



Althusser and Monod: A ‘New Alliance’?

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Abstract

Althusser dedicated the fourth lesson of his ‘course of philosophy for scientists’ at the Ecole Normale Supérieure in the autumn of the 1967 to the inaugural lecture held by Jacques Monod at the Collège de France on 3 November in the same year. Althusser defined the concepts of ‘living system’ and of ‘emergence’ that Monod uses in his interpretation of evolution as ‘materialist’; whereas he judged his conception of human history as the evolution of ideas in the ‘noosphere’ as ‘idealistic’. Against the latter, Althusser counterposed a reading of Marx’s work centred on the notion of ‘structure’ – which is very close to that of ‘system’ used within biology – and on the refusal of teleology and finalism. This last position, which Althusser takes up particularly in the writings of the 1980s on the ‘materialism of the encounter’, represent a particularly significant break with orthodox Marxism.

Keywords

Monod, Althusser, emergence, history, theory of transition

Encounter

Between October and November 1967, Louis Althusser held some introductory lectures for his ‘Philosophy Course for Scientists’ at the Ecole Normale Supérieure in Paris. In the same year, Jacques Monod, Nobel Prize winner for Medicine, was nominated professor of Molecular Biology at the Collège de France. On the 3 November, he held his Inaugural Lecture, which was published in full in *Le Monde* of the 30 November. It was an extremely significant lecture: Monod made clear his conception of science, anticipating the themes which came together in his celebrated ‘Essay on Natural Philosophy’ in *Chance and Necessity*, published in 1970 and destined to have a wide echo.

Althusser immediately grasped the importance of Monod’s inaugural lecture and dedicated his fourth introductory lecture to it.¹ It was ‘an exceptional

1. [Translator’s note: three of Althusser’s introductory lectures, and the lecture on Monod as

document, of an unparalleled scientific quality and intellectual honesty,² which could be used to test the theses expounded in the previous lectures on the ‘spontaneous philosophy of the scientists’ and its ‘exploitation’ by *other*, eminently practical, philosophies.

The ‘conjuncture’ was fortunate, and yet – to use the terminology of Althusser’s writings from the 1980s³ – it did not take ‘hold’; it was not sufficient to provide the foundations for an effective exchange between the two authors. A terminological problem hindered the dialogue. In 1967, Althusser was an activist in the PCF and was still a philosopher who advanced ‘masked’;⁴ the bearer of a radical critique of orthodox Marxism, he nevertheless maintained its vocabulary. In particular, he still used the expression ‘dialectical materialism’,⁵ though in a meaning light years away not only from the *diamat* of strict observance, but also from formulations of Engels. Moreover, he did not hesitate to foist it onto the spontaneous philosophy of the scientist (‘modern biologist’) Monod, judging him to be ‘in direct resonance with a definite philosophical tendency: dialectical materialism’.⁶

This fact is very striking in Monod’s text, which is exemplary in this respect. Monod does not *declare* himself to be a materialist or a dialectical thinker. These words do not appear in his text. But everything he says about modern biology displays a profound materialist and dialectical tendency, visible in positive assertions coupled with determinate philosophical condemnations.⁷

an appendix, are published in Althusser 1990. The Italian edition, Althusser 2000, also includes Monod’s Inaugural Lecture, alongside Althusser’s five introductory lectures.]

2. Althusser 1990, p. 145.

3. Cf. in particular the essay ‘The Underground Current of the Materialism of the Encounter’ in Althusser 2006, pp. 163–207.

4. Cf. Althusser 2006, p. 255. In ‘Philosophy and Marxism: Interviews with Fernanda Navarro 1984–87’ (Althusser 2006, pp. 251–89), Althusser explains his decision to conduct a *political* critique inside the PCF by means of an intervention of a theoretical type: ‘if I had intervened publicly in the *politics* of the Party [...] I would have been, at least down to 1970, immediately expelled, marginalized and left powerless to influence the Party at all. So there remained only one way for me to intervene politically in the Party: by way of *pure theory*’. Subsequently, he affirmed to have proceeded ‘somewhat [...] as Spinoza did when, in order to criticize the idealist philosophy of Descartes and the Schoolmen, he “*set out from God himself*” [...], thus cornering his adversaries, who could not reject a philosophical intervention that invoked God’s omnipotence’. ‘As Descartes too said, “every philosopher advances masked”, commented Fernanda Navarro; Althusser responded, ‘Precisely. Spinoza simply interpreted this God as an “atheist”’.

5. Only in the works of the 1980s do we find an explicit refutation not only of the ‘philosophical monstrosity’ (Althusser 2006, p. 254) but also of the term ‘dialectical materialism’ itself, defining it as ‘that “yellow logarithm”, as [Marx] liked to call theoretical absurdities’ (ibid.).

6. Althusser 1990, p. 149.

7. Althusser 1990, p. 147.

Monod could not, of course, appreciate such a ‘homage’:⁸ the idea of being included in ‘dialectical materialism’ – assimilated to Lysenko! – must have simply horrified him. Thus, if in his inaugural lecture he had reserved only a single line for Engels,⁹ *Chance and Necessity* on the other hand took pains to issue a detailed, total condemnation of dialectical materialism. Monod dedicated several paragraphs to this critique, both in order definitively to take his distance from dialectical materialism, and also because he held that Marxism ‘in our times still wields a profound influence reaching far beyond the already vast circle of its adepts’.¹⁰ Monod not only rejected the fundamentally teleological system of dialectical materialism and the idea of knowledge as a ‘perfect mirror’, and the ‘animist projections’ which in fact entailed the abandonment of the postulate of objectivity;¹¹ he also condemned its ‘epistemological disaster’, that is, the fact that, in the name of this theory, fundamental gains of scientific inquiry had been rejected.

This interpretation is not only foreign to science but incompatible with it – and as such it has appeared every time the dialectical materialists, emerging from purely ‘theoretical’ verbiage, have sought to use their ideas to help light the path of experimental science. Although he had a thorough acquaintance with the science of his day, Engels himself had been led to reject, in the name of dialectics, two of the greatest discoveries of the age: the second law of thermodynamics and (notwithstanding his admiration for Darwin) the theory of natural selection. It was by virtue of these same principles that Lenin assailed the epistemology of Mach; that, later, Zhdanov ordered Russian thinkers take it out on the Copenhagen school for ‘its devilish Kantian mischief’; that Lysenko accused geneticists of maintaining a theory radically at odds with dialectical materialism, and therefore necessarily false. Despite the disclaimers of the Russian geneticists, Lysenko was perfectly right: the theory of the gene as the hereditary determinant, invariant from generation to generation and even through hybridizations, is indeed completely irreconcilable with dialectical principles. [...] The fact that

8. Cf. Althusser 1990, p 146: ‘Monod’s text is in our opinion an exceptional text, to which I would like to pay public homage. This is only a philosopher’s homage. I would be happy if it were taken for what it is – the homage of a philosopher, but a homage nevertheless’.

9. Monod cited a passage in *Dialectics of Nature* in which Engels negated the second principle of thermodynamics (cf. Althusser 2000, p. 175), which ‘he attacks with particular violence’, as Althusser observes (Althusser 1990, p. 157). Althusser nevertheless further correctly notes that in the Inaugural Lecture, Monod, though distinguishing himself from Marxism, does not ‘declare war on it’, as he does, on the other hand, in his treatments of the religious conceptions of Teilhard de Chardin (ibid.). Things are decisively different in *Chance and Necessity*, in which Monod openly treats Marxist ‘dialectical materialism’ as an *enemy* of science.

10. Monod 1997, p 33.

11. For Monod, the ‘postulate of objectivity’ – as we shall see – was substantiated by ‘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.

today the structure of the gene and the mechanism of its invariant reproduction are known does not redeem anything, for *modern* biology's description of them is purely mechanistic.¹²

Monod thought that it was precisely this 'mechanistic approach' – an undeniable characteristic, in his opinion, of the explanation of genetic mechanism offered by contemporary biology – that had earned him Althusser's accusation of 'idealism',¹³ but this was not the case at all. The model of scientific explanation utilised by genetics, as Monod presented it in his Inaugural Lecture, was, on the contrary, exactly what Althusser valued and defined as being a 'dialectical materialist tendency', utilising, certainly, a highly compromised and ambiguous term. The 'idealist tendency', on the other hand, was in the concept of 'noosphere' used by Monod, as well as in the 'ethics of scientific knowledge' that he proposed as a solution to the 'alienation of the modern world'. Thus, Althusser ultimately found the 'idealist tendency' in the conception of history and in the '*political prise de position*'¹⁴ contained in Monod's discourse.

The incomprehension is significant: today we know that Althusser had even less sympathy for *diamat* than Monod.¹⁵ In the 1960s, however, it was not easy to establish a genuine dialogue between a scientist and a Marxist philosopher, particularly if the latter still continued to speak of 'dialectics'. It was precisely this little word – and certainly not the term 'materialism' – that made communication difficult. In *Philosophy and the Spontaneous Philosophy of the*

12. Monod 1997, pp. 39–40.

13. Monod 1997, p. 40.

14. Althusser 1990, p 164.

15. Both considered dialectical materialism – understood as the 'conception of the Soviet Academy of Sciences' (Althusser 2006, p. 254) – to be an 'ideology', that is, a theoretical apparatus of legitimation, even if Monod would not have used this term. 'Let us not forget, moreover, that dialectical materialism is a relatively late adjunct to the socioeconomic edifice Marx had already raised. An adjunct that was clearly intended to make of historical materialism a "science" based upon the laws of nature itself', as Monod wrote (Monod 1997, p. 37). Althusser in the 1980s was even more severe: 'I wanted us to abandon the unthinkable theses of dialectical materialism, or "diamat"... [which] held undisputed sway over all the Western Communist parties. [...] It seemed to me essential that we rid ourselves of monist materialism and its universal dialectical laws; this was a harmful metaphysical conception of the Soviet Academy of Sciences that substituted "matter" for the Hegelian "Mind" or "Absolute Idea". I considered it aberrant to believe, and to impose the belief, that one could *directly* deduce a science, and even Marxist-Leninist ideology and politics, by directly applying the putative "laws" of a supposed dialectic to the sciences and politics. [...] I think that this philosophical imposture took a very heavy toll on the USSR. I do not think it would be any exaggeration to say that Stalin's political strategy and the whole tragedy of Stalinism were, *in part*, based on "dialectical materialism", a philosophical monstrosity designed to legitimize the regime and serve as its theoretical guarantee – with power imposing itself on intelligence.' (Althusser 2006, p. 254.)

Scientists, Althusser employed the term ‘dialectics’ sparingly and with a certain awareness of its inadequacy: it was an old way of saying that the whole was superior to the sum of its parts, or for referring to the ‘qualitative leap’; that is, for alluding to *non-reductive or non-mechanistic* conceptions, which had certainly been formulated in less obscure ways by developments in contemporary science. Althusser held that, with the category of ‘emergence’, Monod had contributed to re-proposing questions that Marxism had ‘sought to think’.¹⁶ However, for Monod, ‘dialectics’ referred irreparably to a Hegelian and therefore *teleological* framework, to ‘metaphysical nonsense’ of thesis-antithesis-synthesis and to the negation of the negation. Applied to nature, this perspective claimed that ‘it may be shown to have an ascending, constructive, creative intent, a purpose [...], to render it decipherable and morally meaningful’.¹⁷ It was for this reason that he declared both his own position and that of modern *mechanistic* science to be against such ‘dialectics’.¹⁸

If Monod misunderstood Althusser’s critique, Althusser, on the other hand, was, in my view, genuinely interested in the model of scientificity proposed by Monod. The French biologist was not a mere example chosen in order to illustrate the difference between the ‘spontaneous philosophy’ practised by the scientist and the ‘philosophy’ professed by the man of culture who prescribes and posits his own system of values. Althusser was *directly* interested in some of the categories used by Monod, precisely due to the possibility they offered for reformulating in an unambiguous fashion problematics that Marxism had ‘sought to think’: concepts of *system* (as it is used in the expression ‘living system’) and of *emergence*, which contribute to clarifying what should be understood by the term *materialism*; the notion of *noosphere*, the critique of which allowed the specification of what is meant by history and by *historical materialism*; and finally, the thematic relative to the articulation of *chance and necessity*, which re-emerged above all in Althusser’s writings of the 1980s around the notion of *aleatory materialism*. For that reason, I think that a more accurate comparison between the epistemological positions of Monod and those of Althusser may be able to contribute to a better comprehension of the latter.

16. Cf. Althusser 1990, p. 149.

17. Cf. Monod 1997, p. 39.

18. Thus leaving perplexed even an author who certainly did not have anything to do with ‘dialectical materialism’ like Piaget. On this point, cf. Piaget 1971.

Monod: evolution and selection of ideas

Let us examine, first of all, the position of Monod, which I will seek to reconstruct by utilising both the Inaugural Lecture of 1967 and the more rigorously argued *Chance and Necessity*. The *materialism* which Monod professed – without calling it by this name, in order to avoid confusions with the abhorred dialectical materialism – has a strong element in common with the materialism of which Althusser spoke in his writings of the 1980s. Althusser defined it as a ‘subterranean current’ with regard to the ‘dominant tendency’ of idealism: for Althusser, because it was an authentic materialism – and not simply an ‘inverted idealism’¹⁹ – the rejection of explanation in terms of final causes was necessary; such rejection was in some ways *more important* than the negation of the existence of spiritual substances. Something similar can be found in Monod: the French biologist defined his own philosophical position *against* two theses that he called, respectively, the ‘dualist illusion’ and the ‘animist projection’. Against the first – which coincides with the Cartesian metaphysical dualism between ‘material substances’ and ‘spiritual substances’ – he set out a firm ontological monism, without, however, insisting greatly on its defence. Dualism was, all things considered, a tolerable illusion: while waiting for a full empirical verification of the monist hypothesis, which would come from a more exact knowledge of the physiology of the brain,²⁰ we can live in peace with those who believe in ‘spirit’:

Objective analysis obliges us to see that this seeming duality within us is an illusion. But it is so well within, so intimately rooted in our being, that nothing could be vainer than to hope to dissipate it in the immediate awareness of subjectivity, or to learn to live emotionally or morally without it. And, besides, why should one have to? What doubt can there be of the presence of the spirit within us? To give up the illusion that sees in it an immaterial ‘substance’ is not to deny the existence of the soul, but on the contrary to begin to recognize the complexity, the richness, the unfathomable profundity of the genetic and cultural heritage and of the personal experience, conscious or otherwise, which together constitute this being of ours: the unique and irrefutable witness to itself.²¹

19. ‘We must therefore treat the term “materialism” with suspicion: the word does not give us the thing, and, on closer inspection, most materialisms turn out to be inverted idealisms. Examples: the materialisms of the Enlightenment, as well as a few passages in Engels.’ (Althusser 2006, p. 272.)

20. Cf. Monod 1997, p. 159. Monod evidently undervalued a theoretical (for example, the Spinozist) solution.

21. *Ibid.*

He had no tolerance, on the other hand, for the ‘animist projection’, that is, for the interpretation of phenomena in terms of final causes. Monod defined the rejection of every teleological explanation as the *postulate of objectivity* without which there could be no scientific knowledge:

The cornerstone of the scientific method is the postulate that nature is objective. In other words, the systematic denial that ‘true’ knowledge can be got at by interpreting phenomena in terms of final causes – that is to say, of ‘purpose’.²²

As we have already seen, Althusser was just as intransigent in claiming the rejection of finalism: every materialism which does not meet this requirement continues to obey ‘the ‘principle of reason’, that is, the principle according to which everything that exists, whether ideal [*idéal*] or material, is subject to the question of the *reason for its existence*’, to the double question of origin and end. It is a merely *pronounced materialism* which in fact ‘reproduces [...] its negation and mirror opposite, the term “idealism”’.²³ An exemplary case – and one which was particularly dear to Althusser – was the ‘philosophical monstrosity of the Soviet Academy of Sciences’, which was at once monistic and teleological.²⁴

For Monod, the postulate of objectivity, introduced into physics by Galileo and Descartes with the principle of inertia, was affirmed much later in the field of biology due to the evidently teleonomic character of the living beings which are, without exception, ‘objects with a purpose, represented in their structure and at the same time realised through their performances’.²⁵ That introduces – ‘at least in appearance’, Monod specified²⁶ – a profound epistemological contradiction: how to explain *scientifically*, that is, without interpreting in terms of final causes, *objects with a purpose*? The contradiction between the principle of objectivity and the teleonomy of beings had been given different ‘false’ solutions (that is, non-scientific solutions, given that ‘there is no way to be rid of it [the postulate of objectivity], even tentatively or in a limited area, without departing from the domain of science itself’),²⁷ which Monod catalogued into two groups: ‘vitalist’ and ‘animist’.²⁸ ‘Vitalist’ conceptions were those ‘which invoke a teleonomic principle which operates

22. Monod 1997, p. 21.

23. Althusser 2006, p. 216.

24. Althusser 2006, p. 254.

25. Monod 1997, p. 14.

26. Monod 1997, p. 22.

27. Monod 1997, p. 21.

28. In his Inaugural Lecture, on the other hand, Monod called the approaches of the second group ‘metaphysical’ (cf. Althusser 2000, pp. 174 et sqq.).

only within the biosphere, in the heart of “living matter”.²⁹ They included the vitalistic biologists of the end of the nineteenth century, such as Driesch, some positions in the field of physics (for example, those of Elasser, Polanyi, Bohr) and also Bergson’s idea of an ‘*élan vital*’. Properly seen, it was a re-proposal of the ‘dualistic illusion’: not in the metaphysical Cartesian version (even though Bergson, at least, ended up moving in the direction of metaphysics),³⁰ but in a variant which, without postulating spiritual substances, opposed the inorganic and organic worlds, maintaining the irreducibility of the latter to the former at least on the gnoseological level, and thus being compelled to turn to different explanatory and interpretative principles (the ‘entelechy’ of Driesch, the ‘*biotonic laws*’ of Elasser).

As for the ‘animist conceptions’, their injury to the postulate of objectivity was even more serious, because they did not limit themselves to carving out a circumscribed field for the finalistic interpretation, (although this was indeed important for their theory), but projected a teleological principle onto the whole of nature, animate and inanimate.

Animist belief, as I am visualizing it here, consists essentially in a projection into inanimate nature of man’s awareness of the intensely teleonomic functioning of his own central nervous system.³¹

According to Monod, it was an orientation that ‘reaches back to mankind’s infancy’, but which was ‘still deep-rooted in the soul of modern man’,³² because ‘animism established a covenant between nature and man, a profound alliance outside of which seems to stretch only terrifying solitude’.³³ It was a fearful solitude, just as it was fearful to renounce the ‘anthropocentric illusion’ upon which the animistic orientation was founded, in the final analysis. According to Monod, the theory of evolution initially re-activated this illusion, which had previously been condemned to death by Copernican astronomy and by the concept of inertia: if man was no longer the centre of the universe, he could now become ‘its natural heir, awaited from time immemorial’,³⁴ the necessary culmination of a cosmic ascension. It was due to this that ‘the animist projection’ had been revived in the nineteenth century, ‘at the very core of certain ideologies said and proclaiming to be founded upon science’: with the

29. Monod 1997, p. 25.

30. Monod 1997, pp. 26–7.

31. Monod 1997, p. 30.

32. Monod 1997, p. 29.

33. Monod 1997, p. 31.

34. Monod 1997, p. 41.

biological philosophy of Teilhard de Chardin, with the positivism of Spencer, and above all with the dialectical materialism of Marx and Engels.³⁵

In order to be constituted as science, biology had needed to liberate itself from both the *dualism* of the ‘vitalist conceptions’ and from the *teleological* monism of the ‘animist conceptions’. In reality, Monod used the same term – *emergence* – to indicate the *two* theoretical movements that wrong-footed such positions.³⁶ In a first meaning, *emergence* designated the *property of a system* insofar as it was different from the properties of the elements that composed it: it is what allows us to speak of a ‘living system’ instead of ‘living matter’, that is, to define ‘life’ as a property that *emerges* from a certain organisation of matter (the same matter treated by physics), thus avoiding dualism. Recent advances in molecular chemistry had consolidated this theoretical position. Even if the reconstruction of the enormously complex ‘cellular machinery’ which constitutes the living systems remains an infinite task, we know ‘the physical support of emergence and the physical nature of the elementary teleonomic interactions’.³⁷ In a second meaning, *emergence* designated instead the *genesis* of such organisation: such genesis is a matter of *chance*. That is, while not contradicting the ‘first principles’ of our knowledge of causes, it is not deducible from them, because it represents a particular event. Monod is clear in an exemplary way on this point:

The biosphere does not contain a predictable class of objects or of events but constitutes a particular occurrence, compatible indeed with first principles, but not *deducible* from those principles and therefore essentially unpredictable. Let there be no misunderstanding here. In saying that as a class living beings are not predictable upon the basis of first principles, I by no means intend to suggest that they are not *explicable* through these principles – that they transcend them in some way, and that other principles, applicable to living systems alone, must be invoked. In my view the biosphere is unpredictable for the very same reason – neither more nor less – that the particular configuration of atoms constituting this pebble I have in my hand is predictable. No one will find fault with a universal theory for not affirming and foreseeing the existence of this particular configuration

35. Monod 1997, p. 31.

36. Althusser was especially keen in grasping this duplicity of meaning and in signalling the risks that it carries: ‘Monod provides a definition of emergence which in fact contains two very different definitions. His lecture opens with this definition. I quote: “Emergence is the property of reproducing and multiplying highly complex ordered structures and of permitting the evolutionary creation of structures of increasing complexity”. It would be fascinating to analyse closely this very thoughtful but lame formula because it contains two different definitions [...] Emergence is a double property: reproduction *and* creation. [...] The small word “and” linking reproduction and creation in Monod may lead to two realities being confused; at any rate, it *juxtaposes* them’. Althusser 1990, pp. 153–4.

37. Monod 1997, pp. 43–4.

of atoms; it is enough for us that this actual object, unique and real, be *compatible* with the theory. This object, according to the theory, is under no obligation to exist; but it has the right to.³⁸

‘To prioritize emergence over teleonomy’ – the theoretical operation with which Darwin had returned the evolutionary hypothesis to the dominion of the postulate of objectivity – signifies precisely this: *teleonomy* (that is, behaviour directed to survival and to reproduction, a property of living systems) is the result of a certain organisation of matter whose genesis is *a matter of chance* (not foreseeable, not deducible from first principles).

Darwin’s hypothesis, today supplied with a firm ‘physical support [...] deoxyribonucleic acid [...] the philosopher’s stone of biology’,³⁹ provided yet another refutation of anthropocentrism. If, after Descartes, man was no longer the centre of the universe, after Darwin he is no longer the crowning point of a marvellous evolutionary project either. He has neither a privileged position, nor an origin, nor a privileged significance: a condition, according to Monod, that should be accepted bravely, renouncing any consolatory metaphysics.

The result was, again, a *gnoseological dualism*, displaced to another level. On the one hand, there were the sciences that respect the principle of objectivity, including biology (due to advances in biochemistry that had shown the uselessness of postulating a ‘living matter’ subject to laws different from those of physics and chemistry and above all due to Darwin whose prioritising of emergence over teleonomy had made a non-teleological interpretation of the evolution of living beings possible). On the other hand, there were ethics and discourses on man that are certainly different from scientific discourse. One could say: the umpteenth version of the opposition *science of nature/science of spirit*, variously conjugated in the twentieth century by historicisms, neo-idealisms and neo-positivisms. In Monod, the same couple of opposites is designated with a terminology taken from Teilhard de Chardin (an unfortunate *symptom*, as Althusser observed): *biosphere* – kingdom of life, delivered by Darwin and by molecular biology to the firm dominion of the postulate of objectivity; and *noosphere* – kingdom of ideas or more precisely of symbolic *language*, because it is language which makes man and his history.⁴⁰

Monod knew perfectly well that, as a scientist, he should stop at the threshold of the noosphere (‘the biologist [...] should perhaps conclude his discourse and allow linguists, psychologists and philosophers to speak’).⁴¹

38. Ibid.

39. Althusser 1990, pp. 146–7.

40. Cf. Althusser 1990, p. 158.

41. Althusser 2000, p. 181.

However, he did not: due to an *ethical* motive and above all due to a *cognitive hypothesis* that is particularly interesting for our study. In the first place, Monod claimed the right and obligation of scientists to involve themselves in ethical debates. *Right*, because they practice a superior ethics – knowledge is, in fact, a categorical imperative and ‘research constitutes for itself an asceticism’;⁴² and *obligation*, because contemporary man is always more alien to scientific culture – too large, specialised, anti-intuitive and above all providing too few consolations – at the precise moment that he increasingly depends upon it. The solution is to fill the gap between the contemporary sciences and the anachronistic values that society still practises and proposes – which is what the ‘alienation of modern man’ consists in – by means of a politics of education and of diffusion of an ‘ethics of scientific knowledge’.⁴³

In the second place, Monod hypothesised the possibility of a *science of the noosphere*, that is, of a history of *scientific* man based on the postulate of objectivity. As Althusser noted,⁴⁴ the concept of *noosphere* coincides, in Monod, with the notion of *history*. I would add: a *very traditional* notion of history. It is the history that commences – and is separated from ‘pre-history’ – with writing, that is, the history of man in as much as he is gifted with symbolic language and with techniques for transmitting it. The development of such a ‘specific performance’, which distinguishes man from other living beings, ‘has opened up the way to another evolution, creator of a new kingdom: that of culture, of ideas, of scientific knowledge’.⁴⁵ With Broca, we begin to uncover the physiological bases of language. Furthermore, ‘although it is immaterial, and populated only by abstract structures, the noosphere presents close analogies to the biosphere from which it emerged’.⁴⁶ It is therefore legitimate to hope that perhaps one day a great mind will arrive ‘who will be able to write a sequel to the work of Darwin: a natural history of the selection of ideas’.⁴⁷ Therefore, according to Monod, the object of history is *ideas and their evolution*; such evolution probably answers to selective mechanism analogous to those that preside over the evolution of the species. This is precisely the ‘idealism’ with which Althusser reproaches Monod: ‘an idealist theory of history’⁴⁸ based on the ‘belief that ideas rule the world’ (*rectius*, history).⁴⁹ The laws of biology come to be applied to this ideal object, thereby advancing

42. Althusser 2000, p. 185; cf. Althusser 1990, p. 158.

43. Cf. Althusser 2000, pp. 183–4.

44. Althusser 1990, p. 153.

45. Monod 1997, p. 117.

46. Althusser 1990, p. 150.

47. *Ibid.*

48. Althusser 1990, p. 159.

49. Althusser 1990, p. 164.

an astounding biologicistic theory of ideas as endowed with the specific qualities of living species, dedicated to the same function and exposed to the same laws. There are ideas that possess an invasive power, others that are doomed to die out because they are parasitic species, still others ineluctably condemned to death by their rigidity.

We fall back with this great avant-garde biologist upon banalities which have existed for more than a century and which Malthus and Social Darwinism charged with ideological energy throughout the nineteenth century.⁵⁰

Not merely: in spite of the postulate of objectivity, Monod assigns an End to the evolution of ideas: the affirmation, slow but inexorable, of ‘the idea of objective scientific knowledge as the *only* source of authentic truth’, this ‘cold and austere idea which [...] imposes an ascetic renunciation of all other spiritual fare’,⁵¹ but which can be the base of ‘a really *scientific* socialist humanism’.⁵²

Althusser: history of class struggle

One can do better, in the field of history, and much had already been done. Althusser had maintained (well before encountering the thought of Monod on this point, from the period of the writings collected together in 1965 in *For Marx*) that a ‘great spirit’ had already taken care of the ‘foundation of the scientific theory of history’: Marx.⁵³ Such a foundation required an ‘*epistemological break*’ with respect to previous theories; it had already appeared explicitly in those works which Althusser defined as ‘Works of the Break’, that is, *The German Ideology* and the *Theses on Feuerbach*.⁵⁴ In these, Marx refused ‘all of the forms of a philosophy of consciousness and an anthropological philosophy’,⁵⁵ that is, he refused to reconstruct a history of ideas centred on the notion of *man*, in order to construct, instead, a *history of class struggle*. Althusser opposed to ‘Idealism = the belief that *ideas rule the world*’ (which

50. Althusser 1990, pp. 150–1. Among the ideas condemned to extinction, Monod numbered Islam and Catholicism. ‘Thus, just as certain extreme differentiations, once sources of success, have led entire groups to their extinction in a modified ecological context (e.g., the great reptiles of the secondary era), in the same way today one sees that the extreme and proud dogmatic rigidity of some religions (such as Islam and Catholicism), sources of their conquests in a noosphere which is no longer ours, becomes a cause of extreme weakness which will lead, if not to their disappearance, then at least to devastating revisions.’ (cf. Althusser 2000, p. 182.)

51. Monod 1997, p. 169.

52. Monod 1997, p. 180.

53. Althusser 1969, p. 32.

54. Althusser 1969, pp. 33–5.

55. Althusser 1969, p. 36.

was the belief of Feuerbach just as of Monod) the notion of ‘Materialism = the belief that the class struggle is the motor of history’.⁵⁶

‘The history of class struggle’, however, is still an ambiguous ritualistic formula, a homage to the celebrated phrase of the *Communist Manifesto* which is open to too many interpretations and risks leading us up a *Holzweg*. It is necessary to specify it in order to be able to verify if the theory of history inaugurated by Marx really corresponds to the requirements of scientificity. In a first approximation, I propose to ‘translate’ it as follows: the study of conflictual social *systems* (‘modes of production’) whose *emergence* is unforeseeable (‘aleatory’). I emphasise the terms *systems* and *emergence* because on these concepts rests, in my opinion, the observance of that ‘postulate of objectivity’ which Monod, the scientist and ‘spontaneous materialist philosopher’, had delineated so clearly as the specific terrain of biology before losing himself in the ideal world of the noosphere.

The *theory of history* discovered by Althusser in the work of Marx seems to repeat very closely the conceptual structure in biology described by Monod. The entire laborious ‘symptomatic reading’ aimed, in effect, to trace, with a terminology that was still inadequate, the task of a concept analogous to that of *system* in order to define the societies (*modes of production* ‘structured in dominance’, that is, totalities of hierarchical social relations founded upon the relations of production) according to a *non-teleological* vision of their succession (not foreseeable, not deducible from first principles). If this is true, Marx’s theory of history respects the postulate of objectivity: it belongs to the family of modern sciences and, philosophically, is a moment of the great tradition of *monistic and aleatory materialism*, that is, a materialism free from both the ‘dualist illusion’ and the ‘animist projection’.

In order to verify this, it is necessary to go beyond the ‘Works of the Break’: they contain little more than the announcement of the change of terrain – from what men *think* to what men *produce in society* – constitutive of historical materialism, and in a form which poses delicate interpretative problems, given that

this new thought so firm and precise in its interrogation of ideological error, cannot define itself without difficulties and ambiguities. It is impossible to break with a theoretical past at one blow: in every case, words and concepts are needed to break with words and concepts, and often the old words are charged with the conduct of the rupture throughout the period of the search for new ones.⁵⁷

56. Althusser 1990, p. 164.

57. Althusser 1969, p. 36.

It is necessary to turn to the ‘Works of Marx’s Theoretical Transition’⁵⁸ (in particular the *Introduction* of 1857, a text which is methodologically decisive) and above all to the great ‘work of maturity’, *Capital*, ‘the work by which Marx has to be *judged*’.⁵⁹ Here we are no longer confronted by a mere declaration of intent, but by ‘the founding moment of a new science’: the *science of history*.⁶⁰

This last statement, which recurs in almost all of Althusser’s texts, merits some further reflection, for *Capital* in no way appears to be an exposition of a theory of history. The declared goal of Marx’s work was ‘to discover the laws of movement of modern bourgeois society’.⁶¹ As he stated, ‘In this work I have to examine the capitalist mode of production, and the conditions of production and exchange corresponding to that mode’.⁶² In other words, the *scientific object* of Marx’s research is ‘bourgeois society’ redefined as the ‘capitalist mode of production’.

Such redefinition – which constitutes the ‘critique of political economy’, that is, the *epistemological break* with respect to classical political economy and its refoundation on a historical basis – rests on a *theory of history* that studies the ‘basic forms of unity of historical existence, the *modes of production*’.⁶³ In this new theory, the historical *continuum* governed by the concept of ‘progress’ thought by previous philosophies of history – from the Enlightenment to Hegel – was shattered. According to Althusser, it had an effect that is comparable to the destruction of the Aristotelian cosmos that followed the Copernican revolution (more precisely, the Galilean).

Capital, a mighty work, contains what is simply one of the three great scientific discoveries of the whole of human history: the discovery of the system of concepts (and therefore of the *scientific theory*) which opens up to scientific knowledge what can be called the ‘Continent of History’. Before Marx, two ‘Continents’ of comparable importance had been ‘opened up’ to scientific knowledge: the Continent of Mathematics, by the Greeks in the fifth century B.C., and the Continent of Physics, by Galileo.⁶⁴

Perhaps, following Monod’s suggestion, we could add the ‘Continent of Biology’ opened up by Darwin. The comparison between Galilean astronomy

58. Althusser defined as such the works of the period 1845–57. cf. Althusser 1969, p. 34.

59. Louis Althusser 1971a, p. 71.

60. Louis Althusser 1971b, p. 15.

61. Marx and Engels 1975, p. 9.

62. Marx and Engels 1975, p. 11.

63. Althusser 1971a, pp. 195–6.

64. Althusser 1971a, pp. 71–2.

and Marxist history can nevertheless prove to be particularly illuminating. The object of the *Dialogue of the Two World Systems* is not directly the *universe*, but the *solar system*, or, more accurately, the heliocentric interpretation of the motion of the planets that constitute it. But this, in Galileo's version, presupposes the co-ordinates of an infinite space that can be represented in the terms of Euclidean geometry. In other words, it requires 'two actions fundamentally and strictly connected [...]; destruction of the cosmos and geometrisation of space',⁶⁵ which, according to Koyré, inaugurate modern science by relegating Aristotelian physics, to use Althusser's terms, to the 'prehistory' of this discipline. In the same way, Marx's reconstruction of the *capitalist mode of production* – the limited object or 'region', so to speak, of the vast 'Continent of History' – presupposes a theory of modes of production, that is, a new *theory of history* which renders the previous conceptions 'pre-scientific'. It is a turning point that concerns the whole domain of the 'human sciences', as we read in the text which follows the previous quotation, one of the strongest and most explicit on this recurring theme:

We are still very far from having assessed the extent of this decisive discovery and drawn all the theoretical conclusions from it. In particular, the specialists who work in the domains of the 'Human Sciences' and of the 'Social Sciences' (a smaller domain), i.e. economists, historians, sociologists, social psychologists, psychologists, historians of art and literature, of religious and other ideologies – and even linguists and psycho-analysts, all these specialists ought to know that they cannot produce truly scientific knowledges in their specializations unless they recognize the indispensability of the theory Marx founded. For it is, in principle, the theory which 'opens up' to scientific knowledge the 'Continent' in which they work.⁶⁶

Because the actual scientific object of *Capital* is only the capitalist mode of production, we have in reality 'only the outlines of a Marxist theory of the modes of production before the capitalist mode of production'. Such a sketch is, however, something much more meaningful than a 'vision of the world'.⁶⁷ Rather, it is 'a system of concepts (that is a *scientific theory*)', even though incomplete or containing some ambiguities. In this way, Althusser poses the task of recognising 'what Marx actually gave us and what he enabled us to obtain for ourselves, although he could not give it to us'.⁶⁸

65. Koyré 1957, p. 2.

66. Althusser 1971a, p. 72.

67. Continuing the analogy with modern astronomy, according to Koyré, the idea of Bruno of an infinite universe still has the character of a 'vision of the world', while its theorisation by Descartes is a fully scientific theory. Cf. Cavazzini 2003, in particular pp. 9 et sqq.

68. Althusser 1971b, p. 197.

It is necessary to note a significant difference between the Althusser of *Reading 'Capital'* and the Althusser of the later writings in relation to this task. There is, in the first place, a different interest in terms of the object of knowledge. The works of the 1960s aimed above all to reconstruct the statute of the *complex structure* – of a *system* – of the modes of production. This task of reconstruction was a difficult one, and required both an accurate demarcation of current interpretations and also the invention of a new terminology. Think, for instance, of the term 'over-determination', introduced in *For Marx*;⁶⁹ or the term 'metonymic causality' employed in *Reading 'Capital'* in order to give an account of the 'determination by a structure'; or 'the efficacy of a whole on its elements', thus avoiding the double bind of 'transitive' Cartesian causality and 'expressive' Leibnizian efficacy.⁷⁰ The result was a concept of mode of production as a 'whole structured in dominance', which, I believe, can be summarised in the following terms. The modes of production, these 'fundamental forms of historical existence', are differentiated from each other (and are classified in a way which makes it possible to '*periodize*' history)⁷¹ on the basis of the type of relations that are established in production and that define their fundamental division into classes: the *relations of production*. The latter 'determine in the last instance' ('over-determine') the other significant social relations and their hierarchy. The importance of this reformulation is notable above all for the critique which it implies of orthodox Marxism, which spoke instead of determination of the 'superstructure', identified with all the social relations different from economic social relations, by the 'economic structure'. In reality, according to Althusser's reading, there is no correspondence between *relations of production* and *economic relations*. Economic relations – or the relations of distribution and of exchange, and production itself in as much as it is a 'technical' process of transformation – become dominant in capitalist society due to its particular structure of classes, while, in other societies, structured differently, other types of social relations become dominant. It is therefore misleading, for example, to counterpose a 'capitalist economy' identified with the *market* to a 'socialist economy' identified with *planning*, without posing the problem of the underlying relations of production – and therefore the problem of the structure of classes.⁷²

69. Cf. 'Contradiction and Overdetermination' in Althusser 1969, pp. 87–128.

70. Cf. Althusser 1971b, p. 187 et sqq.

71. Althusser 2006, p. 196.

72. Charles Bettelheim developed his very interesting analysis of 'real socialism' from this perspective: the opening of this considerable line of research testifies to the fertility of the Althusserian reformulation.

In the writings from the 1980s, the problem of the *genesis* of the modes of production predominates and the assessment of the contribution given by Marx to such question changes decisively. In the 1960s, Althusser had maintained that in *Capital* the modes of production are configured – here I use a term taken up from biology – as complex *systems* endowed with the property of self-reproduction, but that *there is not* a theory of the *genesis* of such systems.

*Marx did not give us any theory of the transition from one mode of production to another, i.e., of the constitution of a mode of production.*⁷³

Such is the conclusion of *Reading 'Capital'* (significantly, in italics). In the essay 'The Underground Current of the Materialism of the Encounter' of 1982 we read, instead, that 'in fact, we find *two* absolutely unrelated conceptions of the mode of production in Marx'.⁷⁴

The first goes back to Engels's *Condition of the Working-Class in England*; its real inventor was Engels. It recurs in the famous chapter on primitive accumulation. [...] *The second* is found in the great passages of *Capital* on the essence of capitalism as well as the essence of the feudal and socialist modes of production and on the revolution; and, more generally, in the 'theory' of the transition, or form of passage, from one mode of production to another. The things that have been written on the 'transition' from capitalism to communism over the past twenty years surpass the imagination and are past all counting!⁷⁵

The gap between these pronouncements from the previously cited conclusion of *Reading 'Capital'* is evident. In *Reading 'Capital'*, the *theory of the process of formation of a determinate mode of production coincides with the theory of the transition from one mode of production to another*.⁷⁶ Here, on the other hand, 'we find *two* absolutely unrelated conceptions of the mode of production', between which Althusser chooses decisively the *first*, while to the *second* he appends an irritated comment. The *second* conception is 'the thesis of a mythical "decay" of the feudal mode of production and the birth of the bourgeoisie from the heart of this decay'.⁷⁷ It is the idea of a predestined course, governed by the 'dialectical laws' of 'contradiction', of 'negation', of the 'great inversion'. This is a history full of problems, of mysteries,⁷⁸ of 'dead-ends';

73. Althusser 1971b, p. 197.

74. Althusser 2006, p. 197.

75. Ibid.

76. Althusser 1971b, p. 204.

77. Althusser 2006, pp. 200–1.

78. Althusser 2006, pp. 201–2: 'what is this strange class – capitalist by virtue of its future, but formed well before any kind of capitalism, under feudalism – known as the bourgeoisie?.'

a ‘philosophical’⁷⁹ theory of history and just as improbable as Lysenko’s ‘metaphysical’ theory of evolution. The *first* conception, on the other hand,

explains that the capitalist mode of production arose from the ‘*encounter*’ between ‘the owners of money’ and the proletariat stripped of everything but his labour-power. ‘It so happens’ that this encounter took place, and ‘took hold’, which means that it did not come undone as soon as it came about, but *lasted*, and became an accomplished fact, the accomplished fact of this encounter, inducing stable relationships and a necessity the study of which yields ‘laws’, tendential laws, of course: the laws of the development of the capitalist mode of production. [...] What matters about this conception is less the elaboration of laws [...] than *the aleatory character of the ‘taking-hold’ of this encounter, which gives rise to an accomplished fact* whose laws it is possible to state. This can be put differently: the whole that results from the ‘taking-hold’ of the ‘encounter’ does not precede the ‘taking-hold’ of its elements, but follows it; for this reason, it might have not ‘taken hold’, and, *a fortiori*, ‘the encounter might have not taken place’.⁸⁰

This conception seems to me to correspond entirely to the ‘prioritizing of emergence over teleonomy’ that Monod attributed to Darwin and which he considered to be the foundational act of scientific biology. Althusser himself seemed convinced of this:

instead of thinking contingency as a modality of necessity, or an exception to it, we must think necessity as the becoming-necessary of the encounter of contingents. [...] Thus we see that not only the world of life (the biologists, who should have known their Darwin, have recently become aware of this), but the world of history too, *gels* at certain felicitous moments, with the taking-hold of elements combined in an encounter that is apt to trace such-and-such a figure: such-and-such a species, individual, or people.⁸¹

Althusser maintained that, in Marx’s chapter on primitive accumulation, ‘All of this is said – in veiled terms, to be sure, but it is said’.⁸² However, this poses a not insignificant problem, given that Marx, if he makes visible the *first* conception, or the *aleatory* theory of the history of modes of production, nevertheless opts for the *second*, or for *teleological* philosophy. And, if maintaining that the modes of production are thought as *systems* means to play off *Marx against Marxism*, particularly against the ‘economistic’ Marxism of the tradition of the Third International, then to maintain that the genesis of

79. Althusser 2006, p. 198. The term is used here with a negative meaning, quite similar to that which Monod ascribed to the term ‘metaphysical’ in his Inaugural Lecture.

80. Althusser 2006, p. 197.

81. Althusser 2006, pp. 193–4.

82. Althusser 2006, p. 197.

the modes of production is *aleatory* means to play off *Marx against Marx*, a part of Marx's elaboration against another part, a part very much prominent and present in the heart itself of *Capital*.

Such a *prise de position* requires courage and, perhaps, this is the reason that it is only to be found in the final texts of Althusser, written outside of any active participation in the PCF and from the consequent exigency to 'advance masked'. Even more courage is necessary in order to accept its consequences: communism is not only under *no obligation to exist* – like capitalism, like the pebble – but still needs to conquer for itself the right to exist.

Translated by Peter Thomas

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