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REMARKS ABOUT LEIBNIZ'S THEORY OF SPACE

Abstract

Leibniz argues that two *qualitative* properties are peculiar to space: relation and position. Leibniz's quasi-Aristotelian (and therefore apparently regressive) approach and his opposition to Descartes' and Newton's quantitative theories are founded upon the principle of continuity, according to which space cannot be made by atomic entities: each point of space is an ideal limit, and not a part or a real being. Nevertheless a point is an individual. Therefore, consistently with the principle of the identity of indiscernibles, it is defined as the "simplest place", congruent with and distinct from each other place. The metaphysical and epistemological status of the point is double-faced: although it is not a monadic substance, it has an individual position. In such a way Leibniz considers each point to be a term of relations, a *point de vue*.

Space, defined as the "place of all places" (or as the totality of places), is the system of these relations, inseparable from bodies. Space is an *ens rationis*, which is neither substance (against Newton) nor attribute (against Descartes).

Such a qualitative view is consistent with Leibniz's distinction between a science of quantities (algebra) and a science of qualities (*ars combinatoria*). He replies to Descartes' algebrization of geometry with a new methodological approach: the *analysis situs*, based upon the principle of the identity of indiscernibles. For example, when two similar objects are perceived separately, no human subject can distinguish between them, since the relations among their elements do not change. Hence, quality is more important than quantity. Leibniz's thesis of the inalterability of some properties of similar shapes and of the permanence of relations was a source of many philosophical, geometrical, and physical problems, from Kant to the discovery of modern topology.

Thanks to the principle of the identity of indiscernibles, Leibniz can state what follows: space is a ductile structure, which is not prior to matter and has no existence independent of matter; without any perceiving subject (without a *point de vue*) the world cannot be oriented within space; in such a space things (as well as geometrical figures) are not isolated individuals, but bound up with one another. In this paper, besides attempting to show the modernity of this model, I point out the close relationship between philosophy of science and theory of knowledge in Leibniz's thought.