

Mentalism and the Explanation of Behaviour 1Action & Movement

Having completed our survey of the principles of metaphysics and the conceptual analysis of ordinary language, we must now proceed to our main business which is to examine the psychological concepts of ordinary language and the implications of this field of enquiry for empirical psychology. Of the remaining sections of the course three sections, numbers 3 [Mentalism and the explanation of behaviour], 5 [The ontological commitments of common sense psychology] and 7 [Emotion concepts and learning theory] will be devoted to an examination of different groups of psychological concepts in ordinary language, while the remaining three sections, numbers 4 [Four languages of psychological explanation], 6 [Physiological Psychology and the mind-body problem] and 8 [Ethical utterances and behaviour modification] will be devoted to an examination of some of the implications for empirical psychology of the immediately preceding section. The present section, section 3, is devoted to the study of those psychological concepts, particularly the concepts of 'believing' and 'wanting' whose primary function is to make possible the explanation and prediction of human behaviour. Section 4 therefore, is concerned with the problem of the relationship between this system of explaining and predicting human behaviour and other systems of explanation devised by psychologists for their own technical purposes. In Section 5 we shall be concerned with an examination of those ordinary psychological concepts which are used in describing the process whereby the individual acquires, develops and modifies the system of beliefs and the body of knowledge which guides and directs his behaviour and in Section 6 we shall be concerned with relationship between this conception of human information processing and the conceptions of human information processing which derive from experimental psychology and neurophysiology. Section 7 is devoted to an examination of the emotion concepts of ordinary language, which is the group of concepts we employ in giving an account of the process whereby the individual acquires his particular system of desires and motives; while the concluding section 8 explores some of the implications of this view of motivation for our understanding of how ethical utterances are used to modify and control human behaviour.

Common sense psychology and the explanation of behaviour

Implicit in the programme I have described is the assumption that the primary function of the psychological concepts of ordinary language is to generate explanations and predictions of human behaviour. The reason for making this assumption is not simply because the explanation and prediction of objectively observable behaviour has become the major pre-occupation of empirical psychology over the past half century since the behaviour revolution, but because an examination of the way these concepts are used in practice shows that that is the function of which they are primarily used and intended. This view of the function of the psychological concepts of ordinary language contrasts with two other views of the function of these concepts which have tended to dominate the traditional philosophical discussions of them. On the one hand, there is the view, which can be traced back at least as far as Plato, according to which the primary function of the mind and mentality is the acquisition of knowledge, especially theoretical knowledge, viewed as an end in itself. That such view should recommend itself to academics in general and philosophers in particular, is understandable, since for such people the pursuit of knowledge for its own sake is or should be their main concern in life. For the man in the street however, knowledge is important, not so much for its own sake, but as a means to an end, as a reliable guide as to how to behave and conduct his affairs in such a way as to achieve the consummation of his desires and relief from his anxieties and fears.

The other traditional view is that which can be traced back to Descartes, according to which the primary function of psychological concepts is to enable the individual to characterise and describe his own private experience. But while it is undoubtedly true that some of the psychological concepts of ordinary language do contain a reference to the private experiences of the individual and, therefore that the

communication of private experience is one of the functions of the psychological language of common sense, recent work on the conceptual analysis of these concepts (12) has shown beyond all reasonable doubt that there are many, perhaps even a majority of psychological concepts which contain no such reference, and as Wittgenstein's private language argument shows (17), that the communication of private experience is a task for which we do not, and necessarily cannot have, an adequate conceptual vocabulary. Furthermore, as in the case of the pursuit of knowledge for its own sake, the communication of private experience is a highly idiosyncratic and specialised form of human activity to which the man-in-the-street devotes very little of his time and interest. On the other hand the prediction and explanation of the behaviour of other people is a matter of constant practical concern in everyday life and it is for this purpose that he uses his ordinary psychological language. It is for this purpose that it is primarily designed and intended; and it is only when viewed as a device for generating such predictions and explanations that the structure of common sense psychology can be properly understood.

The concept of action

Given that the primary function of the psychological language of ordinary discourse is to permit the generation of behavioural predictions and explanations, it follows that our first concern must be with the concepts in terms of which the man-in-the-street construes the dependent variables in any such explanation or prediction, namely the behaviour of human beings. Now the basic concept that is employed in the psychological language of common sense in characterising the behaviour of human beings is the concept of action. Moreover, if we refer back to what was said in Lecture 8 about the basic form of a concept, it will be immediately apparent that the word 'action' is a nominalised form of a concept whose basic form is the verb 'to do', as in the sentence frames 'X does Φ ' or 'X is doing Φ '. Furthermore if we examine the restrictions which apply to the filling of the object variable Φ here we find that the only acceptable filling is either a demonstrative pronoun as in 'X is doing this' or 'X is doing that' or some noun which characterises some activity which X is performing, as in cases like 'X is doing his work' or 'X is doing his Christmas shopping' where the verb phrase 'doing Φ ' is always replaceable a verb such as 'working' or 'shopping'. In other words the primary use of the verb 'to do' here is in asking a question of the form 'What is X doing?' or 'What does X do?', where the answer required is a sentence of the form 'X is Φ -ing' or 'X Φ -es', where the variable Φ can be replaced by almost, but not quite, any verb or verb phrase in the language. We can therefore, say that the concept of 'an action' or the concept of 'doing something' embraces what is common to the concepts expressed by all those verbs and verb phrases which can occur as a filling for the variable Φ in sentence frames like 'X is Φ -ing' or 'X Φ -es', when these sentence frames provide an appropriate answer to questions like 'what is X doing?' or 'What does X do?'. Any verb which is an appropriate filling for Φ under these conditions, I shall call a 'verb of action' or an 'action verb', whereas any verb which is not appropriate filling for the variable Φ in such a context, I call a 'verb of inaction'.

As I have already indicated, the vast majority of verbs and verb phrases in any natural language are verbs of action in this sense. The only verbs in English which appear to be verbs of inaction, in that they are not something which someone or something can be properly be said to do or being doing, are certain verbs of spatial location such as 'standing to a height of x meters' in the case of human beings, animals, buildings or mountains or 'running from A to B' in the case of roads or rivers, mental disposition verbs like 'know', 'believe', 'want', 'intend', some, but not all mental act verbs like 'understand', 'recognise', and 'remember' and some verbs of intentional reference like 'means' and 'shows'; in the latter case only when the subject term is something impersonal like a state of affairs, an event or a book. When a person shows or demonstrates something, he does something.

What appears to distinguish verbs of action from verbs of inaction is that verbs of action always refer or can be used to refer either to the bringing about by the agent of some change in the antecedent state of affairs, to the maintenance by the agent of some existing state of affairs, or to the prevention by the agent of some event which might otherwise have occurred, where the agent is whatever is the appropriate filling for the variable X in sentence frames like 'What is X doing?' or 'What does X do?' In the case of verbs of

inaction, on the other hand, there is no event or state of affairs which depends on the individual referred to by the subject term for its occurrence maintenance or prevention.

Action and causation

It will be apparent from this that the concept of action is, not merely closely related to, but an integral part of the concept of causation which we were discussing in Lecture 5. In talking about actions we are talking about effects and the way in which they come about or are caused. We are talking in this case not so much about causal factors, the antecedent causal states and triggering events, as about the causal agent, the substance or entity of some other kind, the movement or other kind of change in which constitutes the triggering event in the case of an effect of the event type or whose presence is a necessary condition for the maintenance of the status quo in the case of an effect of the state type. Once this point is appreciated, it becomes apparent that a causal agent, that which can be said to do something, the individual referred to by the subject term relative to a verb of action, does not have to be a person, or even a living organism. It can just as easily be an inanimate substance, like the stone which breaks the glass, or a natural phenomenon, like the earthquake that shakes the house or the fire that burns it down.

This feature of the ordinary concept of action is one which is seldom adverted to in philosophical discussions of the concept. Philosophers who have discussed the concept of action (4b, 9, 11, 15 & 16) have usually done so in the context of the discussion of moral responsibility and the freedom of the will. They have usually been concerned to interpret the freedom of the human will and, hence, of human action, in terms of some kind of suspension of the normal relationship of cause and effect. Consequently they have tended to drive firm wedge between the causal agency and action of inanimate objects and sub-human organisms on the one hand, and human action on the other.

A notable exception here, is Miss Anscombe's contribution to the discussion in her monograph 'Intention' (1). Although she is primarily concerned with human action and with doing something with a particular intention or purpose in mind, which is arguably peculiar to the case of human action, Miss Anscombe draws attention to the fact that actions are usually characterised, not so much in terms of the movement, which the agent makes, nor yet, in most cases, in terms of the agent's intentions, but in terms of the effects that he causes or brings about. Moreover if, as sometimes happens, what the agent does triggers off a chain of subsequent effects, what he does (his action) can be characterised, not just in terms of the immediate effect of his acting, but in terms of any of the subsequent effects in the chain of events which he sets in motion. This principle is illustrated by Miss Anscombe's famous, if somewhat bizarre, example of the 'man who is pumping water into a cistern which supplies the drinking water of a house'. The water that is pumped into the cistern has been poisoned by someone other than the man who pumps it, in order to secure the destruction of a group of 'party chiefs' who inhabit the house and are 'engaged in exterminating the Jews and perhaps plan a world war'. In this case we can characterise the action of the man who is pumping the water in any number of different ways according to the various effects it produces regardless of whether or not he intended to produce them. Thus we can say (a) that he is moving his arm up and down (b) moving the pump handle up and down (c) pumping the water into the cistern (d) replenishing the water supply (e) poisoning the water supply (f) killing the inhabitants of the house (g) averting the extermination of the Jews and perhaps a world war.

The Identity of actions across descriptions

Perhaps the most important issue that arises out of Miss Anscombe's example of the man pumping water into the cistern, is the problem of the identity of actions. In fact there are two distinct, though related problems here. The first is the problem of the identity of a particular action across the different descriptions that can be given of it; while the second is the problem of the identity of two different instances of the same or same kind of action. This problem of the identity of a particular action across different descriptions is illustrated very clearly by Miss Anscombe's example. For if we say that in this example the descriptions 'moving his arm up and down', 'moving the pump handle up and down', 'pumping water up into the cistern', 'replenishing the water supply of the house', 'poisoning the water supply', 'killing the inhabitants' and 'preventing the extermination of the Jews and possibly a world war' all refer to a single event, a single action

performed by one man on a particular occasion, we are faced with the objection that what is alleged to be the same event which is characterised in these different ways has different and incompatible properties and characteristics according to the way in which it is characterised; and this is contrary to the principle known as Leibniz's law (10) whereby if two descriptions refer to one and the same thing, then whatever is true when predicated of the common referent under one description must be equally true of it when predicated of it under the other description.

For one thing the temporal characteristics of the action appear to be quite different according to the description that is given. The moving up and down of the arm and pump handle, for example, stops some moments before the replenishment of the cistern, and this together with the poisoning of the water supply is completed some long time before it results in the death of the household and the consequent confounding of their nefarious schemes. Furthermore the causal antecedents and subsequent effects of what is done appear to be different according to the description that is given. Thus, although the pumping of the water into the cistern and the killing of the members of the household both have a common causal antecedent in the man's moving the pump handle up and down and a common effect in that they both ultimately result in preventing the extermination of the Jews, pumping water into the cistern has consequences, such as replenishing and poisoning the water supply and killing the household members, which killing the household members does not have, while killing the household members has causal antecedents such as the water drunk by the household members, the water supply being poisoned and the water in the well being poisoned which pumping the water into the cistern does not have. And as Donald Davidson has argued (4), we can say that two descriptions refer to one and the same event, only if they have the same causal antecedents and the same effects.

Yet the conclusion which seems to follow from these considerations, namely that the man in Miss Anscombe's example was not doing just one thing, but at least six different things at one and the same time, appears grossly counter-intuitive. One solution to the problem presented by the fact that we prefer to talk here of one action under a number of different descriptions, rather than of six or more different actions, is to point out that there is a sense in which an action described in terms of its more immediate consequences is a constituent part of and, hence not wholly separable from the larger action which is described when its remoter consequences are mentioned. This however, in my view, is only part of the answer. In cases like that in which we speak of the man inadvertently killing the members of the household by pumping poisoned water into the cistern, we need to draw a distinction between the event which may be described as the killing of the household as a result of poisoned water being pumped into the cistern and the action of the man in killing members of the household by pumping poisoned water into the cistern. If we make this distinction we see at once that while the event whereby the household is killed as a result of poisoned water being pumped into the cistern extends over a much longer period of time than the event constituted by the pumping itself, and has a different set of causal antecedents from that of the pumping, the action of the man in killing the household members by pumping poisoned water into the cistern extends only over that period during which he is an active causal agent with respect to these subsequent events, i.e.: it applies over the period while he is actually pumping the water and not beyond, unless he continues to take steps thereafter to ensure that the water he has pumped into the cistern is actually drunk by the members of the household. Furthermore the causal antecedents and consequences of his action in bringing about the death of the household by pumping poisoned water into the cistern, if that is all he does, are precisely the same as those of the act of pumping itself. Indeed the two actions are one and the same.

Movements and basic actions

It is tempting in the light of this example to conclude that the action of an agent in bringing about some subsequent result consists in the actual movements of the agent which are causally effective in bringing about the result and that although it is true that actions are normally characterised in terms of their immediate or remoter effects, they always consist in some movement of the agent, which in the case of a human or animal agent will always be some kind of muscular movement. There are however, examples of actions which do not involve any kind of movement. Not only are there actions like the effect produced by one chemical substance or stuff when it comes in contact with another and different kind of substance or stuff

which do not involve movement, at least at the level of macroscopic observation, there are also actions which involve no movement or change at all, such as the action of the beam in supporting the weight of the roof and actions where a change is brought about, not by any movement on the part of an agent, but by the absence of such movement, as in the case of what Gaeta (7) has called 'negative actions' like the action of the king who effectively condemns a man to death by withholding the royal prerogative of granting mercy in such cases. In these examples however, the action of the agent, though it may not involve a movement on the agent's part, can only be said to take place or occur so long as the passive or immobile presence of the agent is a causal factor in the initiation of the subsequent events. Once events have begun to take their inevitable course the agent's action is complete, even though the ultimate consequences of his action, in terms of which it is subsequently characterised, have not yet worked themselves out.

We thus get the notion of an action as that state of, movement of, or process involving, the agent which either constitutes a causally necessary condition for the maintenance of a state of affairs or the persistence of some on-going sequence of events, or else constitutes a triggering event with respect to a subsequent chain of such events, which may be characterised in terms of any of its nearer or remoter consequences. This sense of action is related to, but is not identical with, the notion of a 'basic action' as described by Danto (5). Danto points out that in relation to most actions it makes sense to ask how or by what means did the agent do what he did, and that any answer that is given to such a question will also be a description of something that the agent can be said to do. In most cases indeed, it will be a narrower and more precise description of the same action. Thus, in Miss Anscombe's example, if I ask how the agent killed the members of the household, I will be told that he did so by pumping poisoned water into the cistern. If I ask how he pumped the water into the cistern, I will be told that he did so by moving the pump handle up and down. And if I ask, how he moved the handle up and down, I will be told that he did so by grasping the handle and alternately contracting and relaxing certain muscles in his body and arm. Danto points out that this process of asking how someone did something must necessarily reach a point beyond which no further answer can be given to the question 'how did he do that?' When this point is reached we have what he calls a 'basic action'.

Now when this principle is applied to human actions, like the case of the man pumping the poisoned water into the cistern, it becomes apparent that what constitutes the basic action depends on the extent to which we are permitted to introduce scientific considerations which go beyond our ordinary common sense understanding of the matter. In Miss Anscombe's example, if we are restricted to the kind of description that is available to common sense, the point at which there ceases to be any further answer that can be given to the question 'how' or 'by what means did X Φ ?' is when we reach the point of describing what the agent does in terms of the gross bodily movements that he makes or, in the case where he does what he does by saying something in terms of the particular set of words which he utters. If, on the other hand, we are allowed to make use of scientific knowledge not ordinarily available to the man in the street, we can pursue the matter very much further by describing the actual muscular movements which he makes in moving his body in this way or in uttering this particular set of words. Having done that, we can go on to ask how these muscular movements are initiated and controlled by the agent's nervous system, until we reach as our basic action something which philosophers used to call a 'volition' or 'act of will', what Broadbent (2) has called a 'command signal' or what might be described in the language of neurophysiology as the initiation of a particular pattern of neural activity in the pyramidal tract (7).

It should be noted however, that if we pursue the basic action back into the nervous system in this way, we are no longer talking about the same action under another description, as we are when we describe what a man does in terms of its immediate or more distant effects. We are now breaking down his action, what he actually does, his contribution to the various effects in terms of which his action is characterised, into its constituent parts. Consequently, by the principle which I stated in Lecture 4, it is only a complete substantial reduction of the action which includes not only all the constituent events of which the action is composed, but also the way they are related to one another (the form), which can be said to be identical with the action as a whole. This description, in order to be a complete description of what a man actually does, must extend beyond the limits of his skin to include the immediate effect on his environment which is brought about by his movements or by his failure to move. But it does not need to include the complete

description of the process whereby the remoter effect of his action on the environment come about; though a complete substantial analysis of the event whereby these effects came about as a result of what he did would need to include these.

In this connection it is perhaps, worth remarking that, just as ordinary language allows us considerable latitude in choosing which of the different effects of an action we can use in characterising it, so it allows us considerable latitude in choosing the agent to which the action in question is ascribed. For example, the action of building a house may, in different contexts, be ascribed to the man who ordered its building and paid the bill, to the architect who designed it, to the building contractor whose firm was entrusted with the task or to the men who actually laid the bricks, installed the timber and fitted the windows, doors, pipes and electrical wiring. By the same token we are free to ascribe the moving of a muscle to the nerve fibres which innervate it, to the brain, to the man in question or even, perhaps to his mind. It should be noted, however, that when we change the causal agent in this way, although the description of what is done remains the same (building the house or moving the muscle) the action, in the sense of what is actually done by the agent, is different, since each agent makes his or its own particular contribution to the end result in terms of which the action is characterised.

The Identity of Action across instances

In the preceding section we have been concerned with the description of particular actions and with their material and substantial micro-analysis. What we now have to consider is the conditions under which we can say of two particular actions that they are instances of the same action in the sense in which we speak of an agent repeating an action or doing the same thing as he or it did on a previous occasion. The first point to be made in this connection is that, as is implied by Leibniz's (10) principle of the identity of indiscernibles, every particular event (where an action is a species of event), like every particular substance, is unique. Even in the case of such highly stereotyped actions, such as the individual bar-presses of a well conditioned rat in a Skinner Box or even the more stereotyped actions of the machine that puts tops on milk bottles, no two actions are alike in all respects. If they were, by Leibniz's principle, they would not be two different events, but one and the same event. There must be some respect in which they are different, even if the only detectable difference between them is the difference in the time at which or over which they occurred.

It follows from this that whenever we speak of the same action or event being repeated on a subsequent occasion, we are not, and necessarily cannot be, talking about two occurrences of the same particular action or event. What we are talking about is the occurrence of the two particular actions or events of the same kind. Furthermore, when we talk of two things of the same kind, we are talking about two things which are alike in certain respects, but not in all respects. And from this it follows that any action or event that resembles another action or event in a certain respect is, to that extent, an instance of the same action or event, however different it may be in other respects. Thus, to take an extreme example cigarette smoking and the lack of rain in the Southern Sahara both perform the same action in so far as they both bring about the death of large numbers of human beings.

However in those cases where the question whether or not a given action does or does not constitute a genuine repetition of a previous action, we are not concerned with the same end result brought about in different ways by different causal agents, but with cases where the same end result is brought about on different occasions by the same causal agent, who is either a human being or some other living organism. The problem is to decide in what respects and to what extent the end result and the means whereby it is brought about have to be of the same kind for us to be able to count one particular action as a repetition of another, as a case of doing the same thing over again. Many philosophers in recent years have been inclined to argue that it is a peculiarity of human actions that agent can be said to do the same thing on different occasions despite the fact that the configuration of movements he employs in the two cases is entirely different, provided that the end result, as specified in the common description of the two actions, is the same. It is evident that in such a case the explanation of what is different in the two cases, namely the configuration of movements, requires a different explanation from that which explains what is common to the two cases, namely that they both achieve the same kind of end result. It is therefore, concluded that in general the explanations that need to be given of human actions defined in terms of their consequences or

effects must be different from the explanations that are given of the movements of which particular actions are usually composed. A similar argument is used by Chomsky (3) in order to show that the regularities linguistic behaviour which he attributes to the employment of implicit linguistic rules cannot be construed, let alone explained, in terms of a stimulus-response learning theory such as that used by Skinner (14b), since every native speaker who uses these rules has the ability to construct grammatical and meaningful sentences which neither he nor anyone else has ever uttered before.

The assumption in both these cases is that stimulus-response or 'causal' type explanations of behaviour can only be used to describe and account for the recurrence of the same movements in the sense of movements with specific physical or anatomical characteristics in common. How wide of the mark this view is will be appreciated when we realise that the whole of Skinnerian theory for example, is constructed around observations of so called 'responses' which, like most human actions are defined, not in terms of certain parameters of movement, but in terms of their immediate consequences. As Sidman (13) points out: "When a response is specified as 'lever pressing', the behaviour is restricted only to those actions that succeed in depressing the lever. The lever press may however, vary through a wide topography, including responses of varying force and duration and performed with different parts of the body. Likewise Broadbent (2) in describing the behaviour of the subject in Hammerton's Toy Train experiment (8) in which he analyses in terms of the 'causal' language of cybernetics and signal detection theory, points out that "this simple action consists of two segments, each of which is defined by its final state, and not by the movement which takes place".

However, while there is clearly no difficulty in recognising particular actions as repetitions of the same action when they achieve the same end, but with a different configuration of movements, and in accounting for such actions in 'causal' terms, there is equally clearly some upper limit beyond which we cannot go in describing particular actions, having the same ultimate consequences, as repetitions of the same action. For example no one, expect perhaps a Freudian (6) would want to say that if I cover a floor with a blue carpet, I am repeating the same action which I performed many years ago when I accidentally stained a large patch of floor blue by accidentally knocking over an ink bottle, though under the description 'bringing it about that the floor is blue', the two actions are the same.

What we presumably need, in order to fix such an upper limit, is some principle whereby we will only accept as genuine repetitions of the same action on different occasions those cases where, either the causes or other determinants (if you don't like the word 'cause' in this connection (2)) of the two particular actions in question are similar, or where the further apparent consequences of the action that occurs first in time is a factor influencing the occurrence of another action with the same immediate consequences on a later occasion. Thus even the action of covering the floor with a blue carpet could be regarded as a repetition of the action of spilling the ink bottle as a child, if it could be shown, either that the satisfaction derived from seeing blue stained floor spilling the ink bottle as a child determined the subsequent choice of blue as a floorcovering, or if it could be shown, less plausibly, that some other even earlier experience of a blue floor had influenced both actions. In other words the determination of what is going to count as two unconnected actions which happen to produce the same result and what is going to count as a repetition of the same action is, as Skinner has argued (14a), a matter for empirical determination. If by treating certain actions or 'responses' as Skinner calls them, as instances of the same response repeated on different occasions by virtue of some feature which they have in common, we succeed in establishing lawful relationships between the occurrence of an action or response so defined and a standard set of conditions under which such an action or response will appear or fail to appear and under which its frequency of occurrence will vary, then we can be satisfied that what we have identified is an action or response which, in Skinner's words, follows "the natural lines of fracture along which behaviour and environment actually break".

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