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Alexander Bird
Thomas Kuhn.
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After Thomas Kuhn's death in 1996, there has been increasing interest in his work, so much so that in the year 2000 there was a book of Kuhn's previously published essays, *The Road Since Structure: Philosophical Essays, 1970-1993, with an Autohiographical Interview (RSS)*, and there were four books published on Kuhn: Alexander Bird's book, Steve Fuller's *Thomas Kuhn: A Philosophical History for Our Times*, Hanne Anderson's *On Kuhn*, and Ziauddin Sardar's *Thomas Kuhn and the Science Wars*. Bird's book, which is the first book on Kuhn from the perspective of naturalistic epistemology, puts Kuhn's ideas into their historical context, and expounds on what Kuhn thinks on topics such as normal and revolutionary science. Bird argues that Kuhn's theory is imbued with commitments to empiricist and Cartesian

traditions, which Kuhn has already rejected. Hence, Kuhn's theory is not a thorough naturalistic epistemology, which then leads to scepticism and relativism.

Of interest to the generalist are the first three chapters, which are on Kuhn's historical context, normal and revolutionary science, and paradigms. Of interest to the specialist are the last three chapters that are on the topics of perception and world change, incommensurability and meaning, and progress, truth, knowledge and relativism. In these latter chapters Bird argues that if Kuhn had become a naturalistic epistemologist, he would have avoided scepticism.

Chapter 1 sets out Kuhn's historical context: philosophy of science pre-Kuhn, which is 'Old Rationalism' with main players of Carnap, Hempel, Popper and Lakatos, who hold the task of philosophy of science to be the articulation of scientific method; gestalt psychology which challenges Mach's empiricism; and Fleck's introduction of the notion of a thought-collective. Chapter 2 explains the distinction between normal and revolutionary science and, Chapter 3 describes the notion of paradigms. In Chapter 4, Bird discusses Kuhn's notions of perception and world change. Bird charges Kuhn with remaining an empiricist in spite of his rejection of empiricism's independence thesis of perception, which is that perceptual experience is independent from an individual's mental history.

Chapter 5 is a discussion of incommensurability and meaning in which Bird argues that since Kuhn does not adequately address the causal theory of reference, Kuhn does not establish his different versions of the incommen surability thesis. In Chapter 6, which discusses truth, knowledge and relativism, Bird charges that Kuhn's epistemological neutralism has strong relativistic tendencies, and if Kuhn had adopted naturalistic epistemology with externalist epistemology, then Kuhn's need for an independent Archimedean standpoint would be banished for externalism assesses the reliability of the belief forming process of the scientist. Finally, Chapter 7 is on Kuhn's influence on the Strong Programme, Fuller's reading of Kuhn as a political conservative, and empiricism.

My criticisms are: though Chapter 1 discusses Kuhn's context in terms of ideas, Bird does not mention the influence of Conant, Koyre and Meyerson, all of whom Kuhn mentions in his 1997 autobiographical interview ('Interview with Thomas Kuhn', *RSS*, 253-324), which was originally published in Neusis. Bird holds that he is not interested in Kuhn's biography because it does not affect the quality of Kuhn's arguments (ix). However, it seems to me that the actual influences of Conant, Koyre, and Meyerson are important to the reader.

From the perspective of a naturalized epistemologist, Bird questions why Kuhn did not thoroughly embrace naturalistic epistemology and the causal theory of reference, and hence avoid problems such as incommensurability. a
Bird argues that Kuhn made the wrong turn towards Kantianism and, because Kuhn denied absolute knowledge, he was led to scepticism (280). I argue that Kuhn, who calls himself a post-Darwinian linguistic neo-Kantian

in *RSS*, avoids embracing naturalized epistemology, and would respond that Bird is begging the question against him. First, a clue as to why Kuhn aligned himself with Kantianism and not with naturalistic epistemology was that, when he was a student at Harvard, he was strongly influenced by Kant and not by Hume (*RSS*, 264). Second, Kuhn was not inclined towards a Quinean-type naturalistic epistemology even in *Structure of Scientific Revolutions*, for Kuhn held that there were normative criteria to evaluate theories. Third, though Bird contends that Kuhn is concerned with the project of traditional epistemology, which addresses issues such as empiricism and Cartesianism, and its naturalistic version, which addresses issues such as reliabilism, Kuhn is not concerned with those strictly epistemological issues. Instead, Kuhn's project can be fit into another project of epistemology, which is the evaluation of theories. Popper, Lakatos, and Laudan are part of this project. Fourth, in the 1980s and 1990s Kuhn took a linguistic turn in which he emphasized the role played by taxonomic lexicons. Kuhn was inspired by Whorf's studies on the influence of language on our thinking, understanding and experience of the world. Kuhn holds that language, specifically, structured lexicons are constitutive of the phenomenal worlds and possible experiences of them. Kuhn's view is that a taxonomic lexicon and its structure function very much like Kantian categories of the mind though they vary historically. This leads Kuhn not only to hold to a distinction between the noumena and phenomena, but also to introduce the notion of synthetic a priori truths ('*Road Since Structure*', *RSS*, 90-104). I argue that because Kuhn holds to the notions of a taxonomic lexicon and its structure, which function very much like Kantian categories of the mind that vary historically, Kuhn avoids naturalistic epistemology: 'an evolutionary epistemology need not be a naturalized one' (*RSS*, 95). Moreover, Kuhn was aware of naturalistic epistemology, but Kuhn decided not to go down that road and Kuhn opted for a post-Darwinian linguistic neo-Kantianism instead. The advantages of the notions of the lexicon and synthetic a priori truths are that they help to refine and unify Kuhn's notions of incommensurability and scientific revolutions. (Irzik and Grunberg, 'Whorfian Variations on Kantian Themes: Kuhn's Linguistic Turn', *Studies in History of Philosophy of Science* 29 [1998] 211-15).

In spite of my cavils, Bird provides a rigorous challenge to Kuhn in terms of naturalistic epistemology and externalism that would be hard to ignore.

Francis Remedios
francisr@oanet.com