LEAVING THE PAST ALONE

PROFESSOR MICHAEL DUMMETT, in his puzzling and provocative essay on "Bringing About the Past,"[1] considers the temporal asymmetry of the causal relation and puts forth the claim that this asymmetry is contingent rather than logically necessary. He goes on to describe an empirical situation in which, he claims, one could sensibly speak of voluntary action performed with the intention of bringing about a past event. In considering this essay, I shall refer to Dummett's example of the tribal chief, and to the three propositions one of which Dummett holds the chief must reject: (i) that there is a positive correlation between his performing action A at T and the occurrence of E at T_1, prior to T; (ii) that A at time T is entirely within his power to do if he so chooses; and (iii) that it is possible for him to find out what has happened (E or not-E) independently of his intentions (to perform A or not).

I should like to make the following points, which I shall attempt to support:

1. It is most implausible that the temporal asymmetry of the causal relation would reveal itself to us as mere observers, or, for that matter, that the notion of causality itself would.

2. We cannot in fact sensibly imagine such a world as Dummett seeks to describe, in which "everything happens in reverse."

3. Even in the case of a world without intentional action, Dummett has not shown, in spite of his suggestion to the contrary, that the notion of backwards causality does not generate absurdity.

4. In the case of a world in which intentional action does occur, the set of beliefs (i), (ii), (iii) is indeed inconsistent, and (i) and (ii) are indeed both necessary to make sense of the notion of bringing about the past. But the belief that (iii) holds for past events is not a prejudice. Rather there *are* arguments in favor of accepting (iii).

[1] M. Dummett, "Bringing About the Past," in the present issue of the *Philosophical Review*.

5. Thus Dummett has not actually shown that one can, even in the empirical situation he describes, sensibly speak of acting so as to bring about the past.

6. Indeed, the notion does lead to absurdity, as can be demonstrated by examination of some of the consequences of speaking of the causal relation as differing in essential ways from what we normally take it to be.

7. Furthermore, this absurdity can be accounted for in terms of the relationships in our language among such notions as those of causality, intentional action, physical object, and time.

8. Thus the temporal asymmetry of the causal relation is not an empirical asymmetry, but has its basis in the way talk about causality functions in our language.

Dummett admits the claim that "our concept of cause is bound up with our concept of intentional action." And he recognizes that the "connection between something's being a cause and the possibility of using it in order to bring about its effect plays an essential role in the fundamental account of how we ever come to accept causal laws." But he goes on without further exploration of the point to suggest that we could have a notion of cause even if we were mere observers of the world. And he further suggests that in such a case the temporal asymmetry of the causal relation "would reveal itself to us." But he offers no account of the way in which we might come to learn of cause and its properties.

Admittedly, there is nothing logically wrong with the notion of a being which, independently of any interaction with the world, has an understanding of causality. But I take Dummett's point here to be a psychological one: it is a question of how we come to know about cause, not a question of the logical analysis of that concept. And there is no reason to suspect that we could ever come to know about cause without being able to interact in some way with our environment. Piaget offers experimental evidence in support of the claim that we do in fact develop our conception of causality as a result of such interaction, and concludes: "The starting point of causality is a non-differentiation between inner and outer experiences; the world is explained in terms of the self.... We do not ... begin by discovering internal causality and then proceed to transfer it into objects. Causality

is the result of a sort of bodily contact between the organism and the world, which is prior to consciousness of self."[2] We are left with a complete lack of any suggestion as to how a mere observer could come to have an understanding of causation; and in the light of evidence that we learn about causation by means of our interaction with the world, I must conclude that, as a psychological observation, Dummett's view is implausible.

But let us grant Dummett the first step. Let us imagine a sentient being, created somehow with a notion of causality, placed in observation of our world with orders not to touch. Would the temporal asymmetry of the causal relation "reveal itself" to him? It seems not. For if his understanding of causality includes the temporal asymmetry, the question is begged. But if not, there seems to be no way the observer could discover it. As an observer, he would lack any test to distinguish between causal connection and accidental though constant conjunction, and his inability to participate in causal chains of events would deprive him of the one empirical indication of the asymmetry—that is, the experience of influencing the future with no apparent way to influence the past. Even knowing that *A* and *B* are causally related, he would have no way of determining which event was the cause.

I do not here wish to suggest that an observer could not have knowledge of the temporal asymmetry. I mean merely to deny that he could discover the asymmetry by observation of the world, even granting that he had some prior notion about causality. Of course, I have given no proof that the asymmetry would not reveal itself; but I hope to have shown it more implausible than likely in the absence of some sort of interaction between the observer and the environment beyond that which is involved in observation alone.

The second point I wish to make is that we cannot in fact imagine such a world as Dummett describes, in which "everything happens in reverse." I claim that this result comes not out of any definition of the notion of causality, but rather from an examination of the way in which that notion is bound up with others as

[2] Jean Piaget, *The Child's Conception of Physical Causality*, trans. M. Gabain (Patterson, N. J., 1960), p. 272.

we use language to organize and describe experience. In particular, the notion of causality is closely related to the notion of time. And Dummett's error stems from tampering with one of these notions without considering the implications for the other. I shall argue that one cannot successfully alter the notion of cause, as Dummett does at this point, and leave that of time unaffected.

To begin with, it is not reasonable to assume that time order is independent of causal order. In fact, Reichenbach claims to have shown that time order is *reducible to* causal order.[3] Such a dependence of temporal order on causal order, he argues, is indispensable in relativity theory.[4] What, then, of Dummett's world, in which "everything happens in reverse"? If Reichenbach is right about the dependence of temporal order on causal order, one might well argue that time itself is therefore "reversed" in Dummett's world, and thus the notion of everything happening in reverse is vacuous: it specifies no situation distinguishable from the normal. Even if we do not accept Reichenbach's account, we can see problems arising about Dummett's world to which there are no obvious solutions. How can we tell that everything is reversed? Do the clocks run backwards, too? What does that mean, if all clocks, natural and artificial, run backwards? What is the order of our ideas, if we imagine ourselves in this world? Or if we do not, what distinguishes the forward and reverse directions of time?

This situation suggests that if we are to examine the question of whether or not we can make sense of talk about unusual temporal properties of a causal sequence, we must consider not the case when "everything happens in reverse," but one in which only

[3] Hans Reichenbach, *The Direction of Time*, ed. Maria Reichenbach (Berkeley and Los Angeles, 1956), p. 25.

[4] The decisive argument in favor of defining time order in terms of causal order derives from Einstein's criticisms of simultaneity. It is well known that the Lorentz transformations, which express Einstein's special principle of relativity, permit the reversal of the time order of certain events, namely, of those which cannot be connected by causal chains. Time order is invariant under the Lorentz transformations only if the events in question can be connected by signals, that is by causal chains. It follows that if time order were more than causal order the Lorentz transformations and Einstein's relativity could not be accepted (*ibid.*, p. 25).

some of the causal chains have an abnormal temporal direction. This is, in fact, just what Dummett does when he considers in detail the actual issues associated with the question of the temporal order of causality.

In view of the preceding considerations, it is not at all clear that the notion of backwards causality is a sensible one. For Dummett's remarks in support of such a claim rest on his assumption that there are no problems in imagining and discussing events within a world in which "everything happens in reverse." But this assumption, we have seen, is in error; and thus the question is still open whether or not one can make sense of talk about backwards causation, even in a world without intentional action.

It is, however, the world of intentional action with which we are primarily concerned. Dummett says that it is inconsistent of an agent in such a world to hold simultaneously that:

(i) there is a positive correlation between his doing A at time T and the occurrence of event E at time T_1 prior to T,
(ii) doing A at T is within his power if he so chooses, and
(iii) it is possible for him to find out whether or not E occurred at T_1 independently of his intention to perform A or not.

Now I agree that these three beliefs are incompatible and, further, that beliefs (i) and (ii), if they can be maintained simultaneously, give rise to talk about doing A in order that E shall have happened. But I disagree with Dummett's view that it is a prejudice which leads us to give up (i) or (ii) rather than(iii).

He says of (iii), "If we insist on hanging onto this belief, for all types of past event, then we cannot combine the two beliefs that are required to make sense of doing something in order that some event should have previously taken place; but I do not know any reason why, if things were to turn out differently from the way they do now, we *could* not reasonably abandon" (iii).[5] I think there are reasons why we cannot abandon (iii), regardless of how things turn out, and I think these reasons are strong enough to force us to recognize that (i) and (ii) are incompatible.

Consider the grounds on which Dummett defends abandoning

[5] P. 357.

(iii) in his example. There has been empirical evidence in support of both (i) and (ii). The chief therefore maintains that he can influence the past, and consequently abandons belief in (iii). In fact, this hypothesis—that there is backwards causation—is the only hypothesis on which it is reasonable to give up (iii). Without it, the denial of (iii) makes no sense. Thus, the chief gives up (iii) because he recognizes that (i), (ii), and (iii) do not form a consistent set, and he has already accepted (i) and (ii) on empirical grounds. Here the basic flaw in Dummett's approach can be seen. He says of (i) and (ii), "We are tempted to think of these two beliefs as incompatible, and I described people attempting to devise a series of experiments to convince the chief of this. I tried to show, however, that these experiments could turn out in such a way as to allow the chief to maintain both beliefs."[6]

Because of his conviction that the temporal asymmetry of the causal relation is an empirical asymmetry, Dummett takes the logical possibility of our trying unsuccessfully to find empirical evidence against (i) and (ii) as evidence in favor of accepting (i) and (ii) as compatible. But the evidence against the compatibility of (i) and (ii) is logical evidence, itself compatible with any empirical outcome. So the rejection of (iii) on the grounds that (i) and (ii) are compatible constitutes sufficient argument that one *can* make sense of talk about action done in order to influence the past. But if (i) and (ii) are not compatible, belief in (iii) cannot be abandoned, since it is reasonable to abandon (iii) only on the hypothesis that the past can be influenced, and this hypothesis is true just in case, for some A and E, both (i) and (ii) are true.

Thus we cannot reject (iii) on the empirical grounds cited by Dummett. I shall try to offer a defense of (iii) by providing a case on logical grounds for the claim that it does not make sense to speak of backwards causation, and hence for the claim that (i) and (ii) are, after all, incompatible.

I turn to arguments which I hope will show that talk about acting in order to influence the past does in fact lead to absurdity.[7]

[6] P. 356.

[7] For a discussion of this point, see H. Putnam, "It Ain't Necessarily So," *Journal of Philosophy*, LIX (1962), 665-671. But Putnam has not shown that

Reichenbach, in supporting his view that the ordering of time is dependent on the order of causal sequences, claims that it is an empirical fact that closed causal chains do not occur. He says:

> It should be kept in mind that the openness of causal chains represents an empirical fact and cannot be regarded as a logical necessity. There is nothing contradictory in imagining causal chains that are closed, though the existence of such chains would lead to rather unfamiliar experiences. For instance, it might then happen that a person would meet his own former self and have a conversation with him, thus closing a causal line by the use of sound waves. When this occurs the first time he would be the younger ego, and when the same occurrence takes place a second time, he would be the older ego . . . . Such a situation appears paradoxical to us; but there is nothing illogical in it. However, if such events did occur, there would be no time order in the usual sense. Moreover, there would be no unique identity of a physical object in time.[8]

In this respect, I think Reichenbach shares Dummett's view that it is an empirical truth that effects cannot precede their causes. But he does recognize the consequences of such a view for the notions of time and physical object. This view is not self-contradictory, and I shall not claim that it is, in the traditional sense, analytic that effects cannot precede their causes. But the view does give rise to such puzzles that we are forced to question its intelligibility. Specifically, using Reichenbach's example, this view of causality calls into question our understanding of the relationships that hold among the concepts of cause, intentional action, and physical object. Suppose I meet my former self, as in the example. I draw a pistol. Can I shoot my old self? It seems not, for to do so would entail my having died before I did

---

one cannot cast the notion of time travel (or, presumably, of reverse causation) into ill repute by showing "that if we start talking about time travel, things go wrong with ordinary language in countless places and in countless ways" (p. 668). Putnam's suggestion that a consistent mathematical representation of time travel is possible hardly goes to show that there is nothing conceptually impossible about time travel, except on the undefended premise that what can be represented in a consistent mathematical way is therefore conceptually unimpeachable.

[8] Reichenbach, *op. cit.*, p. 37.

so. And this is absurd. But what of someone else? Can I shoot someone who is standing beside my former self? If not, we are faced with the task of accounting for how I am prevented from performing a simple physical action. Does the example rule out the possibility of anyone ever using a pistol? If not, we must account for the restriction. And what if, on the other hand, I can shoot a man standing beside my former self? Why can I not miss, and shoot my former self as well? What explanation is possible for my failure if I try? Such problems are, I think, indicative of the confusions that arise out of talk about closed causal chains, and the claim that the nonexistence of closed causal chains is an empirical fact seems essentially unsupported. Rather, the puzzles that arise provide a clue to the nature of the logical confusion underlying such notions as that of a closed causal chain.

For when we speak of a closed causal chain, or of reverse causation, we thereby deny of causality certain features we normally consider it to have and which, moreover, are among those most essential to an understanding of causality. In so doing, we open the way for descriptions of situations that are not comprehensible. For example, we normally think that the physical object known as a gun behaves in such a way that we are (logically, if not psychologically) able to shoot either one of two men standing a short distance before us. But the existence of a closed causal chain, as suggested above, is incompatible with this possibility. If we accept Reichenbach's example, we are faced with the problem of explaining why it is that I cannot fire the gun or, if I can, why it is that I can fire only in certain directions. Either the gun is not behaving as the normal physical object we take it to be, or the notion of voluntary action does not apply in the usual way. Thus we see how the notion of causality is bound up with the notion of physical object and of intentional action to the extent that denial of an essential property of the causal relation leads to such serious puzzles involving the notions of physical object and intentional action as to make us question the legitimacy of that denial.

I think, too, that there are some problems about memory that arise when we deny the temporal asymmetry of causality. These problems, like those raised above, emphasize the way in which

tampering with the notion of causality leads to a lack of intelligibility that will spread through our language. I shall consider the problems from two points of view: that of the agent in question, and that of an observer.

First, we recall that the set (i), (ii), (iii) of beliefs discussed above was agreed to be inconsistent. And (i) and (ii) must both be accepted to make sense of talk about influencing the past, so (iii) must be given up. I claim that even granting the compatibility of (i) and (ii), we cannot coherently give up (iii).

In Dummett's example, various experiments are described that are designed to show the chief to be in error in his beliefs. These experiments all fail. But there are a few more which Dummett did not consider. For example, instead of letting the chief remain at home while the warriors hunt, only to cause after their return their having been brave on the hunt, let us insist that the chief himself witness the hunt. Now there can no longer be any question of lying reporters who try to deceive the chief, only to be discovered when he dances. The chief will himself observe the cowardice or bravery of the men. Then, if they were brave, he will of course have no need to dance, even if their bravery resulted in some way from his prior intention to dance after the hunt. For if we suggest that the chief's subsequent failure to dance will make the warriors not to have been brave after all, in spite of his remembrance to the contrary, we are unable to account for the error of his memory. And we are led to ask: will he continue to remember the warriors' having been brave even after his failure to dance has caused them to have been cowardly? Or will his memory abruptly change at such time as the warriors change from having been brave to having been cowardly? Or must we assume that the chief is after all just unable to rely on his own judgment (of what is occurring before him) independently of whether he in fact will, regardless of his present intentions, perform some particular action in the future? But such a hypothesis itself leads to inextricable confusion. What if the chief is unaware of the reversed causal efficacy of his dance? Can he then rely on his observation? If so, why? If not, how can complete skepticism be avoided? I conclude that if the chief witnesses the warriors being brave, no dance is necessary.

What then if the warriors are cowardly? The chief, knowing this, will, possibly at some time later than T_1, decide to perform the dance upon his return, thus bringing about that the warriors were after all brave. But we must repeat the same questions here about the chief's memory. How can we account for his error if his memory does not change? How can we account for the change otherwise? The claim that his coming to have a certain intention can change his memory is too obscure to provide any answer at all.

Dummett avoids these problems, and is able to offer a defense of the chief's refusal to believe in (iii), by ignoring the situation in which the chief himself serves as an observer. There is, however, a way out, albeit temporary, for Dummett. In his earlier article on reverse causality,[9] he suggests that the causal connections that work in reverse are effective only in cases where the agent is ignorant of whether or not the desired event has actually occurred. Perhaps it was to avoid this unlikely hypothesis that Dummett chose to suggest abandonment of belief in (iii), thus ruling out the possibility that the effective agent have knowledge of the prior event independently of his intentions. But I hope to have shown that this will not do, that the denial of (iii) leads, in the case where the observer and agent are one, to problems about memory and the reliability of observation serious enough to force us to retain belief in (iii).

Let us then consider the way out abandoned by Dummett. On this view the chief's dance is effective only if he does not know the outcome of the hunt. We need not seek an explanation of how the efficacy depends on the agent's knowledge. For the same problems of memory reappear as soon as we introduce an observer. If *anyone*, let alone the agent, witnesses the nonoccurrence of E at T_1, then we are—recalling that (ii), as well as (i), is here assumed—unable to account for the error or change in *his* memory in the event that the agent by performing A at T causes E to have happened. And we must be able to provide such an account,

[9] M. Dummett and A. Flew, "Symposium: Can an Effect Precede Its Cause?" *Proceedings of the Aristotelian Society*, Supp. Vol. XXVIII (1954): *Belief and Will.*

since the agent's performance of *A* is, by hypothesis, independent of the occurrence of *E*.

Thus we are led to the view that rejection of belief in (iii) itself leads to absurdity when we consider the implications for talk about memory and, particularly, about observation. Even the restriction that, for the cause to be effective, the agent must be ignorant of whether or not the effect occurred is of no help. For the same problems about memory then arise out of the notion of backwards causality, rather than out of the rejection of belief in (iii).

I thus conclude that talk about acting in order to bring about the past leads to absurdity. It does so because the notion of causality is logically related to notions of time, memory, physical object, voluntary action, and perhaps others. To tamper with one of these notions is to raise problems for all. The problems raised by tampering in this particular way with the notion of causality are so serious, and touch so many crucial features of our language, that they call into question enough of that language for us to be no longer able to make sense of what we are saying. This is not a new point, but so long as philosophers continue to treat separately the fundamental categories in terms of which we describe the world, without considering the interconnections among these categories, it bears repetition.

Thus it is a logical truth that one cannot bring about the past. Yet it is not a mere tautology. Rather, this truth has its basis in the way talk about causality functions in our language, and it is analytic only in the sense that to deny it is to generate absurdities, rather than formal contradictions. Pears, in discussing the logic that underlies talk about time, expresses much the same point. He says:

> the sentences which give the logical relations of temporal words exhibit a curious feature. They are not synthetic *a priori*, but they are, as it were, weak tautologies. And they are weak tautologies not only because we are so accustomed to using temporal words correctly that we need no reminders, but also because their structure is peculiar. For most tautologies are constructed like columns, by placing terms squarely one on top of another like marble drums. But the tautologies which give the logic of temporal words put their terms together like

the stones of a vault. No single conjunction of terms is indispensable or could stand alone. But together they form the vaulted ceiling on which the fresco of knowledge is painted.[10]

SAMUEL GOROVITZ

Wayne State University

[10] D. F. Pears, "Time, Truth and Inference," *Proceedings of the Aristotelian Society*, II (1950-1951), 22.