CHAPTER 1

Causa Sui or Wechselwirkung: Engels between Hegel and Spinoza

1 Monod and Dialectical Materialism

Jacques Monod dedicates the second chapter of *Chance and Necessity* to the analysis of vitalist and animist theories, among which he also discusses the dialectical materialism of Engels. Introducing the theme, Monod affirms that the only hypothesis that modern science can accept regarding the relation between invariance and teleonomy is ‘that invariance necessarily precedes teleonomy’.¹ All the other conceptions, according to Monod, presuppose the opposite hypothesis, ‘that is, that invariance [is] protected, ontogenesis guided, evolution oriented by a teleonomic initial principle of which all these phenomena (living beings) would be manifestations’.² Implicit in this inversion is the renunciation of the principle of objectivity.³ Among the conceptions that invert the relation between invariance and teleonomy, Monod distinguishes two groups: vitalism, which admits an intervention of the teleonomic principle into the environment of the biosphere, and animism, which ‘appeals to a *universal* teleonomic principle, responsible both for cosmic evolution and for the evolution of the biosphere, within which it is expressed only in a most precise and intense way’.⁴ The animist conceptions stabilise a profound alliance between man and nature: they project onto animals, plants, minerals, meteorological phenomena and celestial bodies ‘man’s awareness of the intensely

³ The cornerstone of scientific method is the postulate of the objectivity of nature, that is, ‘the *systematic* denial that “true” knowledge can be got at by interpreting phenomena in terms of final causes – that is to say, of “purpose” ’ (Monod 1997, p. 21).
⁴ Monod 1997, p. 27. Monod concludes: ‘Such theories see in living beings the most elaborated, perfected products of an evolution oriented in the entire universe and leading, because it *must*, to man and to humanity. These conceptions, which I will call animist, are in many respects more interesting than the vitalist ones, to which I will dedicate only a brief mention’ (Monod 1997, pp. 27–28 [translation modified]).
teleonomic functioning of his own central nervous system\textsuperscript{5} (‘the project gives the reason of being and being has sense only in virtue of the project’).\textsuperscript{6}

These conceptions, Monod warns, far from being the distant memory of an age now definitively superseded, ‘still send down deep and strong [vivaces] roots into the soul of modern man’.\textsuperscript{7} This is attested by the efforts made in modern culture from the seventeenth century onwards to reconstruct the ancient alliance: ‘It is enough to think, for example, of the great attempts of Leibniz or of the enormous and powerful [pesant] monument raised by Hegel’.\textsuperscript{8}

Arriving at the heart of the matter with an analysis of some of the theories of the nineteenth century, Monod maintains that such a conception can be found in Teilhard de Chardin, in the evolutionism of Spencer and even in Marx and Engels. It was ‘the central idea of the ideology of scientific progress in the nineteenth century’.\textsuperscript{9} When considering dialectical materialism, Monod explicitly refers almost exclusively to two classic texts of Engels on the philosophy of nature, that is, \textit{Anti-Dühring} and the fragments published posthumously under the title of \textit{Dialectics of Nature}. After having summarised dialectical materialism in a few schematic points,\textsuperscript{10} Monod emphasises that making ‘dialectical

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\item[6] Ibid.
\item[10] Monod enumerates the following points: ‘1) the mode of existence of matter is movement. 2) The universe, defined as the totality of matter, the only existing totality, is in a state of perpetual [perpétuelle] evolution. 3) Any true knowledge of the universe is such in so far as it contributes to the intelligence of this evolution. 4) But such knowledge is not attained other than in interaction, itself evolutionary and the cause of evolution, between man and matter (or more exactly, the “remainder” of matter). Any true knowledge is therefore “practical”. 5) Consciousness is related [se rapporte] to this cognitive interaction. Conscious thought reflects, consequently, the movement of the universe itself. 6) As, therefore, thought is a part and reflex of universal movement, and as its movement is dialectical, the evolutionary laws of the universe also must be dialectical. That explains and justifies the use of terms like contradiction, affirmation and negation in relation to natural phenomena. 7) Dialectics is constructive (above all [notamment], thanks to the third “law”): consequently, the evolution of the universe is also ascending and constructive. Its highest expression is human society, consciousness, thought, necessary products of this evolution. 8) Due to the accent placed on the evolutionary essence of the structure of the universe, dialectical materialism superannuates radically the materialism of the eighteenth century which, founded on classic logic, was able to recognise only mechanical interactions between objects supposed to be classical; it was therefore not able to think evolution’ (Monod 1997, p. 34 [translation modified]).
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