Four Languages of Psychological Explanation 2

Mentalism and S-R Behaviourism

In the previous lecture I distinguished four basic languages or conceptual systems employed in the explanation of human and animal behaviour. I suggested that these four languages fall into two groups the molar languages whose function is to explain particular behavioural events and to state, but not explain, behavioural phenomena and the molecular languages whose function is to explain behavioural phenomena. I distinguished two varieties of molecular language, whose logical relationship to one another is relatively unproblematic. On the one hand there is the language of cybernetics as applied to the explanation of behavioural phenomena in which those phenomena are explained in terms of the properties of and relationship between functional units, usually interpreted as constituent parts of the nervous system, but whose existence is postulated solely on behavioural grounds. On the other hand there is the language of neurophysiology proper whose concepts are derived from direct anatomical observation of the nervous system itself and physiological studies of the functioning of the various parts distinguished in this way.

At the molar level I suggested that we should distinguish two basic languages whose relationship and respective functions are very much less easy to define, the mentalist language of ordinary discourse which we have examined in the previous section and the language of stimulus-response behaviourism. It is with the problem of the relationship between these two languages with which we shall be concerned in this lecture.

The tradition of stimulus-response behaviourism

Although it has undergone considerable development in the course of its history, and although there are a number of distinct variants of it, the language of stimulus response behaviourism forms a clearly defined and readily identified tradition within psychology. Although it has a long prehistory in biology and physiology going back as far as the 17th century where it is represented both in Hobbes' materialism (10) and in Descartes' mechanical theory of animal behaviour (4) it was introduced into psychology quite deliberately as an alternative to mentalist accounts of behaviour by the founder of the behaviourist movement in American psychology, John Broadus Watson (25a). As he makes clear, Watson was strongly influenced in his choice of this new psychological terminology by the conceptual practice of the Russian reflexologists - Sechenov, Bechterev and above all, Pavlov. Pavlov (19) however was a physiologist, rather than a psychologist and his approach to the analysis and explanation both theoretically and experimentally, is molecular rather than molar. His classical experiments on the conditioned reflex were based almost entirely on observations of the salivery reflex, a glandular secretion which forms part of the internal physiological process of digestion rather than the overt behaviour whereby the organism acts on its environment. Moreover in his theoretical work, despite his contention that all human and animal behaviour is "nothing but a long chain of conditioned reflexes", he is more interested in providing a theoretical explanation of the phenomena of conditioning as observed experimentally in terms of hypothetical processes of excitation and inhibition within the central nervous system than in using the experimentally derived principles of conditioning in order to explain particular facts of human and animal behaviour. The exploitation of this molar aspect of conditioning theory is the characteristic contribution of stimulus-response behaviourism as developed by Watson and his successors within psychology.

Watson's bias towards the exploitation of conditioning principles at the molar level is as apparent in his experimental practice and his theoretical pronouncements as is Pavlov's molecular bias in his. Thus the two principal contributions made by Watson to the experimental study of conditioning were a device for the administration and recording of conditioned finger retraction to an unconditioned shock stimulus in human subjects (25a) and his studies of conditioning fear responses exhibited in the overt behaviour of children. On the theoretical side, although he devotes a large part of his 1919 textbook to the anatomy and physiology of the sense organs, the effector organs (muscles and glands) and the central nervous system, his account of the construction of a behaviourist psychology emphasises the importance of establishing laws and principles relating stimuli to their resulting responses based on experimental studies such as those of Pavlov

on the acquisition of new stimulus-response connections in animal subjects and the use of those laws and principles in the explanation and prediction of human behaviour.

In Watson's work the only laws of this kind which are recognised are those derived from Pavlov's work on what has become known as 'classical' or 'respondent' conditioning. But despite Guthrie's (9) valiant attempt to interpret the whole human and animal learning in terms of this single principle of conditioning by contiguity, it soon became apparent that the phenomena of behaviour at the molar level could not be adequately described in terms of this principle alone, and that the puzzle-box experiment devised by Thorndike (23) and the Skinner Box (22a) which evolved from it provided a better paradigm for the acquisition of new forms of behaviour at the molar level than did Pavlov's more molecularly orientated experiment.

The tradition of experimental research and theory which descends from Thorndike to Hull (11) and Skinner (22a), although it employs many concepts derived from the Pavlovian tradition which include, in addition to the basic notion of the 'stimulus-response connection' or 'reflex', such notions as 'conditioning', 'extinction', 'generalisation' and 'reinforcement', differs from the Pavlovian tradition in drawing attention to the <u>effect</u> or <u>consequences</u> of a piece of behaviour as the crucial factor in deciding the probability of its recurrence on a future occasion. Moreover while he still uses the 'response' as the unit of behaviour, Skinner in fact, breaks away radically from the traditional analysis of behaviour as a bundle of stimulus-response connections in which each response presupposes a specific eliciting stimulus with his notion of the spontaneous 'emission' of operant behaviour.

The distinctive feature of Hull's theory is his attempt to reduce the phenomena of classical Pavlovian or respondent conditioning on the one hand and the phenomena of instrumental or operant conditioning on the other to a single set of laws or principles of which the most important is his restatement of Thorndike's <u>Law of Effect</u> (23) as the principle of reinforcement by <u>'Drive Reduction.'</u> Indeed it was the recognition that these two groups of phenomena cannot be collapsed into one another in this way which, perhaps more than anything else, led to the general abandonment of Hull's theory in the 1950's. Although he himself makes considerable use of the molar-molecular distinction introduced into the discussion of psychological theory by Tolman (24) in 1932, what Hull failed to appreciate is the fact which is clearly demonstrated by the series experiments carried out in Poland by Konorski and Miller in the 1920's (15) namely that classical Pavlovian conditioning of visceral and glandular responses at the molecular level necessarily occurs simultaneously with, underlies and may indeed be causally related to the acquisition or extinction of an instrumental or operant conditioned 'response' at the molar level. This hypothetical dependence of operant behaviour at the molar level on classically conditioned visceral or 'emotional' responses at the molecular level has been elevated to the status of a fundamental explanatory principle in Mowrer's <u>two factor theory of learning</u>. However the failure to distinguish the different functions of molar and molecular explanations has, I suspect, made this otherwise promising approach less productive than it might otherwise have been, if it had been recognised that the role of molecular explanation is to explain behavioural phenomena, rather than particular behavioural events. At the molar level where the object is merely to state, but not to explain, behavioural phenomena, Skinner is undoubtedly right in preferring simply to state principles like <u>secondary reinforcement</u> and <u>conditioned aversion</u> as they are observed in experimental studies of operant behaviour, rather than to do, as Hull (11) and Mowrer (18) have tried to do and deduce them from the principles of classical conditioning by postulating hypothetical drive-arousing or drive-reducing responses at the molecular level.

Another respect in which Skinner's form of stimulus response behaviourism has in recent years made a significant advance over earlier forms of S-R theory is in the use of the concept of reinforcement to account not only for the acquisition of new patterns of behaviour, but for the maintenance and persistence of goal directed behaviour over time (22b) instead of relying, as Hull had done on the much criticised concept of 'drive'. This account of motivated or goal-directed behaviour is still not entirely satisfactory. There is difficulty for example, in handling both the phenomena of a rise in the rate of emission of responses other than the particular response being studied under conditions of frustration or time out from continuous or regular and frequent reinforcement and the phenomenon whereby behaviour directed towards a particular goal ceases, at least for the time being, once that goal has been achieved . Nevertheless, despite these defect Skinner's so-called '<u>radical behaviourism'</u> represents the best approximation that we currently possess to a language designed solely for the description of the objective and molar phenomena of behaviour

as they are observed in organisms whose behaviour is not complicated by the verbal abilities of adult humans. Skinner has of course, attempted to extend the application of his form of S-R language to the description of Verbal Behaviour (22c). But although critics like Chomsky (2) have failed to appreciate the value of Skinner's contribution to our understanding of the functional aspects of the use of language, it is clear that his handling of the syntactic and rule governed aspects of language is woefully inadequate, as is his appreciation of the effect of the possession of Linguistic competence on the organisation of behaviour as a whole. But of this more later.

The Mentalist tradition of behavioural explanation in Psychology

There is no tradition within Psychology employing mentalist explanations which is as readily identifiable or as continuous in its development as is the tradition of stimulus response behaviourism. The reason for this is that mentalist explanations of behaviour have existed as part of ordinary language from time immemorial and this system of explanation has simply been taken over in part or in whole at different times by different groups of psychologists for a variety of different purposes and transformed in accordance with current conceptions into what the psychologists in question regard as a passable imitation of a respectable scientific theory. Moreover many of the concepts employed in these explanatory systems or theories of a mentalist kind, particularly in late 19th and early 20th century were derived, not so much from ordinary discourse directly, as from the various much distorted systematisations of the mental concepts of ordinary language developed by philosophers with metaphysical axes to grind which are far removed from the purely practical concerns of behavioural explanation and prediction. Added to which is the fact that in the early years of psychology's existence as an independent discipline, the explanation and prediction of behaviour was not regarded as the primary concern and object of psychological theorising. The result of this is that the tradition of mentalist explanations of behaviour within psychology is represented by a number of different and often unrelated 'schools of thought' whose conceptual systems have little in common apart from their derivation directly or indirectly from the mentalist concepts of ordinary language.

The two oldest of these schools, Wundt's Structural or Introspective Psychology (26) and Brentano's Act Psychology (1) were heavily influenced by and involved in the contemporary traditions of philosophical discussion and neither of them was concerned with the problems of explaining and predicting behaviour. The problem of explaining behaviour only became an issue when, under the impact of the Darwinian theory of evolution by natural selection (3), psychologists began to ask questions about the biological function of mind and consciousness to which an answer involving a mention of the role of the mind in controlling and directing behaviour was inevitable. However the Functionalists, as those who thought along these lines came to be called, never developed a distinctive conceptual system for the explanation of behaviour along mentalist lines. Instead they took over their conceptual apparatus from the psychologists who were pre-occupied with the study of mind and consciousness as a phenomenon in its own right. Moreover, although Brentano's Act Psychology with its emphasis on the intentional aspects of mental concepts was more in touch with those aspects of the psychological language of common sense which is in fact most directly concerned with the explanation of behaviour, the greater prestige of Wundt's system led to the adoption by the functionalists of a system of concepts which emphasised the role of sensations and mental images in the description of the mind's control over behaviour and thus indirectly to the evaporation of the mind which we can see taking place in work of Thorndike (23) as it became apparent that in describing behaviour from an objective point of view, it is just as easy if not easier, to talk about the stimuli impinging on an organism's receptors as it is to talk of the sensations occurring in the privacy of its conscious experience.

As a consequence of this the first serious attempt to adapt mentalist explanations of behaviour for scientific purposes in psychology was Freud's psycho-analytic theory. Freud's system is an extraordinary amalgam of concepts derived from the various philosophical psychologies of his day, combined with a rather crude mechanistic neurophysiology which came to him from his teachers Brücke and Meinert, together with some poorly digested notions from evolutionary biology, mythology and cultural anthropology, hammered together so as to meet the requirements of psycho-analytic practice which involves a theoretical interpretation of the patient's behaviour as an integral part of treatment. That the basic structure of psycho-analytic explanation of behaviour is mentalist in character, despite the superficial overlay of pseudo-mechanistic notions like 'psychic energy' is apparent from the central importance in Freud's theory of a theory of motivation expressed in terms of concepts like 'wish', 'pleasure', 'pain',

'impulse' and 'instinct' which derive more or less directly from ordinary language mentalist explanation as described in the previous section. The cognitive component of mentalist explanations is largely ignored and even denied by Freud as an effective determinant of behaviour, as is implied by his emphasis on the unconscious and hence irrational determinants of behaviour. Nevertheless although he undoubtedly overemphasised the irrationality of normal adult behaviour, we should not underestimate the importance of his demonstration that there are forms of behaviour like hysterical conversion symptoms which the agent does specifically in order to bring about a given result without knowing that that is why he does it or even <u>that</u> he is doing it at all and that there are many aspects of normal and otherwise rational human actions which betray similar characteristics. I am myself of the opinion that such behaviour can be described and explained more simply and in some ways more fruitfully in terms of the stimulus-response notion of the reinforcement of behaviour by its consequences. But the fact that Freud went out of his way to modify the standard assumptions of mentalist behavioural explanation in order to allow it to accommodate this kind of behaviour is in itself a testimony to the fundamentally mentalist character of his conceptual system.

It is perhaps significant in this connection that many of the psychologists who have subsequently adopted mentalist type explanations of behaviour have mentioned Freud as a kindred spirit whose doctrines have a close conceptual link with their own. This is particularly true in the case of William McDougall (17) and Kurt Lewin (16) who are among the most prominent mentalists in the history of the psychology of behaviour. However the fact that Hull's ambition over many years was to build a similar bridge between S-R behaviourism and psycho-analysis, a dream which was partly though somewhat unsatisfactorily realised in Dollard and Miller's book <u>Personality and Psychotherapy</u> published in 1950 (5), suggests that the prestige of Freud's practical and theoretical achievements is something which transcends or is capable of transcending barriers of communication presented by the kind of language a psychologist uses in his own work.

The mentalist character of McDougall's theoretical approach to the psychology of behaviour (17) is demonstrated by his adoption of 'purpose' and 'instinct' as basic concepts. Here again the tendency to underplay the cognitive component of mentalist explanations of behaviour, though less marked than in the work of Freud, is still apparent. The balance in this respect is restored in the case of the mentalist behaviourist E. C. Tolman (24) whose basic concepts are the 'Sign-Gestalt expectation' and 'demands for' and 'against' certain future states of affairs, corresponding to the instrumental beliefs and the wants which provide the basis of mentalist explanations of behaviour as described in the previous section.

The primary concern of <u>Gestalt psychology</u> in its original form was with the description and explanation of conscious experience rather than with the explanation of behaviour. In this respect it continues the German tradition within psychology as represented by Wundt and Brentano, rather than the more functional and behaviourist approach characteristic of the United States. Consequently although <u>Gestalttheorie</u> is formulated in terms of the mental concepts of ordinary language, as modified and distorted by the metaphysical principles of Husserl's phenomenology (12) it is concerned with the process whereby sensory stimulation gives rise to conscious experiences and perception and thence to judgements and beliefs that is, with the more molecular aspect of common sense psychology, rather than with the way in which beliefs and wants combine to determine behaviour at the molar level. Nevertheless Gestalt psychology was eventually applied to the psychology of behaviour by a device which converts the concept of the '<u>perceptual field</u>' which in classical <u>Gestalttheorie</u> describes the conscious experience of the subject at a given moment of time as determined [by] the pattern of sensory stimulation at the receptors into Koffka's (14) 'behavioural environment' and Lewin's (16) 'psychological life space' which includes all the individual's beliefs about his total situation in life, together with his desires and aversions (Lewin's vectors) with respect to the various features of that situation as represented in his beliefs about it, regardless of whether or not those beliefs, desires and aversions are in any way represented in his current conscious experience.

More recently the Gestalt version of the mentalist explanation of behaviour as developed by Lewin has given rise on the one hand to Festinger's (6) theory of '<u>cognitive dissonance</u>' which explores the effect of logical inconsistencies between the different beliefs in the same individual and between his beliefs and those which are being urged upon him by others and Kelly's (13) '<u>Personal Construct</u>' theory which aims to analyse and measure the individual's '<u>psychological space</u>' in terms of the constructs or concepts in terms of which he expresses both his beliefs about his environment and his desires and aversions with respect to those features which he knows or believes it to contain.

Finally although the official definition of a '<u>bit</u>' of information as it occurs as a concept in <u>information theory</u> is such as to preclude its interpretation as what we ordinarily understand by a piece of information in ordinary language i.e. a true proposition communicated to an individual by means of a sentence or set of sentences expressed in a given natural language, the superficial resemblance of the expressions and the underlying conceptual connection between them has made it possible for the unwary to pass from talking about the receipt or input of information in the one sense to the receipt of information in the other sense without appreciating the enormous conceptual gap along the molecular-molar dimension that separates the proper spheres of application of these two concepts. This mistake has led some psychologists both to employ the language of information theory as a device for dressing up common or garden mentalist explanations of behaviour in pseudo-scientific garb and to suppose that the demonstrable utility of information theory in analyzing the functions of the brain at the molecular level also provides evidence of the superiority of mentalist as opposed to stimulus response explanations of behaviour at the molar level. Similar considerations apply, though in the opposite direction in the case where <u>statistical decision theory</u> whose utility as a device for introducing quantitative measurement into mentalist explanations was mentioned in <u>Lecture 12</u> is applied to decisions which are made, not by the individual organism as a whole, but by a part of the body such as a sense organ a single neuron, a system of neurons or some part of the brain specified only in functional terms.

<u>The resemblances and differences between mentalism and S-R behaviourism</u>

The purpose of this excursion into the history of psychology is to establish the claim that many if not most of the theoretical conflicts which have occurred and which still occur within psychology can be plausibly construed as aspects of a single conflict between these two opposing traditions in the description and explanation of behaviour at the molar level. I now want to explain why in my view it is inevitable both that these two systems of molar explanation should exist and should continue to exist side by side within psychology and why at the same time, they are bound to remain as two incommensurable paradigms competing for the explanation and description of an overlapping, if not wholly coextensive body of facts and phenomena.

The reasons why these two languages are bound to be in competition with one another is that they provide two logically different explanations of what is substantially the same set of behavioural facts. For as we saw in <u>Lecture 10</u>, both the actions of the person which the mentalist explanations are designed to explain and the responses like 'lever pressing' which are explained by the Skinnerian form of S-R Behaviourism are characterised for purposes of explanation not in terms of a particular set of anatomically defined movements but in terms of the consequences of those movements. In both cases moreover, the explanation that is given of the actions or operant responses so defined consists in a demonstration that the particular behavioural event in question is an instance of a behavioural phenomena or group of such phenomena which constitutes a dispositional property of the organism in question. The explanations however, are incompatible with one another because the behavioural phenomenon to which the particular event is assimilated in the two cases is different. It is not just that the terminology which comprises the two languages is different. Nor is it simply a matter of the sense or connotation of the different terms. The dispositional concepts which are employed in these two kinds of explanation have a different set of referents in that the class of behavioural events which constitute exercises of say, the belief that pulling the lever will produce food are not co-extensive [with] the class of behavioural events which constitute exercises of the corresponding disposition under which it would be classified in Skinner's stimulus-response language, namely the lever pulling response's having a high probability of occurrence by virtue of its having been repeatedly followed on previous occasions in the past by the delivery of food. For while any act of lever pulling performed by a moderately intelligent human child or adult which followed an initial experience of the effect of the action in question could quite properly be treated as an exercise of either disposition, there are a number of possible behavioural events which could be explained in terms of the belief that pulling the lever produces food which could not be explained as an exercise of a disposition to pull the lever brought about by the delivery of food as a consequence of so doing on previous occasions. For one thing the act of asserting or assenting to the proposition 'Pulling the lever will produce food' is an expression of the belief that pulling the lever will produce food, but is not an exercise of the disposition to pull the lever. Furthermore an act of pulling the lever, because one has been told that pulling the lever will produce food without any previous experience of its doing so or because one had

observed the effect of someone else's so doing without having done so oneself, would count as an exercise of the belief that pulling the lever produces food, but not of a disposition to pull the lever brought about by the delivery of food as a consequence of so doing on previous occasions. Against the act of avoiding pulling the lever might, in the case of someone who was nauseated by the very thought of food, be just as much an expression of the belief that pulling the lever produces food as the act of pulling it under more normal circumstances. One can certainly describe what happens in a case such as this in Skinnerian terms by saying that the stimulus constituted by the delivery of food has ceased to act as a reinforcer of behaviour and become an aversive stimulus, but there is nothing in Skinner's conceptual systems apart from the fact that it is objectively the same kind of event which has these two opposite effects on different occasions, which links the two together as exercises of the same behavioural disposition.

But it is not only the belief that pulling the lever produces food that has exercises which the disposition to pull the lever by virtue of its consequences in producing food does not have, the disposition to pull the lever by virtue of its consequences in producing food also may have exercises which the belief that pulling the lever produces food does not have. Thus although it may seem highly improbable that a reasonably intelligent post-infantile human should be disposed to pull the lever by virtue of its consequence in producing food delivery without being able or willing to assert or assent to the proposition 'Pulling the lever produces food', the example of the increased rate of eye-blinking, mentioned in Lecture 11, which is reinforced by its consequence in increasing a sum of money shown on a counter without the subject being aware of (i.e. able to state) the relationship between his own behaviour and its effect on the counter, shows that it is at least logically possible for someone to be disposed to pull the lever as a consequence of the delivery of food when it was pulled on previous occasions without being knowing and hence without believing, that pulling the lever produces food. Moreover since all that prevents us from saying that the subject knows or believes that pulling the lever produces food in such a case is his inability or unwillingness to say that it does, it seems not unreasonable to suggest that concepts like 'knowing' and 'believing' have no proper application in the case of organisms like animals or infants who cannot speak at all, and that therefore any act of lever pulling performed by such an organism is susceptible to interpretation as an exercise of the disposition to pull the lever by virtue of its effect of producing food in the past, but not as an exercise of the belief that pulling the lever produces food.

This example shows not only that the explanatory concepts of these two languages where they overlap have different extensions, but also that while there are behavioural events which can be explained equally well in either language, there are other behavioural events which can be handled quite readily by the one language, but not by the other. In general we may say that the stimulus response language, at least in its Skinnerian form, is a language primarily designed for the description of behavioural phenomena and the explanation of behavioural facts in the case of organisms such as animals, infants, subnormals and chronic schizophrenics, who either lack the power of speech or in which linguistic behaviour is so disturbed as to make the normal process of verbal communication impossible. It does so by drawing attention to those independent variables in the environment which determine an organism's behaviour and the laws and principles governing the relationship between the two. It thus provides a set of principles which are of practical utility to the behavioural engineer in designing procedures for modifying the behaviour of organisms whose behaviour is not susceptible to modification and control by verbal communication.

The mentalist language by contrast, describes behavioural phenomena and explains behavioural facts, not directly in terms of the independent environmental variables and their effect on behaviour, but as we have seen in Lecture 12, in terms of the relationship between what a man says and what he does. This makes it a method of explanation and prediction which is ideally suited to the practical needs of the kind of behavioural engineer, which in this case includes every normal adult human being, who wants to control or influence the behaviour of others, not directly by manipulating the contingencies of reinforcement, but more indirectly by changing the way the individual is disposed to talk about himself and the situation in which he finds himself through such techniques as argument, persuasion, psychotherapy or what has been euphemistically described as 'cognitive restructuring'.

It follows from this that in choosing between these two conceptual frameworks or languages in those cases where it makes sense to make such a choice, we are really choosing between two alternative ways of influencing or controlling human behaviour. In the cases such as animals, infants, subnormals and chronic schizophrenics, since we cannot reasonably hope to control their behaviour by verbal communication, we

have no real alternative but to adopt a conceptual scheme such as that offered by S-R behaviourist language. In dealing with normal intelligence adults where the environmental contingencies controlling their behaviour are beyond our control, whether for ethical or purely practical reasons, we have no real alternative but to construe their behaviour in mentalist terms. In between there is a large area, particularly in the case of children whose verbal abilities are not yet fully developed and where the contingencies of reinforcement are more readily controlled by parents and teachers, where a genuine choice between the two alternative ways of construing behaviour is open to us.

Nor is this situation likely to change appreciably as psychology develops. As long as psychologists continue to make use of what the subject has to say about himself and his life situation as a source of information about how he is likely to behave and needs to use verbal communication as a means of influencing the behaviour of others who are not themselves versed in psychological technicalities, so long will he need to construe behaviour in mentalist terms. And so long as he remains concerned with understanding, explaining and controlling the behaviour of organisms which lack speech and with the application of this understanding to the explanation and control of behaviour of those organisms which possess this capacity so long will the psychologist need some such conceptual framework as stimulus-response behaviourism currently provides.

It may be that in the future the difficulties which at present prevent the stimulus-response language from providing an adequate description of verbal behaviour and an adequate characterisation of the complex relationship between verbal and non-verbal behaviour in humans, will be overcome at least in principle; though I shall give reasons later for thinking that such outcome is in principle unlikely. Nevertheless if this were to happen it would be possible to conceive of a situation arising in which it was possible to say everything that can be said in the mentalist language about the determinants of behaviour in language-using organisms in stimulus-response terms. But such evidence as is provided by attempts that have been made in this direction (22c) strongly suggest that any such description would be far too cumbersome to be of any practical value as a substitute for mentalism for the practical purposes of argument, persuasion and psycho-therapy. It would moreover, be so foreign to the natural linguistic habits of the man in the street as to require an enormous effort on the part of the psychologist in translating from the language employed by the subject or patient into the technical language of the psychologist. The need to do this is avoided if as at present, a mentalist language is retained by the psychologist for his own theoretical purposes in the area of research and practice where communication with the subject, client or patient is an important consideration.

Reconciling incommensurable paradigms

If in the light of these considerations we are led, as I suggest we should be to the conclusion that we may expect these two molar languages of behavioural explanation to persist side by side within psychology for the foreseeable future, we are left with the serious problem of how to reconcile the two types of explanation in those areas of psychological research and practice where both approaches seem to have an important contribution to make which the other cannot make or which it cannot make effectively. I have two areas of research particularly in mind in this connection, though there may well be others. One is the field of behaviour therapy and the type of clinical research which is associated with it where very considerable advances have undoubtedly been made in recent years as a result of analysing the problems of neurotic patients in a stimulus-response conceptual framework. But it is also becoming increasingly obvious to all but the most hidebound behaviourists that a programma of treatment involving such patients cannot afford to neglect the beliefs, attitudes, desires and intentions expressed by the patient and is made very much more effective if conditioning procedures are combined with verbal interactions between patient and therapist which are designed to modify the patient's beliefs and attitudes, or in other words, how the patient is inclined to talk about himself and his life situation. By the same token it seems likely that psychotherapists who have tended to construe the patient's problem solely in mentalist terms, might well find that their effectiveness would improve if they occasionally switched over and thought about the problem within a stimulus-response framework.

Another area where similar considerations apply is in the field of psycholinguistics. In this field however, the problem is still further complicated by the fact, which is seldom appreciated, that in studying language behaviour, a very different story may need to be told when explaining the occurrence of a particular utterance made by a particular individual on a particular occasion, than needs to be given when explaining

a psycholinguistic phenomenon such as the individual's ability to speak grammatical English or grammatical Dutch. In the light of the considerations presented in the previous lecture it would seem to follow that molar explanations, such as a mentalist or stimulus-response explanation, are only appropriate in the former case where what is to be explained is a particular behavioural event. In the latter case where it is a behavioural phenomenon that is at issue, a molecular explanation of the cybernetic or neurophysiological type would seem to be required. This would suggest that Chomsky (2) is quite right in maintaining that Skinner's theory cannot hope to account for linguistic competence. But by the same token he is surely mistaken when he argues in the same context that we can explain the phenomena of linguistic competence in traditional mentalist terms. For as we have seen, to explain what a man does in mentalist terms is to explain what he does by reference to what he is inclined to say; so that to explain what he is inclined to say in these terms would involve the same kind of empty tautology which, as I argued in Lecture 6-1 explains the absurdity of trying to account for the fact that opium puts people to sleep by referring to its dormitive power.

There can of course, be no objection to explaining what a man says on a particular occasion by reference to what he believes or what he wants to achieve thereby. But neither I would argue, is there any viable objection to explaining what he says in a Skinnerian way in terms of an increased liability to say such things as a result of the effect which saying the same or similar things has had on previous occasions. Moreover this Skinnerian approach to the functional analysis of individual speech acts has, as I shall try to show in Section 8 of the course, some very marked advantages as compared with the conventional mentalist approach. The reason for this I suspect, is that since we use language and linguistic concepts in deciding what to do, we would become involved in one of those vicious circles of supra ordinate thinkings about what we are thinking about which Ryle (21) delights in discovering within traditional philosophical psychology, if we invariably decided what to say in the same way that we decide what to do. The implication here is that there are very severe limitations on the application of mentalist explanations to the explanation of particular utterances which do not apply in the case of other things people do; and where mentalism falters, stimulus-response behaviourism can usually step in to fill the gap.

In cases such as these where the psychologist may need to use two incommensurable paradigms simultaneously or in rapid succession, it is important so it seems to me, that he should have, not only the ability to think fluently in terms of either paradigm, but also a detailed understanding both of the logical connections between the conceptual systems he is using and of their logical differences. Given that understanding, he should be able to pass freely from talking about a given problem in terms of one theoretical language to talking about the same problem in the other language without grossly distorting either or both of them in the vain attempt to produce a synthesis of the two as has been tried on more than one occasion in the past (5).

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