

## **Part II, Paper 1, Question 8, Can the direction of time be explained by the direction of causation?**

The direction of time cannot be explained by the direction of causation. It is possible to understand there existing a causal link between events than run in the opposite direction to the temporal ordering of these events, and so the direction of causation and the direction of time must be distinct concepts. If they can be brought into opposition then neither can be thought to be reducible to, or explicable in terms of, the other. In this essay I will show that our understanding of the way that events are causally linked means that it is possible to understand what an instance of future-to-past causation would need to be like. I will then go on to discuss the objection that such an understanding of a causal link is useless because if is so contrary to our everyday experience of causality, before deciding on the view that the oddities of an instance of backwards causation are simply a result of the way in which we happen to experience causation as a running line with the temporal direction. Ultimately, the concepts can be freed of this experience which arises from our position within time and as such can be shown to be distinct such that neither provides an adequate explanation of the other.

Mackie notes that 'we work all the time with an understanding of the causal direction that is not reducible to the temporal direction'. The causal direction is relative to each individual causal chain while the temporal direction is thought to characterize the entire sequence of events. Although they are different concepts, it might still be possible to provide an explanation of the direction of time if it were possible to reduce our causal understanding to a form that required a cause to temporally precede its effect. If this were possible, then the same direction of events would always be referenced whether the series was talked about in purely temporal terms or in causal ones. To show that such a reduction of the causal link to a single temporal ordering is not possible, it is easiest to consider what features would be required by a causal link between events that was to serve as a counterexample to the thesis that all causes precede their effects. In order to do this, however, we must first provide a short analysis of what marks out causal links between events no matter what temporal order they are in.

If we were to take a causal link to be a Humean one of nothing more than constant conjunction of similar events, then we would not be able to determine the features of a causal link that might allow us to understand it as occurring from future to past. This failure is down to the fact that evidence for such a link is lacking from our experiences and so, without direct evidence for it. Hume does not allow us to draw any conclusions regarding its nature. Yet by denying that our understanding of a causal link is exhausted by the content of our experiences we can begin to unpack the conceptual notions which constitute our understanding of causality beyond our immediate experiences.

I shall consider one such analysis. The counterfactual analysis of causation states that the causal dependency between events is best understood as a relation of counterfactual dependency which holds between them. While it might be questioned whether this analysis of causation truly captures the dependency of one on another, I will make use of it to show that it is possible to have an understanding of the causal link which runs in opposition to the temporal direction and so it is not a necessary matter that the temporal direction can be explained in terms of the causal direction.

An instance of causation which has the cause successive to its effect, therefore, must be one which includes, as Lewis states, 'counterfactual dependence of past on future'. The pair of events which is to provide our counterexample must fulfill this

criteria, yet it is difficult to find a sequence of events which does so and yet still can intuitively be called causally linked in the same way as they are counterfactually linked. For instance, my walking into the exam hall might be counterfactually dependent on my sitting the exam, but there is something intuitively odd about calling the fact that I am writing an exam at this moment the cause of my walking into the exam hall. Nonetheless, it fulfils the criteria of being a counterfactual link including a dependency of a past event on a future event. It might be that the counterfactual link does not properly explain the idea of dependency which is inherent in our understanding of a causal link, but I believe that the counterfactual analysis of causation is sufficient to provide us with an example of what an instance of future-to-past causation is like and thus that we should regard the above example as such an instance. Where the past is counterfactually dependent on the future then that link is sufficient for us to say that the past event is caused by the future event.

Yet such an understanding of causation as running against the temporal direction might be thought to be useless. We experience events in line with the temporal direction and so to have an understanding of the causal link which exists between these events which allows for them to be caused by future events contravenes what Mackie believes to be an essential feature of our understanding of the causal direction, that it is connected with the way round in which we are able to provide an explanation for one event in terms of another event. Since in an instance of future causation there will be a time where the effect has been experienced to occur and yet the cause has not yet been experienced to occur, it does not make sense to say that the effect is caused by something in the future. Our desire for the causal link to be explanatory means that we will only ever allow causal links to be postulated which run in line with the temporal direction, and so the temporal direction can be explained in terms of the causal direction because they will always place events in the same order.

Such an objection can be rejected because it is a contingent matter, dependent on our own place in time, that we will always experience causal explanations as only being possible in line with the temporal direction. We can understand what a converse understanding of a causal link needs to be, that it requires counterfactual dependence of past on future, and can give examples of what such counterfactual dependencies need to be. Although we are intuitively wary of assigning such counterfactual links to causal status, this is because nothing more than our own lack of knowledge at the time of the effect's occurrence of the actual cause of that event. Were it possible to construct an atemporal viewpoint then it may be possible to understand the causal link that exists from future to past. We experience causes as immediate, yet when both events are past then we can see that the cause of the future event, my writing this exam, was, at least partly, my walking through the doors. The causal link can be understood as running in opposition to the temporal direction. Since the concepts do not always place events in the same order, then an explanation of temporal direction in terms of causal direction may fail to be adequate in defining the order of events that we wish it to. In practical experience it is unlikely that we will encounter such a divergence, but that is a result of what we are able, as creatures in time, to know about the causal links between events, not because of any necessary link between the causal direction and the temporal direction.

**Comments**

The answer is detailed and shows good knowledge of the authors discussed, though it is occasionally inaccurate, for instance, in the statement of the counterfactual definition of causation. The argument directly addresses the question and its overall shape is clear enough, but the writing is sometimes a little unclear (as e.g. in the rather convoluted sentence-structures of para. 1). Generally, a thorough and highly competent discussion. A solid 2i.