Interview with Howard Sankey by Reza Alizadeh

Questions of realism:

RA: Do you believe in realism? If yes what sort of realism? Epistemic or ontological? And what is your main argument in defense of it?

HS: I am a realist, and in particular a scientific realist. I regard scientific realism as having both epistemic and ontological dimensions, as well as semantic dimensions. I understand scientific realism to be a form of metaphysical realism, which I take to be the view that there is a mind-independent reality which we do not invent, create or construct. We discover the nature of this mind-independent reality by means of empirical inquiry. In the process of this inquiry, we find that we must postulate the existence of unobservable "theoretical" entities which causally produce observable phenomena. Scientific realism adopts a realist stance toward these theoretical entities: they are real entities, not constructs or "convenient fictions". Scientific realism also adopts an epistemic realist attitude toward these entities, since the scientific realist holds that it is possible for us to discover the truth about these entities, and indeed to acquire knowledge about them. The semantic aspect of realism enters primarily by way of the notion of truth, which I understand as a correspondence relation that obtains between language and reality.

As for the argument for scientific realism, I hold that there is no one argument for scientific realism. It is grounded in commonsense realism, which is realism about the immediately observable world. Scientific realism arises naturally from commonsense realism, and commonsense realism is in some sense the default position. It is not clear what we are left with if we renounce commonsense realism. Within common sense, we are familiar with things that are too small to see, too distant, or otherwise not immediately observable. So I think that the idea that we may have knowledge of theoretical entities is an outgrowth of common sense. But scientific realism also reflects a general rejection of anthropocentric attitudes: we are only a small part of the universe, which was not created for us or by us. Given both common sense and a non-anthropocentric outlook, we are well on the path to scientific realism. At this point, inference to best explanation enters the scene. I am happy to follow Hilary Putnam, Jack Smart, and others who employ some form of the 'no miracles' or 'success' argument for scientific realism. But I also think that this argument needs to be applied at the meta-methodological level to argue for the reliability of our epistemic norms in achieving the truth. In this, my view is closest to that of Richard Boyd, who employs an abductive argument for the reliability of the methods used in science.

RA: What is your idea about constructivism and empiricism?

HS: There are a number of different positions that go under the name of 'constructivism' these days. One is a neo-Kantian position for which Boyd uses the expression 'constructive anti-realism'. It is associated with Thomas Kuhn and his followers. Then there is the movement of social constructivism, which is very strong in the sociology of scientific knowledge. Finally, there is the constructive empiricism of Bas van Fraassen, which is a modern form of empiricist philosophy of science.

As a scientific realist, I am opposed to all three forms of constructivism. Against the neo-

Kantian constructivist, I hold that the world is not created or constructed. It exists independently of us, and we must find out about it. Against the social constructivist, I hold that rational processes including the use of scientific methods can be the basis of theory-acceptance, rather than merely political struggles within a scientific community. As for the constructive empiricist, I regard this position as a central challenge to scientific realism because the constructive empiricist asks the realist to explain the epistemic basis for belief in the truth of claims that go beyond experience. Here, something like inference to best explanation must come in, but it is not entirely clear how best to respond to the constructive empiricist, which seems to me to be a form of scepticism.

RA: Could we have a constructive-realism? And if yes does it hold some basic part of epistemological realism as well as non-observables and calculative and progressive science?

HS: The answer to this question depends very much on what is meant by 'constructive realism'. If the 'constructive realist' position is a metaphysical position, then it seems to me that it could only work for artifacts (e.g tables) and social kinds (e.g. political parties), but not for naturally occurring kinds of things (e.g. gold). This is because, for the realist, the natural world is not something that depends on us, though we may interact with it.

I should add that it may be possible to combine aspects of different constructivist positions with various aspects of scientific realism. So far as I can see, for example, the social constructivist view that science is basically a non-rational social process can consistently be combined with the metaphysical realist aspect of scientific realism. The claim that science is a non-rational social process does not challenge the claim that reality exists mind-independently. What is mysterious is how such non-rational social processes might yield genuine knowledge of such a reality. Nor does it seem to me that the idea that we construct our ideas, belief, concepts or theories conflicts with the metaphysical dimension of realism. Indeed, the scientific realist should be able to countenance a major role for human creativity in developing our own ideas, beliefs, concepts and theories. The question is whether these human intellectual creations represent or may be brought into some sort of relation of correspondence to the mind-independent reality that we are trying to find out about in science.

RA: Do you believe in demarcation of science and non-science in general? And if yes what is your demarcation criteria?

HS: I think there is some sort of crude demarcation that can be drawn between science and non-science, but not along the lines of the criteria of demarcation proposed by Popper and the logical positivists. My own favoured view is that there is a set of epistemic criteria that are broadly constitutive of the methodology of science (e.g. Kuhn's five values of accuracy, simplicity, coherence, breadth and fertility). Theories which satisfy a minimal sub-set of these criteria are scientific. Theories that satisfy none of the epistemic criteria are non-scientific. In between, there is a fuzzy borderline where it may be difficult to judge. Unfortunately, this may not help with some of the contentious issues where we need to make a sharp distinction between science and some contemporary non-scientific movements.

RA: Is IBE an adequate argument in defense of realism? If no why?

HS: As above, I'm prepared to employ inference to best explanation as part of the argument for realism. I think it needs to be placed in the context of a framework that is already realist, i.e., common sense realism combined with a modest view of our place in the world. I would prefer a stronger argument for realism than inference to best explanation. I am hopeful that such an argument may come from some further work in metaphysics about the nature and structure of the world, for example, the natural kind structure of the world. But I am concerned that the arguments for natural kinds will depend, at base, on an inference to best explanation.

RA: What is your idea about some of famous scientific realist's ideas as well as : Richard Boyd, Ian Hacking and Hilary Putnam? which one do you prefer more?

HS: Boyd, Hacking and Putnam have all been very important figures in the field. Boyd remains one of the central advocates of scientific realism. He has most influenced me in relation to the view that the argument for realism must be applied at the level of the methods of science. But there are many different ways in which I share his views, for example, his views about reference and the reliability of method. Ian Hacking is also a major influence. He was particularly important in making me see that the ontological component of realism is connected with considerations about causal interaction with the world. Even though I endorse a more classical form of scientific realism, I am impressed by Hacking's development of the contrast between theory realism and entity realism in his book, *Representing and Intervening*. Hacking offers a causal argument for realism that tries to avoid inference to best explanation. But, unfortunately, I think it winds up being an inference to best explanation in disguise. As for Hilary Putnam, the Putnam of the early 1970's seems to me to have got the picture right, at least as far as the general view of reality goes, a view that he later called the external perspective. The external perspective is important for realism. Putnam's views about reference are very important in responding to the challenge presented to realism by conceptual change in science. This is the problem of semantic incommensurability, on which I have done a great deal of work.

But I have been more influenced in recent years by the work of three Australasian realists, Alan Musgrave, Michael Devitt and Brian Ellis. My own realism derives directly from Musgrave, who was my teacher, from whom I hope I have learned to express my views clearly and forcefully. From Musgrave, I have learned how to prevent linguistic considerations from leading to anti-realist conclusions, as well as to avoid various idealist-tending tendencies such as an internal realist view of truth. From Devitt, I have learned to distinguish semantic and epistemic from ontological matters, though I haven't followed him in adopting entity realism. Devitt and Musgrave are both strong supporters of commonsense realism, which is something that I agree with them is to be treated as the basis for realism about science. Like Devitt, Brian Ellis has also defended entity realism. In recent years, I have learned much from Ellis's development of a new metaphysics for scientific realism, which involves natural kinds and essential properties as the basis for laws of nature. I have attempted to use some of Ellis's ideas about natural kinds as a basis for a reliabilist solution to the problem of induction. In earlier work, Ellis almost got me go give up the correspondence theory of truth! But I think he may now have decided that correspondence is necessary for realism.