Brian, Ellis, 2009.
The Metaphysics of Scientific Realism.
Durham: Acumen Publishing Co. 165 pp.

The author offers us a piece of thinking in the line of the scientific metaphysicians of the so-called Australian tendency. It is, rather, the outcome of long years of reflection and discussion giving us an outline of philosophy in the line of people like Smart, Lewis, Armstrong and the like. Nonetheless, Ellis wants to show his own improvements as well: the strategy of the book as a whole is not to tire the reader with a huge critical apparatus but taking for granted an ongoing philosophical reflections that even already said by others are arranged in a new and coherent form. That is why the book tries to offer something like a complete outline of a philosophy grounded on scientific metaphysics.

Since Ellis has come from an internal realist background, he gives a remarkable importance to theories of truth. However, he changed his mind in the idea that there is an univocal theory of truth: the upset is, thus, an evaluative theory of truth with a particular aim. Now, the aim for the ontology that will be foundational for the whole of his project is "For a theory of reality, we need to understand how our best scientific theories relate to the World" (p. 2). Theories of scientific interpretation of reality Commonly regard that truth supervenes being; therefore, a kind of correspondence theory of truth for these theories is needed. In this sense, science and metaphysics are intimately linked and bound, that is a reason to look for an ontology of scientific realism.

The ontology of scientific realism explored in chapter 2 helps us to do a successful ontological reduction of the primary elements of a scientific metaphysics based in properties, events, relations and causation. In this chapter, we will see how Ellis overcomes the problem of mistaking our conditions to recognize causation with the causation as such. He blames Hume of having psychologised the relationships and shortly dismisses the utterly evident reality of relations in the way that science shows us.

Stepping aside from the common metaphysical outline he has done so far, now he wants to get hold of the contentious issue if the categorical properties are causal powers. He thinks that is not the case. He believes "on the existence of a class of categorical properties distinct of that of causal Powers" (p. 2). This opinion renders possible the "Essentialist realism" he is trying to defend.

In Chapter 4, he developed his realistic metaphysics to include Quantum Mechanical Realism. A natural question is: Why is this so? Well, a quick answer makes us think that it looks as though the common theories of scientific realism hardly can either include with a satisfactory explanation or overcome the difficulties of the "De Broglie-Schrödinger theory of energy transfer processes". This theory in physics has been accused to be "tailor made" or in a sense *ad hoc* to support the concept of "Schrödinger wave" and his realization potential. Contra this, Ellis shows four advantages in his inclusion of an essentialist realism about "Schrödinger waves":

(1) Undermines the argument of the temporal reversibility of all of nature's basic processes: "physical causal processes are real and temporally directed, and their temporal directedness has nothing to do with the direction entropy increase, or with human psychology" (p. 91).

(2) The acceptance of Schrödinger wave realism leads us to recognize two different kinds of processes going on nature: energy transmission processes and instantaneous changes of state.

(3) Entails, for Einstein's relativity theories, a limited scope: theories of energy transmission rather than global theories that may include instantaneous changes of state.

(4) It allows us to develop a physically realist theory of the basic causal mechanisms in nature and what is essentially involved in physical causal interactions.

We have said formerly that there is a distinction underlying scientific essentialism closely related with the difference between causal powers and categorical properties. In chapter 5, Ellis looks for a wide explanation that both of these things belong to different natural kinds on this matter. Ellis introduces a sort of primitive concept on metaphysics, namely "dimension". Things can be what they are in different ways because we can conceive them in different dimensions. For instance, a universal property can be conceived dynamically in different dimensions and become a dynamic universal instantiated as a specific value of a dimension. Ellis tells us that if we just focus in the universals when we are conceiving relationships like cause-effect we may lose the dimensionality of that relationship. Prior to his ontology the category of "dimension" plays a primitive role: "There are properties whose natures are dispositional, and ones whose natures are structural. The former are often grouped together as 'causal powers', but the latter as 'categorical properties'" (p. 93). But the proposal is that categorical properties are ontologically superior to causal properties, *i.e.*, the categorical dimension of a property is a possibility of its causality.

The chapter 6 is widening the scope of scientific realism in the sense that Ellis has shown so far; he thinks that deserves to be regarded as a first philosophy, *i.e.*, "a theory about the nature of reality that can plausibly serve to adjudicate on theories in other fields of enquiry in which assumptions are made about the nature of the world" (p. 4). In this way, scientific metaphysics rules out any theory in philosophy to make it compatible with her main principles, otherwise it will have to be rejected as it is the case, in his argumentation, for Cartesian dualism or deliberative determinism.

The final chapter explores this version of realism in Ethics. Ellis is quite radical here, he thinks that accordingly to his theory, common concepts on ethics and moral theory like moral responsibility, moral powers, moral rights and moral obligations must be rejected because they are not physical properties and, therefore, they are contrary to the tenets of scientific realism. Ellis thinks that the only defensible view of morals is the one that render morals as social ideals, and from this he derives that a plausible kind of this theory is "social contractual utilitarianism".

On this last chapter some criticisms might be addressed. It is not at all clear how an account of scientific realism it is to give us a Utilitarian ethical theory as a consequence just because, allegedly, it has the calculus and logical specifications of weak metaphysical content. It may well be that we really are still not able to account how morals are properties of a "dimension" just to use Ellis' jargon.

One more word about the project of the book: certainly is a point on favour of the scientific character of this approach that it is concerned and committed with the pragmatically successful theories of science; but it also has the risk, on such a huge pretension of grounding a *status quo* for philosophy in general, to be less adaptative to future theories of science that might be more demanding to our accepted ontologies. I think that the emphasis of the book, without losing Ellis' points, might be more successful if the focus were gauged from a theory of inquiry in science and philosophy, and from this ground a scientific metaphysics could be a theory of inquiry that accounts for realism in the sense that if we look after the nature of the world well enough and long enough we will be approaching an ongoing and pragmatic first philosophy. Apart of any criticism that can be drawn the book will show that scientific metaphysics is feasible in many extents and it will show too that the discussion of metaphysics hopefully will be relevant to address with wisdom the conundrums of the rational practice in science.

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