

ALFRED NORTH WHITEHEAD in “*Science and the Modern World*”

“The answer ... which the seventeenth century gave to the ancient question ... , ‘What is the world made of?’ was that the world is a *succession of instantaneous configurations of matter*

The great forces of nature, such as gravitation, were entirely determined by the configurations of masses. Thus the configurations determined their own changes, so that the circle of scientific thought was completely closed. This is the famous *mechanistic theory* of nature, which has reigned supreme ever since the seventeenth century. It is the orthodox creed of physical science. Furthermore, the creed justified itself by the pragmatic test. *It worked*. Physicists took no more interest in philosophy.

This *simple location* of instantaneous material configurations is what Bergson has protested against, so far as it concerns time and so far as it is taken to be the fundamental fact of concrete nature. He calls it a distortion of nature due to the intellectual ‘spatialization’ of things. I agree with Bergson in his protest: but I do not agree that such distortion is a vice necessary to the intellectual apprehension of nature. ... There is an error; but it is merely the accidental error of mistaking the abstract for the concrete. It is an example of what I will call the ‘*fallacy of misplaced concreteness*’. This fallacy is the occasion of great confusion in philosophy. It is not necessary for the intellect to fall into the trap, though in this example there has been a very general tendency to do so.

It is at once evident that the concept of simple location is going to make great difficulties for induction. For, if in the location of configurations of matter throughout a stretch of time there is no *inherent reference* to any other times, past or future, it immediately follows that nature within any period does not refer to nature at any other period. Accordingly induction is not based on anything which can be observed as inherent in nature. Thus we cannot look to nature for the justification of our belief in any law such as the law of gravitation. ... It looks, therefore, as though *memory*, as well as induction, would fail to find any justification within nature itself.” [My italics]

HANS PRIMAS in “*Time-Entanglement Between Mind and Matter*”

“The Cambridge philosopher McTaggart distinguished between two modes of perception in terms of what he called A-series and B-series:

- the A-series relates events in terms of past, present and future,
- the B-series relates events in terms of “earlier than” and “later than”.

... While A-theories refer to the inner experience of time, B-theories refer to *changes in the external world*. ... Even if one considers A-theories as irrelevant for physical sciences, which do not address issues of becoming, they do not lose their legitimacy for a general theory of time. In particular, the B-theoretical structure of *physical time* is not incompatible with the A-theoretical structure of *psychological time*. ... the present and the past are characterized by procedures associated with experiments performed by experimenters.” [My italics]

It seems that the B-series do not refer *directly* to changes in the external world but to *records* of observed events (procedures associated with experiments) all of them present, one after the other, at the moment of being recorded. The result is a record of earlier and later nows, each of them without any recorded *inherent* reference to any other now. To regard such a *record of a series of nows* as a description of a *reality without a now* (a *static spacetime*) seems, even if it works, to be an instance of Whitehead’s ‘fallacy of misplaced concreteness’. However, the record can serve as a basis for a model of a hypothetically real “*active spacetime*” with a growing “*active past*” whose activity serves as objective (but hidden) *inherent references* between a series of objective (becoming and seemingly perishing) nows.

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