Pragmatic realism and truth as correspondence
Pentti Määttänen, Department of Philosophy, History, Culture and Art, University of Helsinki, Helsinki, FINLAND

Realism holds that we can have true knowledge about the mind-independent real world. According to classical (or semantical) truth theory, truth is correspondence between statements and the world. The relation between statements and the world is semantical. It is often said that the relation must be non-epistemic because our epistemic relation to the world depends on internal conditions and is thus mind-dependent. However, what mind-independence means, depends on what one means with mind. If we accept that mind is embodied, then we face the question of what these internal conditions ultimately are. Is embodied mind independent of the physical properties of instruments of our epistemic access to the world, that is, bodily sense organs and external instruments? These physical properties have an effect on how the world is observed with these instruments. On the other hand they are internal conditions in the sense that they are properties of the knowing subject and the instruments used. The relation between statements and instrumentally accessed things is epistemic because instrumental access is (thick) epistemic access. The truth-relation between statements and instrumentally accessed things is epistemic, but can be analysed in terms of correspondence. Tarski’s Tschema can be applied. The fit between statements and the world is operational. Observations are operations with bodily or external instruments.

Epistemic truth is often seen as a sign of antirealism. However, bodily organs and external instruments are as real and objective elements of the universe as their counterparts of interaction. The physical viewpoint determined by these instruments does not corrupt objectivity in the same sense as conceptual viewpoint. And there is no reason to deny the existence of things beyond the scope of present instrumental access, but can be objects of knowledge only until they have become within the reach of instrumental access.

Alethic Pluralism and Scientific Truth
Marco Marietta, Humanities, University of Palermo, Palermo, ITALY

Recently Ian Hacking has argued that the correspondence theory of truth is not satisfactory to explain the concept of scientific truth and that we should endorse a pluralist theory of truth within the scientific domain, claiming that the number of scientific truth properties is greater than one (Hacking 2012). But he does not articulate this insight in depth and therefore, the aim of my paper is to bridge this gap in the literature concerning the relation between theories of truth and science. The thesis that I will discuss states that, just like standard alethic pluralism claims that there are as many truth properties as there are fields of discourse (empirical, moral, legal, mathematical...), scientific alethic pluralism (SAP) claims that there are as many truth properties as there are styles of scientific reasoning (mathematical, experimental, probabilistic, analogical...). Since this is still vague, I will distinguish three kinds of (SAP): (1) method-dependent (alethic pluralism follows from methodological pluralism); (2) discourse-dependent (alethic pluralism follows from the plurality of styles of reasoning); (3) language-dependent (alethic pluralism follows from the impossibility to define a language-independent truth predicate). I will conclude that both (1) and (2) are not tenable because they collapse into epistemological pluralism (without any metaphysical implication). On the contrary, (3) is tenable if based on Tarski’s idea that we can define the truth predicate only referring to a given fragment of language L, but is very different from Hacking’s original claim because: a) the divisions of scientific language do not depend on the styles of reasoning, but, rather, on the stability of meaning in the sub-sets of L; b) the existence of more than one truth property is not required and replaced by a plurality of truth predicates, which is entirely consistent with the correspondence theory of truth.
Does Hacking get the most out of his microscopes?
Alexander Aylward, History and Philosophy of Science, University of Cambridge, Cambridge, UNITED KINGDOM

Ian Hacking once asked, 'Do we see through a microscope?'. In building his discussion (1983; chapter 11) around such a question, Hacking places himself within the complex debates surrounding the nature of observation, vision, and images. He also believes that he has distanced himself from the ‘metaphysical debates’ about realism, with his arguments only bearing on the practical questions that surround distinguishing objects from mere ‘artifacts’ of the microscope (202). In this paper, I question Hacking's approach to his discussion of microscopes. As Hacking realizes, concluding that we in fact do ‘see’ through a microscope is no positive argument for realism about the entities in question, as doing so merely betrays one's pre-existing realist loyalties (208). I examine a means by which Hacking can get a lot more from his microscopes. In this approach, Hacking would be required to adopt the approach of Nancy Cartwright (1983) in advocating entity realism via inference to the most probable cause (IPC), but his discussions elsewhere of 'experimental' realism give us reason to believe that he should not object to such a move. I argue that Hacking erects a false dichotomy with microscopic work on one side and experimental work concerning 'unobservables' on the other. In opposition, I suggest that we simply see microscopes as sophisticated apparatus for detecting effects of causal phenomena, that happen to organize their collected data into cognitively pleasing representations. Seen as such, microscopes are not fundamentally different from the kind of apparatus discussed by Hacking in the context of his ‘experimental’ realism concerning entities that he believes to be unobservable in principle (1983, 262). Through adopting the suggested approach, Hacking would sidestep the minefield surrounding questions of vision and observation, whilst positioning himself to provide strong arguments for the kind of entity realism he elsewhere endorses.

Indeterminacy and Inequivalence
Iulian Toader, Theoretical Philosophy, University of Bucharest, Bucharest, ROMANIA

The standard realist move against the claim that no scientific theory can secure determinacy of reference is to embrace structuralism and argue that indeterminacy of reference does not imply indeterminacy of truth conditions. To show that determinacy of truth conditions can be secured, one typically insists on empirical or computational constraints that might eliminate the "unintended" interpretations that make a theory true. Idealization procedures in scientific practice indicate, however, that such interpretations are necessary to account for a range of natural phenomena. In my paper, I discuss the implications of this fact for semantics and modal ontology. In particular, after providing some background on classic indeterminacy arguments, I describe the problem raised by unitary inequivalence relations in quantum theories, a problem caused by the failure of the Stone-von Neumann theorem in idealized systems, e.g., in systems with an infinite number of degrees of freedom. Then I argue that this is not a problem with determinacy of reference (and if it is, then it can be easily solved by relativizing reference), but rather a problem with determinacy of truth conditions. I point out that insisting, as many do, on physical constraints that could restore determinacy of truth conditions cripples the quantum theory by making it unable to account, e.g., for the mass of massive elementary particles. Then I argue that a recent attempt to accommodate indeterminacy of truth conditions, by considering the "unintended" interpretations of the theory as possible worlds, commits the realist to a possibilist modal ontology. I end by defending a naturalist view to the effect that one's modal ontology should stem from one's scientific practice, rather than being derived from folk theories and then imposed on this practice.