

Juan Manuel Torres (ed.): *On Kuhn's Philosophy and its Legacy*, Lisboa: Cadernas de Filosofia das Ciências da Universidade de Lisboa, CFCUL, 8, 2010

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The volume coordinated by Juan Manuel Torres is the eighth in the series of *Cadernas de Filosofia das Ciências (Notebooks of Philosophy of Science)* edited by the Center for Philosophy of Science, University of Lisbon. It includes studies on Thomas Kuhn's thought and its present influence on philosophy, history of science and science. It contains, among other themes, neglected or forgotten areas such as the influence of the Kuhnean doctrine on the dynamics of change in biology, the structuralist view of theories and Friedman's Kantian ideas.

In spite of the general agreement that the Kuhnean theses were obtained in the philosophical field, there still are controversies about how they should be understood. In order to verify this remaining problem, it is enough to mention that two doctrines so different in methods and perspectives, such as the strong program by David Bloor and the structuralist view of theories by Wolfgang Stegmüller, point to Kuhn as a decisive antecedent of their own views. This volume contains developments and perspectives of Kuhn's philosophy providing answers to the question: what is the right analysis for his legacy?

Here are some of the perspectives presented in the volume:

Antonio Bereijo (University of La Coruña), in "Kuhn's Influence on the Sciences of the Artificial: Analysis of the Repercussions on Information Science," asserts that Thomas Kuhn has exerted his influence in an area that he did not consider explicitly: the Science of Artificial. His philosophical and methodological proposals have influenced the field of Information Science understood as a Design Applied Science. Indeed, there is an interest aroused by Kuhn's thought in areas not explicitly considered by the author of *The Structure of Scientific Revolution*. This implies that one accepts the general character of his philosophical and methodological proposal, which in that case would be valid for talking about the

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artificial. This means that his proposal can be legitimately used for Applied Sciences, disciplines where – as in Information Science – goals, processes and results are involved. Consequently, their approach is given some degree of validity in relation to any empirical Science, including Applied Sciences directly related with information and documentation. Secondly, there is the issue of how the authors of Information Science have understood the philosophical and methodological approaches of Kuhn, concerning both the structural level (the ‘paradigms,’ ‘disciplinary matrix,’ etc.) and the dynamic aspect (‘normal science,’ ‘revolutionary science,’ etc.). This is the key to asserting their degree of influence in Information Science, especially as it has been relatively common to give a different interpretation of the Kuhnian texts that the genuine thought of their author. After considering the legitimacy of Kuhn’s schemes and the question of how Kuhnian categories are interpreted – on the structural and dynamic levels – a third aspect must be considered: the projection of his approach that is, how Kuhn’s characterization is used in order to reinterpret Information Science activity.

Those who accept this projection assume that the structural Kuhnian categories, designed especially for Basic Science of Nature, serve to illustrate the scientific development of the artificial, thus contributing to a Design Applied Science such as Information Science. Also, by incorporating the Kuhnian philosophical and methodological approaches, the dynamic aspect can be understood from the perspective of the historicity of the scientific activity, using notions such as ‘paradigms,’ ‘disciplinary matrix,’ etc. Thus, a Design Applied Science, such as Information Science, which was born through the ‘scientification’ of professional practice, could be seen from a Kuhnian perspective. The authors considered by Antonio Bereijo – Francis Miksa, Rafael Capurro and Birger Hjørland – assume *de facto* the legitimacy to sustain the artificial and applied field since they understand that Kuhn’s philosophical and methodological approaches can cover the various aspects involved.

In the study “Appropriating Kuhn’s Philosophical Legacy. Three Attempts: Logical Empiricism, Structuralism, and Neokantianism,” the authors – Andony Ibarra and Thomas Mormann (University of the Basque Country) – discuss three examples of the appropriation of Kuhn’s ideas in the philosophy of science. They consider as a first example the classical logical empiricism. Perhaps, somewhat surprisingly, Carnap considered Kuhn’s socio-historical account as a useful complementation, and not as a threat of the philosophy of science for the logical empiricism. The second example in this respect is the attempt of the so-called structuralist philosophy of science to provide a ‘rational reconstruction’ of Kuhn’s approach. Finally, the authors discuss Friedman’s proposal to apply Kuhn’s ideas to

the formulation of a modernized, historically enlightened Kantian approach based on the concept of a non-apodictic constitutive and historically moving *a priori*. The authors conclude that even if there is no unanimous agreement upon Kuhn's legacy for the philosophy of science, at the very minimum one may say that Kuhn played a pre-eminent role in the endeavor of reminding the philosophers of science the indispensable role of history for understanding scientific rationality. However, as many different attempts of appropriating Kuhn's ideas show, it is far from clear how this role for history is to be conceived. It may well be the case that this problem has no unique solution, and certainly that the three proposals that have been discussed here will not be the last words on this issue.

In "Retrieving Axiological Incommensurability" Ana Rosa Pérez Ransaz (Instituto de Investigaciones Filosóficas, UNAM) assumes as a starting point the 'lack of a common standard of measurement' among rival theories, which she considers to be the hard core of Kuhn's idea of incommensurability. Ransaz draws a distinction between *semantic* (or more properly, *onto-semantic*) *incommensurability* and *axiological incommensurability*, in order to show that this distinction makes it possible to reconstruct the process of theory choice with greater precision, thus making visible some ways of reaching consensus so far little explored in the philosophy of science. While in the 1970's Thomas Kuhn restricted the analysis of incommensurability to its semantic dimension, anchoring it in the phenomenon of conceptual change, Ransaz considers that it is worth recovering the axiological dimension, which has to do with the different relative weights given to the epistemic values shared by a scientific community. She argues that the both dimensions of incommensurability form the basis for a genuine epistemological pluralism, foreign to sterile relativism.

Another interesting paper by Linda van Speybroeck and Danny Da Waele (Ghent University/FWO Flanders), entitled "Paradigm Lost? Scrutinizing the Veracity of Systems Biology's Paradigm Shift," discusses the application of the Kuhnian 'paradigm shift' to the current developments in the biological sciences. *In casu*, systems biology is promoted as representing a paradigm shift in the study of living organisms. After introducing systems biology's practical ins and outs the authors analyze how its identity is constructed by claims stressing what is 'at the heart' of systems biology and what it purports to 'revolutionize.' These claims indicate that the envisaged paradigm shift of systems biology is about 'going beyond' molecular biology. The veracity of this paradigm shift rests on the perception of molecular biology as being atomistic and gene-centered. As this perception appears to be highly questionable, Speybroeck and Waele conclude

that systems biology forms an evolution within the range of normal science, rather than a truly Kuhnian paradigm shift. That today Kuhn's legacy is handled loosely, and that an inappropriate use of the term 'paradigm shift' may indicate a 'accent shift' in the historiography of a scientific discipline, is hereby demonstrated. This leads to question whether the very concept of paradigm is outmoded to capture the dynamics in current biological sciences, so the authors ask a further question: is Kuhn's paradigm 'lost'?

Carlos Gustavo Wolff Neto, in "Incommensurability without Paradigms: the Epistemological Revolution of Thomas Kuhn," focuses on how Thomas Kuhn's thoughts regarding his original proposal and its embracement were modified. Some important aspects are discussed: the terminological redimension and the subsequent abandon of the concept of paradigm; the structure of scientific community that, in the end, is characterized by taxonomy and lexical structure shared by its members; the scientific revolutions that are not considered abrupt events anymore, as they were considered in the beginning; the incommensurability of scientific theories – where questions related to translation are opened to discussion of the language philosophy – becoming, eventually, locally delimited. In their analysis of Kuhn's trajectory, the authors note his movement from the history of science to epistemology and ontology, providing him with a self-definition as a 'post-Darwin Kantian.' The article concludes with a comparative table between Kuhn of *The Structure of Scientific Revolution* until the 1980's and Kuhn of this decade (Kuhn from *The Road Since Structure*).

Other contributions are signed by Juan Ernesto Calderón (Universidad Nacional de Cuyo, CONICET), Sandra Laugier (Université de Picardie Jules Verne, France), Raúl A. Milone (Universidad Nacional de Cuyo – Mendoza, Argentina), Hassan Tahiri (Universidade de Lisboa – Centro de Filosofia das Ciências), Juan Manuel Torres (Universidad Nacional de Cuyo – Argentina), Erik Weber and Dunja Šešelja (Centre for Logic and Philosophy of Science, Ghent University).