Summary

of the PhD thesis titled ‘Restructuring the Real: A Study in Scientific Realism-Debate’

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Science as a cognitive enterprise displays a positive and a negative aspect. The former relates to predictive, explanatory and technological success of science. The latter pertains to the frequent theory-changes and abandonments of past theories. The positive aspect is offset to an extent by the fact that our best theories in the past were abandoned in the course of history of science which is a “graveyard of theories” as Poincare remarked. This thesis takes the positive aspect of science, namely its empirical success as its stalking horse. I elaborate various realist and antirealist positions and their takes regarding the empirical success of science. However, in doing so, I also discuss the constitutive features of these positions in detail. The scientific realism debate is the result of the arguments and counter arguments between these disparate positions.

In the early years, thinkers were interested to develop individual positions which were constitutive elements of the debate. Now, attempts have been made to firstly, evaluate concepts entrenched in particular positions of the debate and subsequently, evaluate the characteristics of the debate itself. This thesis falls in a category where both these trends in the history of philosophy of science are incorporated. I discuss the views of Stathis Psillos, Anjan Chakravartty, Ian Hacking, John Worrall, Thomas Kuhn, Brian Ellis, Hilary Putnam and many others. In addition, I come up with certain views about the debate itself, which can be considered as meta-philosophical perspectives on the debate. Cues from these meta-philosophical perspectives point to a differentiated or split epistemic attitude towards scientific knowledge. The following passage contains a very brief summary of the issues and views I discuss in each chapter.

In Chapter I, I elaborate the characteristics of the thesis of scientific realism and its defense in terms of the explanation for the success of science. I also explicate the metaphysical, epistemological and other stances of scientific realism. In chapter II, I articulate the major challenge for scientific realism, the challenge from history of science, advanced by Larry
Laudan. Also, I explain van Fraassen’s criticisms of the general assumptions behind the thesis of scientific realism. Chapter III is an attempt to articulate the different responses available for the challenge. The externalist positions, namely, entity realism, structural realism and semirealism are discussed. The internalist positions of Putnam, Kuhn and Ellis are also discussed. In chapter IV, I locate the debate as the seat of three different levels of discourses. Starting from narratives about history of science, the thinkers climb to philosophical and metaphysical generalizations. I argue that these different levels of discourses expose the shortcomings of the debate. In chapter V, I develop the view of ‘historical meta-underdetermination’, which denotes to a state of indecision as to which philosophical formulation corresponds to cases in history of science. I also propose a split epistemic approach where, roughly, the context of knowledge in question provides the clues as to which epistemic attitude can be adopted. In the concluding chapter, I further clarify my position. I introduce the term ‘epistemic indicator’ which denotes to the specific signal from a knowledge context indicating whether to believe or not. I also argue that split attitudes are not new in the history of philosophy of science.

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