
By Dean Rickles

Scientific realism is arguably the default position of most philosophers of science. It is loosely characterised in terms of a commitment to the observable and unobservable parts of the world that our theories seem to describe: quarks and gluons as well as tables and chairs. There has been plenty of ink spilt in the debate between realists and anti-realists, but fortunately Chakravartty does not add to it, proposing instead to attack the debate from an angle very different from that which is usually adopted: he investigates the foundations of the debate itself in order that philosophers better understand their views’ commitments. To this end he proposes to do two things: (1) “investigate the core elements of promising versions of contemporary realism” by laying bare their various commitments; and (2) “develop a metaphysics that makes sense of these commitments” (p. xiii). The latter, argues Chakravartty, is necessary for a proper understanding of what realism involves (in terms of epistemic commitment) since one needs to first know what it is that one is being realist about. In this way he hopes to reconnect the epistemology and metaphysics of science and scientific knowledge.

The book comprises eight chapters, divided into three parts, dealing, respectively, with (I) the state of the art in the realism/anti-realism debate, (II) the ontological commitments of realism (i.e. the metaphysics), and (III) the epistemological aspects of realism (including representation, abstraction, and idealisation). I can say right off the bat that he has written an engaging, first-rate book that all philosophers of science would do well to scrutinise.
Chakravartty introduces the varieties of realism as views displaying what he calls ‘selective scepticism’: only believe in some aspects of what theories say. Of course, any realist position will exhibit some form of selective scepticism, as will most anti-realist positions (that is, not all parts of a theory are ever involved in one’s ontological commitments). However, the strategy here is utilised specifically to escape the pessimistic meta-induction (PMI) since the belief-apt aspects will be chosen so as to remain independent of the discontinuities wrought by theory-change. The realist will be sceptical about just those aspects that are left behind in such changes, retaining commitment only to that which is retained or recoverable (in some sense) from the successor theory.

Chakravartty claims that these selectively sceptical proposals come in two broad types: ‘entity realist’ (= believe in entities that can be manipulated and used to intervene in the world with observable results) and ‘structural realist’ (= believe in relational structure over the relata, or entities, that determine the structure). Of course, these appear to be directly opposed to one another. However, Chakravartty develops his own selectively sceptical position, ‘semirealism’, which synthesises ‘the best insights of’ entity realism and structural realism (on the basis of mutual entailments he claims hold between them); and he argues that entity realism and structural realism both lead to semirealism when pressure is applied. The vital link is provided by ‘detection properties’: causal properties leading entity realists to believe in their entities. (These are contrasted with auxiliary properties that might be causal but are not detectable and so ought not to be given definite ontological credence). But the relations that structural realists will claim define their structures are, says Chakravartty, nothing but relations between these selfsame detection properties. Knowledge of detection properties, however, cannot help but involve knowledge of the particulars that have them, for particulars are (minimally) compresent properties found together according to certain regularities. This I take to be the central argument of Chakravartty’s book (or at least an essential supporting pillar), so I shall focus on this for the remainder of this review – the subsequent chapters of his book develop and defend this basic idea (superbly integrating portions of recent metaphysics and analytic philosophy with philosophy of science, I might add), namely that any defensible form of scientific realism must involve these causal properties and the particulars (minimally understood as above) they reveal and relate.