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Studi - Commenti

Time and Consciousness in Cognitive Naturalism: Four Questions

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Abstract By referring to two paradigm shifts – the passage from classical physics to relativistic physics on the one hand and the passage from folk psychology to cognitive science on the other - Nannini aims at explaining "why neurological theories that reduce consciousness and the Self to aspects of brain dynamics appear implausible from a common sense perspective despite being sound from a scientific point of view". In this comment I underline the importance of the articulated attempt made by Nannini, whilst asking at the same time for some clarifications regarding four epistemological aspects of the perspective he defends.
KEYWORDS: Epistemology; Naturalism; Neuroscience; Relativity Theory; Manifest Image / Scientific Image.

Riassunto *Tempo e coscienza nel naturalismo cognitivo: quattro problemi* – Nannini si rifa a due cambi di paradigma – da una parte al passaggio dalla fisica classica alla fisica relativistica e, da un'altra, a quello dalla psicologia di senso comune alla scienza cognitiva – al fine di chiarire "perché le teorie neurologiche che riducono la coscienza e il sé ad aspetti che hanno a che fare con la dinamica del cervello sembrano implausibili dal punto di vista del senso comune, sebbene siano scientificamente affidabili." In questo commento intendo sottolineare l'importanza del complesso tentativo di spiegazione elaborato da Nannini, mettendo al contempo in evidenza la necessità di fornire alcune chiarificazioni circa quattro aspetti epistemologicamente rilevanti relativi alla prospettiva che difende.
PAROLE CHIAVE: Epistemologia; Naturalismo; Neuroscienza; Teoria della Relatività; Immagine manifesta / immagine scientifica.

IN PHILOSOPHY OF MIND, NANNINI is in favour of a materialistic-eliminative naturalism. He has already staunchly defended this approach in various works where he tried to answer the numerous critical remarks raised by opponents (for example those who support the existence of *qualia*). In this case the topic faced is the *hard problem par excellence* in philosophy of mind, in other words explaining «how phenomenal consciousness», or awareness, «emerges from brain activity».[1]

Differently from those maintaining that such a question «is not only hard but also insoluble in principle», Nannini takes sides with those "eliminativists" for whom "cognitive neuroscience" is producing «a real para-

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digm shift in the science of mind and consequently in the view that we human beings have of ourselves».[2] Nannini is also convinced, though, that

> despite the great progress made by cognitive neuroscience over the last twenty years, the eliminativist argument will remain unconvincing until eliminativists are able to offer a plausible explanation for why the scientific view of human mind offered by cognitive neuroscience is so deeply counter-intuitive and appears to most philosophers and scientists to be completely incomprehensible.[3]

It is only by finding an explanation of this kind that it would be possible to realise the eliminativist programme according to which

> the phenomenological gap between two different ways of referring to our subjective experiences – as introspectively grasped in terms of folk psychology or as explained in neurological terms – can be overcome by abandoning the pre-scientific concepts of folk psychology by means of which mental states have hitherto been described and replacing them with new concepts taken from cognitive neuroscience.[4]

In order to contribute to the search for this explanation, Nannini draws a parallel between what occurred in physics with the age from classic mechanics to the theory of relativity and

> the cultural process that for the last fifty years has led many philosophers and scientists to abandon a vision of human beings and their world still based on Descartes' mind-body dualism for a new scientific conception of the mind as brain activity in interaction with the external world.[5]

This in order to show

> why the (allegedly platonic) image of the soul as a "sailor" able to drive the body appears to common sense introspectively more appropriate (and more useful in everyday life) than a neurological theory of consciousness and the Self that reduces them to aspects of brain dynamics, although, on the other hand, from a scientific point of view, the image of the Self as a self-conscious free entity ontologically independent of the body is not plausible.[6]

Nannini first gives a synthetic survey both of the Theory of Special Relativity (STR) and of the Theory of General Relativity (GTR), as well as «of the changes introduced by the cognitive sciences (especially neuroscience) in current philosophical concepts of mind and consciousness».[7] Obviously he is aware of the fact that «if you wish to naturalize» mind and consciousness «you cannot unfortunately rely on already fully developed theories like STR and GRT».[8] He thinks, though, that the reference to the «countless studies on the nature of consciousness published by neuroscientists» such as F. Crick, A.R. Damasio and G.M. Edelman allows us to overcome such divergence. In fact, those studies had already presented «some guidelines for a scientific and naturalistic reconstruction of the concepts of mind and consciousness»[9] and more specifically of the idea, formulated by Kant and later on taken up and developed by William James, that consciousness is a kind of unity in the manifold of its representations. In his view Edelman's notions of *Complex Scene* and *Dynamic Core* together with B.J. Baars' concept of *Global Workspace Memory* make plausibile the idea that «the emergence of consciousness is essentially due to the synchronization of brain process».[10]

According to Nannini, the two surveys show that both the theory of relativity and neuroscientific and cognitive research have produced a paradigm shift in their respective thematic fields. This has led not only to the replacement of classical physics and folk psychology intuitive notions (both close to

common sense) by concepts linked to scientifically better theories, but such new theories can also explain why previous notions seemed and still do seem so obvious whereas the new concepts appear to be in an insoluble conflict with our ordinary experience. It is extremely interesting to see how Nannini makes such a thesis emerge using as a leverage point an analysis that does more than taking into account the results of relativity and the cognitive neurosciences separately considered. In sections 4 and 5 he shows how the relativistic conception of time can be integrated with the neurological analysis of the common notion of temporality developed, for example, by E. Pöppel. It is precisely this integrated vision that allows us to understand the reasons why the new theories, in spite of being scientifically better than the old ones, seem to be so counter-intuitive when seen in the light of common experience.

For Nannini, when we put this set of acquisitions in relation with the theory of evolution, Crick's hypothesis becomes plausible: human beings are "nothing but a packet of neurons". The conjoint results of the above mentioned theories (relativistic physics, evolution theory and neuroscientific-cognitive studies) lead us to think that human beings appear to themselves as conscious minds distinct from their bodies «only because this illusion is a trick found by biological evolution to adapt certain animals to their enviroment».[11] Our consciousness and our Self necessarily seem to be something «ontologically different from the activity of [our] brain, although this is a mere illusion, because this illusion is created by the brain itself and is biologically useful».[12]

Nannini very aptly highlights how proving «that this hypothesis is true is a task that cannot be fulfilled by a philosopher through any arguments a priori». In particular – he observes – this problem cannot be solved via an analysis of common language of a Wittgensteinian kind. To assert the scientific validity of that hypothesis one needs to display scientific empirical-experimental evidence, such as that provided, for example, by the neuroscientist Pöppel when he showed that our tendency to consider the classic theory of absolute space and time well founded is linked to the fact that we perceive as simultaneous «all the visual stimuli that fall within a range of 30 ms». It is because of this «limited power of temporal resolution of the human brain» and our perceptual system that in our common visual experience Lorentz Transformations «coincide with Galilei Transformations» and therefore «the absolute time of classical mechanics intuitively appear acceptable whereas the dilatable time of STR is counter-intuitive».[13] But if the «psycho-neurological theories of perception [...] suggest that phenomenal time is not identical to real time», in Nannini's view we can analogously suppose that it is possible to explain «by certain properties of [our] brain's dynamics why [we] feel like a free agent and a self-conscious master – the platonic "sailor" [...] of [our] own body whereas [we] are in reality just a servo-mechanism of [our] brain».[14]

From the parallel between the well established paradigm shift that occurred in the passage from classical physics to relativistic physics and the paradigm shift still in its consolidating progress from folk psychology (favouring Cartesian dualism) to the neurobiological and cognitive conception (favouring the idea that human beings are "a packet of neurons") Nannini draws the following general conclusion:

> STR and GTR, particularly if coupled with Pöppel neurological theories, are able to explain why such theories are counter-intuitive and less acceptable than classical mechanics for common sense although they are preferable to classical mechanics from a scientific point of view. In a similar way, a new science of the mind/brain allows us to now begin to clarify within the "scientific image of the man" – to borrow W. Sellars' words – why the "manifest image" that we human beings have of our-

selves usually favours Cartesian dualism but is fundamentally wrong.[15]

The importance of Nannini's attempt to consolidate the naturalistic and materialistic perspective is beyond question. I would like to pinpoint some elements that seem problematic to me and that perhaps are worthy of further and more in depth analysis. I shall do this by posing four questions or groups of questions, two of which are of a more general nature whereas the others are more specific.

(1) Nannini's discourse takes somehow for granted the cognitive value of very abstract scientific theories such as relativistic physics and their semantic commensurabiliy with classical physics considered in its turn intuitively consistent with (or at least very close to) common sense beliefs. Essentially, he compares the two paradigm shifts looking only at their respective doctrinal contents, doing away with those epistemological issues (commensurability, conventionality, empirical underdetermination etc.) that led some philosophers to defend notions such as H. Bergson's and/or take up anti-realist positions (pragmatism, instrumentalism, constructive empiricism).

All of which does not invalidate by itself Nannini's contribution both because there are good reasons to affirm that, for example, classical physics for relatively small speeds compared to light's speed can be considered an approximation to STR and because one can bring many an argument in favour of a metaphysical realism such as I would define the position dear to Nannini. Nevertheless, it seems unavoidable to me to ask oneself whether the accomplishing of the task he assigned himself does not also imply a more in depth analysis of the epistemological dimension of the paradigm shifts taken into consideration, possibly facing the question of whether among the many theoretical options proposed (from pragmatism to metaphysical realism) there are some that are apter than others to accomplish the task he has in mind.

(2) The second general question regards the relationship between scientific and manifest image.[16] As it is well known, Sellars' essay on the two images gave rise to different theoretical paths. Some, such as P.M. Churchland, developed Sellers' idea in the materialistic-naturalistic direction dear to Nannini; others, on the other hand, such as R. Brandom, used it as a starting point for a Kantian-Hegelian development of the space of reasons and so forth. Obviously I cannot get into the merits of such debate.

There is one aspect though that I think is relevant for the issue discussed. Some authors[17] pointed out how the sphere of manifest image includes also the notions of truth, knowledge and epistemic justification. This means that also the ideas of scientificity and scientific validity brought to the fore by Nannini to support his thesis are part of such an image. It seems therefore that in the manifest image one must see, among other things, one of the presuppositions of scientific inquiry and the very validity we ascribe to its results. I do not intend to say that in such a presupposition we can even see the foreshadowing of an unsurmountable obstacle for materialistic naturalism or a necessary and unescapable trascendental condition for any scientific enquiry. It seems though legitimate to ask Nannini which position he takes regarding this issue. Do we have to deny any ground to the epistemological debate on the question of validity and justification, or also in his perspective does the articulation of Sellers' space of reasons still maintain some kind of value and meaning?

The two specific questions are connected to the general question on the relationship between scientific and manifest image.

(3) According to Nannini, the supporters of the «anti-reductionistic theories of consciousness», starting from «a Cartesian conception of the mind according to which mind and body are metaphysically different "things"», maintain «that no robot could in principle become conscious even if it were

possible to equip its artificial brain with all the mechanisms of synchronization (or with any other property of brain dynamics that antireductionists might think responsible for the emergence of consciousness in human beings)». In opposition to this, Nannini affirms that reductionists have full rights to think that once shown in a scientifically plausible way that consciousness can be identified «with the synchronization of brain process (or with any property of brain dynamics)» we have «already rejected dualism as a solution to the mind-body problem».[18]

I too am inclined to think that, once we have established a criterion that allows us to decide in an empirically convincing way that robots in which some "mechanisms of synchronization", or anyway some properties "of brain dynamics", have been inserted, have acquired the property of consciousness or awareness, it is possible to say that we have put in place some mechanical mechanisms capable of producing consciousness.

Here comes my question for Nannini: would having achieved such a result deprive of any legitimacy an inquiry that intended to analyse *juxta propria principia* the characteristics and the contents of the consciousness phenomena, possibly taking for granted the thesis that consciousness cannot exist unless resting on opportune mechanisms and properties of a cerebral nature?

Along with this question, I would also like to ask Nannini a second one. Does he feel that it is possible to exclude the possibility that in the future the various dualisms (naturalism/antinaturalism, scientific image/manifest image) may be overcome by new theories capable of going beyond the dualism between the physical and the mental, in other words theories analogous to the ones attempted by authors such as E. Mach, W. James and B. Russell with the so called "neutral monism"?[19]

(4) Furtheremore Nannini affirms that «being conscious and self-conscious» is «a servo-mechanism» of our brain, although we have to admit that it is a very special servo-mechanism (a "*rebel* servo-mechanism" – emphasis added) that in the course of the evolutionary process transformed itself step by step into something «"programmed" by the experience of social life, that is, by learning a language and a culture».[20] And Nannini adds

> And so the servo-mechanism of your brain that in every moment creates in you the illusion of being a conscious and free agent if you are awake makes of you a person, too, insofar as it creates in you the further illusion of being a "subject" who on the one hand can maintain her/his personal identity over her/his whole life (despite the plurality and mutability of social roles that you have taken on) and on the other hand interacts with other human beings insofar as you recognize them, too, as persons with a conscious mind like your mind. Thus, each human being becomes in her/his eyes a "person-Self" who in fact is only a fiction produced by the dynamics of his/her brain and a certain socio-cultural context. However, this illusion is necessary for her/his mental health and to execute voluntary acts.[21]

Nannini therefore says that the illusion of consciousness is needed not only for our "mental health", but also "to execute voluntary acts". If I understood correctly, though, in a strictly naturalistic and materialistic perspective such as his, should we not say that the illusion of consciousness is necessary "to execute voluntary acts", but rather to have the *illusion* that we are executing voluntary acts or that we execute *illusory* voluntary acts? If our consciousness is a servo-mechanism we should not have reason to believe that – as some experiments already try to show – we possess an effectively free will. Should things be this way, should we not add something to the explanation of why "Mother Nature" gifted us with such a servo-mechanism (an illusionary consciousness) if *de facto* also such servo-mechanism leads to mechanically determined results?

Notes

[1] S. NANNINI, *Time and Consciousness in Cognitive Naturalism*, in: «Rivista Internazionale di Filosofia e Psicologia», vol. VI, n. 3, 2015, pp. 458-473, here p. 459 and p. 466.
[2] *Ivi*, p. 459.
[3] *Ibidem*.
[4] *Ibidem*.
[5] *Ibidem*.
[6] *Ibidem*.
[7] *Ivi*, p. 466.
[8] *Ibidem*.
[9] *Ibidem*.
[10] *Ivi*, p. 467.
[11] *Ivi*, p. 469.
[12] *Ibidem*.
[13] *Ivi*, p. 470.
[14] *Ivi*, p. 459 and p. 470.
[15] *Ivi*, p. 471.
[16] For details see, i.e., C. GABBANI (ed.), *Between two Images. The Manifest and Scientific Conceptions of the Human Being, 50 Years On*, in: «HumanaMente. Journal of Philosophical Studies», n. 18, 2012, special issue.
[17] W.A. DE VRIES, *Ontology and the Completeness of Sellars' Two Images*, in: «HumanaMente. Journal of Philosophical Studies», n. 18, 2012, pp. 1-18.
[18] S. NANNINI, *Time and Consciousness in Cognitive Naturalism*, cit., p. 467.
[19] See E. BANKS, *Ernst Mach's World Elements. A Study in Natural Philosophy*, Kluwer Academic Publishers, Dordrecht 2003; E. BANKS, *The Realistic Empiricism of Mach, James, and Russell. Neutral Monism Reconceived*, Cambridge University Press, Cambridge 2014.
[20] S. NANNINI, *Time and Consciousnes in Cognitive Naturalism*, cit., p. 469.
[21] *Ibidem*.