

MODERN THEORIES OF INSTINCT.

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of

INSTINCT

by

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CHAPTER 1

THE BEHAVIOURIST VIEW OF INSTINCT

So much of a confusing nature has been written upon the subject of INSTINCT that it is advisable to begin the discussion of INSTINCT with those theories which are least complicated. Of these the simplest is the behaviourist theory and I commence this thesis by outlining the views expounded by Warren in his recently published work "HUMAN PSYCHOLOGY".

The neuro-terminal system is the mediator between the creature and his environment. The forces acting upon the nervous system as stimuli lead to responsive activity upon the part of the organism; that is, there is organic reaction, not necessarily implying intelligence, or consciousness, or deliberation. This response is adaptive; that is, tending to protect the organism and to promote its life activities. Many responses are possible to various situations, and upon the general principle of natural selection the most suitable reactions tend to survive.

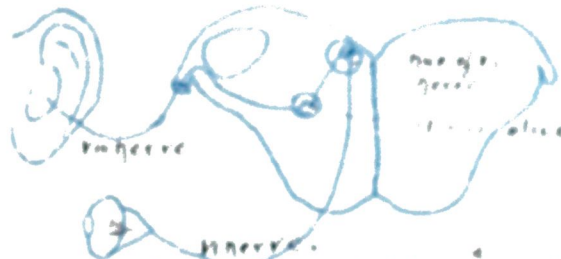
This gives us the idea of behaviour -- such activities as are manifested in muscular contractions and glandular secretions together with the various resulting movements and physiological changes, mediated by the activity of the nervous arc. It may be viewed from the three-fold aspect of stimulus or afferent element, the central adjustment, and the motor or glandular response. On this basis human behaviour includes three main types: reflex action (simple response), instinctive behaviour, and individually modified intelligent behaviour; i.e. reflexes, instincts, and intelligence. In man intelligent behaviour is differentiated into habit and rational behaviour.

REFLEX BEHAVIOUR

The reflex is the original form of behaviour among creatures possessing a nervous system. It involves the operation of a single nervous arc or a number of such acting simultaneously. Simple reflex action is brought about by the operation of a simple nervous arc.

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The diagram below illustrates a simple auditory reflex. The auditory stimulus starts as an impulse through the auditory nerve; the impulse is conducted by an intercalary neurone to the origin of the efference, and along the efference to an external rectus muscle of the eye ball, producing a movement of the eye towards the side of the stimulus.



The knee-germ is a spinal reflex; winking, cerebral reflex.

Compound reflexes are those in which two or more sensory impulses are combined, or in which a single sensory impulse finds multiple expression. The knee-germ may form part of a compound reflex; a portion of the impulse may pass over directly from the primary sensory centre to the motor path and cause the leg to fly up while part may travel to a higher centre and lead to another type of activity.

If the entire impulse reaches a higher centre it may result in a co-ordinated compound reflex; eg., grasping, sucking. In the compounding of reflexes the effect differs according to the nature of the component motor impulses. There are antagonistic reflexes, and allied reflexes reinforcing each other. Where several reflexes follow in succession, they may be alternating (eg. in walking), or supplementary (eg. the flexing of the fingers at each joint in grasping). When a completed reflex causes a new stimulation leading to another reflex, the series is called a chain reflex. This is the border line between reflex and instinctive activity.

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The conditioned reflex

Put into dog's mouth a tasting substance that arouses the flow of saliva, and at the same time ring a bell, and repeat this combination of stimuli many times. Then ring the bell alone, and the saliva flows in response to the bell. This is the conditioned reflex. The bell is a substitute stimulus, which has become attached to the salivary response by dint of having been given along with the natural stimulus which arouses this response. In the same way the dinner bell makes the mouth water, and so does the sight of food or even the name of it. The first research on this was ^{done} ~~was~~ by the Russian Pavlov. Lashley in Johns Hopkins found the same result with human beings and Bechterew found the same results with both striped and smooth muscles which Pavlov had found with glands. [Watson, Psychology from Stand-point of a Behaviourist, pp 29--38 and Woodworth-Psychology pp 303-304.] This phenomenon of the Conditioned reflex and the substitute stimulus will explain how, as McDougall says, an instinctive response comes to the excited by an object different from its original natural excitant, and it explains, also, what Thorndike has called the law of Associative shifting. As shown elsewhere, this is effected through the mechanism of neural drainage.

Reflex action is the fundamental type of behaviour. Out of it through various complications rise the higher types. Instinct and intelligence, from the neurological side, maybe viewed as the operation of chains of reflex arcs. In the case of instinctive behaviour the neural connections which determine the path way and mark out the arcs are inherited, while in intelligent behaviour the connections are modified through experience.

Instinctive Behaviour

The term instinct denotes those complications of behaviour which involve a series of reflex activities where

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- (a) one reflex furnishes the stimulus to the next and
 (b) the connections depend upon inherited structure, not upon individual modifications.

Thus in walking each step serves as a stimulus to the next. However, in most instincts each reflex involves a different reflex from the one before it. Thus in the suckling instinct of the human infant hunger or sight or odour sets up the reflex of bending towards the breast. Next is the grasping reflex with the lips, followed by the sucking and then by the swallowing reflex, each furnishing the stimulus to the next reflex. This succession of response and stimulation is characteristic of instinctive behaviour.

A reflex arc is made up of a series of neurones or neuron groups joined in a circuit, and reflex action occurs because this constitutes a pathway of preferred discharge due to least resistance. So an instinctive circuit system is made of several superimposed reflex arcs, and instinctive action takes place because each reflex which composes it is a path of least resistance and because the motor response of one reflex provides the appropriate stimulus for the next.

CLASSES OF HUMAN INSTINCTS

The human adult rarely behaves in a purely instinctive manner. His activities are modified by his experiences and belong mostly to the intelligent type. Pure instincts are replaced by modified instincts and instinctive tendencies. Modified instincts include the partly inhibited expressions of fear, anger and the like, and such partly trained activities as walking, feeding, parental and sexual instincts, expression of sorrow and delight. Man has few pure instincts, but many modified instincts.

HUMAN INSTINCTS

1. NUTRITIVE

Metabolic expressions (a variety of complex manifestations of general bodily or 'systemic' conditions - joy, sorrow etc.)

THE BEHAVIOURIST VIEW OF INSTINCT

Walking
Feeding
Wandering (Hunting)
Acquiring (Hoarding)
Cleanliness

2. REPRODUCTIVE

Mating (sexual attraction, courtship)

Maternal
Filial (of infancy)

3. DEFENSIVE

Flight, Subjection, Hiding, Avoiding, Modesty (shyness)
Clothing (covering), Constructing, (home making).

4. AGGRESSIVE

Fighting, Resenting, Domineering, Rivalry.

5. SOCIAL ORGANIZATION

Family (parental and filial)
Tribal (gregariousness)
"Eupathetic" (responses to the attitude of others)
Sympathetic
Antipathetic
Co-operative.

INSTINCTIVE TENDENCIES

These are modes of behaviour comprising many sorts of action, all individually learned, but resembling one another in type; the type itself is not learned but belongs to the constitution of the species.

Imitableness
Playfulness
Curiosity
Dextrality
Aesthetic Expression
Communicableness

Ref. Warren--
Human Psychology,
ch. 6.

THE BEHAVIOURIST VIEW OF INSTINCT

A more thorough going behaviourist than Warren, who gives consideration to consciousness, is Professor J. B. Watson, who limits the facts of psychology to the objective facts of muscular and glandular responses.

According to Watson a human action as a whole can be divided into hereditary modes of response (emotional and instinctive), and acquired forms of activity begin early to overlay: Emotional reactions become separated from the original stimulus and the instinctive reactions become overlaid by organized habits.

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by para. at
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page.*

It is obvious that in this treatment emotion and instinct are viewed as two separate things, though both are hereditary modes of response, and so emotion and instinct ~~are~~ defined by Watson would be classed by other students, for example by McDougall, as instincts. It becomes necessary then to outline both Watson's conceptions of instinct and his conceptions of emotion.

What is an Emotion? It is an hereditary "pattern-reaction" involving profound changes of the bodily mechanism as a whole, but particularly of the visceral and glandular systems." By "pattern reaction" is meant that the separate details of response appear with some constancy, with some regularity and in approximately the same sequential order each time the exciting stimulus is presented. It is to be observed that this answer is in objective terms, one might say in purely physiological and neurological terms. The stress is on the efferent aspect. Why then make a distinction between emotion, which is thus a muscular and glandular response to a stimulus, and instinct, which also is a muscular and glandular response. Watson makes the distinction that the shock of an emotional stimulus throws the organism for a moment at least into a chaotic state: the subject makes few or no adjustments. So when the adjustments called out by the stimulus are internal and confined to the subject's body we have emotion; eg. for blushing. When the stimulus leads to adjustments of the organism as a whole we have instinct, as in defensive response, grasping, etc. Emotions seldom appear alone, but usually along with instinctive and habit factors. This simultaneity, however, it is to be observed, is not the same thing as the appearance of the emotion as one aspect of the instinct, after the fashion of McDougall's theory.

According to Watson human action as a whole can be divided into hereditary modes of response (emotional and instinctive) and acquired modes of response (habit). These inherited and acquired forms of activity begin early to overlap; emotional reactions become separated from the original stimulus and the instinctive reactions become overlaid by organized habits.

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EARLY TYPES OF EMOTIONAL REACTIONS.

As a result of the study of the early life of infants, Watson suggests that the Emotional Reactions of fear, rage and love (the latter term used as Freud uses sex) belong to the original nature of man. His discussion of these is not of the inner, conscious aspect of them, but is a statement of their objective manifestations, and a tabulation of the situations in which they occur.

SUBSTITUTION OF STIMULUS:

Attachments and Detachments.

Under the action of ^environmental factors (habit influences), situations which originally did not call out emotional response come to do so. This is on the principle of the substitute stimulus. It explains a great deal of the complexity of adult emotional life. We may call such responses conditioned emotional reactions. Here belong the phobias, and vast numbers of the likes and dislikes of ordinary life. In addition are "attachments" and "detachments" to persons, places and things formed by slow associative or habit connection, probably differing from the former only in the increased length of time required for their formation.

EFFECT OF EXCITING STIMULI UPON THE DUCTLESS GLANDS

Emotional stimuli release adrenin. This in turn liberates sugar stored in the liver. Glycosuria results; that is, the excess sugar passes into the urine. (Cannon, Bodily Changes in Fear, Rage and anger). This glycosuria indicates an increased supply of sugar in the blood. The adrenin also acts in conjunction with the sympathetic nerves and produces vaso-constriction and hence increased blood-pressure, resulting in increased food-supply and the removal of waste. The blood is driven out of the vegetative organs of the interior into the skeletal muscles, which have to meet the extra demand, for example, when the animal is fighting and struggling to maintain itself.

Such are Cannon's conclusions, their import being that they are "adaptive" in character, and aid in meeting crises. Watson, however, says that they are not always serviceable to-day, but maybe "inadaptive", disassociative and

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disruptive. Their effect upon the general level of activity may be facilitation or the reverse, or it may be neutral, depending upon many factors; the nature of the stimulus, the individual's character, and his bodily state. There is a tendency to follow Darwin, and to find a utilitarian value in every reaction. The probability is that in both hereditary modes of reaction, eg. emotion and instinct, there are reactions of no positive value at all. They are luxuries. (Watson op. cit. p. 224)

Has emotion then no value in daily life? Watson enumerates three values.

(1) It makes society more agreeable, and makes a man a more delightful personality with whom to work, fight, and play.

(2) In a few exceptional men the heightened state which comes after a great emotional crisis may bring about a high degree of achievement.

(3) Emotionally exciting stimuli sometimes do arouse to a higher level of achievement those who habitually work at a dead level.

The foregoing expresses the behaviouristic view of instinct and emotion. The behaviourist studies instinctive and emotional reactions---glandular and muscular response. He rules out consciousness as a factor in scientific psychology and so rules out the central factor in instinct, with which McDougall occupies himself so much. Such data are too subjective, and the behaviourist wishes purely objective data, which will be the same for every observer. He thus limits his field. This is of value for certain purposes, and no doubt accurately observed facts may be accumulated by following this method and much obscure conjecture may be removed. But even so the behaviourist cannot escape the fatal net of subjectivity. The so-called objective fact, the observed muscular twitch or glandular reaction, is known to the behaviourist only through perception, and perception is a fact of consciousness, that is to say, purely subjective. And so it turns out that the behaviourist is as much indebted to introspective method as any other. His method has merely the merit which comes from limiting the field, but he is not justified in ignoring the other methods of research, and in this particular, not justified in ignoring the central factor in instinct, thereby excluding the most profitable aspect of instinct, namely instinct as experience.
(Watson, Psychology from Standpoint of a Behaviourist, PP)

CHAPTER 11

THORNDIKE on ORIGINAL NATURE

To understand Thorndike's theory it is necessary to understand his doctrine of situation, response, and bonds. Any fact of intellect, character or skill means a tendency to respond in a certain way to a certain situation--involves a situation, a response, and a connection or bond. Whereby the latter is the result of the former (Educational Psychology, Briefer Course, p. 1.) Man possesses through heredity an equipment of original nature--reflexes, instincts and inborn capacities, which make up his unlearned tendencies. When the tendency concerns a very definite and uniform response to a very simple sensory situation and the connection between them is very hard to modify and is so strong as to be almost inevitable, we have a reflex; e. g., the knee-jerk. When the response is more indefinite, the situation more complex, and the connection more modifiable, the term is instinct. When the tendency is to an extremely indefinite response or set of responses to a very complex situation and when the final strength of the connection is due to large contributions from training, it may be termed capacity, as, for example, a capacity for scholarship.

There is no hard and fast line between reflexes and instincts, nor between instincts and capacities. But it is useful in thought to have the distinction available. They are, however, essentially alike in that they all include the ability to be sensitive to a certain situation, the ability to make a certain response, and the existence of a bond or connection whereby the response is made to that situation. This may be expressed by the formula $S \rightarrow R$. However the response is not always bound exclusively to one situation, and the same situation may lead to variety of response: thus there may be multiple response and multiple causation. This would seem to violate the law of the uniformity of nature, and this of course cannot be maintained. The uniformity of nature implies that in the same organism the same neurone-action will always produce the same results. The variety mentioned follows from the fact that apparently the same situations may really be different, and the state of the organism itself varies, and moreover while the main situation may remain the same, minor co-operating factors may vary.

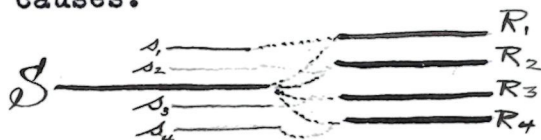
THORNDIKE on ORIGINAL NATURE

The S R connections, says Thorndike (op. cit. pp. 7-8) are of three main types.

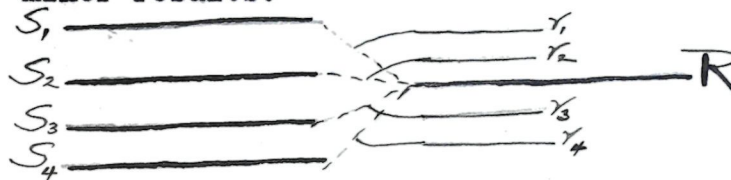
1. S_1 leads to R_1 , its peculiar sequant.



2. S_1 leads to R_1 or R_2 or R_3 , etc., according to minor contributory causes.



3. S_1 leads to $R+r_1$, S_2 to $R+r_2$, S_3 to $R+r_3$, where r_1 , r_2 , r_3 , are minor results.



This analysis I have elaborated to this extent because it is basic to Thorndike's treatment of the relation of original nature to learning, and because I need it in the discussion of McDougall's treatment of instinctive reactions.

These instinctive or unlearned tendencies to reaction are basic to man's learned reactions. Action aims at the satisfaction of wants. Some activities are originally satisfying, others originally annoying. Wants, says Thorndike, are the ultimate source of all value, taking in this a psychological hedonism which goes back to Aristippus.

When any original behaviour-series is started and operates successfully, its activities are satisfying and the situations which they produce are satisfying, and when any behaviour-series is started, any failure

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of it to operate successfully is annoying. But the successful operating of a conduction unit or neurone group depends upon its readiness to conduct. When it is ready to conduct to do so is satisfying and not to do so is annoying. A corollary to this is that for a conduction unit not ready to conduct to be forced to do so would be annoying.

It will be remembered that instincts were spoken of as modifiable. This brings in the fact of learning, and of man's capacity for permanent modifiability. This can easily lead as far afield into the psychology of learning, and into a treatment beyond the scope of this essay. Yet a consideration of the subject cannot be escaped, and we come from the foregoing to the laws of learning, which can be stated as follows:

THE LAW OF USE

To the situation, 'a modifiable connection being made between the situation S and a response R, man responds by an increase in the strength of that connection; that is, the same response is more likely to recur to the same situation. In neurological terms, the synapse is made more pervious.

THE LAW OF DISUSE

To the situation, 'a modifiable connection not being made between a situation S and a response R during a length of time T, man responds originally by a decrease to the strength of that connection. In neurological terms the synapse becomes less pervious. This is explanatory of what is termed the "transitoriness of instincts", their tendency to die away if not subjected to stimulus. The Laws of Use and Disuse may be combined as the Law of Exercise.

THE LAW OF EFFECT

To the situation, 'a modifiable connection having been made between an S and an R and being accompanied or followed by a satisfying state of affairs,' man responds by an increase in the strength of that connection. In other words the synapse is made more pervious, or as Aristotle says in Ethics X, pleasure increases the efficiency of a function. Similarly an annoying state decreases the strength of the connection, or closes up the synapse.

THORNDIKE on ORIGINAL NATURE

These laws of readiness, exercise, and affect, having as their object matter the instinctive activities, are the main laws of learning. Secondary to them are five secondary characteristics of learning. These are as follows:

1. The fact of Multiple Response or Varied Reaction. This has been already explained.

2. The learner's Set, or Attitude, Adjustment or Determination. An individual's inner state will affect his response to a situation. He will respond differently to food if he is hungry from his action when not hungry. This response to sex stimuli will depend largely upon physiological state. The readiness of the neurones in these cases will vary.

3. The Law of Partial Activity. A part or element or aspect of a situation may be prepotent in causing response, and may have responses bound more or less exclusively to it regardless of some or all of its accompaniments.

4. The Law of Assimilation or Analogy. To any situations, which have no special original response of their own, the response made will be that which by original or acquired nature is connected with some situation which they resemble. For S_2 to resemble S_1 means for it to arouse more or less of the sensory neurones which S_1 would arouse and to more or less the same fashion. So if an animal has learned to fear one certain man, the sight of another man may arouse the response of fear; and so we, as we say, "instinctively" dislike some new acquaintance, because his resemblance to some other person whom we dislike, causes the stimulation of the same neurone group.

5. The Law of associative Shifting. We hold up a piece of food for a dog to reach and tell him to "stand up." He stands up to reach for the food. In time he stands up in response to the stimulus "stand up" alone. The response has been shifted to the words "stand up." The word of command has become a substitute stimulus.

1st. S_1 (food) \longrightarrow Response (stand up)

S₂ (food) → Response of Audition

Then by "neural drainage"

S₁ (food, lacking) → Response of Standing

S₂ (stand up)

As Thorndike puts it, a response to the total situation A,B,C,D,E, may be shifted to B,C,D,E, to C,D,E, to D,E, to E. Moreover, by adding to the situation new elements F,G,H, etc. we may get any response of which a learner is capable associated with any situation to which he is sensitive.

This is Thorndike's statement of a fact on which light is thrown by the idea of the conditioned reflex, and the contribution of Pavlov, which theory is itself explicable by the theory of neural drainage, contributed by McDougall. This gives us the "substitute stimulus," which was not understood by Thorndike at the time he wrote his volume on "The Original Nature of Man." For the sake of clearness I introduced it above.

Relevant to the foregoing is McDougall's discussion of the complications of instinctive processes. The first two of these complications he distinguishes thus:

- 1) "The instinctive reactions become capable of bringing initiated, not only by the perception of objects of the kind which directly excite the innate disposition, the natural or native excitants of such objects, but by perceptions and by ideas of objects of other kinds."

(McDougall, Social Psychology, pp.31-32).

This is Thorndike's law of Associative Shifting. It is also the substitute stimulus of Woodworth (Psychology pp. 298-311-401-408).

- 2) "The bodily movements in which the instinct finds expression may be modified and complicated to an indefinitely great degree." (McDougall, op. cit. p.32).

This is the Thorndike's Multiple Response or Varied Reaction. It is Woodworth's Substitute response.

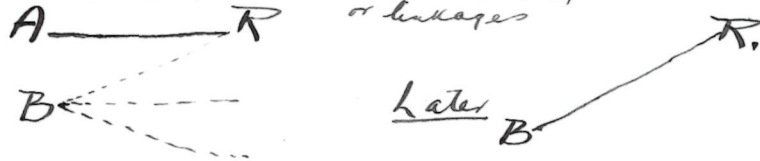
Illustrations of the Substitute Stimulus.

A. Substitute Stimulus Originally Unnecessary for Producing the Response.

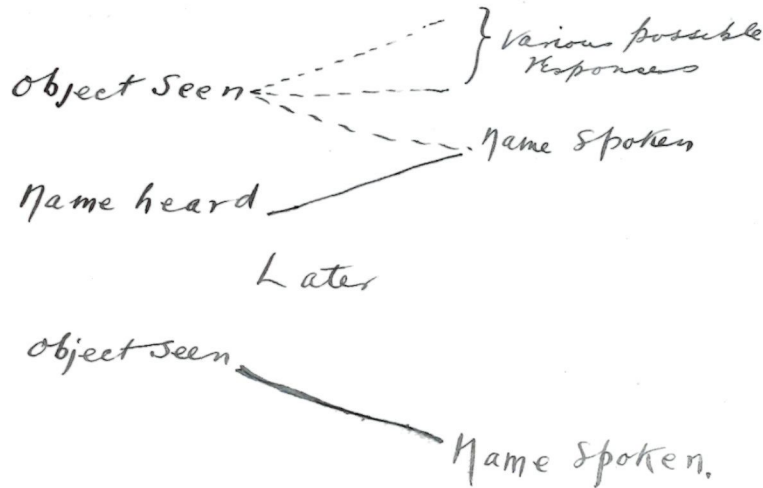
1. Conditioned Reflex.

A child was taught to shrink from a rabbit by the sounding of a harsh noise along with the showing of a rabbit. Finally, he would shrink at the sight of the rabbit alone.

A is the original effective stimulus (noise), leading to response R (shrinking). B is the original ineffective stimulus (sight of rabbit). The dotted lines represent various weak possible bonds or linkages.



2. Learning the names of things.



B. Substitute Stimulus Originally an Essential Member of a Team of Stimuli that Arouse the Response.

^A
∴ Observed Grouping or Relationship

A ---
B --- Response of observing Group AB

Later

A ---
(B) Thought of Group AB.

The Substitute Response, which likewise applies to the modification of ^{reactions,} Instinctive ^{is} essentially the same. Though learning to drive a car is not instinctive, the substitute response, in the form of a higher, combined motor unit, may be explained by ^{it} the ~~substitute~~ response, and this ^{same process} will hold good in the modification of modification. ^{Instinctive reactions: it explains the mechanism.}

Brake Stimulus ————— Brake Response
Clutch Stimulus ————— Clutch Response

Later

Brake Stimulus ————— Brake Response
Clutch Response

[Woodward - Psychology, pp. 401-413]

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CHAPTER 111

MCDUGALL on INSTINCT

"The human mind has certain innate or inherited tendencies which are the essential springs or motive powers of all thought and action, whether individual or collective, and are the bases from which the character and will of individuals and of Nations are gradually developed under the guidance of the intellectual faculties. These primary innate tendencies have different relative strengths in the native constitutions of the individuals of different races, and they are favoured or checked in very different degrees by the very different social circumstances of men in different stages of culture; but they are probably common to the men of every race and of every age." (McDougall, Social Psychology, p. 19.)

Here we have it stated that men have certain tendencies which are

1. Innate or inherited,
2. The springs of all thought and action,
3. Common to men of every race and age.

And, further comparative psychology indicates that they are

4. ~~Evolutionary~~ ^Evolutionary in origin, inherited from our pre-human ancestors. (ibid. p. 20.)

These tendencies are of two main classes-

1. The specific tendencies or instincts;
2. The general or non-specific tendencies arising out of the constitution of mind and of mental process in general, when mind and mental process attain a certain degree of complexity in the course of evolution.

Definition of Instinct.

"An instinct is an inherited or innate psychophysical disposition which determines its possessor to perceive, and to pay attention to, objects of a certain class, to experience an emotional excitement of a particular quality upon perceiving such an object, and to act in regard to it in a particular manner, or, at least, to experience an impulse to such action." (McDougall, op. cit., p. 29.)

With reference to this definition, in contrast with such definitions as those of Watson, one may comment upon

the wealth of psychological terms involved in it. We have not merely behavior, but consciousness. We have instinct not merely as something physical, a response to a situation, but instinct as experience, as psychophysical. ^{There} is the exciting occasion, the afferent element of neurology, and this is perceived and attended to, and this experience has an effective quality, and there is an impulse to action and finally there is action or response. We have thus an afferent element, a central or adjusting element, and an efferent element. Or to put it in terms of experience there is a cognitive aspect to instinct, an affective element, and a conative element.

Viewed from the point of the afferent element or the stimulus, and the efferent or Motor element or response, instincts are capable of very great complication and alteration. The central element, however, remains largely stable, though blendings of different kinds occur even there, but the elements of which these are formed remain practically unchanged. And it is here in this central element that Starch finds the energizing power of an instinct. "The energizing power of instinct makes itself felt largely through its control of the attention processes. The great importance of attention for the learning process lies in the fact that association, analysis, and indeed all mental processes are carried out much more effectively when they occupy the focus of attention." (Starch, Educational Psychology, p. 13.)

Complications of Instinctive Processes.

The instinctive reactions become capable of being initiated by the perception of objects of the kind which directly excite the innate disposition, the natural or native excitants of the instinct, but also by the ideas of such objects and by the perceptions and by ideas of objects of other kinds.

Now in this matter the point calling for explanation is how the central and efferent parts of an instinctive disposition can be aroused by a different object from its natural excitant. Taking the case of the fear instinct aroused in birds when a gun is fired, how do we explain that finally the sight of man alone will arouse the instinct? Mc Dougall rejects explanations involving reasoning or associations of ideas. "We may suppose that, since the visual presentation of the human form repeatedly accompanies the excitement of the instinct of fear by the sound of the gun it acquires the power of exciting directly the reactions characteristic of this instinct, rather than indirectly by way of the reproduction of the idea of the sound; i.e., we may suppose that, after

repetition of the experience, the sight of a man directly excites the instinctive process in its affective and conative aspects only; or we may say, in physiological terms, that the visual disposition concerned in the elaboration of the retinal impression of the human form becomes directly connected or associated with the central and efferent parts of the instinctive disposition, which thus acquires, through the repetition of this experience, a new afferent inlet through which it may henceforth be excited independently of its innate afferent inlet (McDougall, op. cit., p. 37).

This is a very round about way of saying that the sight of a man becomes a substitute stimulus leading to the response of flight with its accompanying emotion of fear.

2. Complications of instinctive process (continued).

"The bodily movements in which the instinct finds expression may be modified and complicated to an indefinitely great degree." (McDougall, op. cit., p. 32).

This is the "substitute response" of Woodworth (Psychology pp. 299-301, 409-413). It is Thorndike's Multiple Response or Varied Reaction. (Thorndike, op. cit., 132-133).

3. "Owing to the complexity of the ideas which bring the human instincts into play, it frequently happens that several instincts are simultaneously excited; when the several processes blend with various degrees of intimacy."

4. The instinctive tendencies become more or less systematically organized about certain objects or ideas.

The first two of these complications have been sufficiently discussed. The third and fourth will call for further elaboration. Before dealing with them it becomes necessary to discuss the relation of instinct and emotion.

Instinct and Emotion.

"The instinctive mental process that results from the excitement of any instinct has always an affective aspect, the nature of which depends upon the constitution of that most stable and unchanging of the three parts of the instinctive disposition, namely the central part. In the case of the simpler instincts, this affective aspect of the instinctive process is not prominent.--- But, in the case of the principal powerful instincts, the affective quality of each instinctive process and the sum of visceral and bodily changes in which it expresses itself are peculiar and distinct; hence language provides special names for such modes of affective experience, names such as anger, fear, curiosity; and the generic name for them is "emotion."---Each of the principal instincts conditions, then, some one kind of emotional excitement whose quality is specific or peculiar to it; and the emotional excitement of specific quality that is the affective aspect of the operation of any one of the principal instincts may be called a primary emotion." (Social Psychology p. 46).

Thus:	
1. <u>Instinct</u>	<u>Related Emotion</u>
Flight.	Fear
Repulsion.	Disgust
Curiosity.	Wonder

<u>Instinct</u>	<u>Related Emotion</u>
PugnacityAnger.
Self-abasement or SubjectionNegative Self- Feeling.
Self - Assertion.Positive Self- Feeling.
Parental InstinctTender Emotion.

11. Some other Instincts of less well-defined Emotional Tendency.

1. Instinct of Reproduction

Along with Parental Instinct, is the basis of family life, and along with both the Parental Instinct and the Gregarious Instinct is the basis of genetic social groupings. Drever, (Instinct in Man p.) calls the related emotion "lust."

2. Gregarious Instinct--formative of society;

3. Instinct of Acquisition--has led to growth of economic society; acquisition of facts and ideas lends to the organization of the sciences.

A; Instinct^{of} Construction--leads to all constructive mental and physical activities of man.

Be it observed that these instinctive tendencies co-operate and interpenetrate.

THE COMPLEX EMOTIONS.

Our emotional states commonly arise from the simultaneous excitement of two or more of the instinctive dispositions; and the majority of the names currently used to denote our various emotions are the names of such mixed, secondary or complex emotions. The compounding of the primary emotions is due largely to the existence of sentiments, and some of the complex emotional processes can only be generated from sentiments. This conception of sentiments McDougall takes from Shand: a Sentiment is an organisation of Emotional dispositions in systems centred about some object. (Social Psychology pp. 121-122)

Some of Complex Emotions that do not necessarily imply the Existence of Sentiments.

Secondary Emotions

1. Admiration--Wonder plus Negative Self-Feeling.
2. Gratitude--Tender Emotion plus Negative Self-Feeling.
3. Scorn--Anger plus Disgust.
4. Contempt--Disgust plus Positive Self-Feeling.
5. Loathing--Fear plus Disgust.
6. Envy--Negative Self-Feeling plus Anger.

Tertiary or Beyond

1. Awe--Admiration plus Fear.
--Wonder plus Negative Self-Feeling and Fear.
2. Reverence--Awe plus Gratitude.
--Wonder plus Negative Self-Feeling plus Fear plus Tender Emotion.
3. Scorn--Anger plus Disgust plus Positive Self-Feeling.

Complex Emotions that imply the Existence of Sentiments.

This topic may seem to be rather far from the subject of Instinct, but it follows from it, and is included here because it lends to the interesting comparison between McDougall's "sentiments" and the "complexes" which are a part of the Freudian theory of Instinct which remains to be touched upon.

1. Within the sentiment of love several well-defined emotional compounds arise
 1. Reproach--Anger plus Tender Emotion.
 2. Anxiety or Solicitude--Tender Emotion plus some anticipatory sympathetic pain plus a little anger against the source of harm.
 3. Jealousy--Anger against a third person plus painful check to one's own tender emotion.
(Query--Why not also aborted positive self-feeling?)
11. Vengeful Emotion (generally developed in connection with the self-regarding sentiment).
An insult leads to positive self-feeling. This painful struggle of positive self-feeling, maintaining one's anger against the offender, is Vengeful Emotion.
111. Bashfulness--a struggle between the opposed sentiments of self-display and self-abasement with their emotions of positive and negative self-feeling.
- 1V. Shame--bashfulness qualified by the pain of baffled positive self-feeling whose impulse is strong within the system of the self-regarding sentiment.
- V. Joy or Joyous Emotion..a complex emotional state (e.g. tender emotion plus positive self-feeling) in which are one or more primary emotions, developed within the system of a strong sentiment.

- VI. Sorrow or Sorrowful Emotion--painfully toned binary compound of baffled tender emotion plus negative self-feeling.
- VII. Pity--tender emotion plus sympathetically induced pain.

The Development of the Sentiments.

A sentiment is an organized system of emotional dispositions centred about the idea of some object. The growth of sentiments is of great importance: it means the organization of the affective and conative life; it makes possible the volitional control of the immediate promptings of the emotions; our judgments of value and of merit, i.e., our ethical ideals, are rooted in our sentiments.

Classification of the Sentiments.

- A
 - 1. Those sentiments which draw one towards their objects, generally in virtue of the tender emotion: love, liking, affection, attachment.
 - 2. The opposite due to fear and disgust: hate, dislike, aversion.
 - 3. A third principal variety, which is primarily the self-regarding sentiment and is best called Respect. Respect involves positive self-feeling, negative self-feeling, and shame, but, unlike love, does not involve tender-feeling.
- B Classified according to the nature of their objects.
 - 1. Concrete particular e.g. love of a child.
 - 2. Concrete general, e.g. love of children.
 - 3. Abstract, e.g. love of justice.

Growth of Sentiments.

When any one of the emotions is strongly or repeatedly excited by a particular object, there is formed the rudiment of a sentiment, e.g. fear aroused by an object, then fear aroused by the idea of the object. Many die away from lack of stimulus, but they may grow into a more complex organization by incorporation of other emotional dispositions, e.g. hate, anger, revenge, disgust, shame.

It cannot escape notice how closely this conception parallels the Freudian "complex."

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CHAPTER IV

INSTINCT VIEWED HISTORICALLY

Theories of instinct which has been voiced by Bergson and by ~~Freud~~^{Freud}, compel us in our treatment of instinct to go back as far as to Leibnitz and his successors. This gives an opportunity to give an outline of the historical development of the theories of instinct, and the modern views already sketched will appear then in proper perspective.

Leibnitz maintains that the human soul must be regarded as a monad, having the power of 'clear perception' and ~~too~~^{by} that power transcending the animal mind, though containing the animal mind. In virtue of the 'clear perception' or reason, the human mind brings to knowing certain innate principles, the forms of clear cognition. As containing the animal mind, the soul has also 'confused perceptions'--sensations--and 'obscure perceptions,' such as characterize plant life. But all the perceptions manifest themselves as self-initiated effort. In this aspect, the 'obscure perceptions' correspond to unconscious impulse, 'confused perceptions' to instincts, and 'clear perceptions' to rational will. Hence since all three grades stand in continuous connection, acts of will are originally found in the obscure natural impulse. (Erdmann, History of Philosophy Vol. II, p.195.)

Note here the position of self-activity, realizing itself as perceptions of different degrees of distinctness on the cognitive side, and as unconscious impulses, instinct, and will on the conative; note also the 'obscure perceptions,' and unconscious impulse, related to instinct and will, clear anticipations of later and of present day doctrines of the 'unconscious' and the 'sub-conscious'.

The notion of the Ego as self-determining activity became the central principle of Fichte. Finally he used the term 'Life' in place of Absolute Ego; using the term much as Bergson uses 'E lan vitale.' "I ascribe to myself a real active force--a force, which produces being and which is quite different from the mere faculty of ideas. The ideas or plans, usually called ends or purposes, are not to be considered, like the ideas of cognition, as after-pictures of something given; they are rather forepictures, or exemplars of something to be produced. The real force, however, does not lie in them; it exists on its own account, and receives from them only its determinate direction, knowledge looking on, as it were as a spectator of its action [see Hegel, Hegelianism and Personality, p. 153] quoted by Drever, Instinct to Man, p. 61.] Here we see Fichte as forerunner of Schopenhauer, von Hartman Bergson.

The instinct gives the universal, the rule; the intellect, the particular, the application.

INSTINCT VIEWED HISTORICALLY

SCHOPENHAUER

For Schopenhauer, Kant's 'thing-in-itself' is Will-- that which is the inner nature of everything. [Schopenhauer. Die Welte also Wille and Vorstellung, trans. by Haldane and Kemp Vol. 1. p. 153.] From the side of intellect the world is only Idea (op. cit. Vol. 1. p. 5); its inner reality is teleological activity or Will, identified with every kind of active and operative force in nature--in inorganic nature, in the organic and vegetative changes of the animals, as well as to our own self-conscious nature (op. cit. Vol. 1. p. 143).

What is the place here of instinct? In the case of animal life the will may be set in motion in two ways--from without, through motivation, and from within, through instinct, although instinct does not spring entirely from within. Its action depends upon some external determining circumstance. Hence, even where such action is most mechanical, though primarily dependent, upon instinct, it is yet subordinated to intellect, ~~the particular, the application.~~ (op. cit. Vol III p. 96-98.) These somewhat obscure statements mean nothing more than that instincts ^{are} hereditary or unlearned forms of behaviour, and that instinctive reaction is modified by learning.

The difference between this mechanical tendency of instinct and ordinary organic processes in animals is that in the latter case the will acts 'perfectly blindly, in its primary conditions.' They cannot both be subsumed under the ^{lies} conception of knowledge 'apriori' because their source ~~lies~~ deeper, in the will, as the thing-in-itself, the inner reality above spoken of. As such it remains free even from the forms of knowledge (op. cit. Vol III. pp. 101-104). One can find Freud in this.

VON HARTMANN

Von Hartmann tries to reconcile the philosophy of Schopenhauer with that of Schelling and Hegel by placing beside Schopenhauer's unconscious Will, the unconscious Ideas. "The unconscious Will of nature eo ipso presupposes an unconscious Idea, as goal, content, or object of itself". [Von Hartmann, Philosophy of the unconscious, trans. by Coupland. Vol. 1, p. 39.] Instinct is one of the manifestations of the unconscious, both as Will and as Idea. Instinct is purposive action without consciousness of the purpose. It is conscious willing of the means to an unconsciously willed end, (op. cit. Vol. 1. pp. 79-88). We may explain it as a mere consequence of corporeal organization, or as a cerebral or mental mechanism, or as a

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cerebral or mental mechanism, or as a result of unconscious mental activity. The first two views he ~~rejects~~ subjects. Instinct is conscious willing, or volition, not as mere mechanism, but conscious willing conditioned by an unconscious purpose. Unlike reflex action, it is marked by emotion, and there is consistency in carrying out the intention. But conscious willing cannot explain instinct. There must be unconscious ideation and volition, an unconscious purpose, to explain the connection between the sensuous presentation as purpose and the conscious will to some particular end. The causal connection cannot come from experience, mediating through the consequent pleasure nor from conscious volitional activity, for on this basis we could never account for the instinctive actions of the lower organisms. (op. cit. Vol. 1. 61, 87, 88, 93).

The unconscious knowledge underlying instinct is of the nature of Clairvoyance and manifests itself as "Clairvoyance intuition" (op. cit. 106, 107). Clairvoyance explain the nature of instinct-knowledge. This Clairvoyant intuition is, the characteristic attribute of the unconscious. Summoning up Von Hartmann finds that instinct is not the result of conscious reflection, nor of corporeal, cerebral, or mental mechanisms, but of the conscious activity of the individual, "springing from his inmost nature and character," that the end towards which the activity is directed, is not conceived by an external mind, or Providence, but "unconsciously with will and imagination by the individual and the suitable means unconsciously chosen; and that the knowledge involved in this unconscious cognition, which is frequently such as could not be obtained from sense perception, is of the nature of Clairvoyant intuition. It is necessary that the instinctive action itself should be vividly realized in consciousness, in order that the necessary accuracy of execution should be secured, but it is the execution only that is conscious. (Drever--instinct in man, p. 66.)

On the other hand, conscious thought makes possible "the emancipation of intellect from the will". The apparent errors of instinct are the errors of consciousness, not of the unconscious, but all progress depends upon the extension of the sphere where consciousness prevails, making possible the "liberation of consciousness from the sway of passion and interest", that is of will (Von Hartmann, Philosophy of the Unconscious Vol. 11. P. 59).

The function of instinct in nature is three fold: the presentation of the self, the presentation of the race, and especially the perfection and ennoblement of the species (op. cit. Vol. 11 pp. 55. 56.)

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The function of instinct in nature is threefold; the presentation of the self, the presentation of the race, and especially the perfection and ennoblement of the species (op. cit. Vol. 11, pp.55-56). The progress of the human race, individual, social, and national, the appreciation of the beautiful, the development of science and philosophy the satisfaction of the deeper spiritual needs of the heart,

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all derive their driving force, their interest and will from the will and idea of the unconscious.

Is not this the dynamic theory of instinct (Starch, Educational Psychology, pp. 13. 14. 15.), which is the view expounded by McDougall in his Social Psychology? In Von Hartmann, too, one may find the Freud's concepts, and his "Clairvoyant intuition" appears again in the thought of Bergson.

Again, recalling VonHartman's three-fold division of the function of instinct given above, we find Rutgers Marshall classifying instinctive tendencies into three ~~freud~~ divisions determined by the laws of organic development;

(1) Instincts which function to the preservation of the individual organic life;

(2) Instincts which function to the preservation of the species to which the individual life belongs;

(3) Instincts which function to the preservation of those social groups which we discover among many species of animals and which appear most markedly in the highest animal-man. (Rutgers Marchall-Instinct and Reason p. 102.). We have here the instinct of self-preservation, the instinct of reproduction and the social instinct, this being the classification of instinct of popular speech, Stout (Manual Psychology) has practically the same classification. The weakness of such classification is the generality of it,

Following VonHartmann is a long and unprofitable period occupied by phrenologists and pre-evolutionary physiologists.

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CHAPTER V

INSTINCT AND PSYCHO ANALYSIS

Sex instinct from the standpoint of the ^{Freudian} ~~Greadian~~ psychology is comparable to the philosophical "will-to-live" of Schopenhauer or to the Elan Vitale of Bergson. To Freud it is the basal instinct of life. It comprehends hunger and sex as primarily identical and embraces still other instinctive impulses and their accompanying emotions as partial impulses (Partialtriebe) which have become specialized and seemingly dissociated from the original sex impulses through psychic evolution. In Freud's words, "We reckon to the sexual life also all activities of tender feelings which have proceeded out of the spring of sexual emotions, even if these emotions have experienced an inhibition of their originally sexual aims or have exchanged this aim for another less sexual." This imperative sex instinct or impulse Freud calls the "libido." As Von Hartmaun conceived Schopenhauer's will-to-live as unconscious, so Freud conceives his libido as unconscious.

Cultural repression is an obstacle to the fruition of the libido. These impediments do not annihilate the libido but cause mental disturbances or psychoneuroses appearing as hysteria, anxiety-neuroses and the like. The libido in its struggle with the inhibiting effects of consciousness makes use of psychic mechanisms:

1. Sublimation -- A process by which the repressed libido escapes the endopsychic censor of consciousness in the guise of a more refined impulse as spiritual love.
2. Transposition of feeling or ambivalency of emotions, where one emotion is transformed into its opposite, as love into hate.
3. Dreams, day-reveries, slips of the pen and tongue, unconscious word associations, symbolism, religion, myth and comic--all channels of escape for the libido.

COMPLEXES.

Ideas sensory and conscious in origin have infiltrated to the unconscious realm and are associated according to their affective or libido-value into large

idea systems, Freudian constellations or complexes, a sort of fusion of libido and idea, making for their dynamic value.

(Sumner, Psycho analysis of Freud and Adler, Pedagogical Seminary, Vol. XXIX. No. 2.)

One can see here the suggestion of the Herbartian apperception process.

Considered in its literal signification, a sentiment, as defined by McDougall is a complex. The latter term, however, has come to have a specialized meaning in psycho analysis and psychiatry and has taken on a morbid connotation. It is connected with repression, whereas sentiments are connected with consciousness and may be systematically built up in orderly fashion. As Rivers puts it (British Journal of Psychology. Vol. XIII. No. 2.) complexes are protopathic, sentiments epicritic; or as expressed by Pear, complexes, in this limited sense, belong to the untidy aspects of mind. While both sentiments in McDougall's sense and complexes in the psycho analytic sense have an instinctive basis it becomes of practical convenience to limit the term complex to repressed complexes and to use sentiment with reference to the non-suppressed, though it must be understood that sentiments, epicritic though they may be, may become suppressed.

CHAPTER VI

MINOR THEORETICAL ASPECTSOther Theories with Regard to Instinct.

The literature of Instinct is so vast in extent that it is impossible to expound or to criticize all the theories which have been held or which still are held. A few viewpoints remain, however, which appear so frequently in the literature of the subject as to make reference to them necessary.

The Transitoriness of Instincts or Nascent Periods.

According to this theory instincts appear suddenly, and if not allowed to manifest themselves they disappear never to recur. The business of the educator is to watch for these nascent periods and then to "strike while the iron is hot" (James). So there are optimum periods for the study of every art and science, when the most progress can be made, and failure to do this means the atrophy of the capacity. This theory is associated especially with the name of Stanley Hall. (Stanley Hall, Youth, p. 236).

The element of truth in this is stated in other terms by Thorndike as the "Law of Readiness," together with the "Law of Effect." When a neurone is ready to conduct, it will conduct, and to do so is satisfying and this strengthens the bond. Obviously an instinct cannot come to activity before the neuron connections have reached the necessary development. On the other hand the experimental evidence is all against the theory of the disappearance of an instinct because of lack of stimulus at its so-called nascent stage (Starch, Educational Psychology, pp. 19-23).

The Recapitulation Theory of Instincts

This is the theory that the instincts appear in the child in the order in which they appeared in the evolution of the race. It applies to instinct the familiar Biogenetic law that the ontogeny is the recapitulation of the phylogeny. Essentially the same idea is the Culture-Epoch theory of the Herbartians.

This theory of recapitulation is another favorite of Stanley Hall. (Adolescence, pp. 202-203.)

There is doubtless good ground for the Biogenetic law as applied to embryonic anatomy. But it is pure ideology to apply it on the psychic level to human in-

instincts. As a matter of fact we find coexisting instincts of many conflicting kinds, and we find instincts which flourished from the very beginning of the race having their nascent period late in the individual; e.g., the sex instinct. Once begin to examine the theory with reference to particular instincts and we find it breaking down.

ORIGIN OF INSTINCTS.

A. 'Lapsed Intelligence.'

This follows from the Lamarckian account of Evolution. Instinct is originally a character consciously acquired and established as a habit, in successful adaptation to an environment, and then transmitted to descendants. This inherited character is similarly modified by later successful adaptations, which likewise are transmitted. So a complex instinct is formed and transmitted as gradually changing 'race habit.' This view is supported by Ribot, Preyer, Wundt, Schneider, Herbert Spencer (Drever, *Instinct in Man*, p. 79), Bolton (*Principles of Education*, pp. 197-211) quotes many examples from Cope, Brewer and Eimer in support of this theory. The theory implies the doctrine of the transmission of acquired characteristics. If acquired characteristics can be transmitted, the origin of instincts is easily explicable.

B. Natural Selection.

The Darwinian view is that Instinct is due mainly to the operation of natural selection upon accidental or spontaneous variations. This is a much less facile explanation than that of lapsed intelligence. From the side of mechanism it makes instinct a chain of reflexes (Spencer), each occurring by chance and then transmitted, and the integration of the separate elements of the chain likewise is the ~~result~~ ^{result} of chance, producing an advantageous and transmitted variation. The difficulty in this is that it is the last step in the chain which is of value and gives meaning to the first elements, and so how could the first steps in the chain have been preserved because of a value for them which had not yet arisen?

However Weismann is his "Continuity of the Germ Plasm" has argued against the transmission of acquired characters. His view is the accepted view of biologists of today, though I am imperfectly convinced. But if one is to follow biological orthodoxy he must frame his views of the origin under the handicap of Weismann's doctrine. On this basis the mechanism of their origin is this expressed by Warren: Each separate reflex appeared in the first place in connection with some chance variations of nerve structure; the variation was selected and has survived because it is suited to the needs of the creature. The grouping of reflexes into instincts is also the result of

structural variations due to chance, which have survived on account of their utility. If a new combination of reflex paths, brought about by a chance variation in growth, prove especially fitted to preserve the animal's life, it has a greater chance of surviving and being transmitted to posterity.

The combination of reflexes into co-ordinated instincts is due to the growth of the fibers of their constituent neurons in certain directions. If the motor neurons of one are growing in such a way that their effect on co-operate with the receptors and sensory neurons of another are, the two may act together and bring about instinctive activity.

(Warren-Human Psychology pp.103-104).

This gives us so far a purely reflex theory. Romanes adds the element of consciousness: "Instinctive behaviour is conscious and adaptive action, antecedent to individual experience, without necessary knowledge of relation between means employed and ends attained, but similarly performed, under similar and frequently recurring circumstances, by all the individuals of the same species," (Romanes, Animal Intelligence p.17).

A new instinct would arise by natural selection in some one individual animal. The theory of natural selection requires us to believe that this new instinct gave to this particular animal and its descendants an advantage in survival, so that the strain possessing this advantage would be the struggle for existence survive and those lacking it would be eliminated, until at last all the living members of the species would have this instinct.

Theory of Organic Selection

This theory, attributable to ^{Lloyd} ~~Day~~ Morgan, H. F. Osborn, and J. M. Baldwin is based on the notion of the possible coincidence in tendency between congenital variations and adaptive modifications, developed by the individual and with cumulative force from generation to generation. The giraffe may have had an "urge" towards a longer neck, and congenital variations leading in that direction would be reinforced with cumulative force from the giraffe's own striving. On the other hand, the rats whose tails were cut off, in the classical experiment, had no desire to have their tails cut off. There was no coincidence between "urge" and traumatism, and so each new generation had tails just like their ancestors. The theory of organic selection is to me more credible than that of natural selection above. alone.

CHAPTER VII

CONCLUSION AND EVALUATION OF THE CONCEPT.

The simplest living animal organism, say Amoeba, displays in its protoplasmic structure the fundamental characteristics of motility, irritability and conductivity. It responds to stimuli; it is acted upon by the environment; not only that, but as a living organism it reacts to the environment and maintains itself against it. It has the *élan vitale*, which characterizes all life.

In the discussion which follows there are two fundamental principles which are to be presupposed throughout:

1. The idea of the evolutionary origin of the more complicated forms of life, growing out of the more simple and less differentiated beginnings.
2. That in this evolution there is the working out of an immanent life impulse, an evolutionary *nisus*; that this development is teleological in character, and is to be interpreted in terms of Hegelian self-realization.

So then we have the activities of Amoeba containing within themselves all the 'promise and potency' of the highest human activity. Already life has its fixed modes of activity. The *élan vitale* manifests itself in two main functions; in food getting, or ingestion, by means of the movements of its pseudopods, and its reproductive activity, in the form of simple binary fission. This points to Freud's doctrine of Sex-Hunger as the fundamental instinct.

Just as from the relatively formless amoeba there develops by differentiation the complex morphology of the higher forms, so from the irritability and conductivity of Amoeba develops the highly differentiated nervous system of the higher organisms, and their highly complicated psychical organization. All this is a process of specialization. The response of low forms is a response of the whole body; there is diffusion. But differentiated responses finally develop, and so to characteristic situations characteristic responses are made. Reflexes are such modes of response, in which consciousness does not occur or is not an essential factor. Instincts are characteristic modes of response involving consciousness. The *élan vitale* shows itself in these differentiated and characteristic modes of response.

One cannot but feel that too much mystery has been made of the whole subject, and McDougall has contributed his share. It is a fact that our conscious life —

activities take definite and characteristic forms; that in certain situations it is our nature to act in certain ways. We do so act because a living organism is active. Then we describe and classify these modes of activity and call them instincts and say that they are the causes and driving forces of our activity, whereas they are only names which distinguish the different forms of activity. And that is all there is to the dynamic theory of instinct.

As I have said, and as Romanes said long ago, consciousness is essential to an instinct. Without it, there would be but a chain of reflexes. This relation of instinct to consciousness, that is, the relation of instinct to knowledge, has led to interminable discussion. Much of the trouble comes from the popular notion that instinct and knowledge are of two different realms. The desire of theologians of the last century to make a gulf between man and the "brute creation" has contributed to this idea and Bergson in recent times has made the distinction, and talks of the intuition or clairvoyance of instinct. McDougall has pointed out that there is a cognitive, an affective and a conative aspect to instinct. There is a cognitive, an affective, and a conative aspect to my consciousness of the pen with which I write. Drever becomes impatient with the discussion and declares, after examining instinct in insects, "we have no right to speak of Knowledge, in any psychological sense of Knowledge, beyond the knowledge involved in perceptual consciousness.----Psychologically the only possible interpretation of instinctive behaviour seems to be in terms of specific impulse determining specific act, on presentation in perceptual consciousness of a specific situation". (Drever, *Instinct in Man*. p.107).

This theory of perceptual consciousness is part of a three level theory of consciousness. First is the purely perceptual level, where instinct functions. In the next level perceptual consciousness is no longer confined to presentative but contains also representative elements. In the third level "there is 'noetic' relating and synthesis of the perceptual elements, to one another and in a conceptual whole, whereby the underlying impulse itself, rather than the separate particular impulses, may become clearly conscious, in its relation to the final term of the series which has become conscious end" (Drever, *op. cit.*, p. 97).

To this I raise no objection; the distinction has practical advantages. But conception is implicit in perception, though it becomes explicit, no doubt, by noetic relating and synthesis of perceptual elements. Such relating and synthesis is the work of intelligence

on the higher level, the level of thinking. The perceptual knowledge mentioned is the intuitive knowledge of Bergson, ^{and} ~~and~~ it is nothing but the ordinary perception of elementary psychology. Manifestly one cannot respond to a situation, above the reflex level, unless he perceives it. So there is no mystery about instinct-knowledge. One may reasonably say that from the point of cognition, the theories of instinct contribute nothing of value, and nothing new. From the standpoint of action--conative aspect--the conception is confusing. The fact that man does act in such and such a fashion has been made the cause or driving force impelling him to act. Post hoc ergo propter hoc. From the affective aspect much of value has been contributed in McDougall's analysis of emotion, and his development of the primary emotions into the more complex ones. This analysis and the applications of it throw great light upon the affective nature of man and form the most valuable of all the discussions upon this subject in several centuries of writing.

B I B L I O G R A P H Y.

- Bergson -- Creative Evolution--MacMillan Co. London 1911.
pp. 142-185.
- Drever -- Instinct in Man--Cambridge Univ. Press, 1917.
passim.
- Erdman -- History of Philosophy--Trans. by W. S. Hough,
London 1891. Vol. II p. 195.
- Hall G Stanley -- Youth. p. 236. Adolescence pp. 202-203.
- Marshall Rutgers. Instinct and Reason. London 1898.
p. 102.
- McDougall, W. Social Psychology. Methuen, London 1921.
pp. 19, 20, 37, 46, 121-122, 120-173.
- Rivers, W.H.R. Sentiment and Complex--British Journal of
Psychology, Vol. XIII, Part 2, Oct. 1922, pp. 107-112.
- Romanes -- Animal Intelligence. London, 1882. p. 17.
- Sumner, F.C. Psychoanalysis of Freud and Adler. Pedagog-
Seminary. Vol. XXIX, No. 2, Worcester, Mass., June 1922.
pp. 139-167.
- Schopenhauer -- Die Welte als Wille und Vorstellung. Trans
by Haldane and Kemp, London, 1886. Vol. I p. 153.
- Starch, D. Educational Psychology. MacMillan, New York,
1921. p. 13, 14, 15, 19-23.
- Stout. Manual of Psychology. London 1913.
- Thorndike, E.L. Educational Psychology, Briefer Course,
Teachers' College, Columbia Univ. 1921.
pp. 1, 4-10, 50-58, 132-133, 138-152.
- Von Hartman, Philosophy of the Unconscious. Trans. by
Copeland. Vol. I, pp. 39, 55, 56, 59, 61, 79, 87, 88, 93.
- Warren, Human Psychology. The Houghton Mifflin Co., Bos-
ton 1919. pp. 92-111.
- Watson, J. B. Psychology from the Standpoint of a Behav-
iorist, Lippincott, Philadelphia and London, 1919.
pp. 194-268.
- Woodworth, R.S. Psychology. Henry Holt and Co., New
York 1921. 299-301, 409-413.