THE NATURE OF MENTALITY

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Mentality as Adjustment

Recent investigations of the unconscious phases of the mind have brought forth much valuable material; but they have sometimes suffered from what appear to us to be inaccurate concepts of mentality. We would like to approach these valuable findings by way of a preliminary statement of the nature of mentality as we wish to have it understood.

Mind or mentality means a certain mode of doing things on the part of an organism. An organism has other ways of doing things besides that way which constitutes mentality. The building up of waste tissue by way of the blood is not a mental process, nor the healing of a wound, nor organic growth in any form. Mentality on the other hand appears in writing a poem, building a house, mowing a lawn or organizing a social campaign. What then is the difference between these mental activities and that sort of behavior which is not mental? We must take a concrete example in order clearly to define the nature of mind.

When I endeavor to sketch the likeness of a man my whole mind is absorbed in the undertaking, for, while I am no artist whatsoever, I am very earnestly desirous of making it as perfect a representation as possible. Making such a sketch is a very clear case of mental operation. Of what does this mental action consist? It consists in the first place of tentative efforts to draw the man before I venture to mark the paper. I am actually moving my muscles and adjusting my whole nervous system in such a way as to make very slight movements, so slight as to be imperceptible to the naked eye, but movements, nevertheless, by which an imaginary outline is made supposedly representative of the man, before ever I

put pencil to paper. If a delicate instrument were attached to my hand in such a way as to record these movements, the tentative picture-making efforts would be revealed, although they are so slight that the naked eye cannot see them. Mental effort is nothing else than organic effort of this most delicate and tentative form. Mentality is that process by which we adjust the physical organism preparatory to some overt action upon the environment. When the organism is already adjusted by reason of some innate mechanism, hence no preparatory adjustments being required, there is no mentality involved. Such is the heart beat, the respiration ordinarily, digestion, the knee jerk, etc.

When the words "Draw that man" first fall upon my ears a number of physiological processes are stimulated to activity. Any one of these several tendencies, if isolated from the others, might be executed without the exercise of conscious mentality. But since they are simultaneously aroused they hold one another in abeyance because of their disorganized condition. They interfere with one another. In order to be executed they must be adjusted to one another in such a way as to constitute an orderly consecutive scheme of operation.

But our analysis is not yet complete. Thus far it would seem that the words "Draw that man" simply aroused a chaotic medley of tendencies. There is nothing inherent in such a chaos that would tend to reduce it to a definite scheme of procedure. If our analysis stopped at this point the inevitable conclusion would be that mind was some sort of mysterious entity that worked upon this chaos from without, reducing it to order. Yet this is precisely the conclusion that scientific psychology wishes to avoid.

As a matter of fact the operation of drawing the man does not require of me that I organize a system out of chaos. Previous mental operations of mine have long since established a certain system of tendencies which, in the form of an established system, is excited when the words "Draw that man" fall upon my ears. This system is more or less indefinite to be sure. In order to be executed on any particular occasion,

new tendencies, which may be aroused for the first time on that occasion, must be assimilated to it, and other tendencies which have previously inhered in it must be excluded or re-adjusted. Nevertheless this preëstablished indefinite system of tendencies constitutes a dominant propensity which serves as a governing agency in the process of drawing the man. The process of adjustment which constitutes mentality is the process by which numerous newly aroused tendencies are assimilated into this propensity, and the propensity itself modified, to the end that it may be fulfilled or executed.

Such a mental process stands in marked contrast to a non-mental one, such as that of a healing wound or metabolism. In the latter operations there is no organization of tendencies into a novel scheme which has never before been executed. On the contrary there is only one established and relatively invariable system of operation. In case of mind there are many different activities which tend quite as much to frustrate as to supplement the original propensity until they are adjusted to one another and organized into a single system of procedure. In the non-mental there are no frustrative tendencies, nothing requiring adjustment, the organization of activities being firmly established and operating automatically.

But in drawing the man we may have noted that we could pick up the pencil without giving our attention to it. In a sense it was an unconscious act; nevertheless it was a mental act. How are we to distinguish it from the non-mental acts? How can we have an unconscious mental act?

Picking up the pencil is a manifestation of mind because it is an operation which we had to learn. Just as we are now learning how to draw a man, so at one time we had to learn to pick up a pencil. At that time in our early infancy we had to make a great many tentative efforts, a great many movements had to be pruned down, gradually adjusted to one another and finally organized into a coördinated system of behavior by which the pencil could be firmly grasped and directed to the point desired. A great many reflex movements or previously acquired movements were put together

into that new combination which constituted picking up the pencil. Any such combination of movements which at some time in the past experience of the individual has been put together into an orderly system of behavior, is a part of the mind. Whatever has been put together under the control of some ruling propensity, can be taken to pieces again and put together into some other system under the control of some other ruling propensity. This taking to pieces of systems of tendencies and rearranging them and reorganizing them into new systems, is what is meant by mentality.

Many previously organized systems may be incorporated into the system which is in process of formation. In drawing the man we were not required to organize the system of activities by which the pencil was picked up. We found that system already established in the form of a habit and simply appropriated it as a subordinate part of the larger system we were forming. So it is that we are always forming larger systems of action, and in doing so are always assimilating older systems previously formed, some of which must be reorganized in order to adjust them to the new system in process of formation, others of which can be taken over without modification. Mind then consists of all systems of behavior which have been organized at some time during the life of the individual, or are now being organized, out of more elementary modes of behavior.

The prime essential in this systematizing of uncoördinated tendencies which constitutes mentality, is the preëxistence of some established system; for the entire organizing process is simply the process by which this original system of tendencies attains fulfillment. When any system of tendencies thus operates as the central nucleus in forming a new system we call it a ruling propensity. It is plain that the propensity itself is modified in the process of organizing the new system, and this modification may be so great as to transform it quite completely. Or again the process of modification and organization may continue indefinitely without attaining any final fulfillment. In such case the ruling propensity at any given moment in the process is the system evolved out of that

portion of the process immediately preceding. But in any case the existence of a preëstablished system or propensity as a governing motive is indispensable to that organization which constitutes mentality.

If we trace this organizing process of mentality back to infancy we find that in the beginning certain innately established systems or propensities served to initiate the process of mentality. These innate systems are not mental but the process by which they assimilate new tendencies and hence develop into larger systems is mental. These rudimentary combinations of reflexes are the nuclei of instincts. The instincts themselves, however, pass through a more or less elaborate process of development after birth and are organized and reorganized to suit the demands of an ever changing environment; hence they form an essential part of the mind. Indeed they are probably the most important part in as much as they constitute those original propensities to action which force the individual to organize and assimilate a great many diverse movements into a coördinated system in order to carry the propensity to fulfillment.

The manner in which such a propensity forces the individual into the mental process of organizing a multiplicity of movements into a coördinated system has been excellently demonstrated by an experiment described by E. L. Thorndike.[1]

A kitten is placed in a box made of slats between which she can look out. The door is shut and is fastened with a small piece of wood falling into a slot. So far as the kitten's physical ability is concerned she could open the door with ease, had she sufficient mentality. When she becomes hungry a piece of fish is placed in front of the box beyond her reach. Immediately the food-getting propensity is aroused. That means that certain glands are excited so that the gastric juices begin to pour into the stomach, the salivary glands begin to secrete, the swallowing apparatus acquires a certain tonus or readiness to act, the seizing apparatus of claws, fore-

[1] E. L. Thorndike, 'Educational Psychology,' Vol. II, 'The Psychology of Learning,' p. 9. Cf. also R. B. Perry, 'Docility and Purposiveness,' PSYCHOL. REV., 1918, 25, pp. 1–10.

legs and jaws are slightly innervated, etc. This is the food-getting activity at the initial stage of operation. This is what is meant by the excitation of an original propensity.

But this propensity cannot get beyond this initial stage of futile excitation as long as the box door intervenes between the cat and the fish. Hence the propensity must continue in a state of excitation and the energy which is released by it must stimulate many other movements. Excitation of these other activities appears in the form of restless movements to and fro, clawing at the cage in all manner of ways, biting, rubbing, mewing, pushing etc. All these represent subordinate tendencies which have not been previously established as an essential part of that system constituting the food-getting propensity, but which are aroused now because of the accumulation of stimuli to which the kitten is exposed when she cannot reach the fish which lies so closely in front of her. Finally, quite by chance, the kitten happens to claw the latch in such a way as to open the door and gets the food.

She is again confined when hungry and goes through the same process, and likewise again and again. But the number of scratchings and other movements, which are carried out before the door is opened, rapidly become less and less. After a time, when so confined, she promptly puts her paw upon the stick, opens the door without any such superfluous movements as random clawing and restless darting to and fro. She has organized a definite system of movements by which she is able to procure the fish. She would never have been able to accomplish this organization but for the fact that: (1) She was impelled to seize the food by the original food-getting propensity (instinct); (2) Other secondary activities such as clawing, walking about, etc., were aroused, in part independently of the food-getting impulse by reason of stimuli which acted directly upon them, in part dependently upon the food-getting impulse by reason of more or less indefinite relations to that system; (3) This original propensity remained in a state of excitation until it had assimilated into a single system with itself all those movements which were necessary to its satisfaction and let fall into desuetude

all those which were not necessary, and thereby developed a system which included just those activities which open the door and no others.

Had the kitten a higher mentality the subordinate tendencies, such as mewing, scratching, moving about, might have been so numerous and diverse, or have been aroused so nearly at the same time, as to prevent one another from issuing in overt action. In such case they would have been maintained in the form of slight physiological processes, producing a labile interplay of tentative adjustments and nerve discharges until some sort of arrangement of activities had been evolved which would serve to open the door. Not until this arrangement of activities had been organized as a motor set of her organism would she have exerted her strength upon the box to obtain release. This mode of behavior would have represented a higher degree of mentality than the actual procedure which the kitten did carry out. It would have been higher not merely because the heterogeneous movements were restrained from exerting their full physical effect upon the environment until the scheme was worked out, but because this restraint made possible (or resulted from) a much more rapid transition from one kind of tentative movement to another and consequently the arousal of a far greater number and diversity of innervations and adjustments. But in any case the original propensity, making all this possible, would be an instinct.

Subconsciousness

It is apparent that any system in process of formation may include a great deal which is unconscious. All subordinate systems which are included in the one being formed, but which have been organized in the past and require no further modification, would be unconscious portions of the evolving system. Such was the system of picking up the pencil, as a subordinate part of the larger system of drawing a man. These unconscious supporting systems are always far more extensive than the individual is aware. The focus of attention is never very extensive and always consists of those ac-

tivities which are being most rapidly and critically reorganized. There may be other portions of the system which are undergoing modification at the same time as that at the focus of attention, but at a less rapid rate and of less critical significance to the system as a whole. But the total system, including all the supporting systems which are semi-conscious, co-conscious and unconscious, is far more extensive than the individual ever imagines. To use Stanley Hall's analogy, the mind is like an iceberg, seven eighths invisible (unconscious), and the motive force which impels a man to act as he does is the total force of the entire system, only a small portion of which appears in consciousness. When we refer to any such entire system it will be understood that we mean to include all these unconscious portions, the preëstablished supporting systems which enter into it. How vastly extensive these unconscious portions are it would be difficult to exaggerate, reaching back as they do to the earliest experiences of infancy and comprehending elements as diverse as mathematics and love.

But the unconscious is even more extensive than the range of any total system which at its apex is being developed in consciousness. In all of us there are systems of activities or tendencies to act which are not subordinate to, and do not support, the propensity which rules consciousness. Independent and refractory systems such as these can only arise in a very extensive and complex mentality, hence perhaps never arise among the lower animals; but they are very common among human beings, and particularly among the more intelligent. They do not contribute to mental ability, quite the contrary, for they are a mark of mental disease; but it is a disease which can only appear in a relatively complex mentality.

To illustrate the nature of these independent systems of the mind we might hypothetically endow our kitten with a more highly developed mind than she actually had. Suppose, then, that the kitten at some earlier time in its career had been trained not to eat fish, which would be quite possible with any kitten. This training has established a cer-

tain system of tendencies which, when excited by the sight and smell of fish, impels the kitten to ignore or retreat from the fish, rather than to seek to eat it. Now in the presence of the fish two independent and antagonistic systems of behavior are excited, one controlled by the food-getting propensity, the other by the protective or retreating propensity. Perhaps in the simple mind of the ordinary kitten both systems could not be operative at the same time, but with the more elaborate mentality with which we have hypothetically endowed her, both could be active. The food-getting propensity might dominate over the other quite completely so that the kitten would strive most energetically to get out of the box, but the other system would be active nevertheless in the form of slight physiological processes which interfere with the kitten's efforts to reach the food. In consequence of such interference it requires much longer time for the kitten to get out; or if she does get out with great difficulty for one or two times, she will be much longer in organizing that system of activities which we call learning to open the door, all because of that latent system which strives away from the fish. Here then we have an unconscious system which antagonizes the dominant system. The dominant system is partially conscious, although large portions of it are unconscious. This antagonistic system may be entirely unconscious, and it interferes with the process of bringing the dominant system to a state of efficient organization such that the kitten may be able to open the door promptly. She is frustrated in her efforts by an unconscious system which is part of her mind.

This case of the kitten is altogether hypothetical, but we can take a case from real life, which has been presented by Jung in his 'Analytical Psychology.'[1]

A young lady with a group of friends was walking down the middle of the road when the beating hoofs of runaway horses were heard approaching from the rear. The others stepped to the side of the street and easily evaded the team, but the young lady seemed so frightened that she lost her

[1] C. G. Jung, 'Analytical Psychology,' pp. 359–364. Tr. C. E. Long.

wits and ran straight down the middle of the road directly in front of the horses. Only at the point of exhaustion did she cast herself at the side of the road. Upon investigation it was found that she was not ordinarily hysterical but quite the contrary. Some years before she had been in Russia during a revolution and in the midst of death and other dangers had shown most remarkable self-possession. Why was she so much less capable of escaping from the horses than were her friends? By means of the technique of psychoanalysis the unconscious systems of her mind were analyzed and a propensity was there discovered which had organized about itself a system of tendencies which acted independently of, and antagonistically to, the natural instinctive propensity to escape from the horses.

This antagonistic unconscious system was developed under the following circumstances. The party at the time of the accident was returning from the home of a man with whom the young lady was in love. Circumstances were such that this night was the one supreme occasion, perhaps the only occasion, that she could hope to receive a declaration of love from him. If hurt, she would be carried back to his house. She certainly was not conscious of trying to get hurt, and indeed was not hurt, but the independent antagonistic system which sought a meeting with her lover, was impelling her into one mode of behavior, which was frustrative to the self-saving system which impelled her to escape from the horses. This antagonistic system rendered the self-saving system inefficient.

Freudian literature is full of such cases illustrative of the 'unconscious conflict' between systems of behavior which have become so fixated that they will not yield to that reorganizing process of mentality by which all established systems as well as all newly arising tendencies are assimilated into one comprehensive system under the control of a single ruling propensity. Any such inertia of unconscious systems means a diminution of mentality in as much as mentality is precisely this process of organizing the total mass of physiological processes into one system to the end of fulfilling the

ruling propensity. This process of organization or reorganization requires the transformation in some degree of all the preëstablished systems which enter into the process. Hence any tendency or system of tendencies which resists that degree of modification which is required for adjustment in the newly evolving system becomes the source of inefficiency and of all those phenomena of which the Freudians treat.

However it should be emphasized that conflict per se is not inimical to the most wholesome and highly developed mentality. Indeed quite the contrary is true. There could be no mentality at all, as we have defined it, if there were no antagonism or maladjustment between operative systems of behavior requiring their readjustment and reorganization, for mentality is precisely this process of reorganization and readjustment and nothing else. Conflict, or maladjustment, is the indispensable pre-condition of that readjustment which constitutes mentality. Conflict diminishes mentality and causes misery and inefficiency only when the antagonistic systems are so rigid or inert that they will not yield to the process of reorganization. Mentality is diminished or rendered abnormal not by the antagonism of systems of behavior but by the automatism of such systems. Mentality thrives upon uncoördinated behavior, providing the uncoördinated elements are sufficiently plastic. If every tendency of the organism were perfectly adjusted to every other, mentality would disappear.

Creative Mentality

This relation between the process of mentality and coördinated behavior introduces us to a concept of prime importance. It arises in the answer to this question: Is mentality purely an instrumental process the sole function of which is to achieve coördinated behavior? Behaviorism all too frequently has treated mentality as though this were its sole function. But certainly the question must be answered in the negative.

The inherent function of any given tendency can be nothing else than its own fulfillment. It is not essentially a means

to any end unless that end is its normal fulfillment. The inherent function of growing grass, for instance, is certainly not to provide food for cattle. The inherent function of mentality is the achievement of coördinated behavior only in case such behavior is its normal fulfillment. Undoubtedly this is the normal fulfillment of a certain type of mentality. It might seem to be the only fulfillment in so far as we have treated mentality thus far. But we now wish to distinguish a second type of mentality.

Human beings manifest not only the process of organizing tendencies into coördinated systems, but they also display a process of organization which never produces a completed and final coördination, but continues indefinitely seeming to find no other fulfillment than the progressive evolution of a system which is never completed and never sufficiently coordinated to issue in overt action. This is the second type of mentality to which we refer.

Hence our analysis reveals two types of mental process. Orthodox behaviorism has restricted itself almost entirely to the study of one of these types only. But the second type is also quite in accord with its principles. The first type may be distinguished as a process which fulfills itself in the organization of some ultimate coördination of tendencies. It always culminates in some specific mode of interaction with the environment. The second type of mentality is a process which continues indefinitely, evolving some system of behavior, or series of systems, which never results in any ultimate adjustment. Adjustments may be made, issuing in overt action, but they are incidental to the further development of the given system; they are not ultimate adjustments.

In the first type of mentality, which we may designate as instrumental, we have seen that that mechanism by which the organizing process is controlled is some definite propensity which tends to bring itself to fulfillment by this very process of assimilating to itself all other tendencies and systems. We must now analyze the second type of mentality, which we shall designate the creative, and ascertain the mechanism by which the organizing process is directed.

This second type of mentality, the creative, arises out of an equilibrated conflict between two or more modifiable systems of behavior which keep one another from fulfillment and by reason of their mutual frustration constitute a continuous stimulus to the progressive outgrowth of new systems or the continuous evolution of some given system. But such a statement is hardly clear without an illustration.

Professor E. B. Holt, in his 'Freudian Wish,'[1] has made use of an excellent illustration for a different purpose. But it is especially adapted to our needs because Professor Holt has analyzed it solely in the interest of what we have called instrumental mentality. If we can show that the same data might also give rise to creative mentality, the two types of mentality will be set over against one another in clear cut distinction against the same background.

A man who is fond of mushrooms finds some while walking in the woods. But he recalls that some species are poisonous. He then experiences a conflict between two propensities, the one to eat what tastes good, the other to avoid poison. Shall he go on past the plants, casting backward many longing reluctant glances, or shall he sit down to eat with constant qualms and tremors of fear which quite destroy the enjoyment of the repast. If he follows either one of these two courses we have a case of conflict between two independent but maladjusted systems of behavior, the one seeking mushrooms, the other retreating from them.

Up to this point there has been only that slight degree of mentality involved in organizing each of the two independent systems. A much more complicated process will be required to adjust the two to one another. There are two possible methods of adjustment, illustrating respectively the instrumental and the creative types of mentality. As we have indicated, Professor Holt recognizes only the instrumental, although he does not use our terminology.

The adjustment which reveals instrumental mentality consists in dissociating the two systems and preserving them as independent and automatic propensities having no rela-

[1] E. B. Holt, 'The Freudian Wish,' pp. 125–8.

tion to one another. This is accomplished by learning from some infallible authority the precise marks of distinction between good and bad mushrooms. Thereafter every mushroom will be either good or bad. If the mushroom is seen to be edible, the food-getting propensity will be aroused and that only. The retreating propensity will not be excited and hence will not interfere with the eating propensity. If the mushrooms are plainly poisonous the retreating propensity will operate without interference from the antagonistic system, because the latter will not be active.

It is plain that this method of adjustment, the method of dissociation, does not involve any extensive reorganization of the two systems. Only that slight degree of reorganization is exercised which is necessary to bring about complete independence and automatism of the two systems. With this method mentality is exercised only to that minimum degree necessary to satisfy the original propensities by eliminating the conflict between them, and as soon as that is accomplished mentality ceases except as it may be exercised in eating or retreating. Conflict, the stimulus to mentality, is regarded as the great evil from which escape is sought.

But there is another method of adjustment which could be applied. This alternative method would consist in developing the antagonistic reactions to mushrooms until the systems of tendencies began to organize themselves about this plant, constituting, say, the scientific interest of botany. This new system of behavior, botanical investigation, instead of serving merely to dissociate the two original systems of fear and desire, becomes itself the predominant system comprehending these two original ones as subordinate functions of itself. Instead of mentality serving to satisfy fear and desire and then ceasing, fear and desire serve as motives to a progressive process which quite completely subordinates the original propensities. (Have not all the sciences arisen in some such fashion as this?)

Or again, the new and comprehensive system which arises out of the mutual frustration of the two original propensities may be that of psychological investigation. One may ob-

serve his reactions to mushrooms and find positive satisfaction in the conflict of tendencies because they serve to enlarge his system of psychological comprehension.

Or again, the new system which arises out of the reorganization of the primitive propensities may be that of humor. The whole experience with mushrooms reveals its humorous aspect. The two original reactions may remain, perhaps in a state of mutual frustration, but as constituent features of a humorous episode. (Here again may we not ask if all wit is not some such spontaneous reorganization of two antagonistic tendencies into a new system which arises so suddenly as to seem to flash into existence by magic, and which subordinates the otherwise meaningless and hopeless conflict to the function of creating this new system. We believe Freud's own interpretation of wit could be developed very readily into this theory.)

Still again, the new system arising out of the two opposing reactions to the mushrooms may be that of an ethical problem, the conflict serving to work out the features of an ethical theory.

So we might elaborate the possibilities of creative mentality arising out of these two conflicting propensities toward mushrooms. Whatever might be its form, and however it might be designated, as botany, psychology, wit, ethics, art, friendship or religion, it would be creative mentality rather than instrumental if it continuously brought forth new systems, or progressively modified some given system, without regard to the fulfillment of any particular propensity or completion of any final system. It is creative because it is directed to no other goal than the bringing forth of new systems for the sake of the process rather than for the sake of a final system.

This type of mentality seems to arise out of the very nature of the mind when two conditions are given. These two conditions are (1) complexity of the mental systems, and (2) their plasticity. In consequence of these two conditions no single system can operate as a ruling propensity, organizing the other systems of the mind under its control to the end of

its fulfillment. On the contrary the dominant system, by reason of its plasticity and the number, strength and diversity of the other systems, is itself modified so continuously and radically as to preclude its issuance in the form of a definite and completed scheme of conduct. In such case the subordinate systems are not passive beneath the control of the dominant system, but the readjustment is reciprocal among them all, the dominant system being transformed as much as they, hence there is no propensity which persistently seeks fulfillment in the form of a final and completed action, such as eating mushrooms or killing the foe or the like. On the contrary the process of reciprocal modification between the dominant system and the subordinate ones goes on indefinitely, producing a process of evolution which seems to have no teleology save the continuous elaboration of the dominant system or of a series of systems.

Of course it is understood that no human being exercises creative mentality alone. Any thing which serves to fixate the dominant system and transform it into a ruling propensity, halting the process of its continious modification and making it the nucleus about which a definite and final system is organized and executed, gives rise to instrumental mentality. Many things may serve to give such rigidity to a mental system. Any strong and persistent stimulus such as hunger or fear will do it. Weariness renders the mental systems inert and so brings the creative mental process to an end. So also does long established habit. Age also removes that plasticity of behavior which is an essential pre-condition for this type of mentality. Among the lower animals the systems of behavior are perhaps never sufficiently plastic for this process of mind. Creative mentality may be the prerogative of human beings.

Summary.—Mentality is the process by which various stimulated tendencies of the organism are adjusted to the execution of a series of movements resulting in adaptation to the environment. Its mode of operation is the organization of diffusive tendencies into a definite system under the control of some dominant propensity having an instinctive

basis. This propensity consists either of an innate series of reflexes or of some system of tendencies which has been organized in the past experience of the individual and which persists as an established physiological motor set.

But where the organized systems of tendencies of the organism are sufficiently numerous and modifiable the process of their reorganization may continue indefinitely without issuing in any final completed system of behavior. Where the process of organization does result in a final system which can be fulfilled in execution, we call the organizing process instrumental mentality. Where the process continues indefinitely, never developing any system which can attain final satisfaction and thereby bring itself to an end, we call the process creative mentality.