

Backward Causation

Perhaps no other psi phenomenon arouses so much philosophical disquiet as does precognition. Although, in a sense, all our activity is directed towards the future, the idea that it might be possible occasionally to catch a glimpse of that future, as opposed simply to making inferences about it on the basis of past experience, is an idea that many find outrageous, not least because it seems to imply a backward causation. When, therefore, I was invited, again by the Parapsychology Foundation, to participate in a conference on philosophy and parapsychology, in Copenhagen in August 1976, I decided that backward causation would make a suitably controversial topic for such an occasion. Bob Brier (1974) had already set the cat among the pigeons with the publication of his book on this theme. I, for one, had found the book persuasive. Moreover, the recent advent of observational theory was making a bid to interpret all psi phenomena as a retrocausal effect produced at the point of feedback.

The two professional philosophers who took part in the discussion which followed my paper (Parapsychology Foundation 1977), namely Shivesh Thakur and Peter French, seemed amenable to the principle of backward causation, unlike Anthony Flew who at a previous conference (Parapsychology Foundation 1974) had attacked the notion as logically absurd and, with it, the very idea of precognition in a literal sense. I had tried to challenge him at the time but he would not concede anything to my objections; so did Brier, himself, even more forcibly, pointing out that Flew had failed to recognize the elementary distinction between changing the past, which was a logical absurdity, and influencing the past which was not. To this day Flew has clung to his position and refuses to recognize this distinction.

Every paranormal phenomenon must, in the nature of the case, arouse suspicion and skepticism, but the claim to be able to foretell events which have not yet occurred, which is what we mean by *precognition*, is apt to raise doubts

as to whether this concept is even coherent. A number of eminent philosophers, including some like the late C.D. Broad (1967) or C.W.K. Mundle (1964) who were known for their interest in and involvement with parapsychology, came reluctantly to the conclusion that precognition, taken in its literal sense as a knowledge of the future, was not just impossible in point of fact but was logically impossible.²

I want to start by considering some of these logical objections that have been brought against the concept of precognition. It has been pointed out, for example, that if an event has not yet occurred, then it cannot have any effects and, in particular, it cannot be an object of knowledge. Something which does not exist may be imagined, but it cannot literally be known. Moreover, even if we disregard this obvious point, in order for a future event to become the cause of my present precognition of it, it would have to exert a backward effect in time and this, it has been said, is inadmissible on at least three counts. First, because it is part of the meaning of the word *cause* that a cause should precede its effect, hence a cause which followed its effect would be a contradiction in terms. Secondly, and more seriously, if, forgetting about the semantics of the case, we do posit a backward causation, this would be tantamount to asserting that we could alter the past. But what has been, has been and nothing that anyone can do after the event can change it in any way. Hence, the very idea of backward causation is a radical absurdity. And, thirdly, even if we could somehow overlook the two previous objections and persist with the idea of backward causation, we should find ourselves committed to the following paradox: If it were possible to intervene in the past then, in principle, we could intervene in order to prevent our own birth. But, in that case, who was it that intervened in the first place? We would thereby have negated our own existence!

These are not by any means the only objections that have been raised with respect to precognition and I shall have more to say on the point towards the end of my talk but, in the meanwhile, I want to look very closely at the concept of backward causation which I believe is the real root of the trouble. I hope to show that, contrary to what many philosophers have maintained, there is nothing radically wrong with this concept and hence it cannot be invoked as a reason for rejecting precognition on *a priori* grounds. Furthermore, I shall try to show that, once we have come to terms with this seemingly paradoxical idea, we shall be ready to appreciate an exciting new development in experimental parapsychology, namely the study of backward or retroactive PK. In what follows, I would like to acknowledge my debt to a young American philosopher, Bob Brier, who alerted me to this problem and convinced me that the *a priori* case against precognition could be met. Bob Brier propounded his views in a brief but important monograph entitled *Precognition and the Philosophy of Science* (Brier 1974), with the subtitle "An Essay on Backward Causation." Brier, in turn, was following the lead of the English philosopher

Michael Dummett (1964), whose "Bringing About the Past" first appeared in the *Philosophical Review*. But, having acknowledged my intellectual debts, I consider myself free to develop my theme in my own way and draw my own conclusions. Let us return, therefore, to the objections which I have already listed and see whether they are really as cogent as they may at first appear.

The idea that future events do not exist and can, therefore, have no conceivable influence upon the present is a case of begging the question. For, in fact, many if not most contemporary philosophers of science who have written on the problem of time take a realist or objectivist view of the temporal order. I mean by this that they deny that the expressions *past*, *present*, *future* have anything more than a subjective or, at least, mind-dependent basis, indicating the relationship between the observer and the event in question, like the expressions *here* and *there*. In a mindless universe, they argue, no particular instant of the time series would have a preferential status over any other instant. Each event would still stand to any other event in the relationship *earlier than* or *later than* but none would stand out from the rest as representing a unique *now*, that is, the instant which the universe had attained on the time series. All events would simply coexist in the timeless sense in which we talk of facts as existing or *being the case*. Now, I am not saying that the realist view of time is necessarily the correct one or that the concept of *now-ness* or *becoming*, as something extra which an event attains when it actually takes place, is a concept with no clear meaning. I mention this view simply to show that one cannot just assume, without further argument, that future events are any less real than past or present events. And, certainly, those cosmologies which treat the universe as a single four-dimensional continuum, in which every object is represented by a certain determinate world-line, recognize no division of the universe into a past, present and future.

Let us agree, then, that there are no *a priori* objections to our treating future events as sufficiently real to have causal consequences. The question we must then consider is whether the direction of such causation must always extend from earlier to later, never from later to earlier. Let us look again at the reasons that are offered for refusing to admit any sort of backward causation. First, I do not think that the purely verbal objection need to detain us for long. It may well be the case that, in ordinary language, a cause is always understood as preceding its effect, since this, after all, is what happens in ordinary experience. But, given new circumstances, linguistic usage tends to become reasonably pliable and if we can show that there are paranormal cases where the cause comes after its effect, I am quite sure we would not be deterred from acknowledging them by the constraints of language. At worst we might have to write the word "cause" in adverted commas, to signal that this was a rather special kind of cause that we are dealing with.

What is much more problematic is whether the admission of backward causation would lead us into any logical difficulties. If it does, it is not

indeed commit us to asserting that the past could be altered and this, I would agree, is nonsense. But, although we cannot alter the past in the sense of making something to have happened which did *not* in fact happen or, conversely, preventing something from having happened which *did* in fact happen, it does *not* follow that what *did* happen might never have happened, or might have happened differently, *but for* certain later events. We may find this supposition strange, but it is certainly not illogical. In fact, the case is no different logically when we are considering the future. If what has been, has been, then, equally, what will be, will be and in this sense one can no more alter the future than one can alter the past. But, of course, we quite rightly believe that what will be may depend on what we now do and, in this sense, we can *influence* the future even if it makes no sense to talk of altering it. The fallacy which previous philosophers have fallen into arises from the fact that they failed to observe Brier's distinction between altering the past and influencing the past. The point to grasp is that the past might not have been what it was, had it not been for some action in the present.

We are now in a position to deal with the other paradox of the man who by dint of backward causation cancelled his own birth. Given the fact that a person was born on such and such a date, it follows that nothing thereafter can *alter* this fact. But it does not follow logically that his having been born might not have been due to some subsequent action that was taken. For example, a pious Christian mother might well believe that her child would never have been born, but for the fact that, at the appointed time, she had it baptized. Now, we may mock her for her credulity as much as we please, but we cannot fault her logic. The fact that we cannot use backward causation to cancel our birth is no more problematic than the fact that we cannot cancel any event once it has occurred.

Critics of backward causation point out that causation is an essentially pragmatic concept. Thus, we say that A is the cause of B when we are satisfied that we can bring about B by taking action involving A. However, if we know that B has already occurred, then any action we take involving A would be superfluous, since we have now obtained B whether or not we do A. Conversely, if B has *failed* to materialize at a given time t_1 . Hence, from the pragmatic point of view, every instance we take involving A is then futile insofar as it was designed to make B occur at time t_1 . Hence, from the pragmatic point of view, every instance of backward causation must be either superfluous or else futile.

Brier offers an amusing example to show, nevertheless, that backward causation need not be devoid of pragmatic import. Suppose a man were to discover, by sheer trial and error, that whenever he received a letter through the post he had only to clap his hands and, when he then opened the envelope, he would invariably find there a check made out in his favor, while, conversely, if he were to clap his hands there would be no check. In this situation,

Brier asks, would any of us, whatever our philosophical prejudices, refrain from clapping our hands? And, if so, could any of us honestly deny that clapping our hands at the right moment was a necessary condition or cause of the check having been inserted into the envelope at an earlier time? Now, you may say at this point: well, supposing the envelope were transparent, what then? The man would then know as soon as he caught sight of the letter either that there was a check inside, in which case he would not bother to clap his hands, or that there was no check, in which case no amount of hand-clapping would help him! And yet, surely, a causal connection which depended for its validity on the knowledge or ignorance of the agent would be a very queer sort of cause.

But consider, any causal connection whatsoever is circumscribed by certain boundary conditions. Indeed, as Ducasse (1969) and other philosophers have stressed, causation actually involves a triadic relationship, A causes B under conditions C. Striking a match will cause a flame but not if the match is damp or the surface is too smooth. It is not, therefore, surprising if what we might call the epistemic aspects of the situation should constitute the boundary conditions where human actions are involved. Here, again, a comparison with actions directed towards the future may help to clarify this point. Thus, if I *know* that tomorrow I shall be killed, it follows logically that nothing I can do today can prevent it, since knowing something logically implies that it is the case, but, granted that I do *not* know whether I shall be killed, it is entirely rational for me to take steps to avoid getting killed.

Similarly, if the letter I receive arrives in a transparent envelope, so that I know that there is no check inside, no magic on my part can conjure one into having been inserted, but, granted that the envelope is opaque and that I do *not* know, it is entirely rational for me to clap my hands. What makes these two cases appear different is that normally we do *not* know what lies in the future, whereas normally we *do* know, or at least we can very easily find out, what has happened in the past. But this is an empirical difference as between past and future and, of course, there are many such empirical differences. The logic of the two situations, however, is entirely symmetrical and it is the logical aspect that now concerns us. From the foregoing we are, I submit, entitled to conclude that there are no logical objections to saying that A is the cause of B, so long as we believe that B would not have happened but for A, regardless of whether A is earlier than B or B is earlier than A.

Up to this point we have discussed the question of backward causation in purely hypothetical terms, using examples drawn from the realm of fantasy or superstition. I now want to turn to the actualities of parapsychological research and consider its relevance in that context. It has been widely held by parapsychologists that ESP is essentially independent of space, time and matter, so that when we use our extrasensory powers, instead of relying on our sensory channels and their associated brain-mechanisms, there is no inherent reason why we should not become aware of events occurring in the past or the future

as much as events occurring contemporaneously, just as there is no inherent reason why we should not become aware of events occurring in remote places or events shielded from us by intervening matter. In the case of PK, however, it has been the practice to use target-systems located in the subject's immediate vicinity and much less has been made of the potential time and space transcendence of the phenomenon. And yet it would be very odd if PK behaved any differently in this respect from ESP, considering that the two are so closely linked that it is customary to subsume both phenomena under the generic term *psi*. The trouble is, however, that it would, in the nature of the case, be very difficult, if not impossible, to demonstrate unequivocally the existence of a PK effect directed towards the future that would be the analog of precognitive ESP. For, whereas in a precognition experiment the subject has simply to record his guess at time t_1 , and then wait for the target event to occur at time t_2 , against which he can compare it, in the case of PK there is no objective way of registering mental effort at time t_1 that might be responsible for the target event at time t_2 . The point is that PK is known only through its effects. It cannot be identified with any sort of conscious effort on the part of the subject. Moreover, even if one went to the extreme of killing the subject between the time t_1 when he is given the instruction to try exerting a PK effect on the future and the time t_2 when the effect is observed, one could still not rule out the possibility that the effect was due to a delayed-action PK or, even, that the deceased subject was exerting a PK effect from the life beyond, as it were.

We may note in passing that the problem of demonstrating forward PK is exactly matched by the problem of demonstrating backward ESP, otherwise known as retrocognition. In the latter case, although the subject's response can be recorded prior to verification, the verification would not be possible but for the existence of certain records in the present. Hence, there can be no unequivocal test of retrocognition. Fortunately, there is no such logical barrier in the way of demonstrating unequivocally the existence of a backward or retrocognitive PK, which is what I want to talk about now. The way it can be done is as follows: Some physical effect can be automatically recorded at time t_1 , but kept secret until later. At time t_2 , the subject is instructed to try producing this particular physical effect or outcome on this particular target-system and then, but only then, is the result checked against the original record at time t_1 . This, basically, is the method used by Helmut Schmidt in his recent experiments on PK with time displacement, but others, too, have been working independently along similar lines elsewhere (Janin 1974). For a straightforward test of PK, Schmidt uses as his target system a device known as a "random number generator." This usually has a binary output such that, when it is operating in isolation, the two possible outcomes will occur with approximately equal frequency. The PK task is to upset the randomness of the machine by predicting the one digit or the other, depending on the

arbitrary instruction that is laid down. A prominent feature of the Schmidt set-up is the feedback system. This may take a variety of forms, visual or auditory, for example, a recording pen that shifts from side to side or a fluctuating tone etc. The principle, in every case, is that the feedback is controlled by the random number generator in such a way that an excess of hits or successful trials will produce a shift in one direction, while an excess of misses or unsuccessful trials will produce a shift in the opposite direction. This feedback is not just an amenity designed to engage or sustain the interest of the subject; it is, according to Schmidt's (1975) mathematical model of psi, a crucial part of the whole process. It is, indeed, the feedback which is said to activate the psi source. However that may be, the subject is encouraged to concentrate his attention on the feedback and to try getting it to move in the desired direction, and not to bother about the random number generator which actually governs it.

This, as I say, is what happens in the straightforward or contemporaneous type of PK test. To convert this into an experiment on retroactive PK, only one modification is necessary. The output of the randomizer is now determined by a solid state memory on which a sequence of digits has been recorded, based on a previous output from the machine. Hence, instead of generating a fresh sequence of random digits by being triggered from a source of quantum indeterminacy or of electronic noise, it now merely repeats the series recorded at this earlier time. So far as the subject is concerned, however, nothing has changed; he does not need to know that the situation is any different from what it is in the standard case. Nevertheless, if the subject is to succeed in making a significant score under these new conditions, it is necessary for him to influence the behavior of the machine, not as it *is* currently, since it is now strictly determined, but as it *was* when the target sequence was originally recorded. His PK, in other words, is now operating retroactively. Although, so far, very few such experiments have been reported, it is beginning to look as if PK with time displacement may be a fact (Schmidt 1976).

In our department at Edinburgh, Richard Broughton, one of my postgraduate students, has already started work on a project which depends on the retroactive properties of PK. His point of departure is the notorious *experimenter effect*, that is, the idea that the experimenter himself, rather than the ostensible subject, is the real psi source which is responsible for the positive results which are observed. Without some such hypothesis, it is hard to explain why certain parapsychologists obtain positive results time and time again while others hardly ever do so. Indeed, Broughton had begun to wonder whether his own positive results, which he had himself obtained earlier, while working on his thesis project designed to demonstrate a hemispheric lateralization effect in ESP, might not have been the product of such a psi experimenter effect. In this new project, what he does is to generate a certain expectation in his subjects regarding the kind of scores which they may expect, more specifically, that they may expect to do better under one condition in which they perform their

ESP task than they will under another condition, on account of certain unspecified artifacts. Actually, there is no objective difference between the two conditions under which they perform, and it is only when they go to the computer to receive a printout of their scores at the termination of the experiment, that they are told which was the high-scoring condition and which the low-scoring condition, the assignment being arbitrarily determined by the computer. This means that the expectation is generated in the subject, not at the start of the experiment, but only when it is all over. The idea, if you follow me, is that any significant difference that is then found as between these two arbitrary categories must be due to the subject's retroactive PK. In other words, what he expects to find at time t_2 must influence the scoring level recorded at time t_1 . A pilot experiment along these lines has already been run which did in fact produce some significant differences and Richard Broughton has been reporting on them to the Parapsychological Association Convention at Utrecht (Broughton 1976). There are further refinements in his experiment which I have not bothered to mention and a much larger experiment is planned for next year, which the Parapsychology Foundation has generously agreed to support, but I have taken it as an illustration of the fact that backward causation is beginning to enter into the current thinking of experimental parapsychologists.

Nor is it only PK that operates retroactively. If we adopt the Schmidt axiom, that all psi interactions depend critically on feedback, then ESP, too, involves backward causation, proceeding from the moment at which feedback is received to the earlier moment in time at which the response was given. Even precognition, on the Schmidt model, is elicited not, in the first instance, by the future event that is precognized, but rather by the subsequent confirmation, whether by the subject himself or the experimenter, that the event in question has come to pass.

Armed with the concept of backward causation let us finally turn back to the problem of precognition which I introduced at the outset of this paper. Undoubtedly, one reason why precognition has engendered so much resistance is that to many people it seems to cut at the root of the belief in free-will. If our future actions could be known, it is feared, this would make a mockery of our claim to be able to determine our actions by a spontaneous act of will. Applying the concept of backward causation, however, this fear would seem to be unfounded. For, when I spontaneously choose or decide upon some course of action, then my choice or decision could just as well have caused you to have had a precognition of it the week before, as it could be the cause of your remembering it a week later. Whether this entirely disposes of the uneasiness we all feel at the thought of the future being already in some sense laid down and knowable, I do not know. Certainly, we like to feel that the future lies open before us waiting to be created, but whether this intuition is philosophically justifiable, I must leave you to judge. I will say, however, that

there is one restriction we must impose on the scope of precognition if we are to retain the idea of free-will. We clearly cannot both precognize our own future actions and, at the same time, freely decide upon them when the time comes. For, deciding implies being in a state of uncertainty which is terminated only when the decision is made. But, if we already *know* what we are going to do, it would be absurd to talk of our then *deciding* what to do. Having perfect precognition, which would include knowing all one's future actions, would indeed be incompatible with living one's life in the sort of way that characterizes human existence.

I am not claiming that the concept of backward causation can solve all the problems connected with the idea of precognition—there is, for example, the notorious *intervention paradox* which raises quite different questions—but what I have tried to do in this paper is to show that precognition cannot be dismissed on logical grounds alone, and that the idea of backward causation, so far from being nonsensical, is now being taken seriously by more and more experimentalists as a basis for testing psi in the laboratory.^b

Notes

a. To be fair to Broad, he does attempt to rescue the concept of precognition in the literal sense by toying with the idea of an additional dimension of time (Broad 1967, pp. 199–204).

b. Despite this confident conclusion, resistance to the idea of backward causation and, hence, literal precognition, is still far from having subsided. Both Jule Eisenbud (1982) and Stephen Braude (1986, chap. 5) repudiate it as an incoherent idea. Braude, a professional philosopher, unlike Flew, does not fall into the same trap, that of failing to distinguish between altering the past and affecting the past. His argument is much more subtle, namely that "Any causal connection we identify will always be part of a larger causal nexus spreading indefinitely into the past and future" whereas the putative counterclockwise causes are never part of any such wider network. My own response to this objection is to challenge the premises of Braude's argument. I do not agree that normal causes are necessarily part of any wider network. The obvious model for precognition is memory, indeed one is tempted to regard precognition as simply memory operating in reverse. Now the relationship between the events remembered and the present memory need be no different from the relationship between the events precognized and the present precognitive experience. It is true that, in the case of memory, one can fill in the time gap by invoking memory traces in the brain; indeed this is what enables us to regard memory as a normal rather than paranormal phenomenon (see my paper on pages 110–122). But, clearly, this is not part of that causal nexus to which Braude alludes and, in any case, Braude has elsewhere (1979) repudiated the trace theory of memory. The point is that when we are dealing with an epistemic relationship there is simply no need for Braude's causal nexus, rather it is a case of the percipient's mind being directed either onto its past experiences or, in the paranormal case, onto its future experiences.

It is curious that, as a consequence of what I regard as their faulty logic, both Eisenbud and Braude (who acknowledges his indebtedness to Eisenbud) adopt what they themselves call an "active" interpretation of precognition. This means that the events said to have been precognized were actually brought about, psychokinetically, by the precognizer! This has long been a favorite fall-back position for those parapsychologists who, for whatever reason, cannot come to terms with literal precognition. Alternatively, when the active interpretation becomes too far-fetched even for its proponents, recourse can be had to superinferential powers of extrapolation from contemporaneous clairvoyant knowledge. Such antics, it would seem, are the price one has to pay for rejecting backward causation.