Logical and Ontological Issues in the Manifest and the Scientific Images: An Introduction

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1. The Context

In December 2019, the 2017 PRIN project "The Manifest Image and the Scientific Image", funded by MIUR, the Italian Ministry of University and Research was launched. The research units are at the Universities of Macerata, Florence, Rome 3 and Urbino. Francesco Orilia, from the Macerata unit, is the P.I., and Elena Castellani, Mauro Dorato and Mario Alai guide the other three units, respectively. The project will terminate in December 2023. The main theme is the clash between the scientific image offered by science and the manifest image emerging from common sense. This dichotomy is typically taken to regard metaphysics, as is clear from Sellars' seminal paper on this topic (1963). In this project, it is also taken to encompass logic, by distinguishing between the formal logic of the scientific image and the informal logic of the manifest image. The project thus explores both metaphysical and logical manifest/scientific dichotomies, in order to reach a deeper understanding of the two images and thus a perspective wherefrom the clash may be superseded. The goals of the project were accordingly fixed as follows: (1) achieving a better understanding of the manifest image, also by recourse to experimental philosophy.[1] (2) Getting a clearer grasp of the scientific image, especially in these three areas: the sustainability of scientific realism concerning properties, relations and unobservables; the nature of time as emerging from current physics; the systems of formal logic that aim at treating consistently notions such as truth, predication, knowledge and belief, which generate paradoxes when treated at the level of informal logic. (3) Investigating how the two images must be related from the logical, epistemological and metaphysical point of view, if they are to be understood as compatible, in spite of their *prima facie* incompatibility.

Over the last three years, these goals have been pursued by the members of the project in the above-mentioned universities and by other collaborators. This has resulted, *inter alia*, in a number of papers which were presented and discussed

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[1] As regards this, there are works in experimental philosophy under way for publication by Ernesto Graziani, Francesco Orilia, Roberto Burro and Elena Capitani (on temporal ontology) and by Francesco Orilia and Michele Paolini Paoletti (on the ontology of relations).

in two general conferences in Florence (November 29-30, 2021) and Urbino (June 20-21, 2022). These papers can be subdivided into those dealing mainly with logical or ontological issues and those conducted from a broadly epistemological point of view. The former are collected in this special issue of *Argumenta*, while the latter will appear in another special issue.

2. The Papers

Mauro Dorato addresses the very issue of how the distinction put forward by Sellars 1963 between a manifest and a scientific image of the world should be understood, and emphasizes its multifariousness, in the light of (i) the plurality of methods in scientific practice, highly dependent on normative notions, and (ii) the different ways of conceiving the manifest image. By relying on this analysis, Dorato criticizes Sellars' anti-reductionist stance, according to which the two images should be joined together in a stereoscopic vision.

Matti Eklund engages with conceptual engineering, the flourishing field dealing with how concepts can be revised and replaced (Burgess, Cappelen and Plunkett 2020), a topic to which Eklund himself has already contributed (see, e.g., Eklund 2017, 2021). The development of a scientific image of the world may well involve, notes Eklund, a replacement and revision of the concepts employed in the manifest image and he thus reflects on whether there are limits to this. In a search for a positive answer, at least as regards very basic normative and logical concepts such as *ought* and classical negation, he dwells in particular on Hoefweber's notion of inescapability. Eklund concludes that even this notion fails to grant immunity from revision, once relativity to purposes in the use of concepts is duly taken into account.

Bruni and Orilia view the logic implicit in the manifest image as a "global deductive system" involving both classical logic (CL) and naive principles for truth and predication (TP). These, however, when taken together, notoriously generate logical paradoxes and, even worse, explosion, the provability of every proposition whatsoever. The standard response, which comes in a variety of forms, is to arrive to a logic of the scientific image, by sacrificing aspects of either CL or TP. Bruni and Orilia seek a different path, wherein CL and TP somehow co-exist and paradoxes and explosion are dealt with, as they come to the fore. Bruni and Orilia explore the viability of Batens' adaptive logic for the pursuit of this path. They end up with a negative assessment, but incorporate something like Batens's distinction between provisional and final derivability in their own proposal.

Aldini, Graziani and Tagliaferri focus on two crucial notions, knowledge and belief, which arguably are governed by an implicit informal logic at the level of the manifest image, but have been treated very formally at the level of the scientific image at least since Hintikka 1962, in a way that has generated problems such as logical omniscience. Aldini, Graziani and Tagliaferri propose their own logical system for knowledge and belief and base on it an exploration of ignorance. They dwell on different definitions of it and clarify how they may trigger or inhibit higher-order forms of ignorance, namely ignorance about ignorance, and so on.

Orilia and Paolini Paoletti take up the ontological issue of the existence of relations and relational states of affairs in both the manifest and scientific image of the world. Since Russell's battle in favor of external relations, this has been

taken for granted in analytic philosophy, but in recent times an anti-relationist trend is emerging in influential ontologists such as Simons, Heil and Lowe. Focusing especially on Lowe, Orilia and Paolini Paoletti critically analyze the arguments that motivate this trend.

Fano deals with temporal ontology and in particular with the hotly debated divide between presentism and eternalism. The manifest image seems to favor the former, as it is usually taken for granted that common sense is implicitly presentist, whereas the scientific image seems to favor the latter, in the light of Einstein's relativity theory. By relying on his own moderate version of scientific realism, Fano defends a non-standard position in which presentism and eternalism have different realms of validity and can thus somehow co-exist.

Rossanese delves deep into the most controversial aspect of the scientific image, namely the quantum world and its ontology. He focuses in particular on Quantum Field Theory (QFT), and proposes an ontology of properties for it. Wayne (2008) and Kuhlmann (2010) have similarly put forward an ontology of properties understood as tropes. Rossanese relies on a very general formal framework provided by Da Costa, Lombardi and Lastiri (2013), which allows for possibly viewing properties as universals.[2]

References

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