

Section II

The Behaviour of the Individual and Motivation

This section of the monograph is treated differently from the rest. It has been possible in other sections to prepare either detailed bibliographies of published work on the study of attitudes to cancer, as in chapter 1, which called for no more than an accurate presentation of what facts have so far been uncovered; or to present a guide to some of the accessible and up-to-date reviews of research in other disciplines, as in Chapter 5, in which our aim has been to refer readers to authoritative compendia of information rather than to provide a substantial commentary of our own.

In the present section, however, dealing with the psychological and socio-psychological aspects of what the health educator and physician must regard as inappropriate behaviour, we have found it impossible either to present a guide to reliable reviews of the situation, or to attempt the task of summarizing all current trends of thinking. There is so much disagreement among specialists within the field of psychology that the nonspecialist would be courting disaster by advocating one line of argument or another.

In this chapter, therefore, we have not tried to give a balanced view of psychological theory, but to present a number of pointers to the explanations offered for certain types of behaviour. Given the format of this monograph, such a review cannot hope to be comprehensive, but we hope it will be stimulating to someone coming new into the field of cancer education and provocative to those who have been involved in it for some time. It is *not* intended for the specialist.

The emphasis throughout is on pointing the way to published work which seeks to explain the barriers to rational action. We know that there are people who, when faced with disturbing signs or symptoms, visit the doctor promptly as a means of resolving their anxieties. But people of this kind are *not* the ones who pose real problems for the health educator. Our concern is necessarily with the people who do not behave in the most sensible way when threatened by the signs and symptoms of disease.

Whenever a health-educator plans a campaign or a lesson, he does so with certain preconceived notions about man's nature and mode of functioning. When he makes appeals of an emotional, rational or other kind, he is, in fact, presuming that man is of such a nature that he will respond to the appeals in a particular manner. The health-educator does not sit down to have a philosophical or psychological "think" about the nature of man as a preliminary to his work, though his campaign might sometimes benefit if he did so. MENDELSON (1964) does precisely this from the point of view of those involved in the planning and directing of public education in safety campaigns; his controversial but stimulating remarks could be read with equal profit by those involved in public education about cancer.

One of the most important reservations to keep in mind in considering any psychological treatise is that the author is dealing with an extremely complex being in an equally complex situation. In consequence, whatever starting point he takes, whatever aspect he considers, whatever concept he uses, and whatever tools or

methods of study he employs, he is limited to a greater or lesser degree in the overall coverage of his subject and in the generality of his conclusions. This should, however, not prevent him from always attempting to see man, his behaviour, and his environment as an interacting whole.

Man is a complex of inherited physical and psychical characteristics and dispositions, able to learn new pieces of behav-

our and concepts, and greatly influenced by his social environment. Such a description of man includes those aspects usually considered by psychologists under the headings of heredity, drives, personality, learning, motivation, perception, cognition, and the social and behavioural concepts of groups, roles, communication, and attitudes. It is with these that we will be dealing in the succeeding chapters.

Reference

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6. Motivation

Probably one of the most obscure and at the same time most important concepts in psychology is that of motivation. It is obscure to the extent that it is ill-defined, and important in so far as it asks the key question of psychology: why does man behave as he does? The definitions of motivation are as diverse as the approaches to this question, and as the differences in emphasis placed on various aspects of behaviour. Psychologists have, however, been interested to a greater or lesser degree in motivation of behaviour as demonstrated by new or increased activity, and/or they have been concerned with the reasons or causes (i.e. the "why") of behaviour.

The structure of those theories concerned with the "why" of behaviour depends to a large extent on the sample of behaviour that is examined. Thus "drive" theories of motivation, that see all behaviour as the effect (direct, or indirect e.g. as a result of learning) of a number of primitive drives (hunger, thirst, sex, etc.), are proposed mainly by those psychologists concerned with lower animals.

On the other hand, those psychologists who are especially interested in man in his social setting will see his behaviour as influenced by his surroundings in the form, for example, of social roles, reference groups etc.

One of the most pervasive ideas about motivation is that it can be compared to a hydraulic system: pressure or level builds up until it flows over in the form of behaviour. Such a view was taken by early psycho-analysts and appears to be generally supported by many theorists and by everyday experience. This, surely, is something of an oversimplification; the inadequacy of the hydraulic analogy would appear to lie in its failure to take into account (1) the effect of learning on the establishment of the hydraulic set-up (often called "equilibration" or "equilibrium"), and (2) the influence of factors external to the person, especially, in the case of man, social influences.

For the present purpose, however, it has been decided to discuss a few important aspects of motivation, rather than to concentrate on theoretical issues.

(i) Conflict

A frequent characteristic of behaviour is conflict, which can be either between possible but incompatible actions, or between ways of doing them (see COFER and APPELY, 1964). Some people are able to resolve conflict by appropriate action, but it is with those in whom conflict is not so resolved that cancer education is most concerned.

Two of the most prominent researchers into conflict have been LEWIN (1931, 1935, 1938; also LEEPER, 1943) and MILLER (1944, 1951; DOLLARD and MILLER, 1950). LEWIN analysed conflict in terms of overlapping fields, forces and directed movements in the psychological space that included the person concerned and all he, the individual, considered to be important to himself. This view led to a classification of conflict into three main types: —

1. *approach — approach*: i.e. the positive attraction of two incompatible goals.
2. *avoidance — avoidance*: i.e. both choices are unattractive.
3. *approach — avoidance*: i.e. the ambivalent situation in which a person is both attracted and repelled by the same object.

These three types of conflict have different characteristics. In the *approach — approach* situation, the conflict is only really a problem to the extent that the attraction to the two goals or objects is nearly equal, since otherwise the more attractive one would soon predominate over the less attractive. The most important characteristic of *avoidance — avoidance* is that the person in such a situation will attempt to flee from both objects, and can only be kept from doing so by means of barriers (physical or psychological). Another characteristic of such conflict is that, unlike *approach — avoidance* and to some extent *approach — approach*, the conflict is never resolved and is often increased. There is often vacilla-

tion between the two undesirable goals. Having said that the conflict is never resolved, two reservations are necessary: (1) that the barriers must remain impenetrable, and (2) the individual may escape psychologically from the situation. An example of such psychological escape is the use of defence-mechanisms by a person who experiences great fear or anxiety whichever way he turns (e.g. a woman's going to see a doctor versus living with the possibility that she has cancer — she may deny that she has any symptoms, or rationalize them away, etc.). A typical reaction of both animals and men in grossly fearful and inescapable situations is to "freeze" and do nothing.

The approach — avoidance experience is perhaps the most common of all; very rarely does an action seem attractive from all points of view. No barrier is involved here, since one is attracted towards the goal, but also kept from it by the repelling force associated with the goal. Even more so than in *avoidance — avoidance*, vacillation is the characteristic of this conflict. Such conflict is particularly interesting in the light of Miller's work in analysing conflict in terms of gradients of approach and avoidance. He has postulated and demonstrated a number of important hypotheses:

- (1) the tendencies to approach or to avoid increase the nearer the person is to the goal; hence more effort is made at the end of a course to obtain a desired goal; but, on the other hand, one backs away more from an undesirable or noxious goal the closer one gets to it. (2) The tendency to back away increases much more than does the tendency to approach, the nearer to the goal one is. A consequence of this is that to reduce the tendency to avoidance (e.g. by removing a frightening warning-signal) will result in a greater lessening of tension than will be obtained by increasing the degree of

attraction to the goal. (3) The strengths of the approach and avoidance tendencies depend on the underlying drives, and so can be varied. Because of the characteristics of the two gradients, changes in either of them will have different results, as mentioned already in (2) (see LEWIN, 1958). A small but important point is that the distance from a goal is not strictly or solely spatial, but psychological or temporal. Important in any situation where there are both positive and negative motivations is the level of achievement to which a person aspires.

Mention has already been made of the vacillation or hesitation that may occur, especially where there is conflict between two attractive goals, or between the attractive and non-attractive aspects of the same goal. This is a sufficiently common phenomenon to merit special mention. In this situation there is a critical point at which the attractive and repulsive qualities of an action will seem equal to the individual. At such a point he will hesitate most, perhaps even stopping altogether. This is the moment of greatest indecision, and thus most crucial in any decision to go on or go back. To continue pursuing a course of action after this point of commitment can result in increased suffering, pain, loss, cost, or whatever is discouraging him from going towards the goal. An example of this would be the build-up of hesitation when someone finds that he has a symptom suggestive of a feared disease. He will hesitate and put off going to the doctor, and when he finally does reach the consulting-room he experiences a mounting conflict between, on the one hand, telling the doctor, with all the possible sequelae of telling (e.g. being told he has cancer, hospitalization, painful treatment, or even death), and, on the other hand, saying nothing and being spared (for the moment!) all such unpleasant results.

There are, of course, those who cope with the situation and find appropriate relief from these conflicts by putting themselves into the hands of doctors whom they trust. Fortunately, there are many such people, but the numbers who do not are still distressingly large, and it is with the psychological background to their inaction that we have been concerned here.

(ii) *Frustration and reactions to frustration*

In considering conflict we have, in fact, been dealing with those situations where one or other possibility open to a person is hindered or frustrated. A great amount of work has been done in studying the effects of frustration in animals and, to a lesser extent, in man.

One of the earliest examples was observed in PAVLOV's laboratories (PAVLOV, 1927): a dog was fed after being shown a circle but not after an ellipse; as the difference between them became less, the animal found it increasingly difficult to discriminate between them, until finally its behaviour deteriorated to such a degree that the effects have been called "experimental neurosis". Without examining in detail the pros or cons of such a description, we can note the interesting effects of ambiguous stimuli which are sometimes associated with reward and sometimes with punishment, and ask whether there are not some similarities with possible symptoms of feared diseases. For a fuller treatment of "experimental neurosis" see WATERS *et al.*, (1960). At the human level, psychoanalysts have attempted to show that neuroses in adult life stem primarily from unresolved conflicts in childhood. There is evidence that conflicts are at the root of psychosomatic ailments.

Although the suspicion of cancer does not necessarily produce the extreme forms of reaction to frustration discussed here, these possible reactions are discussed

in some detail to provide a theoretical background to the problems of those who behave unrealistically when confronted with the threat of cancer. Different research workers have emphasized different reactions to frustration, some of which are considered below:

(a) Repression. This can most easily be described as “motivated forgetting”. The extreme case of this is amnesia which occurs when a motive is too threatening and so results in high anxiety. There is evidence for this in the Yale communication studies (e.g. HOVLAND *et al.*, 1953. See (i) p. 46 of present work) and in studies of perception (see chapter 7), as well as in the classical psychoanalytical writings (see FREUD, 1937). A relevant example is the denial by a cured patient that she has ever had cancer or been told the diagnosis (AITKEN-SWAN and EASSON, 1959).

(b) Rationalization. Another way of dealing with a threatening situation is by explaining away the fear-provoking behaviour. This is called “rationalization”, for which abundant evidence exists in everyday life; for example, the woman who finds “good” reasons for not going to see her doctor, or who finds alternative but less frightening explanations for a possible cancer symptom.

(c) Projection. This, basically, is the placing of responsibility for one’s own unwanted motives (which may be repressed) or behaviour on others. Such a defence is often to be found in prejudiced people who put the blame for their own views on the group they are prejudiced against. An example of this would be a woman who claims that she derived her attitudes opposed to cytological examination for cancer from her doctor.

(d) Aggression. Probably one of the most common reactions to frustration is aggression. Such a reaction is not strictly

a defence mechanism in that it need not be covert, but it is designed to defend the person frustrated, and it may lead to unconscious reactions. For example, the aggression may be turned towards oneself in self-blame, or it may be displaced and directed against something else. Aggression is a frequent component in the reactions of a patient who has undergone major surgery.

(e) Displacement. By this mechanism a person is able to vent his (hostile) feelings on someone other than the frustrating person. This is the basis of the “scapegoat” system. An obvious example of displacement in the field of medical care is the anger which is sometimes visited on doctors when they are unable to help a patient who has delayed too long in seeking help.

(f) Reaction formation. As the name implies, this defence involves reacting to the fear-arousing situation by overtly going to the opposite extreme in one’s behaviour or expressed feelings (while the real ones are repressed). It has been suggested that the good response by people to appeals by cancer organisations for support and for voluntary help might be a case of reaction formation.

(g) Regression. This is *par excellence* a psychoanalytical concept (FREUD, 1949) and refers to the phenomenon of a person who, when faced with a problem, employs methods which were formerly successful but which are no longer suitable. Regression may be seen in a person’s way of dealing with his environment when under great stress. For example, before or after undergoing a major surgical operation, a patient may adopt the purely passive role of childhood in relation to his doctors and treatment (see SUTHERLAND, 1959).

(h) Fixation. The final defence-mechanism to concern us here is the response, or lack of it, to a situation in which the individual moves neither forward nor

back; he appears to “freeze”. This is also a psychoanalytical concept, but much animal-laboratory evidence is available (e.g. MAIER, 1949, 1956) to show the fixating effect of frustration. An example of this type of defence-mechanism would be a man who for a long period of time, and in spite of contra-indications, had recourse to quack-medicines for cancer symptoms.

(iii) *Fear or anxiety*

One of the most potent barriers against escaping from a frustrating situation, and one of the most frequent stimuli leading to avoidance, is fear. MOWRER (1960 a and b) has put fear at the centre of his learning theory; by learning or conditioning it permits a person to anticipate danger, or other noxious situations. It can be detached from its original association with a painful stimulus and, by secondary learning, become attached to new situations. In this way it is a powerful tool and source of motivation. On the other hand, the learning theorists have demonstrated that fear-provoked behaviour is often very resistant to change, even when the painful stimuli are no longer present (e.g. electric shock). Such evidence sheds light on the persistence of human behaviour which is quite obviously maladaptive: it was probably once successful in reducing fear.

Mowrer was influenced in his views by FREUD's theory of anxiety (synonymous here with fear) (FREUD, 1936, 1949). For FREUD, anxiety was central; it was the warning signal that there was danger for the individual from the outside *real* world. FREUD distinguished between real, neurotic, and moral anxiety. In the last analysis all anxiety stems from reality, and FREUD's distinction rests on the psychic media by which it is experienced, but it does have value in distinguishing between fear of the known danger (real anxiety)

and fear of the unknown danger (neurotic and moral anxiety). The individual must take action to reduce anxiety since it is painful to him. If, however, he does not know the source of his anxiety, he can only reduce it by one of the mechanisms we have already discussed — repression, rationalization, etc. It is in this sense that one can say that the reactions of many people to cancer symptoms are neurotic; they are reacting not to the physical symptoms themselves, but to the neurotic and moral anxiety created by false ideas about having cancer. It is with such “unreasonable” and often excessive fear that health-educators and doctors may have to contend.

Without going too deeply into the arguments in support of various lists of basic motives, it is clear that many important “motives” are probably derived, or receive their motive power, from underlying fear.

It is important to stress that we are dealing with fear almost to the exclusion of other basic emotions and motives, not because it is the only or most effective one, but (a) because of its crucial role in matters concerning health, (b) because it is often an easy way to motivate people (but not necessarily to make them act!), and (c) because of its peculiar and often contrary effects. From the earlier discussion of the mechanisms used to defend against anxiety, it is clear that the use of fear as a motivator is quite likely to result in failure if the fear is unavoidable or irreducible by normal means, that is, if all attempts to leave the situation are frustrated and the only possible exits are fear-associated. No-one would deny that fear is a necessary source of adaptive behaviour, particularly when an isolated and immediate action is desired (LEVENTHAL and KAFES, 1963), but studies in several areas of psychology demonstrate its limitations:

Psychologists, in their experiments with animals, have shown that if fear is too intense it is likely to impede rather than assist performance. A "law" (quite old for psychology) was stated by YERKES and DODSON in 1908, indicating a relationship between task-difficulty and optimal level of motivation. *Activation Theorists*, who see motivation in terms of intensity of activation or arousal, have demonstrated that as arousal (e. g. due to "fear") increases, so does efficiency, until an optimal or best point is reached, following which there is a decline in efficiency as arousal continues to increase. (DUFFY, 1932, 1957, 1962).

Communication Studies carried out at Yale (HOVLAND *et al.*, 1953) demonstrated the inefficacy of the use of fear appeals; a more recent study (LEVENTHAL and KAFES, 1963) using antismoking communications has produced further support for this finding. They found that acceptance of a communication increases as the amount of fear increases up to an optimal point, after which acceptance declines as fear increases. We shall deal with this more fully when considering the effects of communications on the changing of attitudes (see page 46 below).

Some workers have suggested (see p. 10 for discussion) that people delayed not out of ignorance of the facts, but out of fear. There is also direct evidence from Russia (ORLOVSKY, 1957) that the use of fear as the stimulus in cancer campaigns was a failure and in consequence was abandoned (see also LA POINTE *et al.*, 1959). The importance of these considerations for health educators is summarized in *Health Education Monographs* No. 6. by R. S. LAZARUS (1959).

Before leaving the topic of fear a word or two must be said about how it is learned. How does a person come to fear a particular thing, or object, or experience? It may be as a result of personal

experience, or via the usual channels of communication that exist in any society or culture, or by association with something that is already feared. In other words, we come to fear something according to the usual principles of learning (see the later section on "learning", page 35).

There are many motivating drives apart from that of fear, which are evident in adult behaviour. Some of these, such as hope, can be seen in relation to fear, or as functioning in an inverse way. There has been a growing realization among psychologists, especially those influenced by psychoanalysis, that man develops beyond the stage at which he is at the mercy of his instincts, and past the stage where he is concerned with bringing them into line with reality; his control increases to the point at which he can take an autonomous, dynamic, and creative stand in respect to his environment and himself. Two forms of motivation which have been the concern of social psychologists to an increasing extent are man's desire to be with other people physically, psychologically, and socially (affiliation motivation), and secondly the level of achievement or success that a person requires of himself (achievement motivation).

Finally, and most important of all, the health educator should not become disconcerted because people do not react in the way we (or any other "reasonable" person) would expect in a particular situation. Men react according to the way *they* see the situation, how it affects *them*, *their* values and possessions, and not according to the logic of the doctor, the lawyer, or even the health educator.

Helpful references for studies of motivation are COFER and APPLEBY'S (1964) excellent book *Motivation: Theory and Research*, ATKINSON'S *An Introduction to Motivation* (1964), also the reviews by MOWRER, COFER, and IRWIN in *The Annual Review of Psychology* for the

years 1952, 1959 and 1961, respectively. McCLELLAND's *Studies in Motivation* (1955) is a useful and interesting collection of readings. For a fuller coverage of the field with contributions from almost every area, the *Nebraska Symposium*

edited by M. R. JONES has appeared every year since 1953 (COFER 1957 surveys the first five of these). For a brief, sound and readily understandable book on this subject the reader may consult MURRAY (1964).

References: Motivation

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7. Perception

Perception refers to the way sensory experiences are assimilated and understood by the individual. BERELSON and STEINER describe it as "the more complex process than sensations by which people select, organize, and interpret sensory stimulation into a meaningful and coherent picture of the world". (BERELSON and STEINER, 1964, p. 88).

The main aspect of perception to be dealt with here is that there is no one-to-one correspondence between what the senses experience as a result of stimulation and what the *person* experiences. Our present task is to examine some of the factors which bear on this.

The first thing involved in perception is the manner in which the person *attends* to his environment. But attention itself is subject to a number of factors. Since it is dependent, to a certain extent, on the senses and supporting bodily functions, it will necessarily be subject to the normal laws of *fatigue* — i. e. attention will be less when one is physically tired, or when one has been at the task a long time,

though length of time is not all that is involved. Interest is the most obvious factor involved in how long we persist in a task and how hard we try at it. The interest involved in attention or vigilance can be affected by whether or not we feel that we may benefit by it, or by our being emotionally involved in it (e. g. because it affects something we value), or by there being a need that may be fulfilled by it — which all boils down to its being sufficiently important to us. A third factor involved in strength of attention is our *expectation* or *anticipation* that a particular event will take place. This factor is synonymous with the concept of "set"; there will be a predisposition to perceive things in a fixed (or set) way under the influence of, for instance, bias, attitudes, prejudice and special interests. This has been discussed by several authors in different terminology, e. g. schema (BARTLETT, 1932), assumptions (AMES, 1955), hypotheses (BRUNER, 1951). Expectation, however, has two sides to it: it will sometimes enable us to observe something which we

would otherwise miss (e.g. we expect to see an unpleasant look on our enemy's face), but it also makes a novelty more noticeable (e.g. a fair Latin, or a dark Anglo-Saxon). The fourth and final factor influencing attention is the strength and other characteristics of the *sensory input* from the stimulus; a powerful stimulus will attract our attention more readily.

Closely related to attention is *selection*: what the individual selects from the innumerable bits of information he receives about his environment *via* his senses. Obviously he cannot attend to all his physical and social surroundings at once, hence the functioning of attention as outlined above. Further selection is made along similar lines, until finally only a relatively small area of the whole possible perceptual field reaches the person. Through the influence of motives, interests, values, emotions, etc., selection is made of the relevant objects; (see JENKIN 1957); defences are put up to prevent the perception of unpleasant or potentially disturbing or irrelevant objects. (See BRUNER and POSTMAN, 1947; MCGINNIES, 1949; BROWN 1961). There is abundant evidence that these perceptual processes affect the perceived characteristics of the object. Thus BRUNER and POSTMAN (1948) demonstrated that positive and negative values (of a dollar sign and a swastika) led to the subject's overestimating the size of the plastic discs on which these were drawn as compared with a neutral (geometric) sign. (see, also LAMBERT *et al.*, 1949). POSTMAN *et al.* (1948) demonstrated that personal value-systems (e.g. religious, economic) can affect one's perception and memory (cf. also POSTMAN and SCHNEIDER 1955). McCLELLAND and ATKINSON (1948) have shown the effects of hunger on the perception of volunteers: food-related objects (e.g. fork, table) increased in frequency (up to a point) when

the subjects were asked to relate what they perceived, when in fact nothing was there. POSTMAN and BRUNER (1948) have shown the effect of stress on perception, resulting in a kind of perceptual recklessness. ATKINSON and his co-workers have shown that motivation to achievement (i. e. to succeed) can affect recall of an unfinished task (ATKINSON, 1955). There is also evidence about the effect that racial attitudes and one's own colour can have on perception. (SEELMAN, 1940; MARKS, 1943). The processes of perception will have similar effects on what is learned and what is remembered.

It is important to note that perception is amenable to training. Examples of this in everyday experience are not hard to find: the doctor examining a slide under a microscope or an x-ray; the farmer noticing the finer points in his animal's condition, breast self-examination for cancer symptoms. There is also experimental evidence for this from HAGGARD and ROSE (1944), and SCHAFER and MURPHY (1943) among others. Much of the research into the discrimination of different stimuli and learning to discriminate between different stimuli and patterns of stimuli is in fact research into perception. (see WOODWORTH and SCHLOSBERG, 1955, p. 582 ff.; OSGOOD, 1953, p. 350 ff.). A third source of evidence regarding the element of learning in perception is to be found in the many social, cultural and anthropological studies of attitudes. (e.g. PAUL, 1955) and prejudices (APPLE, 1960; HURLOCK, 1964; RAAB and LIPSET, 1959; SHERIF, 1935; also the many studies on social conformity.) As a result of experiments, especially with visual objects, a law of perception has been proposed which states that, particularly where there is ambiguity in the stimuli, one will organize what one sees according to one's expectations and needs; that the part will be seen in relation to the whole,

that is, in context; and there will be a tendency to homogeneity, so that there will be symmetry, regularity and simplicity of perception.

Extending these laws to the non-sensory, we can see that they have obvious application to the organization of information, to memory, (see BARTLETT, 1932), and to such things as the composition and functioning of social groups. Regarding the effect that perception has on the reception and acceptance of communication, we shall have more to say later. Man's activities in his society, and even the society itself, are, to a large extent, governed by the way he perceives his environment. We follow men we perceive to possess the qualities we expect in a leader, and whom we perceive to promise satisfaction of our needs. We listen to men we perceive to possess the necessary qualifications of reliability, and who will not contradict what we hold strongly. We associate with men we perceive are like ourselves, satisfy our desire for comradeship, etc. We blame men we perceive to be the cause of harm to us. For an extensive consideration of this we refer the reader to *Person Perception and Interpersonal Behaviour*, edited by TAGIURI and PETRULLO (1958). (See also BRUNER and TAGIURI, 1954; TAGIURI *et al.*, 1958; JONES and DECHARMS 1958.) WOODWORTH (1958) places great stress on the interaction between man and his environment, and emphasises the function of perception in man's "dealing with the environment". [See KUTNER (1958) for social perception in the patient-surgeon relationship.]

The usefulness of these findings has been greatly increased by recent evidence

for the existence of a relationship between personality and perception. If it is true that certain types of people perceive in a particular way, or even that people tend to perceive in a fairly consistent way, then our powers of prediction of people's behaviour are enormously increased. (See ALLPORT, 1958; BLAKE and RAMSEY, 1951; WITKIN *et al.*, 1954.)

For the health-educator, the way a person or potential patient perceives the educator, doctor, hospital, illness, etc., is of crucial importance. (See Chapter Five on this subject). The factors of experience, learning, and expectations are important, for example, in the current situation, where the public is aware mainly of those cancer cases that are fatal.

For a comprehensive review of the theories of perception and research in this field, the reader is referred to F. H. ALLPORT's book, *Theories of Perception and the Concept of Structure* (1955). For a consideration of the research with less emphasis on theory he is referred to VERNON (1952). OSGOOD (1953) has an excellent section (pp. 191—298) covering all aspects of perception and some of the theoretical problems involved. Various sections of BERELSON and STEINER (1964) give useful summaries in the different areas of psychology. A useful and yet not too advanced book is ABERCROMBIE's *The Anatomy of Judgment* (1960). A lecture given by G. W. ALLPORT to health educators on "Perception and Public Health" is issued as one of the *Health Education Monographs* (1958). HOCHBERG (1964) deals with perception briefly, simply and interestingly.

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8. Learning

The expression "learning theory" will be used here to refer loosely to those parts of psychology that deal with the way in which individuals learn. There have been relatively few attempts to draw conclusions from this field of study and apply them to health education. Learning theory, though a specialised field in itself, has never really surmounted the hurdle presented by the sheer complexity of human behaviour. As a result, it has tried to simplify its object of study by using lower animal species and also by theoretically isolating the elements of behaviour (e. g. incentive, drive, habit, inhibition, etc.). Little can therefore be validly extrapolated for application to human behaviour. But there are two ways in which learning theory may be of assistance. We may be able to glean a few indications or clues to guide us to the human situation. Secondly, we can examine the one area in which human subjects have been studied extensively — the process of remembering.

One of the corner-stones of all learning theories has been the concept of reinforcement, and though psychologists differ in their views about the nature of reinforcement, it is one of the most prominent

aspects of learning in everyday life. Any attempt to define "reinforcement" will depend on whether one takes a pragmatic or a hedonistic point of view. From the pragmatic viewpoint, reinforcement refers to *anything* that increases the probability of a certain action being performed. From the hedonistic viewpoint, reinforcement is seen solely in terms of pleasure and pain, pleasure increasing (reinforcing) the likelihood that an action will be performed, and pain reducing it (negatively reinforcing). For our present purposes a combination of both is probably most useful. People are more likely to do things that are pleasurable and avoid those that are painful; but one must remember that, although some things are generally agreed to be pleasurable or painful, there are many occasions on which more than one interpretation is possible, and it then becomes a personal, subjective matter. Prior study is, then, required to discover just what people regard as pleasurable and what as painful, and to what extent they do so. Thus, going to see the doctor may be pleasurable (or rewarding) for some individuals, classes of individuals, or sections of society, but painful (or punishing) for others. There are, for instance, some

societies — such as peasant communities in Greece — which regard seeking medical advice as a sign of weakness; yet some tribal societies in Africa regard prompt care of the breadwinner as an urgent and vital duty. The two norms of behaviour would colour the views of individuals in those communities regarding what constitutes rewarding or punishing activity. Psychologists usually talk in terms of reward and punishment. Bearing in mind what we have said above, these two terms may, with care, be used as alternatives for pleasure and pain.

Ignoring variations in the points of view of different psychologists concerning the definition of 'reinforcement' and the part it plays in learning, one can say that reward and punishment have their own characteristic effects in the learning situation. Careful consideration should be given to what behaviour one wishes to produce. Taking a simple situation of doing or not doing a certain action which we will call A, the aims of the educator can be (i) Not to do A — and, by inference, doing anything else but A; or (ii) not to do A but to do B or (iii) to do A. There are several possible combinations of reward and/or punishment which may be used to achieve (i), (ii) or (iii). For (i) it should be sufficient merely to punish the doing of A. (ii) can be achieved by making a reward attached to the performance of B sufficiently attractive to exclude that of A; it may be necessary, though, to punish any attempt at A. For (iii) one must either reward A, or exclude by means of punishment all other alternatives. It must be pointed out, however, that the above is one of the simplest of situations. There will usually be more than two possible courses of action, and each one will be more or less attractive or repulsive. Furthermore, the importance of the strength of the punishment must be stressed, for, if it is too great, there is a

possibility that it will have a paralysing effect, and (in (ii) for example) the subject when punished for doing A will "freeze" and be unable to follow the alternative course of action, B. Without taking sides with one theory or another, this is the effect that has been found both in experiments by learning theorists and also in communication studies which use fear as a motivator.

MOWRER calls attention to the different consequences of the use of the two types of reinforcement. Discussing the effect of what he calls danger signals¹ (stimuli, objects, or situations repeatedly associated with punishment) he says "a teacher (or any other person) who is constantly emitting danger signals will tend to drive students *away* from her (and from the school situation in general), whereas a teacher who emits safety signals and promises (which are confirmed tends to *attract* them. And this is important educationally" (MOWRER, 1960).

An important experimental finding supports what one would expect from common sense; punishment that is *avoidable* is much more effective than that which is *unavoidable*. This is important in everyday life, in which going to the doctor when something serious is suspected may seem to involve unavoidable punishment if the patient believes that nothing can be done, or knows that treatment will be long or painful. There is also evidence that subjects prefer a situation in which there is a warning signal of danger that permits avoiding action. It is likely that when punishment is unavoidable other defences will be attempted. In the case of human beings these will often be mental

¹ It should be noted that Mowrer's use of the term "danger signals" is in no sense synonymous with the use of the same term in the public education programmes of the American and Canadian Cancer Societies.

defences, such as denial or withdrawal. (See page 26 of this work.)

Just as certain stimuli obtain their significance from association with punishment, others associated with reward or the avoidance of punishment can act as safety signals, or can in themselves be reinforcing by means of what is termed "secondary reinforcement". This is a crucial concept in all learning theories, if not in all learning, and has been used to explain all sorts of anomalies.

One of the most important factors in reinforcement is what has been called the "schedule" of reinforcement i.e. how often and when an action is reinforced or punished. There is a great deal of evidence to show that an action that is reinforced intermittently (i.e. not on every occasion) is harder to extinguish than an action reinforced on every occasion. This is possibly due to the effect produced when a person finds that a situation no longer holds true; a single exception can disprove a rule stated as universally true, but will not have such an effect on a rule only claimed to hold in certain cases — hence the inadvisability of making false claims in educating the public, as, for example, giving the impression that all cancers are curable.

The delay between an action and the reward of punishment of that action should, from common-sense and experimental evidence, diminish the power the reinforcement has. Only infrequently in everyday life do all the good and bad results of behaviour follow immediately or even closely after its completion. It is, therefore, a crucial problem in the most significant areas of social learning to bridge the gap between act and consequence. In cancer education an obvious example is the often lengthy time-lag between the first seemingly trivial symptoms that lead to delay in seeing a doctor and the onset of painful or incapacitating

symptoms. The problem is even greater when the relationship between act and consequence is further obscured by immediate satisfaction, as in the case of cigarette smoking.

An interesting situation arises when elements of both reward and punishment are present. The individual concerned may either exaggerate the reward of his action (maximize the gain), e.g. by going to the doctor, regardless of his belief that treatment may be painful or financially crippling; or he may play down the punishment aspect (minimize the loss) by staying away and offsetting the danger to his health by his continued freedom from painful treatment and financial loss. It has been suggested that how the individual will assess the situation may well be a question of personality. No one form of education can therefore hope to encompass all the possible variants of human response, and it is important for the educator to be constantly aware of this in designing his programme.

An important aspect of any learning situation is the extent to which the learning is aided or hindered by the similarity of present circumstances and actions to those of previous learning situations. It is evident that when a new response has to be learned there is a problem of habit-breaking. A habit will be more difficult to break the older it is, or the more it has been practised. It will also be difficult to break if the new and old responses are incompatible. It is therefore obvious that a health educator will find great difficulty in changing old-established patterns of behaviour or attitudes when they are incompatible with the new response (e.g. the old habit of denying the existence of an illness and the desired new response of seeking prompt medical care).

The topic of remembering is only one part of the complex field of learning, but in many respects it is the most important

aspect of the educational process. No attempt will be made here to summarize the enormous amount of work that has been done since the earliest days of modern experimental psychology. For an excellent review and critical consideration of this, the reader is referred to chapters 12 and 13 of C. E. Osgood's book *Method and Theory in Experimental Psychology* (1953).

Recognizing that we shall leave ourselves open to the criticism of oversimplification, we nevertheless think it is useful to consider some of the main elements involved in remembering. The first is a short-term temporal factor, which accounts for the build-up and dissipation of inhibition. The inhibition referred to here is the sort that develops throughout the performance of an action or with repeated performance, that is, a type of fatigue. This temporal factor helps to explain the phenomena of the bow-shaped curve of learning, reminiscence, and the superiority of distributed practice. We shall deal only with the last of these phenomena.

Distribution of learning refers to the way in which it is spread out through time. Thus a person learning a list of words must decide (i) how slowly he will read each word, (ii) how many words he will read before taking a rest, and (iii) how many times he will read the entire list before resting. The experimental evidence demonstrates the superiority of distributed learning as opposed to massed learning. In practical terms these results mean that it is advantageous to proceed slowly, with pauses sufficient to allow for the dissipation of "fatigue".

The second factor is known as interference. The basis of this is the similarity between (i) elements of the material to be learned e.g. the similarity of words in a list of words, or (ii) the similarity be-

tween the learned material and subsequent material. For instance, the learning and remembering of a list of words will suffer more interference if the subject is faced with the highly similar task of learning another list of words than if he is called on to learn the dissimilar task of driving a car. Constant exposure to similar learning tasks accounts for the cumulative loss in retention of material with time.

There are also other factors that both common-sense and experimental evidence tell us must influence learning and remembering. The meaningfulness of material is one such. It is obviously easier to learn ten words which form a meaningful sentence than ten unconnected words. Trite though this statement may seem, it is too often disregarded in preparing material for the general public. It is all too easy for the specialist in medicine or health education to frame his message in the language of his own reference group. Even when a conscious effort is made to avoid mishap, only careful testing of the material will ensure that it conveys the meaning intended without the intrusion of uncomprehended factors. Another such factor is motivation, which plays as large a part in learning as in any other field of human behaviour. We remember better those things in which we are personally involved. The educator must therefore discover and make use, in his educational programme, of the hopes, fears, social norms and existing beliefs of his audience, so that his message will appear to have the most personal appeal possible to the recipient.

Before closing this section, we should mention the important influence that perception may have on the processes of remembering and learning. Perception, as used here, does not refer to the use of the five senses, but to the way in which communications are grasped at the intellectual level. The two forms of perception,

though distinct, are in many ways analogous, and some of the principles derived from the study of sensory perception apply equally to intellectual perception. One of the most important of these principles is that of "set", which we have already defined as a predisposition to perceive things in a fixed (or set) way, under the influence of, for instance, bias, attitudes, prejudice, and special interests. This principle is also included in laws put forward originally by the Gestalt psychologists, and summed up by the *law of prägnanz*, according to which "psychological organization will always be as 'good' as prevailing conditions allow". In simple terms, this means that the way in which people perceive, receive and organize the information offered will tend to follow a pattern of symmetry, regularity and simplicity. They tend either to make communications fit in with what they already believe, or to complete the (to them) unfinished picture by a series of

illogical steps, or to simplify the message to make it more manageable. All these processes can be a potent mechanism of distortion, twisting the message the educator *thinks* he has put over into something quite other than he intended. The same principle also accounts for much of the change in what is remembered (or what is forgotten) that occurs over time.

Probably the most complete reviews of research into the processes of learning are *Theories of Learning* by E. R. HILGARD (1958), and *Conditioning and Learning* by E. R. HILGARD and D. G. MARQUIS, revised and edited by G. A. KIMBLE (1961). An excellent, brief, and not too advanced book on the subject is *Learning* by S. A. Mednick (1964). The readers should find useful any of the many books available on educational psychology; especially recommended is *Educational Psychology* by D. R. GREEN (1964), (also Cronbach, 1963; Valentine, 1960).

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9. Roles

We shall deal later with the functioning of groups. Studies of groups have importance for many reasons. They are, first of all, the unit of society in which all behaviour takes place: men never act in a vacuum, they are always members of a number of groups, and their actions

will have an effect on some at least of the members of some of these groups. Secondly, the attitudes of the individual are to a great extent derived from, and reinforced or maintained by, the relevant groups to which he belongs and with which he interacts. Lastly, we stress the importance

of group-studies because the health educator is so often concerned with influencing the individual through the group (for example, the audience or the discussion-group). In dealing with group-studies we will have cause to mention the effect of a person's status or position in the group on the power the group has over his behaviour and attitudes.

In any group there is an uneven distribution, if not of power, then at least of status or ranking (which can be based on any number of different criteria). There is also a distribution of functions or tasks according to the aims, values and needs of the group. Certain members of the group, therefore, have to perform certain tasks when called upon to do so either formally by the members or rules of the group, or less formally as a consequence of being a member of the group, or possessing the qualities or skills necessary to carry out the task. In this way the group and its members come to *expect* the performance of certain actions by different members. When this happens, the person in question fills a *role* in the group which entails the fulfilling of certain duties by that person in line with the expectations and rights of the group. Roles within a group (e.g. family) are sometimes specified and controlled by the wider cultural environment in which a person exists.

The mere fact that a group expects the holder of a role-position to act in a particular way does not necessarily imply that he will either be aware of this, or that, being aware of it, he will act accordingly. In this case, as in many others, the way a person perceives the role and its associated expectations will be of paramount importance. A distinction must therefore, be made between roles and role-behaviour.

It is not uncommon to find that two individuals occupying similar role-positions will behave in different ways as a

result of different interpretations of the duties involved. On the other hand, a role is very often independent of the occupier of the role, since the role can continue to exist in spite of there being a number of different individuals holding the role-position over a period of time, or even if there is no one occupying the role at all. We can say, therefore, that there is a certain continuity associated with a role. Since an individual occupies many positions simultaneously (e.g. father, worker, patient) there will be several expectations to be fulfilled at any one time. Sometimes these expectations will be incompatible with each other or with those of another person; on other occasions confusion will arise from the lack of agreement by members of a group about the expectations of a particular role. In such cases of conflict or confusion a person will have to solve the conflict by the use of one or more of the following: relinquishing one of the roles, redefining the expectations, or limiting the function of the roles so as to ensure a separation of the conflicting roles.

We have been talking about roles in terms of the group. It must be made clear, however, that groups are as diverse in their characteristics as are the forms of interaction and relationships between two or more people. Whenever two or more individuals interact socially there are always a number of expectations (expressed or understood) about the behaviour of the one with respect to the other, and to this extent a person is always occupying some role (e.g. Superior-inferior, older-younger) when he interacts with other people. Roles are thus the link between an individual and society.

The lesson from all this for the health-educator is that a person never acts in isolation but is always a member of a group, whether it be a formally constructed one or merely the informal interaction

between two people (e.g. health educator and recipient).

The educator should ask himself what the recipient of his communication expects of him in the role of health-educator, doctor or any other role he might *be seen* to occupy. The recipient's expectations about his own behaviour as a result of being in the role of recipient, patient, pupil, etc., must also be examined.

Of perhaps greatest use to the educator in the planning of a health education programme is a clear perception of the structure of the society or community in which he is working. By means of an examination of the roles filled by various members of the society, one can identify the key positions at which to direct one's campaign. Such positions are usually filled by those occupying the roles of leaders in the community, whether it be in terms of economics, religion, scholarship, government or any other criterion of status and leadership. This analysis must be made (not necessarily academically, but at least superficially) down through the entire

social structure. All the role-positions an individual holds and the role-expectations that go with them (e.g. work, family, government) will have an effect on his behaviour, including that associated with his health. (See Chapter Five on the "sick role"). Such an analysis is even more necessary, since, when working with a society or part of a society with which one is not familiar, one can never presume that positions in the different societies, or even in different parts of the same society, are similar in the duties, rights, and expectations that go with them.

For works on the subject of roles the reader is referred especially to L. R. SARBIN's review in Lindzey (1954), also relevant chapters in *Human Society* by K. DAVIS (1949), and in *Sociological Theory and Social Structure* by R. K. MERTON (1957). NADEL's *The Theory of Social Structure* (1957), NEIMAN and HUGHES's "The Problem of the Concept of Role — a Re-Survey of the Literature" (1951), and PARSON'S *The Social System* (1952) should also be consulted.

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