BOOK REVIEW

John W. Carroll, *Laws of Nature*, Cambridge University Press, 1994, ix + 200 pp.

The book starts with asking what propositions are (thought to be) laws of nature (p. 1) and ends with professing, "I believe that there *are* necessary truths, and that things *do* persist, and that there *are* physical objects, and there *are* laws of nature, and that the eruption of Mount Vesuvius *did* cause the destruction of Pompeii" (p. 160, pp. 161–200 being filled in with two appendices, references and index). The very first sentence of Carroll's treatise promises us a better understanding of the concept of law of nature, in the very last sentence (p. 160), the author makes us sure, he would never even begin to presume we can be provided with the most perspicuous analysis of every philosophically interesting concept. The reviewers are afraid the reader of the book is hardly provided with *a perspicuous* analysis, either.

John W. Carroll's main points of reference are, on one hand, Pierre Simon de Laplace's (1749–1827) universe being sufficiently described by an instantaneous *état des choses* and the totality of laws of nature and, on the other, David Hume's (1711–1776) view of laws of nature as highly probable sentences based upon our impressions. All he does, methodologically, is relativizing the Laplacean determinism. Instead of the principle (LP) (= Laplacean picture, p. 17) "if it is physically necessary that P implies Q, then if P were the case, then Q would be the case" he proposes a principle (SC) (= ???, see p. 20 for its very first mentioning) which says "if it is physically possible that P and if it is physically necessary that P implies Q, then if P were the case, then Q would be the case". Difference between laws and accidents is discussed, as well as lawhood and lawlikeness of propositions. From the laws of nature, three features are expected: truth, contingency and universality.

We shall not dwell on John W. Carroll's developing his philosophical concepts any longer. What is striking is his ignorance of physics, to say nothing about other sciences of nature or mathematics. On p. 159, we are told our atomistic concept of the world can be seen in two inverse hierarchies: there are either *perfectly solid atoms moving about in perfectly empty space* or *little pockets of empty space moving about in a material plenum.* Well, this might have been brilliant in the times of Democritos (460–370 B.C., approx.) teaching about *atoma* (indivisible corpuscles) and *kenon* (empty space), but both alternatives proposed are pure nonsense from the point of view of modern physics. On pp. 84–85, two universes are provided in which one and the same object under precisely the same conditions behaves in two different ways. This can be studied not only as ethical supervenience in a physical model, but also as mathematical incompleteness which is, as we know since Kurt Gödel (1906–1978), an inevitable concomitant of any model of elementary mathematical strength.

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Apart from Laplace and Hume, we see a third important point of reference of the author's, namely post-Fregean analytical philosophy which, unlike Gottlob Frege (1848–1925) himself, believed to speak about the world when manipulating symbols. John W. Carroll manipulates concepts. Little is said about nature.

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