



**Hume's Conditions for Causation: Further to Gray and
Imlay**

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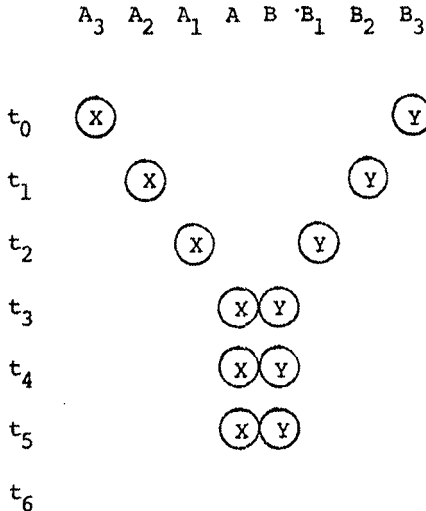
HUME'S CONDITIONS FOR CAUSATION:
 FURTHER TO GRAY AND IMLAY

As part of his second proof of the existence of God, Descartes in Meditations III argues a causal premise derived from the nature of time. He argues it follows from the nature of time "that, in order to be conserved in each moment in which it endures, a substance has need of the same power and action as would be necessary to produce and create it anew, supposing it did not yet exist; so that the light of nature shows us clearly that the distinction between creation and conservation is solely a distinction of reason."¹ The nature of time to which he refers allows only a finite divisibility into durationless moments, each of which is entirely independent of every other. In the ultimate analysis, nothing true of one moment is deducible from what is true of any other, even what happens to be eternally true. The doctrine of the creation of the eternal verities is of a piece with this conception of time, and following with it from the conception of the divinity as sheer omnipotence, points to Hume's view that experience is the only guide to the world. It would seem to be Descartes' view that nothing at a given time can stand in the necessary relation it must have to be a cause of something at another time; or, only something outside time can be a cause, for whose operation things in time can serve as but occasions. To what extent this dialectic in fact led to later occasionalist views is an historical question we need not consider. My only suggestion here concerns Hume's reponse to the occasionalists. With all but psychological necessity eliminated from his analysis of causation, Hume effectively argues the familiar case that occasional causes are the only causes by arguing the finite divisibility of time.

In the literature only Laporte has held that for Descartes time is infinitely divisible and in this sense continuous. The separability of the parts of time, he

thought, suffice for their independence and contingency. But if time is continuous, its parts are inseparable; as Gueroult correctly observes, by discontinuity is meant contingency, independence and separability.² In addition, if a moment had duration, light would not be propagated instantaneously, thus according to Descartes upsetting his entire physics.³ Gueroult maintains, rather, that Descartes' view of time is determined by his view of motion. Whatever the historical and logical priorities, there clearly is a connection between the above and what Bergson called the cinematographic conception of motion as a succession of static objects. It is a conception that precludes events as such. Motion occurs only in time, never at the moment, and occurs as a result of the re-creation of matter with regularly differing spatial relations. Due to metaphysical considerations expressed in theological terms, especially with reference to the immutability and simplicity of divine ways, this re-creation of matter is constrained in certain ways, some of which we pick out as conditions for what was later called occasional causation. Put very simply, only what is constantly conjoined can stand in this relation; and that there should be instances of constant conjunction follows from the metaphysical considerations. With Hume's elimination of these metaphysical considerations, the status of the conditions, which he takes over as conditions for causation simpliciter, becomes problematic. But a recent challenge to Hume's program is still more problematic. The contention is that there is a case in which Hume's conditions necessary for constant conjunction cannot all be satisfied. Even worse, it is a case in which his analysis ought to be conspicuously successful, viz. collision, which Hume like Descartes conceives in cinematographic terms.⁴ The aim of this paper is to show that Hume's analysis stands against the challenge.

Consider the following diagram which illustrates the positions ($A_3, A_2 \dots$) of two balls (x, y) at successive moments (t_0, t_1, \dots).



Robert Gray's thesis is that in at least one case of causation, collision which results in rest, three of Hume's conditions for causation cannot all be satisfied, viz. that a cause must be a) different from, b) contiguous with, and c) prior to its effect.⁵ His main argument is that "if the cause is their striking and the effect the stopping, the two 'events' are one and the same event occupying one and the same time",⁶ and thus all three conditions would be violated. On the other hand, if the cause is motion and rest the effect, then since motion (and rest) as cinematographically conceived by Hume can occur only over different times, not every part of the cause can be contiguous with, and immediately prior to the effect. For example, x at A₂t₁, which is part of its motion, is separated from y at B₄t₄, which is part of its rest.

I believe this argument badly miscarries. One way of expressing its weakness is that Gray insists on talking about events as causes and effects. The same event can occur at different times and places in the sense that it can begin at one time and place and end at others. But for Hume, since there are no events, only objects are causes and effects. On this view, if rest is said to be the effect, it must be viewed

as a series of different objects occupying the same position at different times. Thus, not until t_4 can we say that the balls are at rest, because at a time given in isolation, things cannot be said to be either in motion or at rest. Put another way, if the universe were to end without the occurrence of t_4 , the question of motion or rest at t_3 would make no sense.

The source of Gray's difficulty is that he fails to take seriously his own proper understanding of Humean events as "essentially static".⁷ "A ball's motion between any two adjacent points is not a moving from one to the other. It is simply its being in the one place at one instant and its being in the other place at the next. It is not a continuous motion but the occupation of discrete places at different times." But for there being nothing to leap across, it would be true that the ball's motion "is as it were, a series of instantaneous leaps."⁸ The proper Humean inference from this is that the alleged effect of stopping is a contextual notion definable only with respect to other times.

Gray in fact argues against this line on the basis that it must violate the same cause - same effect maxim.⁹ The contact at each time after the collision is the effect of the contact at the preceding instant except for the contact at collision which is the effect of the motion at the preceding instant. I believe, however, that the description of contact as an effect is misleading. The explananda are the positions of each ball at each time. The explanation of the position of each at t_2 is, ceteris paribus, its positions at t_0 , t_1 , i.e. the fact that it is in motion. At t_3 the ceteris paribus condition is not met; x is at A because of where it was at t_2 , t_1 , etc., but at t_4 it is still at A because of the contact at t_3 .

The upshot is that Newton, is, mirabile dictu, confirmed: unless affected (by contact) a body at rest remains at rest and one in motion remains in motion. In terms of the problem, rest is brought about by contact, but contact does

not preserve rest - after all, y can be taken away at t_4 without disturbing x . Gray simply ignores Hume's recognition of inertia, stated (with conservation of momentum) in a footnote to the Enquiry.

We find by experience, that a body at rest or in motion continues for ever in its present state, till put from it by some new cause; and that a body impelled takes as much motion from the impelling body as it requires itself. These are facts. ¹⁰

On this view what needs explanation by invoking causes is change of motion, e.g. the occurrence of x at At_4 rather than at Bt_4 , or at A_1t_6 rather than At_6 . But the explanation of, e.g. x at AT_3 (or x at At_5) is non-causal and thus may invoke occurrences which are neither spatially contiguous nor immediately prior to the explanation. Appeal is made only to what Hume calls facts. Thus we can say that x is at At_3 because it is at A_2t_1 and A_1t_2 , and that it is at At_5 because it is at At_3 and At_4 , and not violate the same cause - same effect maxim, because we are not talking about causes and effects at all.

A critic of Gray also gives a non-inertial account. Robert Imlay objects that if the striking and stopping of the balls are the same event, then they occur not only at the same time, but also at the same position, with the result that spatial contiguity is preserved between x at t_2 and y at t_3 , and y at t_2 and x at t_3 .¹¹ A difficulty with this view is that since x and y cannot occupy the same position, while their contact occurs only at a position, Imlay is led to distinguish positions within positions. It might be that for all but minima sensibile, positions might be regarded as compounds of positions, some of which might be shared. This construal has problems, but they are not as severe as those had by the construal for which Imlay in fact opts, viz. that there is an overlap. According to him, in fact, only if there is an overlap do we get the striking phenomenon, which "requires a point of contact, a point common to a part of both billiard balls. This point of contact, it should be clear, is

provided by the point designated by both A and B."¹² But against this view it must be urged that given Hume's insistence on the finite divisibility of space, things for him are in contact not when they overlap, but when they occupy adjacent spaces. As it happens this case need not be made since the issue is irrelevant: Imlay invokes an overlap to preserve contiguity in a case where there is no causation and hence no need for contiguity, since collision at t_3 has no cause; change of motion, defined contextually around t_4 does have a cause, but one which is contiguous and immediately prior, viz. the collision at t_3 .

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1. AT VII, p.49; HR I, p.168.
2. Martial Gueroult, Descartes selon l'ordre des raisons (Paris: Aubier, 1953) I, pp.227 ff.
3. To Morin, 13 July 1638. AT II, p.209. V. also, Gueroult, ibid.
4. Although Hume unlike Descartes does not insist on the divine recreation of the constituent objects.
5. "A Refutation of Hume's Theory of Causality", Hume Studies II, 2, November 1976.
6. Ibid. p.82.
7. Ibid. p.78.
8. Ibid. p.77.
9. "The same cause always produces the same effect, and the same effect never arises but from the same cause." Treatise, p.173.
10. Enquiries.... ed. L. A. Selby-Bigge, rev. P. H. Nidditch (Oxford: Clarendon Press, 1975) p.73.
11. "How Not to Refute Hume's Theory of Causality: A Reply to Gray", Hume Studies, III, 1, April 1977.
12. Ibid. p.52. Emphasis added.