of mental activity. The process of inhibition was, we found, due to affective factors, which not only had the tendency to narrow the focus of attention, but to guide the entire process.

The same objection must be made to the dismissal of the process of adapting the sense-organs. This is not merely a matter for the physiologist. Adaptability may be a mechanical feature in the activity of the organism in relation to its environment, but that is not the whole explanation. We found that activity originated in the state of dissatisfaction in the case of one or the other of the instinctive tendencies, and this led to a lowering of the threshold for the entrance of the relevant stimulus. Adaptation of the sense-organs was inevitable. Adjustment then is due to something more than environmental conditions, and enters into and becomes a part in the description of the total response. Kinaesthesia is involved and is an element in the psychological explanation of the whole. We cannot hand the matter over to the physiologist. The factors mentioned are all influential in the meaning of the whole and cannot be eliminated in a study of preperception.

If we turn to the section on qualitative conclusion we find statements of peculiar interest. One of the most important differences made by preperception is very difficult to describe, as it is so essentially subjective. The observer feels that his mental energy is being more effectively spent, and this tends to make him more active. Such effective use of mental effort is accompanied by a distinct feeling of satisfaction, which seems to make the effort easier. This is, to our mind, a far-reaching admission. It is quite in line with what we have been saying on the presence of the affective factor in mental activity. This report seems to indicate that the response

THE BRITISH JOURNAL OF PSYCHOLOGY GENERAL SECTION

A STUDY IN PREPERCEPTION

BY CHARLES FOX.

- I. *The meaning of preperception* (pp. 1-3).
 - II. *The general plan of investigation* (pp. 3-5).
 - III. *Refinements in method—the time factor* (pp. 5-6).
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I. THE MEANING OF PREPERCEPTION.

IN summarizing the results of previous experimental investigations on perception in order to discover the nature of attention Prof. William James came to the conclusion that three factors were involved; namely, the organic process of adjusting the sense organs, ideational preparation, and inhibition of irrelevant movements and ideas¹. He considered that, in voluntary attention, the process of inhibition was merely an incidental feature and not an essential part of the process. It is evident also that conscious inhibition presupposes attention and, therefore, cannot, without circular reasoning, be used to account for it. The accommodation of the sense organs, although necessary for sensorial attention and probably always present in ideational activity, is a matter for physiology and need concern us no further. In any case, such adaptation is only a favourable condition of attention. We are left, then, with ideational preparation or pre-perception as the distinguishing feature of the attentive process. It is necessary, however, to avoid what Prof. James Ward calls the doctrine of presentationism, according to which presentations are regarded as entities interacting amongst themselves; and to do so we must keep clearly before us the fact that the interaction of

¹ *Principles of Psychology*, vol. I, ch. XI.

presentations is always dependent ultimately on attention¹. The mistake here alluded to is especially prevalent amongst experimentalists who are apt to confuse the conditions favourable to attention with the attentive process itself. Such process involves the conception of mental activity, which is evident whenever a conscious state is the result of previous conscious processes. It is safe to say that all attempts to dispense with the notion of mental activity on the basis of experimental researches have so far completely failed.

In his valuable, but strangely neglected work called *Problems of Life and Mind*², G. H. Lewes first used the term preperception. He pointed out that the effect of previous experience was to enlarge our present perceptions making us more and more independent of the immediate stimulus, more and more masters of the external world. The present is largely the resultant of the past revived as a present experience, "and this revival makes *pre*-perception a factor in perception." In the same way a new idea "must be prepared for, *pre*-conceived by the exhibition of its points of similarity and attachment with familiar conceptions." Both a new object presented to sense and a new idea presented to thought must be "soluble in old experiences" before either can be perceived or comprehended. These phenomena have, of course, been long recognized. Thus, in the *Midsummer Night's Dream* we read:

"Such tricks hath strong imagination,
That, if it would but apprehend some joy,
It comprehends some bringer of the joy;
Or in the night, imagining some fear,
How easy is a bush suppos'd a bear!"

Again, in all ambiguous geometrical figures and patterns, a strongly imagined effort to see one form rather than another is usually successful in making us perceive the expected shape.

Prof. James, in his chapter on "Attention," following Lewes states the theory of preperception as follows: "*the only things which we commonly see are those which we preperceive* and the only things which we preperceive are those which have been labelled for us, and the labels stamped into our mind. If we lost our stock of labels we should be intellectually lost in the midst of the world." This doctrine, so vivaciously affirmed, consists of two distinct parts which, if true, are both of fundamental importance to educational theory. The first is that effective observation depends on preliminary knowledge of what we are about to observe; and in some sense this must be true since the trained observer is more

¹ J. Ward, *Psychological Principles*, ch. iv.

² Third Series. Problem the Second (1879).

efficient in his own department than the untrained. The second statement is that language or an adequate terminology is essential to preperception. It seemed to the writer that both these positions ought to be experimentally examined so as to discover the precise difference made by ideational preparation and whether language is essential to the process of observation¹.

II. THE GENERAL PLAN OF INVESTIGATION.

Experiments with these aims in view were performed with over eighty University graduates, mostly honours men, taken in sets ranging from six to twelve in a group. The procedure employed with the last two groups is the most satisfactory and will be described in detail, but as the earlier experiments indicated by their results certain essential improvements in method they will be touched upon here. In general, the experiments were conducted on the following plan. Lantern slides were prepared, showing suits of armour, which were projected on to a screen in front of the subjects who were told to observe the picture as accurately as possible, as they would be asked to describe in writing all they had seen. After the first slide had been closely observed for about one minute it was withdrawn, and the subjects were told to note down immediately every detail they remembered in as concise a form as possible and also to state any general observations they had made. No time limit was imposed and each signed a declaration, before giving up his record, that he had tried but could not recall anything else. The set of subjects was now divided into two groups, one of which had a lecture in which the structure of a suit of armour was explained and illustrated by slides showing drawings of each part and the technical names of the parts were written up on the board. It was found that none of the subjects had any but the vaguest knowledge of armour, derived from hazy recollections of pictures or casual visits to museums, and the technical terms were almost absolutely unknown; only three or four of the total number of students examined knew an odd term or two, but hardly knew exactly to which part it applied. When the lecture was

¹ The term preperception is firmly fixed in psychology in English-speaking countries, but unfortunately covers distinct phenomena; one on the perceptual plane, the other ideational. In Stout's *Manual* the term is equivalent to 'complication,' a purely perceptual process. Ward in his *Principles* deals with the doctrine in his chapter on Ideation though the facts dealt with are mainly perceptual or transitional. James uses the term loosely to include perceptual and ideational experiences indiscriminately. In the present study the word is used in the sense in which it is defined in *Baldwin's Dictionary*, namely as "The ideal representation of an object preceding and facilitating the perception of it."

over the two groups were again combined into one set and were shown another slide of armour for one minute; then they recorded their observations as before. Introspective records were also made. In this way it was possible to compare two groups; one with, and the other without definite preperception. Marks were assigned on the following scale. Two were given for each part correctly noted (*e.g.* neck guard, wings on knee); one mark for each position correctly recorded (*e.g.* left foot advanced); and one mark for each correct description (*e.g.* arm guard chased; solerets pointed). The same numbers with a negative sign were assigned for incorrect observations under these heads, *i.e.* marks were subtracted.

The first set of subjects examined consisted of twenty-three ex-service graduates of average age 26 years. When the first slide had been shown and records of observations had been made they were divided into groups L and N consisting of eleven and twelve respectively. The lecture was given to group L and immediately afterwards both groups were combined and shown the second slide, and then a third slide; records of observations and introspections being made after each.

For group N the average marks for the three slides were 20, 22 and 25 (the medians being 21, 24, 20); for group L the averages were 30, 38 and 38 (medians $30\frac{1}{2}$, $37\frac{1}{2}$ and $38\frac{1}{2}$). It will be seen that the groups were of unequal merit at the beginning and that the group which had the lecture improved relatively only slightly more, if at all, than the other group. The outstanding feature of these marks is the surprisingly small difference made in preperception by the lecture. The introspective records make clear the reason for this; for, after the second slide, half the subjects in group L complained that the endeavour to remember the technical terms confused them and made observation more difficult. Some of the introspections may be quoted as they illuminate different points. Thus one subject said: "The technical terms were of use only in so far as they broke the suit into pieces thus indicating what parts to look for." Another said: "The knowledge of technical terms enabled me to work systematically," and this was confirmed by several. "The lecture aided the observation in that I used the sequence of the lecture and was able to *anticipate objects*, *e.g.* I looked at once for the lance rest." This may be compared with the following: "I would not have seen the lance rest if I had not expected it. I had to search for it. The lecture hindered observation because of the technical terms. If more time had been given after the lecture this might not have happened. The lecture, however, was of direct assistance in that after it much less attention was paid to such details as decoration which was

immediately dismissed as Milanaisé, chasing, etc. In *this* way technical terms helped." The next two records indicate clearly why the lecture made so little difference. "The lecture aided me because (a) it prepared me to deal with the suit part by part instead of wondering where to begin; (b) it was a guide to parts to look for. The terms helped observation when they were thoroughly known but hindered when I had a difficulty in remembering them." "The half-learnt terms obtruded when observation was going on, tending to a mixture of two endeavours—to observe, and to fix on the right terms; with the result that neither was properly accomplished. In the few cases where the name was recalled without effort, the observation was helped."

It was evident that the chief effect of preperception was to introduce order into the observation and that technical terminology was only of assistance provided that it was thoroughly well known.

III. REFINEMENTS IN METHOD—THE TIME FACTOR

With the next set of sixteen subjects special care was taken to see that the technical terms were well known, for which purpose the lecture was repeated twice and the terms emphasized. Questions were also invited and answered. In order to secure a better comparison the subjects were divided into two groups of equal ability as measured by the marks obtained on the first slide. Two slides only were shown this time. The results, nevertheless, were puzzling since the group that had the lecture seemed to have profited by it astonishingly little compared with the other group, as the following figures indicate. The average marks of group N (the unlectured) for the first and second slide were $17\frac{1}{2}$ and 31 (medians 15 and 29); for group L the averages were 17 and 34 (medians 19 and $33\frac{1}{2}$). A further set of eighteen subjects gave the following averages for initially equivalent groups; group N, $19\frac{1}{2}$ and 37 (medians 20 and 35); group L, $19\frac{1}{2}$ and 51 (medians 21 and 53). This last result is much more what might have been expected *à priori*. There were still baffling results obtained with other subjects owing to the eagerness of the groups who had the lecture to *concentrate on detail and to neglect general features*, which neglect caused a certain group of L subjects, who had the lecture, to score less than its equivalent N group in the second slide. Also several of the men required more practice to adjust themselves to the experimental conditions. The experiment was so interesting to nearly all the subjects that their eagerness militated against the calm which is essential to this kind of work; especially when they were shown the first slide. It was evident, also, that merely being familiar with the

structure of armour and the terminology was not sufficient to display the full effects of ideational preparation. The subjects ought not only to learn their lesson but to have a sufficient period to digest it. Adequate time for mental assimilation of the knowledge given by the lecture turned out to be the kernel of the problem of preperception. Attention is facilitated by preperception only when this condition is fulfilled. Time is of the very essence of the problem. During the interval there is an actual stamping in of the previous knowledge, a phenomenon to which Dr Ballard has given the name of Reminiscence. He says: "The belief that the change that takes place in the nervous system during conscious learning is to a certain extent continued when the learning has ceased is forced upon us when we consider those phenomena of reminiscence in which the physical basis is marked and manifest." He gives as instances the improvement of skill in swimming, skating, typewriting, etc., which occurs in the intervals when no practice is being taken; and concludes that "an actual modification of brain structure, of the same nature as that which is supposed to occur during learning, gradually goes on during the interval¹." The only objection to this view is that the changes are supposed to be purely nervous. There seems no sufficient reason to doubt that mental changes of a similar kind also take place during periods of inactivity. The results of the present series of experiments have convinced the writer that mental changes, leading to better systematization of facts and more adequate assimilation of terms, takes place after the conscious learning has ceased.

IV. THE FINAL METHOD OF INVESTIGATION—SUBJECTIVE ACTIVITY.

The final method of experiment adopted, which proved satisfactory in bringing to light the effects of preperception, may now be described. Sheets of paper were distributed to the subjects, divided into two columns with a subdivision for introspective remarks. The purpose of the experiment was announced as being the attempt to discover the difference made in observation by a preliminary knowledge of what one is about to observe; and the subjects were also told that they would be asked to describe on their sheets everything they could remember. They were likewise informed that suits of armour would be projected from the lantern on to the screen. Slide (1) was then shown on a screen in a darkened room for $1\frac{1}{2}$ minutes. This time was discovered by several preliminary trials to be the optimum. All agreed that the time was sufficient for a complete

¹ Ballard, "Obliviscence and Reminiscence," pp. 70 ff. and 82. Monograph supplement of this *Journal* (1913).

observation, but when they were asked at the end of the whole experiment for how long they thought the slides had been shown their answers varied from 1 minute to 5 minutes. If a longer time is given several subjects begin to get restless and are apt to let their attention wander; with less time they feel hurried. Before each slide is exhibited it is as well to assure the observer that he will have adequate time and that he need not worry on that account.

The slide was then withdrawn and immediately afterwards the subjects were asked to state in one column in brief catalogue form every detail they could recall, and subsequently in the other column any general observations which could not conveniently be considered as detail. Any remarks they wished to make, not of an observational nature, were to be placed in the introspection column. As much time as was wanted was given to making these records, at the end of which the subjects wrote and signed the declaration "I have tried my best but cannot recall anything else." No sheet was accepted without this statement.

What the subjects were really trying to do was to read off from their memory image the details which they had noticed during their observation of the picture. It may be objected that a good visualizer will be able to decipher details which he has not observed, but, as it were, photographed and subsequently developed. But this view has been shown to be a mistake. The best visualizers, who claim to have perfect imagery, are not capable of reading off details which they have not *definitely* attended to. It has been demonstrated, for instance, that such a person claiming to retain a complete mental picture of the front of a building (say) is unable to read off the number of pillars unless he has definitely counted them. Prof. Woodworth, as the result of the study of his own imagery asserts that "it always consisted of facts previously noted." He goes on to say that "an actual situation presents an almost unlimited variety of facts or features, of which an observer notes a few, the rest remaining undiscriminated in the background.... Later he may 'remember' the situation, but this is not to reinstate it in its original multiplicity or continuity. He recalls the features which he has observed, or some of them, but not the great mass of them which remained in the background. Lacking this setting or background, he is not in a position to make any fresh observation in recall¹." Prof. Woodworth's conclusions have been repeatedly confirmed in the course of the present investigation and also in some experiments undertaken by a totally different method by the present writer. *In brief, we cannot study mental*

¹ "A Revision of Imageless Thought," *Psychological Review*, xxii (1915).

*imagery without reference to mental activity and all that preperception can do is merely to facilitate such activity*¹.

The next step in the method was to interchange the records amongst the subjects. The picture was again thrown on to the screen (this time in the lighted room) and they marked each other's papers in accordance with the scheme given above. Every doubtful point was referred to the writer for his final decision and he subsequently examined the sheets. This method of marking has the great advantage that it forces the subjects to examine the picture in detail and stimulates interest and competition amongst the groups, which is necessary in this type of experiment. The method of evaluating the marks must take into account the fact that both groups have some practice in preperception; and this has been done in the calculations made below.

The whole process was repeated with a second slide (2) which was also shown for $1\frac{1}{2}$ minutes and marked in the same way. The marks for the two performances were added together and, on the basis of the totals, all the subjects were divided into two groups of equal ability. For the particular set of fourteen subjects whose results will be considered in detail the combined marks for the two slides were 354 for group L (the lectured group) and 343 for group N (the non-lectured group). It was not possible to get closer totals, as one subject proved so considerably superior to the others. The advantage of combining two sets of readings lies in the fact previously noted that some habituation is required in order to allow several of the subjects to adjust themselves to the experimental conditions.

The lecture, printed in the appendix, was now given to group L, the other group being dismissed. It was repeated twice and the various portions of a suit of armour were shown on the screen, each technical term being written on the board. At the end of the lecture, slide (1) was again projected on to the screen and the parts indicated by name. Finally, the terms were copied into note-books by the subjects who were told to go over them during the following week until they were perfectly familiar with them. Questions were freely asked and answered during the lecture. In this manner the seven subjects of group L were enabled completely to assimilate all the terms and the details of the structure of armour, thus being placed in a most favourable attitude for pre-

¹ It is often assumed that the content of a remembered fact must, of necessity, be a sensorial image, visual, auditory, verbal, etc. But there is no convincing evidence whatever for this view, and many professed psychologists suffer from introspective illusions, confusing feelings with images.

perception. All the subjects successfully learnt and could use all the terms freely. Exactly one week later both groups were recombined and two further slides (3 and 4) were exhibited, as before, the details of procedure being the same. When each observation had been recorded and signed they were told to state on the back of their sheets "what they thought of the slide" itself, *i.e.* without comparing it with the others. In this way it was hoped to get some light on the question of aesthetic appreciation in the two groups.

At the conclusion of the whole experiment, when the records had been marked and given up, the following questions were answered. Those who had the instruction stated whether and how their observation had been aided or hindered by the lecture and the technical terms; those who did not have the lecture stated whether the absence of a terminology hindered observation and in what manner. They were expressly enjoined to give no theory but simply to describe their experience.

V. THE QUANTITATIVE RESULTS.

The combined marks for each subject for slides (1) and (2) at the first sitting, and for slides (3) and (4) at the second sitting are given below:

Without preliminary knowledge (Slides 1 and 2).

Group L		Group N	
Subject	Marks	Subject	Marks
<i>A</i>	94	<i>P</i>	61
<i>B</i>	54	<i>Q</i>	60
<i>C</i>	53	<i>R</i>	53
<i>D</i>	51	<i>S</i>	57
<i>E</i>	42	<i>T</i>	42
<i>F</i>	39	<i>U</i>	41
<i>G</i>	21	<i>V</i>	29
Mean	50.6	Mean	49
m.d.	14.2	m.d.	10

Coefficient of variation*, 28 Coefficient of variation, 20.4

* *i.e.* $\frac{\text{m.d.}}{\text{Mean}} \times 100$.

A week after the lecture (Slides 3 and 4).

Group L		Group N	
Subject	Marks	Subject	Marks
<i>A</i>	153	<i>P</i>	85
<i>B</i>	114	<i>Q</i>	94
<i>C</i>	107	<i>R</i>	75
<i>D</i>	107	<i>S</i>	55
<i>E</i>	102	<i>T</i>	45
<i>F</i>	118	<i>U</i>	81
<i>G</i>	82	<i>V</i>	67
Mean	111.9	Mean	71.7
m.d.	14.1	m.d.	13.8

Coefficient of variation, 12.6 Coefficient of variation, 19.

A Study in Preperception

The effect of organized preperception can clearly be discerned in the differing variabilities of the groups. For the unlectured group N remains practically constant in this respect; whereas the group L displays a marked decrease in variability. It is important, for the theory of education, to realise that systematic training tends to produce greater uniformity within a group. Group N had, of course, some training in the observation of the first two slides and in marking them, but such training was undirected by precise knowledge, and unsystematic as compared with that of group L. Experiments of this nature may serve to differentiate the relative values of class instruction and individual work especially for weaker pupils; since the decreased variability, as the figures show, is brought about by levelling up the less able whilst the trained group as a whole and individually show better results.

If we desire to compare the trained group with the untrained from the point of view of the relative difference made by preperception, we must resort to the statistical device of using as our unit the standard deviation of the groups. The standard deviations of groups L and N at the outset were 20.6 and 11.1 respectively, yielding an average of 15.8. A week later the deviations were 19.9 and 16 with an average of 17.9. The crude figures in the above tables were converted into multiples of these units, yielding the following numbers when cleared of decimal points.

Group L			Group N		
Subject	Marks (in terms of σ)		Subject	Marks (in terms of σ)	
	Slides 1 and 2	Slides 3 and 4		Slides 1 and 2	Slides 3 and 4
A	60	85	P	39	47
B	34	64	Q	38	53
C	34	60	R	34	42
D	32	60	S	36	31
E	27	57	T	27	25
F	25	66	U	26	45
G	13	46	V	18	37
Mean	32	63	Mean	31	40

As the figures are now comparable, we shall not be far out in assuming that if group L had no lecture they, too, would have risen to an average of 40 instead of 63. Consequently 23 marks is the gain due to preperception; and to find the percentage gain we must start not from their original average mark namely 32, but from 40. This is a gain of 57.5 per cent. To put it otherwise, these figures show that as a result of preperception the trained group is able to observe somewhat over one and a half times as much as the untrained group; which implies, as pointed out previously, *that they are capable of so many more separate definite acts of attention*¹.

¹ See the discussion on p. 7.

VI. THE QUALITATIVE CONCLUSIONS.

Having thus obtained a numerical estimate of the effects of preliminary knowledge in facilitating attention, it is time to consider the non-quantitative results which are, perhaps, of more significance. In dealing with these use will be made of the records of the whole of the eighty subjects and of their introspections.

One of the most important differences made by preperception is very difficult to describe, as it is so essentially subjective. The observer feels that his mental energy is being more effectively spent and this tends to make him feel more active. Such effective use of mental effort is accompanied by a distinct feeling of satisfaction, which seems to make the effort easier. Thus the person at one and the same time feels that he is more active with less effort. One of the N subjects put the matter in this way: "Lack of terms distinctly hindered my observation. I knew one technical term from reading Scott (tasset) and I always looked first to that part of the armour and had a *feeling of sureness* about this. Lack of terms hindered the mental separation of the armour into details; I could only remember each detail as soon as it was separated."

After the lecture the subjects of the L groups took the initiative and went out on a voyage of active exploration to discover the definite parts named; whereas previously the picture, as it were, had the initiative and the person was passively trying to remember what it offered to him. Or, to vary the figure, just as an animal expecting the appearance of its prey is ready to spring with all its muscles pre-adapted for that purpose, so the person expecting to see certain details in a picture has his mind attuned ready to pounce upon them. Owing to this difference of attitude it frequently happened that the elaborate decoration on the last two slides confused or baffled those who had no lecture, so that they lost the wood for the trees; but this never happened with the lectured group who were able to dismiss the decoration with a name, and subsequently to remember its nature. These experiments, therefore, yield confirmation of the view put forward by Dr C. S. Myers that recollection of an observed visual fact may be based on purely verbal imagery without any sensorial image of a visual nature being present¹.

It will be remembered that the subjects were asked, at the end of the experiment, to say how the lecture and the knowledge of terms had helped their perception of the picture. The records show that the greatest help is given in supplying a plan for the observation, *i.e.* in making it more systematic and definite. Recognition becomes more rapid as a

¹ *Text-book of Experimental Psychology*, p. 141 (1911).

result of preperception, and more certain—no subject ever complained that he could not *see* a detail after the lecture was given. The lecture makes the details stand out from the picture; as one subject said, "The ordinary parts were emphasized because one knew where to look for them. Without the lecture it was the curious or outstanding parts that were noticed." The latter part of this statement is open to challenge. In the fourth slide the size of the 'lance rest,' when projected on to the screen, was about two inches in length and, as may be seen from the picture, forms a conspicuous feature; but it is hardly ever seen by a subject who does not know what it means. In fact, it was this object which induced the writer, after the first set experiments, to insist on the declaration that everything that could be remembered had been recorded, as it was difficult to persuade a person otherwise that he had missed so conspicuous a feature. In slide (3) where the lance rest is inconspicuous owing to the ornamentation, it was never overlooked by those who knew what to look for. Finally, the absence of expected parts is immediately noticed; several subjects declaring that they needed only to look for missing parts after the lecture in order to take in the picture. One subject of an N group who had considerable artistic skill pointed out a curious difficulty. He said that he failed to observe the picture accurately, in detail, because he could not separate constructional from decorative lines owing to lack of preliminary knowledge of the structure of armour.

With regard to terminology it became evident that its chief use was to facilitate description, *i.e.* to make it more concise, more 'telescoped.' But this is not all; for frequently the mental image needed a word to fix it, that is to say, the terms formed 'pegs,' as one subject said, on which to 'hang' the detailed observations as they were made. Closely connected with this is the aid given in discriminating parts by the use of words. Words make the dissection of the suit into parts much easier. For this purpose it is essential that the names should be perfectly familiar. The following introspective record illustrates this: "Terms did not help me because I thought of the armour in terms of my own making. My method was to consider the parts of the body covered and *then* the name. Breast plate was 'breast plate' in my mind and 'cuirass' only by an effort of memory. This does not apply to 'greaves,' since I happen to know this term as a literary one."

We can best, perhaps, see the utility of terms by noticing what the subjects who had no lecture reported. "With terms," said one, "I would have tabulated all the possible parts into a generalized suit of armour and I should have then gone through the given suit checking

these off." In other words lack of terms prevents generalization. Another subject stated that "Lack of knowledge of structure and terms hindered me owing to lack of definite starting points, and definite systematization in classifying parts. Also by necessitating the use of roundabout phrases, which was apt to turn my concentration on the visual image to concentration on the terms expressing it." Several others pointed out the necessity of putting their observations into language, whilst the slide was shown, in order to recall the image later. Thus one particularly conscientious observer made the remark: "I could have mentioned several other points but having no terms I was quite unable to express what I had noticed." He really meant that his memory image failed because he had no terms with which to retain it. Another remarked that he had a difficulty in retaining the relation of one part to another and he thought that terms would have helped him in this respect. Some few, however, denied all this and maintained that the absence of terms simply made their descriptions more clumsy. We are here probably dealing with ultimate differences in mental make-up.

VII. PREPERCEPTION AND AESTHETICS.

A final tentative suggestion is offered as to the aesthetic significance of these experiments; as it is hoped that the method will ultimately yield facts bearing on aesthetic education. One difficulty militates against any very precise results. Any mention of appreciation during the experiment would, inevitably, interfere with free observation and introduce disturbing factors. For this reason it was decided to approach the matter indirectly, by observing the number and nature of the aesthetic remarks made spontaneously by the subjects.

The fourteen subjects of the two final groups were asked to state with reference to the second, third and fourth picture, what they "thought of the slide." They were told in each case not to compare the slides but to treat the one under observation by itself, and to state whatever occurred to them with regard to it. Readers of this *Journal* are acquainted with Mr E. Bullough's four perceptive attitudes, which may be referred to by the following letters: *A*, The objective aspect; *B*, the intrasubjective; *C*, the associative; and *D*, the character aspect¹.

The objective attitude is that taken by subjects who refer to such aspects as the poorness or stiffness of the picture or whether it is a line drawing or photograph, and so on. The intrasubjective attitude is shown by such comments as exciting, stimulating or cold, etc., these physio-

¹ Bullough, "The Perceptive Problem, etc.," vols. II and III. Myers and Valentine, "Individual Differences in Attitudes towards tones," vol. VII. Myers, "Individual Differences in Listening to Music," vol. XIII.

logical effects being produced by the slide on the subject. Those who adopt the associative attitude refer to tournaments, chivalry, modern weapons and so forth. Finally the character aspect is revealed by such remarks as fierce, stubborn, valiant, etc., which indicate some human characteristic possessed by the picture.

There seems to be some considerable doubt as to the aesthetic value of these aspects, more especially as Mr Bullough apparently regards the objective attitude as practically extra-aesthetic. Again the value of the associative aspect depends on whether the associations aroused are completely fused with the picture or not. For our present purpose it is sufficient to regard *A*, *B*, *C* and *D* as forming a scale of aesthetic values from the lowest to the highest.

With regard to the second slide the subjects of group L were classified roughly as 5*A* and 2*C*; and group N as 4*A* and 2*C*. One subject gave no reply; so that both groups were of about equal merit as regards aesthetic appreciation. For the third slide the numbers for group L were 5*A* and 1*D* and for group N there were 3*A*, 2*B* and 4*C*. These figures show that the subjects gave distinct indications of belonging to mixed types, so that some had to be counted in two or more categories. The relatively larger number of the objective type in group L, together with the paucity of other types, points to the fact that the lecture by forcing attention to the details of observation fails to allow of the development of aesthetic appreciation. For slide (4) the figures for group L were 3*A*, 2*B*, 1*C*, 5*D* and for group N they were 2*A*, 1*B*, 2*C*, 6*D*¹. The numbers of mixed types has increased in both groups; greater knowledge of detail whether systematically or incidentally acquired has now stimulated aesthetic appreciation. Similar results were obtained from earlier sets of subjects. The final conclusion may perhaps be stated tentatively thus; too great concentration on analysing detail may interfere with the aesthetic attitude at the outset, but as the result of increasing familiarity this effect seems to disappear.

APPENDIX.

LECTURE ON ARMOUR.

A gradual progress is evident in the improvement of arms from the earliest times. Starting from the tenth century we are able to follow step by step the gradual change in defensive armour. The mail shirt remained in use for over five hundred years, and was replaced by complete plate armour only after a transition period in which coats of mail

¹ The large number of *D* remarks is, doubtless, due to the fact that it is difficult to avoid giving a 'character' aspect to a plan of a human figure; which fact may be held somewhat to vitiate the results.

partly composed of plates of iron were used. The armour of the sixteenth century had beautiful flutings called *Milanaise*, and in the second half of this century was adorned with chased engravings.

Our slides are concerned with the perfected plate armour showing some traces of the old coats of mail as vestiges of the earlier covering.

The casque or helmet was of diverse shapes and of great antiquity but the real bowl-shaped helm, the *salade*, only came into use in the fifteenth century. This sometimes had a *neck guard* at the back and had a moveable or fixed *vizor* or sight piece, which however was usually so short (end of nose) that a *beaver*, or chin piece, was necessary to guard the chin, neck and mouth. Later came a rounded helmet or *armet*, the crown of which was sometimes crested and sometimes the chin piece and gorget were fastened to it.

The neck collar, made of leather, which supported the rest of the body armour and lying underneath (therefore never seen) supported the

Gorget, or throat guard, sometimes with *pauldrons*, or shoulder plates, attached. Often the pauldron was a separate part.

Below was the *cuirass*, or breast plate, which protected the chest and was often made with a *prominent ridge*. This had usually a *lance rest*, which was placed on the right of the breast plate and was used to support the lance, when on horseback.

Below the breast-plate was the waist piece or great *brayette*, that part of the armour which guarded the abdomen. It was composed of steel plates and usually ended in

Tassets, designed to protect the upper part of the thighs, and strapped with thongs to the brayette.

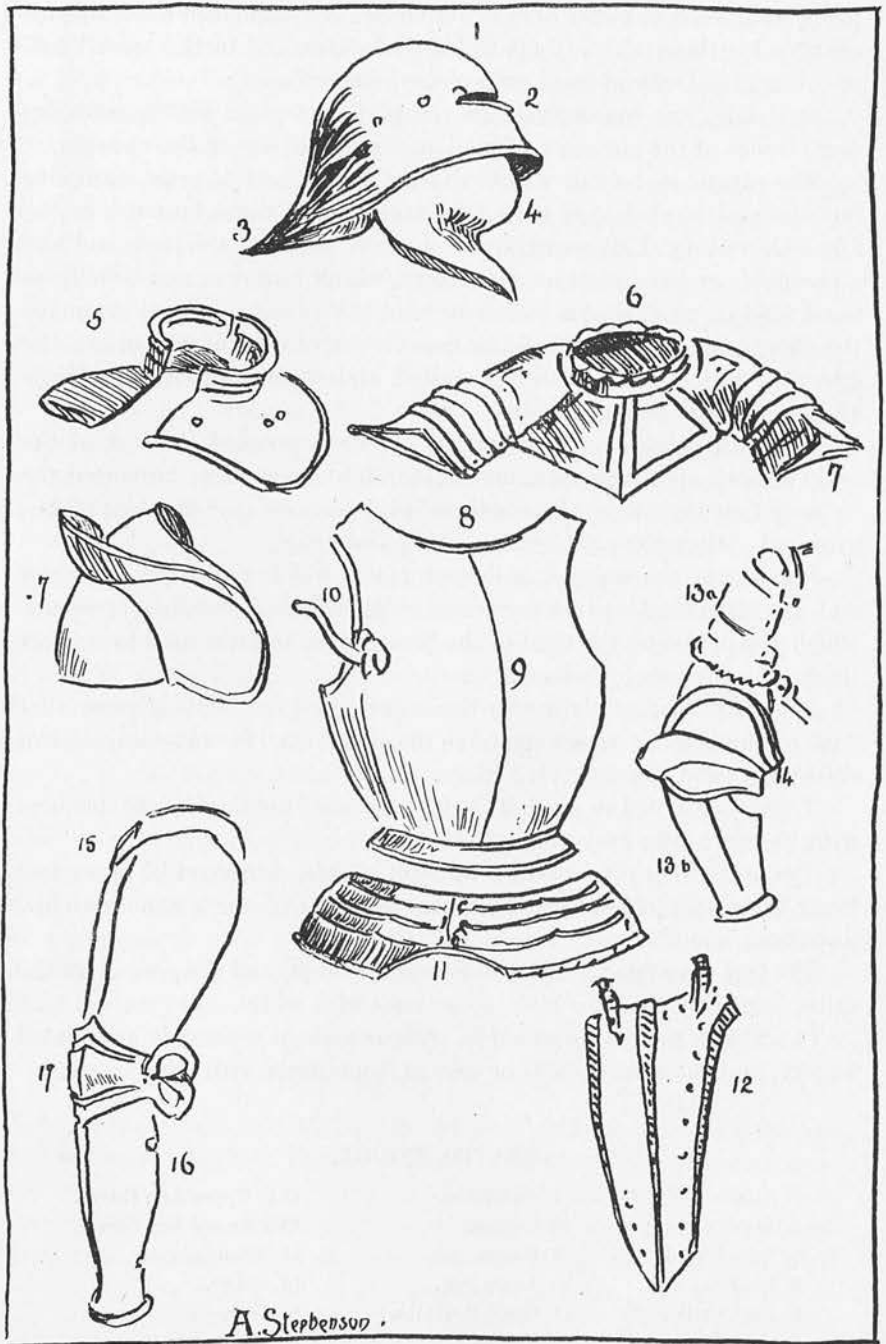
The arms were protected by the *arm guards*, composed of upper and lower armplates joined together by the *elbow piece*, which sometimes had prominent wings.

The legs were guarded by the *cuisse*s on thigh, and the *greaves* on the shins, joined by the *knee plate*, sometimes with wings.

In addition there were *gauntlets*, with or without separately articulated fingers; and the armed shoes or *solerets*, sometimes with long points.

KEY TO FIGURE.

1 Salade.	7 Pauldrons.	13 a Upper Arm Guard.
2 Vizor.	8 Cuirass.	13 b Lower Arm Guard.
3 Neck Guard.	9 Ridge.	14 Elbow piece.
4 Beaver.	10 Lance rest.	15 Cuisse.
5 Neck Collar.	11 Great Brayette.	16 Greaves.
6 Gorget.	12 Tasset.	17 Knee plate.



A. Stebensoo .

(Manuscript received 20 February 1924.)



Slide 1.



Slide 2.



Slide 3.



Slide 4

FOX.—A STUDY IN PREPERCEPTION.

response/

is meaningful, both in the primary and secondary sense, in so far as it issues in satisfaction. The subjective factor, though difficult to describe, is essential to any full psychological explanation of the experience. Any mere quantitative measurement of the stimulus cannot give meaning or significance to the reaction. However carefully we may study a single phase or isolate various mental processes for particular study we must remember we are dealing with a whole, and subjective factors are not less important than the objective.

Since completing this section there has come to hand an interesting article by Martin, L. Reymert, of Wittenberg College, Springfield, Ohio. We cannot do better than give it in detail.

*The following study will try to open us this field (of meaning) by very simple methods, and make a mere orientation for further and more extended investigation. Three hundred child observers (5 to 14) were examined in individual sittings. Firstly, we exposed a 60° angle drawn in black on a white card. Question; What is this? What does it mean to you? Some responses of relative frequency may be quoted: Figures, letters, teacher's mark, arrow, bird's beak, roof of house, point, tent, crescendo, box, street corner, anchor, plough, game of rabbit, wolf's mouth, cow's foot, kite, etc. Experimental reports were obtained by questions immediately after response. How do you know? Why does it mean that to you? The reports were exceedingly interesting and suggestive. The following three series were then contributed with a view to get light on the bearing of attributes of size, position, etc of simple geometrical figures on meaning. Just one figure was given to each child on the same day. Thus each series called for five consecutive days of examination and report. Omitting here the tables and other exact data, as also reference to related literature, the following suggestive inferences may be cited.

(Figures are given on following page.)

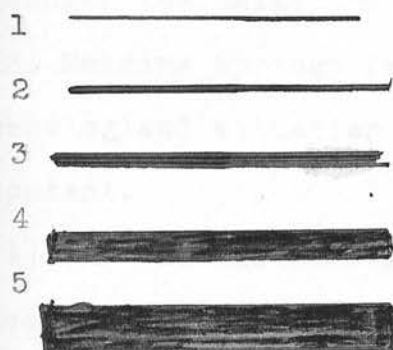
The inferences are as follows.:

(1) Meaning seems to be derived from, and to be built up by, experience.

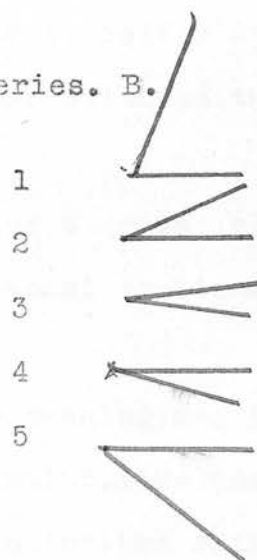
Figures Exposed.

Original size, each no, on separate card.

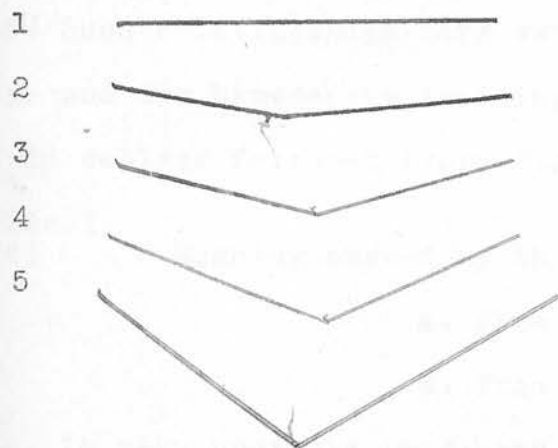
Series A.



Series B.



Series C



From Martin . L. Reymert Pamphlet on Ontogenetic aspects of meaning. International Psycholocial Association proceedings. 1926

(2) By far the most dominating factors of experience carrying meaning were kinesthesia or movement or bodily activities (as apparent in the sittings for the retracing of figures, suggested movements or bodily attitudes. This is found in the reports,)- the more difficult the stimulus, the younger the child, the more kinesthesia.

(3) Meaning springs forth from a context, a gross pattern, or a gross phenomenological situation - almost invariably coloured by pleasant emotional content.

(4) One and the same stimulus may give rise to almost any meaning, and this meaning is often independent of the attributes of the stimulus, like position, size, etc. Meaning does not seem to reside in the stimulus, but rather in the relation between stimulus and response.

(5) Such relationships are very unstable in young children; with advancing age and the homogeneous training they tend to become stabilised and uniform.

(To college freshmen every figure in series B means an angle and nothing else.)

(6) Meaning evoked by these figures seems to evolve in two stages:

a. From object, or situation pattern, or context.

b. from symbol-pattern or context.

a. Is very unstable, imaginary, or emotional. b. is generally of a definite context or pattern based on learning.

(7) The structuration of meaning then seems from our material to terminate and crystallise itself out of various stages of development in a definite symbol-pattern of a certain duration - to be changed only by the superimposition of another symbol.

(8) Meaning pattern or structure may, at times, seemingly have no conscious concomitants.

(9) While the naming of meaning is the natural reaction, children may carry meaning in purely kinesthetic and other forms of expression within the general pattern.

It may seem as if some of the conclusions suggested run counter to ours, but the main development is really in line with our treatment. The last note does not imply that meaning is kinesthetic, it indicates the form of imagery in which meaning may be carried. That is a vastly different thing

A discussion of Meaning in Conceptual processes.

This section demands ,at the very beginning,an outline of the method employed, and an indication of the steps in the discussion. We have approached the subject of meaning in the conceptual processes from three stand-points. The following outline will prepare the reader for the general argument.

(A) There is a descriptive outline of nature of the conceptual process.

(B) A discussion of the evolution of the concept in developing experience. In some way this is an anthropological approach.

(C) In this section,which is not altogether distinct from the former,we come closer into touch with what, in Psychology, is called the Genetic.

(D) Our last section is an approach from the Analytic stand-point.

We have drawn our conclusions at the close of each section. This makes what seems to be a break in the continuity of the whole. If, ^{in reading, we} ~~we~~ ,following the above outline, ^{we shall} realise, that the various points are really distinct steps within a whole we call conception, ^{and} the coherence, ^{of the argument} will be made clear.

Section one, including A and ^{and C} B; the descriptive nature of conceptual process,

" and the discussion of the Evolution of the Concept. "

This section is inclusive of what we have termed the

" Anthropological and Genetic approach . "

In passing to the conceptual process we pass to the section, in which, owing to the complex nature of the mental activity, it will be found the most difficult to establish the theory of affective meaning. It is good to remind ourselves, at the very beginning, that in discussing meaning at this level we are dealing with certain distinction with a whole, and that we find the three forms which we have mentioned within this whole: primary meaning; derived meaning and significance. The relative predominance of the latter in no way dismisses the former. All three are involved in the process. Our difficulty is, in showing, the relation, and in discovering if, at any point, we can say the affective factor is not central; that meaning is purely cognitive.

Our method of treatment may seem, at times, to lead us away from the main line of the thesis, but that is owing to the nature of the discussion. We shall begin by giving a brief description of the conceptual process, its distinctive features, and then trace the evolution of the concept, indicating its relation to, and distinction from, the previous stages discussed. This will by genetic treatment enable us to discover the mental factors involved in the process. We shall, then, by an analytic investigation of the function of the concept discuss the place and power of interest.

The Conceptual process.

The conceptual process is the third or highest level of conscious activity, and it is in relation to this process that the higher thought processes are discussed. This, however, does not imply that thinking is not present at other and lower levels of human consciousness, and non-existent in animals. If thinking can be defined as the conscious adjustment of organism to situation then it may, and does, take place in most of the stages discussed in this thesis. But in the generally accepted description, from a psychological stand-point, the thought processes are taken as implying the mental activity manifest in judging, comparing, reasoning. It is possible to describe the characteristics of the conceptual process as two-fold. The thinking of

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relations, and the apprehension of the general and the abstract as opposed to the concrete and the particular. The first step in conceptual thinking involves the selection of, and dwelling, upon parts or aspects of a concrete situation. We have no difficulty in illustrating this from ordinary experience. For example the selection of the colour, hardness, shape of the table at which I am writing. These are separated out as aspects, and dwelt upon as qualities in the whole and can each be thought of as apart from the whole, or in relationship, with other things in their own separate universes of qualities. That is what we term the analytic phase of conceptual thinking. A process of discrimination and analysis. The synthetic aspect indicates the thinking of the relation of the parts to the object or situation or to each other. There is also the process by which an aspect or quality, held apart from the total situation, is placed side by side with other aspects or parts and comparison takes place, and also synthesis into a general idea, representative of more than the particular object or situation takes place. We thus, have what we can call, judging, comparing, reasoning. That is what is termed the text-book or academic outline of the conceptual thinking.

The relation of conceptual thinking to other processes

It is interesting and suggestive to ask at this point what is behind and in the processes, say, of discrimination and comparison stated above? Our investigation of any situation even at this level is not determined solely from the objective side. There is an interest factor. Conceptual process is not, any more than any other process, unrelated to, or independent of, the processes involved in the whole of experience. Its isolation for specific study is not illegitimate, but we must remember we are dealing with a part of a psychological whole called experience.

We find in the study of experience the following facts. There is no instinctive behaviour without an intelligent factor. The one determines the end without prescribing the means of achievement; the other gives form and method or means towards realisation. If we take the illustration already given from Koehler's "Mentality of Apes" we find that, while the appetitive tendency, evoked in Satan by the sight of food, gave rise to activity, it did not prescribe the means of securing the food. That was ac-

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through experience and involved intelligence. The other side is also true. There is no intelligent behaviour without the instinctive factor¹. The same illustration makes this fact clear on its active or teleological side. We set aside any suggested bifurcation by calling the whole experience, and recognising that both factors are involved. The point we are making is that we must keep closely in touch with the organic nature of psychical growth. Higher processes emerge in the life interest of the organism. Apart from the emergence of this higher level of conception we would be limited to the simple reals, like Grashey's patient, and reasoning would be impossible. But experience is a whole, and our distinctions⁵ are distinctions within a whole. This we feel it is necessary to emphasise. There is continuity in mental life, and the first stages are not dismissed from, nor lost in, the subsequent and higher stages.

The evolution of the Concept.

We described the characteristic features of the conceptual process as (1) the thinking of relation, and (2) the apprehension of general or abstract ideas. A characteristic process by which these are achieved is that of reflection. The learning from, and in, experience, which is involved in intelligent behaviour, involves this form of mental activity. This process, however, does not take place in vacuo, but involves a relation to the whole experimental context, both past and present. Experience, on which reflection takes place for the guidance of present and future activity, includes even the primitive impulsive and instinctive factors. These may have been sublimated in the progress of increasing adaptation and mental growth, but they are integral to the whole. The mother who is nursing her sick child may, and does, manifest the higher thought activities in her behaviour, but there is an immediate and intimate relationship to the parental instinctive tendency. Such activity is not necessarily ego-centric or selfish

1. Instinct in Man. Drever. p.111.

selfish/.

The subjective aspect may be the satisfaction of the instinctive tendency, but the whole purpose is inclusive of more, the well-being of the child. The mother is aiming at something inclusive of both. Involved in the activity we find all the stages we have discussed, and, at the core of the experience, guiding and directing it, the affective factor. Meaning both primary and secondary are present. Sydney Smith says, in a humorous aside, "a man cannot get outside his skin and sit on his bones" and we may say that it is equally impossible, in any discussion of intellectual processes, to stand outside the whole organic basis on which they are built, or eliminate the passional element. It is just this danger that threatens so much of our analysis of the reasoning processes, and leads us astray on the subject of meaning. We seem unable to escape the tendency of confusing the logical with the psychological view-points of the subject. We externalise too much our psychological concepts and terms, treating them as discrete mental elements or entities, and fail to realise that we are dealing with a process. Titchener is quite emphatic on this point. He says "1 What I want you to do, and what I want some of our philosophical critics to do, is to realise that those who do their work in the laboratories are always operating and describing and observing in terms of process. The realisation is not easy: (1) because language is discontinuous and our descriptions must substitute word mosaics for the moving experience, and (2) because the terms in which we are obliged to describe our operations are already stamped as meaning by their use in previous systems. A pure intelligence seems to be more an ideal we desire than anything at present within our grasp.

The marked objectivity of the data at this stage of our enquiry is not a little responsible for the difficulties stated. An illustration may be given from the field of comparative religion. The effect of biological science in giving rise to what is known as Anthropology has —

1. Lectures on the Experimental psychology of thought processes.
Titchener. *Chapter I*

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altered the entire view-point in the study of the place and power of religion as a factor in human development. The philosopher may and does discuss the validity of the various religious conceptions in the light of some accepted view of the nature of reality, but the anthropologist gives the inside view, and seeks to trace the determinations of the religious systems from their rise and development in relation to man's needs. His concern is not the validity of this or that religious idea in relation to some metaphysical view of reality, but the way in which it emerges in, and satisfies, or expresses, the needs and impulses of primitive man. The psychologist is not concerned with the validity of this or that conceptual system, and its relation to any metaphysical view of reality, but with the process itself. Stated in this way one can readily realise how logic and psychology are not antagonistic, but complementary. The study of the one is essential to the full understanding of the other. We are, therefore, in studying the evolution of the concept taking the right way to a true elucidation of our subject.

In our discussion of the emergence of the "Image" we found that there was a biological reason for the higher and relatively freer adjustment of the organism and situation which it yielded. It was necessary in the life interest of the organism. In discussing this evolution of the concept we are quite in keeping with this organic view, and preserving some continuity in our discussion. The obvious criticism that this may lead to a mere utilitarian or frankly hedonistic point of view need not at this point disturb us. Our concern is with the facts. We are seeking the nature of psychological meaning in the higher processes and this involves, we think, a genetic treatment.

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Prof. Ward, says To understand intellection we must look at its development under the impetus of practical needs rather than to the logical ideals of what ought to be. Like all forms of purposive activity thinking is primarily undertaken as a means to an end, especially the end of economy. Logical theory of concepts assumes the previous existence of the very things to be formed. Moreover thinking does not begin in the

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conscious abstraction in the way logicians describe. The actual process of generalisation is, for the most part, at all events, much simpler. It is from this much simpler point of view that discussion begins. The classification under common names or concepts representative of more than one particular has its origin in a practical point of view, and in the interests of economy. In the plurality of objects, differing from one another from the point of view of perception, we find the same capacity to satisfy some specific need or desire, and, through this or due to this capacity, the plurality is reduced to unity. This gives the inner point of view in the formation or rise of the concept so essential from our view-point. It arises not from external sources, but in the interests of economy. Its value lies in relation to the particulars it includes, ^{and} in correspondence to the associations established. These bonds we found were in the deepest sense affective.

This may sound, ^{like} a piece of special pleading, but further ^{2"} discussion will clarify the point. Even the common names and concepts which seem at first to be purely cognitive, and to have no affective substratum at all are found on close analysis to have an affective core as well as the others. ^{"3"} The child has a natural impulse to play. Among other things his play activities bring him into contact with a ball. He comes repeatedly into contact with round things, and, as a result of reaching towards them, he finds he gets the agreeable experience of causing them to roll. He, therefore, places these things, whatever their matter, colour, or size, in a ⁴ single group, which constitutes for him the concept ball. In the matter of satisfying certain needs or impulses we find among objects having the same characteristics that one is as good as the other. The concept thus general in nature is relative to a felt need. It is governed in its formation, and has ⁵ as its centre, informing it with meaning both in relation to the immediate task or activity, and in ⁶ reaction to the wider context of experience, a feeling phase, and interest. The satisfaction of a need informs ⁷ and unifies the whole.

1. Psychological Principles. Ward. p 303.
2. Psychology of Reasoning . Rignano. p 108
3. Psychology of Thinking. Miller. p 190. 213.

This is not a purely subjective view giving no real place to the objective factors. The objects or situations, which enter into the whole in the satisfying nature of the behaviour, do so because they possess a quality that has such a relationship. There is a felt relationship between impulse and situation. There is, therefore, on the objective side a qualitative element that makes its contribution to the satisfaction of the dominant need. It is in virtue of this that the experience is an organic whole. The concept is never purely cognitive in character, but has a passional element.¹ The fierce beasts, which the savage groups in one category to be feared have certain zoological qualities differentiating them from others of a more docile type, and so later the more scientific classification yields the concepts of carnivorous and herbivorous animals. The first is not more utilitarian than the second; both have in them an element of mental economy, and are fashioned to subserve some end. More than that, we can see that the distinction in meaning in the concepts thus formed is due to the nature of the dominant interest. Qualitative differences in the significance of the objective patterns are due to the change in the aim, or purpose, or interest. The primitive concept may be formed in relation to some evident instinctive emotion attaching, to flight, or ^{one,} the self-tendencies. The second arises also from an interest, which has been effective in building up the psycho-physical disposition, and thus ^{the} instrumental in the creation of the concept.

In both there is, what we can term, a psychological constellation. The constellation consists at the core of the attachment of the instinctive feelings to the object or situation. Hadfield uses ² Patriotism as an illustration. It is a constellation in which the emotions are grouped round the idea of our country. It matters not how extensive may be the association grouped round this controlling sentiment they partake of and are part of the interest of the whole. The centre is affective. That we are convinced is at the core of the concept.

1 Psychology of Reasoning. Rignano. p 110

2 Psychology and Morals. Hadfield. p 20.

Section 2.

This section approaches the subject from the "Analytic" side, and includes the discussion of Language and thinking, "structuration" of meaning, and a further examination of imageless thought.

So far we have discussed the genetic rather than the analytic nature of the conceptual process. We have attempted to trace the genesis and development of the concept from its inner or organic side, and we have been led to the conclusion, that, however, much the cognitive aspects may seem to predominate in the finished product, the core of the whole is that of interest and thereby affective. We now turn to a short analytic study of the reasoning process.

An analytic study of the reasoning process.

 Every act of reasoning is governed by some purpose either immediate or remote. It is that which determines attention, narrows the focus of consciousness, governs the association and prescribes the train of imagery through which reinstatement takes place, and comparing and reasoning proceeds to its end. It is the expression of one side of the earlier history of the individual, is connected with the life-purpose of the individual, and finally with the instinctive tendencies. In the discussion of the image we found that the image of itself, any more than the actual presentation in perception, does not provide the energy for the prosecution of the activity. In the same way the process of comparing or reasoning or any intellectual synthesis by which reasoning may devise means for the successful achievement of the end either immediate or remote does not provide the energy. Reason may be the card or chart, but passion is the gale. ^{"1} That there is something in consciousness which checks the use of the mental state when it is inclined to act in a way that the concrete things it represents will not permit we must admit on the evidence of experience. It is possible Wundt is right in suggesting that there is what he terms a concept-feeling. At any rate the inhibition is due not to any objective fact but to an interest in which feeling is essentially present. We cannot, therefore, in any description of the function of the concept eliminate the passional element. We react to a meaning which, while it has a relational significance within a system of related experiences built up in relation

1. Psychology of Reasoning. Pillsbury. p 67

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to a definite need *has* the affective element ~~is~~ present in and forms ^{ing} the primary basis of the immediate *relation*. Conceptual thinking does not go on in a world of meanings outwith the individual mind. That, we must hold in any psychological description of experience. It is futile to suggest that any amount of thinking of two objects together will make the *relation* known unless there is a deeper something, a felt interest arising from the capacity of satisfying some need. The dominant interest lies behind, and in, the whole process; its modification alters the interpretation of specific data and governs the selection. This controlling interest may seem to be no part of the reasoning process, and we may be seldom aware of it, but the failure to recognise its influence is responsible for many misconceptions.

It is on the objective side, however, that the greatest difficulty is met. It is difficult, say, in the matter of mathematical distinctions of figures with their specific content, and their place in a conceptual system to discover anything that approximates to an affective factor. We may admit its presence, but can hardly admit its fact as meaning. The properties which, for example, distinguish the circle from the triangle seem to wholly cognitive in nature and apprehension. Feeling has apparently little or nothing to do with the meaning of each, and the distinction they involve or the place in the system. We admit the difficulty, and yet the whole, whatever may be the validity of the distinction on the objective side, is ^{so} far as the individual experience goes a learned and acquired whole; and the process, ~~then~~, is not without its interest core. Moreover the distinction and the reasoning, which may be in process, is one that had some aim and the satisfaction of some need, however intellectual. The abstract sciences are we confess difficult ~~to~~ bring within our thesis, and yet we cannot see how the immediate relation of any presented data can have any meaning to or within the whole unless it be that of one to the governing interest and having ^{merely} a worthwhile character.

Illustration of the way in which the dominant interest may modify and even alter specific data can be given. To the hunter or forest-guide the forest presents a totally different meaning in the immediate or primary sense to that which it yields to the botanist. The differing meaning is not due to any actual difference in the environment, but to the interest that governs the response. There has been built up on the organic side in each case a definite structure, and there is on the objective side also a certain pattern. We can see how true is Haldane's statement that the organism and the environment combine to form a whole. Of course there is no reason why the hunter should not be a botanist and vice versa. In that case we have meanings, according to the governing sentiment, in the separate universes of interest. We have meaning in its primary relation to the felt interest in each case, derived meaning acquired through experience, and significance in relation to the prospective or significant aspects of the data, but the experience is a whole.

It may be argued that we are dealing with things that must not be confused. We can speak of a hunting instinct and thereby find in the one case the primitive factor, but not in the botanic side is this possible. Is that objection valid? Take music, ^{"1} We know that the ordinary man speaks about the child having been born with a gift for music. That is a very loose way of expressing what after all is a psychological fact of experience. We do not claim that the capacity for the acquiring skill and knowledge in music is instinctive, but the working out of the capacity will involve an instinctive factor. Hence there is no reason why we should not say there is an instinct for music in the same way as we say that the *Ammophilis* has an instinct to hunt caterpillars. The acquiring of skill may not be instinctive but the motive, the interest, is not independent of instinct. So in Botany, and this may help also in the understanding of the difficulty in the previous section in relation to mathematical reasoning.

Language and the structuration of meaning.

An interesting point in the structuration of meaning in symbol patterns lies in the growth and use of language. The word becomes a surrogate, and a ready symbol in the process of reasoning. This point is also critical in any discussion of the subject of imageless thought. We cannot, obviously, enter into any detailed account of the rise and growth of language, That would lead us too far afield. We must, however, make some reference to this instrument which plays so great a part in the higher thought activities. "1 The elaboration of this indispensable instrument, which, more than anything else, enables the individual to advance to the rational stage calls for consideration. If we are to recognise the process of objectivation and the way in which the articulation of meaning takes place, we must study the instrument by which they are achieved. The structuration of meaning, which, we recognised, took place in the form of images of a definite sensory-pattern, takes place also in the form of words. It is at this point we find the distinction between psychology and logic, at least, on its formal side, coming into view.

We need not discuss the vexed question as to what instinctive tendency is the most ultimate in order to recognise that man is gregarious. This tendency drives towards intercourse, and this drive towards intercourse leads to the development of language. There is no doubt that, though language has reached a high state of articulation, and is now a coherent system of signs or symbols conveying meaning that is intentional, it was originally emotional expression and nothing more. "2" Some advance took place as soon as the "ejective" level of experience was attained, as soon as, that is to say, as the individual experient could recognise that within a common

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environment were other individuals of its own kind. Then, the desire of communication, it is supposed, impelled men to the production of language, and turned the instinctive into the intentional. But this transition, we may well believe, was a far more gradual process than such deliberate purpose as desire to communicate implies, and also began far below the level of the human animal; in other words language was neither invented nor discovered, but throughout has been evolved. It is not our purpose to trace this evolution. It is sufficient for our purpose to indicate that the first signs or symbols expressed a certain affective and emotional state. The articulation of the experience in this form did not eliminate the affective elements which constituted the experience. The presentation of the symbol, as a vehicle of the experience, carried with it the arousal of the affectivity which had given it content and value for the individual. In the growth of mind, and the telescoping of experience in the interests of mental economy, together with the emergence of higher processes, these signs gained in articulation and stability and became representative of more and more in the experience of the individual. It is, however, true at the later stages, as in the more primitive, that the motivation is never without instinctive quality or its affective factor.

In the growth of the concept, which we traced in a previous section, we found that one word may be symbolical of more than one particular experience. The richness of the symbol-pattern depends on the associations it enters into or awakens. Thus, though in later growth language appears to be detached from the primary motivations of its origin, it is part of a whole of human experience and the expression of that experience in symbol. In itself it is but a skeleton without flesh and blood.

Imageless thought.

We return to this subject. This is really its proper setting. Academic, though this topic may be, it is critical to any study of the higher thought processes. If it is possible to prove imageless thought, then, it may be quite legitimate to argue that there is a psychological meaning other than that we have considered: a pure intelligence in which meaning is purely cognitive, and from which the passional element is gone. There may be as Besanquet and Bradley suggests a world of meanings independent of any we have stated; something given and not acquired in and through experience. There may be a phase of intellectual process and experience still awaiting our investigation, and which will yield to us a new point of view in the study of intelligence. Our discussion will take the form of a recapitulation of the views stated in our last section as to its rise as a psychological problem, a statement of the views of leading psychologists for and against, and finally our own conclusions on the subject.

Thinking according to Aristotle (as stated previously) seemed to be one of the functions of the soul, and if the soul is separable from the body then imageless thinking is possible. Aristotle, however, indicates that, while there is nothing in the nature of thought demanding bodily organs, thinking, as an actual fact, is never without images, and images depend on sense-organs. It seems, however, from the psychological point of view an unnecessary complication of the problem to discuss the separability of soul and body. The modern position is that, if we take away either, we have no behaviour. The most original thinking is made possible by and grows out of the whole organised system built up through conscious and unconscious experience. Looking at this problem of imageless thought it is really problematical how far it is not the product of philosophical presuppositions. It is easy at this point to see how the problem centres, in no small degree, in the question of the relation of body and mind; whether the solution is that of psycho-physical parallelism or some form of interactionism. That, however, is a metaphysical problem, the discussion of which we need not undertake. We are concerned with the concrete

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facts of mental activity.

Modern psychologists are divided on this subject. The earliest experiments were undertaken by Ribet, and the conclusions reached are elaborated in his discussion of the "Evaluation of General ideas." His method¹ was the word-list method, and his results may be briefly summarised as follows. (1) A group having visual and motor images. (2) A group having visual image of word only. (3) A group reporting no image of any kind. This latter group would indicate an affirmative position, but Ribet argued that the third group reports could not be taken literally, because, if the word was understood, there must have been something else.

Aveling, who writes on the "Consciousness of Universals", used the method of nonsense words of two syllables together with pictures, and, so far as his reflection on the evidence goes, holds that imageless thought does take place. Stout³ says that there is no absurdity in supposing a mode of presentational consciousness which is not composed of visual, auditory or tactual images, other experiences derived from and in some degree resembling the sensations of the special senses; and there is no absurdity in supposing that such modes of consciousness possess a representative value of significance for thought. It is very difficult to grip just what Stout means in this statement. In his "Manual",² he says, "no image, no thought." An American investigator, Calkins, holds, that while, it is abundantly proved that along with imagery, and often in the focus of attention when one compares, and reasons and recognises, there are present elements which are neither sensational nor affective, it is unwise to assert there is imageless thought. The Wurzburg school, mentioned and criticised by Titchener, gave considerable data on this subject. The irradiation of which Stout speaks is not dissimilar to the "Bewusstseinslage", meaning something like posture or attitude. "The following quotation from Mayer and Orth is interesting. Besides ideas^{and} volitions we must mention a third group of facts of consciousness which have not received sufficient emphasis in current psychology, but whose

1. Experimental Psychology. Collins and Dreyer. p 241

2. Consciousness of Universals Aveling. p 17

3. Analytic Psychology Stout, p see below - this is an extract from Titchener

4. Experimental psychology of thought processes. Titchener, various pages in appendix

whose/

existence impressed us again and again in the course of our experiments. The observers reported that their experiences consisted of certain conscious process which obviously refused description either as determinate ideas or volitions. Orth for, instance, observed that the word mustard touched off a process which he thought might be characterised as the suggestion of a familiar form of experience. Then came the associated word grain. In all such cases the observer was unable to find in consciousness the ideas which he afterwards employed to describe the facts of experience. All conscious^{ness} of that type we shall include, despite their evident differences of *quality*, under the name of conscious attitudes. These positions indicate to us the divergence of views that are held. In the experiments we conducted, and on which we have reported, we found certain features corresponding to conscious attitudes, and they were always influential in the determination of the nature of the response. But we never felt that they could be dignified by any other title than organic adjustments due to some affective activity.

Watt, approaching this subject from the method of "constrained association" found the essential element in the act of thought to be the *Aufgabe* or problem. That, however, is not an isolated fact in experience, but related to a context, and images are present. This discussion yields little, if any, confirmation of, or contribution to, the immediate subject.

The whole difficulty in the subject of imageless^e thought seems to arise from the tendency to isolate one part of ^{the} mental process. We are studying the behaviour of an organism, and we must not lose the comprehensive point of view. It may be possible to argue as Ward suggests that all thought is, strictly speaking, imageless, for all thought is concerned with propositions sought or found, in other words, with problems, suppositions, and assertions; it is intentional not presentational. On the other hand all thought is concerned primarily or ultimately with images, that is to say with such of their relations as are relevant to the immediate problem.

1. Experimental psychology of thought process. Titchener. *Appendix*
2. Psychological principles. Ward. p 301.

Some final words on the reasoning process.

The foregoing account of the question of imageless thought is integral to the study of the reasoning process. So far, either in experimental work, or in analysis of the thought processes, we have been unable to agree that imageless thinking takes place. There is always the verbal image, at least. On the reasoning process there is, at present, no general agreement. Views differing as widely as Plato's did from the Greek materialists are advanced. Some are still prepared to make it a mysterious spiritual function, and others merely a complex process of associative reproduction determined by physico-chemical processes in the brain proceeding according to the mechanistic law of habit. With either of these views we have nothing in common. The truer view lies midway between, and, while recognising the intimate relation of body and mind, the two as interacting within a whole called experience, finds a central place for feeling. Psychology of the thinking process, and consequently of the reasoning process as a finished product, ignores too much the dynamic aspects which is really the essential thing. The dynamic element is the feeling element, affection, emotion, and sentiment. In any coherent discourse everything tends to the accomplishment of some end, and the idea of the end controls the association in every part of the process. It is not only the grand suggesting principle that sets the train of images connected with itself in motion, it is the grand selective principle. It is the central interest, which constitutes, what Rignano calls, the thread of reasoning.

It is exceedingly rare to find persons that can with perfect fairness register facts or estimate them against their own views or theories, and this is due more to the conflict of affect than any other element. The disagreeable nature of that which threatens the primary interest is one of the chief sources of this bias. Meaning is individual in its primary nature, and it is only in the processes, through stabilisation in symbol-patterns, it becomes articulated and significant of more than the immediate present, inclusive of more and more. The passional element, however,

1 Psychology of thinking. Miller. p 190, 213.

2 ~~System of Logic~~. Mill, J.S. p

analysis of the phenomena of human mind pp. 370-371

however/

is never absent. We may state the steps thus: appetitive, affective, and evaluation. The latter comes under the head of the sentiments.

Conclusion.

The implications of our study are manifold and far-reaching. In the stressing of interest we are touching on a psychological factor hitherto too little studied and examined. If we assume that the child naturally seeks satisfaction, and that is not a groundless assumption; and that such satisfaction is typical of its age and maturity, we shall find interest to be the relevancy of the environment to the wants that originate in the child. A stimulus that does not serve as a tool for the child's satisfaction as seen by the child is simply not a stimulus. We conclude with a statement of the psychological act. It starts with the unrest in the inner self, and completes itself in the contentment of the inner self. This is the affective factor that gives meaning, and it runs throughout the whole of behaviour. From our point of view it is only on some such basis that human psychology is human.

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