HUME, CAUSAL POWERS, AND NATURAL NECESSITY

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Over the past decade or so, several philosophers have mounted a systematic attack on the widely accepted neo-Humean view of causality, proposing to substitute in its stead a new notion of causality which rests on the idea of natural necessity. The core of this attack is the notion that causes produce their effects by natural powers, and that a natural necessity therefore connects cause and effect. I will argue, however, that these necessitarians' criticisms of the Humean position are inconclusive: though they may indeed undercut some of Hume's actual arguments for his analysis of causality, there is available to the Humean a more general and fundamental argument which is not vulnerable to the attack, but which nonetheless preserves the essentials of the Humean position.

The central claim of the critics is that, contrary to Hume, it is contradictory to suppose that a cause can occur and not be followed by its effect. This is because the power to produce the effect is a part of the nature of the cause: thus, to suppose that a cause C was followed by not-E, the failure of the effect, would be to suppose that C both did and did not have the power to produce E. For example, when an automobile moves down a highway,

> The exploding gasoline...has the power to move the pistons, and move the car....The chemical structure, or nature, of gasoline, in turn, explains the explosive power of gasoline...[1]

And

> A liquid that had a gasoline smell but did not explode when ignited would not count as gasoline any more, since a host of interrelated concepts and explanations would break down.[2]

The necessitarians agree that it is not possible for a particular, P, to act and react differently at t_1 than at t_0, but they insist that it is impossible for it to act incompatibly with its own nature and still remain the same particular. In short, they contend that there is a natural necessity between what a thing is and what it is capable of doing and undergoing, and that the conceptual necessity of the concept of cause reflects this. Therefore, the argument goes, C and not-E is impossible. Of course, the nature of C could change to "C'"; and if "C'" no longer has the power P to produce E, then "C'" and not-E is perfectly possible. But that the particular C could fail, in the appropriate conditions, to produce its effect E is impossible, for then it would no longer be C at all.

The error of the Humean position, the necessitarians claim, comes from its "ontologically discrete" metaphysics. That is, Hume and his

followers take it that every particular is ontologically distinct from every other; thus any combination whatever is logically possible. Madden, Hare, and the other necessitarians wish to argue that causes and effects are not thus distinct: the capacity to produce certain effects is part of the nature, and thus is critical for the identity, of the causes. If a yellow, malleable substance otherwise resembling copper were discovered to be electrically non-conductive, we would simply not call it copper. Since conductivity is one of the criteria for identifying copper, it is necessary that copper conduct electricity.

Furthermore, the necessitarians insist, contrary to Hume, we can see causal powers at work. When we see the waves erode away the beach, we do not just see the wave action, followed by the disappearance of the beach; rather, we see the power exerted by the waves in causing the erosion. Causation thus involves "powerful particulars": particulars which, by their nature, possess the power to bring about certain effects. Only Hume's antecedent conviction that experience is "punctiform"—divided into discrete, separable elements—could have made him think otherwise, they contend.

In fact, the necessitarians argue, Hume's position amounts to an attack on the rationality of science. Their own position, on the other hand, is based on

> ...the principle that it is possible to give a rational account of the changes that do occur in the causal powers of things and materials by reference to changes in their natures.[3]

Thus the concept of a causal power is held to be essential to explanation in the empirical sciences.

Moreover, the necessitarians argue, their view neatly sidesteps the problem of induction which is so intractable on the Humean view. For we learn the powers of causes by observation; and once we know those powers, we know by natural necessity that the expected effects will follow them.

Now, it is true that many of Hume's arguments lend themselves to such an interpretation. He does place great stress on the impossibility, as he claims, of perceiving powers or causal connections beyond the constant conjunctions which he says constitute causality. And he does frequently speak of the impossibility of our knowing the "secret springs", or "inner causes" of nature, as though there were an insurmountable epistemic barrier that confines our knowledge. That is, Hume sometimes makes it seem that such springs or powers indisputably exist, but lie outside the limits of our knowledge. Against such arguments as these it may be that the causal necessitarians are successful in their attack.

I want to argue, however, that there is another line of defense open to the Humean; one which not only escapes the present criticisms, but, as it seems to me, actually represents a stronger position in any case. But I must disavow at once any attempt to show that this was really Hume's meaning; at most I will cite a few remarks to show that such an argument would not have been uncongenial to him.

The argument I propose might be called a logical, or a linguistic,

one, in contrast to the epistemic arguments Hume usually employs—the ones criticized by the necessitarians. This linguistic argument consists in noting that reference to causal "powers" amounts to no more than reference to Hume's notorious "constant conjunctions" between events. That is, in saying C has the power P to produce effect E, we do not refer to a P which is distinct from C and E, but only to their constant conjunction, in which C's are uniformly followed by E's. It is perfectly proper, Hume might say, to speak of the power of gasoline to move the automobile; but we must be careful in so doing not to become confused, by thinking that we have identified some third entity distinct from the cause and effect. We have not: we have only adopted a convenient shorthand terminology to describe our observation.

It is perhaps because this last point is so important that Hume places such emphasis on the fact that we cannot perceive causal powers. When the necessitarians insist that we can perceive them, so far as I can tell they do not really disagree with Hume about what we can see and what we cannot: when we observe wave action on the beach, I do not suppose they claim to perceive anything more than the Humean would report. Rather, the former wish to say that what we see is seeing the power of the waves at work, while the latter reject this form of speech.

The necessitarians take Hume's arguments on causal powers to be epistemic in nature. That is, they take his point to be that we cannot perceive, and therefore cannot know, what the ultimate springs of nature may be. It seems that this is the way Hume sometimes viewed the matter, for he often speaks of "secret powers", and the like. For example, he says

> ...my intention never was to penetrate into the nature of bodies, or explain the secret causes of their operation....I am afraid, that such an enterprise is beyond the reach of human understanding, and that we can never pretend to know body otherwise than by those external properties, which discover themselves to our senses.[4]

There are many such passages which suggest that Hume viewed his analysis as revealing limits on our knowledge of causation. But Hume was also at least partially aware of what I am calling the linguistic argument, for he also comments

> Should anyone...pretend to define a cause, by saying that it is something productive of another, it is evident he would say nothing. For what does he mean by "production"? Can he give any definition of it, that will not be the same with that of causation?[5]

In other words, Hume recognized that substituting words like "production", "power", etc., is empty: it merely changes the label without adding anything to the substance about what we know about the relation of cause

to effect. And this is exactly what the necessitarians propose to do, for their idea of a causal power is the same as Hume's "production" in the above passage.

This linguistic argument is not affected, I think, by the criticisms urged by the necessitarians. For, as Hume suggests here, all the talk about causal powers, and the nature of particulars, is empty. This is because the powers and the natures cannot be identified independently of the cause and the effect. That is, the necessitarians say C is the cause of E because it is its nature N to have power P—i.e., the power to produce E. And nothing that does not have this power will count as C; thus, the argument runs, it is necessary that C be followed by E. If E does not occur, it must be because N has changed, so that C no longer possesses P. The trouble is that C's possession of P can be defined only as the systematic succession of E's after C's. The great ontological advance offered by the necessitarians turns out to be no more than the recommendation that we should speak in a different way of causes and effects.

The necessitarians insist, furthermore, that Hume is mistaken in saying that we cannot explain causal powers. For example, they suggest, we could explain the explosive power of dynamite if we "delved below the surface" and examined its chemical and physical structure. And of course, in one sense, it is true that we can do so: that is the task of the physical scientist. But this wholly misses Hume's point; for such an explanation, valuable as it is to our understanding of the world, simply explains one set of natural regularities in terms of other, more general regularities. Thus, to say that dynamite explodes because it constituents undergo a reaction that releases energy is just to subsume its behavior under more general laws of chemistry. In fact, the linguistic argument under consideration constitutes an analysis of the logical structuring of empirical explanations. The point is that these explanations always consist in descriptive statements about constant conjunctions. However far we may push our study of the explosive power of dynamite, or any other scientific explanation, this will always be its form. It is harmless to speak of the causal power of dynamite, provided we recognize that in so doing we have not added anything to our knowledge. The necessitarians leave this central linguistic argument unanswered.

Now is is possible to evaluate the necessitarians' charge mentioned earlier, that Hume "attacks the rationality of science".[6] By this they seem to mean that on Hume's analysis nothing can be explained. But this is not correct; Hume would have no reason at all to disagree with them about the explanation of the explosive power of dynamite: the chemical properties of nitroglycerine, cellulose, etc., do explain that power, in the only way any empirical fact can possibly be explained. That is, the chemical and physical principles to which the explanation appeals are more general regularities—constant conjunctions—of which the particular properties of dynamite are specific cases.

What does follow from Hume's analysis is that it will never be possible to explain everything. For in every explanation, the explanans consists of regularities more general than those in the explanandum; and so the regularities of the explanans are not, thus far, explained. If

progress in science enables us to explain the original explanans, this new explanation must necessarily be in terms of still more general regularities, which will then in turn be unexplained. If it seems to some philosophers that this attacks the rationality of science, I think it is only because they demand more of science that it can possible provide. It can give perfectly satisfactory empirical explanations; but it cannot reduce causality to purely logical relations of pellucid intelligibility. As Antony Flew remarks in a rather different connection, it is wholly pointless to complain that there is nothing to wear but clothes! If Hume is correct, and this is necessarily the logical structure of empirical explanation, we may as well accept it.

As we have seen, the necessitarians put forward their view as one which eliminates the problem of induction. For, they say, if we know from our observation that C has the power to produce E, and if having P is part of the nature of C, then it is necessary that C be followed by E. And if E does not occur, then this shows that it was not C at all, but only "C", which resembles C but lacks P. This, however, says nothing useful about the problem—if it is a problem—of induction. For, as the necessitarians concede, C may perfectly well lose its power P and become "C". For example, dynamite may undergo a change in its chemical structure and become inert with the passage of time. And so there is no way of knowing that C will not in fact become "C". The necessitarian position was in fact anticipated by Hume, who gave essentially the above answer to it.

> Should it be said, that we have experience, that the same power continues united with the same object, and that like objects are endowed with like powers, I would renew my question, why from this experience we form any conclusion beyond those past instances, of which we have had experience?[7] (emphasis original)

In other words, appeal to the "power" of C to produce its effect in no way answers the Humean challenge to induction. I do not intend to dwell on the logical niceties of induction, but I think it is clear that it cannot be resolved simply by proclaiming in a confident tone of voice that the future will resemble the past.

If the linguistic argument is sound, it does not follow that there are no causal powers. Rather, what follows is that speaking of powers is a convenient but non-explanatory, way of describing our experience. Hume saw this, I think, and it is in this light that we should read his frequent use of the language of causal powers. And if the foregoing analysis is correct, the necessitarians' criticisms of Hume's basic position count for very little.

FOOTNOTES

1. Madden, E. H. "Hume and the Fiery Furnace," Philosophy of Science, 1971, 38, pp. 63-78.

2. Ibid., p. 66.

3. Harre, R. and Madden, E. H. "Natural Powers and Powerful Nature" Philosophy, 1973, 49, pp. 209-230.

4. Hume, David, A Treatise of Human Nature, L. A. Selby-Biggs, ed. Oxford, Clarendon, 1968, Book I, p. 64. (First published 1888)

5. Ibid., p. 77.

6. Harre & Madden, 1973, p. 211.

7. Hume, D., 1968, p. 91.