

Leibniz, Materialism, and the Relational Account of Space and Time

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Zusammenfassung

Leibniz' Verteidigung einer relationalen Auffassung von Raum und Zeit im Briefwechsel mit Clarke nimmt in keiner Weise Bezug auf Monaden. Infolgedessen haben einige Leibniz-Interpreten angenommen, Leibniz' relationale Auffassung von Raum und Zeit könne – wenn man sie hinreichend abstrakt versteht – von seiner außerordentlich mentalistischen Ontologie losgelöst werde. In der Tat hat der Gedanke einer Trennung der beiden Lehren etwas Bestechendes, da die relationale Auffassung plausibler erscheint als Leibniz' Metaphysik der Monaden. Vor allem haben Materialisten sich Leibniz' relationale Auffassung zu eigen gemacht und seine mentalistische Ontologie verschmäht. Wie bestechend diese Trennung auch sein mag, die Kohärenz von Leibniz' relationaler Auffassung von Raum und Zeit hängt in entscheidendem Maße von seiner Monadologie ab. Wie Leibniz (aber nur wenige andere) erkannte, glückt eine relationale Auffassung von Raum und Zeit nur dann, wenn einige grundlegende Bestandteile der Welt nicht grundsätzlich räumlich-zeitlich sind.

1. Introduction. Leibniz's attack on the Newtonian conception of absolute space and time makes no reference whatsoever to monads. The arguments Leibniz uses invoke only those general philosophical (and theological) principles which were accepted by his opponents (Newton and Clarke); the principles of sufficient reason and the identity of indiscernibles seem to do all of the philosophical work. For this reason, most commentators on Leibniz have treated his defense of a relational account of space and time as independent of his mentalistic ontology. Of course, the specific account of space and time Leibniz offers does depend heavily on monads and their representations. There is no escaping the fact that when Leibniz's account is fully spelled out, monads will be of central importance. Still, the common view appears to be that Leibniz's relational account (suitably abstracted) can be prised off from his monadic ontology¹.

While the problems Leibniz raises for an absolute view of space and time don't turn on whether or not there are monads, the coherence of his relational account does. Leibniz's theory holds together exactly because it presupposes that monads are the basic constituents of the world².

The significance of monads to Leibniz's relational account is brought to light by examining what would go wrong with the theory without them. A thorough-going materialism, in particular, cannot consistently be combined with a Leibnizian relational

¹ C. D. Broad, for instance, summarizes Leibniz's account of space even before he turns to Leibniz's metaphysics. (See *Leibniz: An Introduction*, (Cambridge, 1975)) And Russell, whose book on Leibniz has a chapter devoted to the relationship between monads and the account of space, sees monads as raising fundamental problems for, rather than supporting, the relational account of space. (See *A Critical Exposition of the Philosophy of Leibniz*, (London, 1937).

² I purposely don't say that Leibniz's relational view avoids the problems only because it presupposes monads as the basic constituents – any non-materialistic ontology will avoid the problems. My point is simply that Leibniz's avoidance of the problems rests on his monadic ontology.

account of space and time. To make this clear, I will examine Anthony Quinton's recent attempt to combine the two³. The relational account offered by Quinton is (essentially) Leibniz's. Yet while Quinton's account faces devastating problems these same problems don't even arise for Leibniz's account. The reason the problems don't arise, I shall argue, can be traced to the fact that Leibniz holds that the only truly real things are not material things.

2. We do conceive of the world as spatio-temporally unitary; I shall concentrate on three questions to which this fact gives rise (one ontological, one psychological, and one epistemological)⁴.

The ontological question is concerned with what the nature of the relation between space, time and enduring objects really is (and not just how it seems). In broad outline the answers offered fall into two kinds: relational accounts and absolutist accounts. Those who hold a relational view maintain that since space and time are defined in terms of things, the spatio-temporal unity of the world is dependent upon there being at least some enduring things. If there were no enduring things there would be no relation between the spaces of one moment and those of the next. Theorists of an absolutist bent, on the other hand, hold that the world may be spatio-temporally unitary regardless of whether there are enduring things; space and time, they maintain, are independent of the existence of things.

The psychological question concerns how we come to form the conception of a spatio-temporally unitary world. This is distinct from the ontological issue, for the question is how we come by our conception, and not whether it is correct. The question has as its primary subject people as perceivers and not the world as a spatio-temporal whole. The method to be adopted here is that of accepting our conception – not as true or false, but as something we have – and working backwards so as to discover its source. The answers we propose might concern themselves solely with psycho-biological make-up; no appeal need be made, though it certainly may, to the spatio-temporal unity of the world.

We are then led quite naturally to the epistemological question: Given that we do conceive of the world as spatio-temporally unitary, what justification can we offer for accepting our conception as true?

3. In answer to the ontological question both Leibniz and Quinton advance relational accounts of space and time. Leibniz, in his correspondence with Samuel Clarke, reports that

"I have said more than once that I hold space to be something merely relative, as time is: that I hold it to be an order of co-existences as time is an order of successions"⁵.

And Quinton says that "Unqualified or empty positions must be defined in terms of occupied ones (in other words there can be no absolute or wholly unoccupied time and space) . . ."⁶ In addition, Leibniz and Quinton agree on how people come to form a conception of the world as spatio-temporally unitary. According to Quinton,

³ See *The Nature of Things*, (London, 1973).

⁴ I ignore the problems which arise in distinguishing these sorts of questions – even though the problems are particularly complicated when discussing Leibniz.

⁵ Leibniz: *Philosophical Papers and Letters*, Leroy E. Loemker (ed.), (Dordrecht, 1969), p. 682; GP = *Die philosophischen Schriften von G. W. Leibniz*, hrsg. von C. I. Gerhardt, 7 vol. (Berlin, 1875ff.), here GP VII, p. 363.

⁶ op. cit., p. 264.

our identifications. There is no problem with that. However, on a relational theory, it is not merely our conception of, but the actual existence of, space which depends upon enduring things. It is not just our identification of enduring things, but enduring things themselves, which depend upon persisting space.

Someone might hold that we could get both enduring things and persisting space going at once; persisting space would come into existence because we happen to identify two momentary things as stages of a single enduring thing. In fact, this is the gist of Leibniz's account of how we do come to construct a spatio-temporally unitary world. But the suggestion won't work for a materialist since there is no one thing to do the "taking" prior to the existence or persisting space.

Quinton recognizes this and suggests that "it is natural in the face of this problem to look for some kind of privileged continuant, whose identity can be established without recourse to independently specified identity or continuity or spatial position"¹². Since Quinton is a materialist the privileged continuant must of course be a material thing. Quinton considers three candidates for the role of "privileged continuant"; (i) oneself as a spatial entity, (ii) the here-and-now, and (iii) the objects of continuous observation. Quinton argues that because the here-and-now is the position of one's body, "we can treat these two proposals as the same"¹³. This is a mistake, however; the two proposals are not equivalent. While one's body is capable of enduring through time, the here-and-now is not: the here-and-now is always momentary. Though one's body is a plausible candidate for being a privileged continuant, the here-and-now is a non-starter.

Be that as it may, Quinton offers two reasons for rejecting one's own body as a privileged continuant. The first concerns the fact that one's body moves about and so won't do as a privileged continuant to establish the stable framework required in order for there to be persisting space. Despite this, one might take the position of one's body as fixed and then use it as a stable point of reference. As Quinton points out, though, this would "... produce an exceedingly cumbersome account of the movement of other things, one whose complexity would make it unnecessarily hard to establish laws of motion"¹⁴. The second problem revolves around the fact that more than one point of reference is required in order to fix positions in three dimensions. One's body alone will not do for establishing a spatio-temporal framework. In any case, one's body is just a special case of an object of continuous observation. So Quinton moves on to consider objects of continuous observation in general as the fixed points of a stable framework. Quinton thinks these can serve as an enduring framework to which a unitary space can be related:

"First, then, there is direct identification of continuously observed things. These provide a spatial framework for the identification of things over temporal gaps. The primary continuants do, of course, exhibit spatial continuity or identity, but this is directly observed and not determined from their relations to independently identified places. They satisfy the criterion they make possible but it is not required for their own primary identification"¹⁵.

Quinton considers three objections to this position. First, we might be mistaken about whether we have actually performed an act of continuous observation. Second, choosing candidates for identification requires that we classify them into substantial

¹² op. cit., p. 71.

¹³ op. cit., p. 72.

¹⁴ op. cit., p. 72.

¹⁵ op. cit., p. 73.

kinds, which presupposes that we can rectify misclassification, which in turn seems to require that we can (already) identify the candidates through time. And third, we must be able to count the candidates at each moment and yet counting takes time¹⁶.

All three arguments, Quinton maintains, miss the point. They "are not directed against the view that it is a criterion of the identity of A and B that they fall within a continuous stretch of observation. They count against the applicability of the criterion rather than its adequacy"¹⁷. Presumably, then, Quinton holds that it "is a criterion of the identity of A and B that they fall within a continuous stretch of observation".

Quinton may mean either of two (importantly different) things by "continuous observation". Neither allows continuous observation to qualify as a criterion of identity through time. The first defines continuous observation wholly in terms of how the observation is carried out. Such a definition might require, for example, that the observer apply undivided attention, be wide-awake, and have a perceptual apparatus which is in good working order. These conditions met, the observation the person makes would qualify as continuous. However, on this interpretation, continuous observation cannot be a criterion of identity. For no matter how intricate, specific, and demanding, the conditions are (as long as they are confined to how the observation is carried out), a person may meet the conditions (perform an act of continuous observation) even though the things falling within the continuous stretch of observation are not identical.

Still, it does seem strange to say that a person is, and has been, continuously observing something, even though the thing in question left the person's field of vision or has gone out of existence. We are tempted to say, and the second interpretation reflects this, that a particular act of continuous observation comes to an end when the thing (or things) observed have been replaced by different things or empty space. Thus the second interpretation of continuous observation adds to the conditions of the first the stipulation that the things observed must remain the same things. Such an interpretation does indeed avoid the awkward position of allowing one continuous observation to span several different objects of observation; but it does so at the expense of presupposing a criterion of identity. On this interpretation, in order to determine if an act of observation is continuous we must establish independently that the objects observed do indeed remain the same things through-out. This second interpretation renders continuous observation useless as a method for determining privileged continuants. The very possibility of employing continuous observation (on this interpretation) presupposes an independent criterion of identity.

Neither interpretation will allow continuous observation to serve as a useful criterion of identity through time. The first leaves open the possibility that two different things may fall under a single bout of continuous observation and yet not be stages of a single thing, while the second presupposes some other criterion of identity. Continuous observation, then, cannot serve as a criterion for identity through time and therefore it cannot solve the problems raised for Quinton's relational account of the spatio-temporal unity of the world.

5. Quinton holds that the only things that really exist are material things located in space and time. Everything else, he argues, is either reducible to or identifiable with

¹⁶ Quinton presents all three objections on pp. 73-74 of *The Nature of Things*.

¹⁷ op. cit., p. 74.