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Inaccurate Ambitions and Missing Methodologies: Thoughts on Jeff Kochan and the Sociology of Scientific Knowledge

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Jeff Kochan's *Science as Social Existence* (2017) presents an engaging study of two perspectives on science and scientific knowledge: Heidegger's existential phenomenology and the sociology of scientific knowledge (SSK). The book sets down an interesting path to merge the two traditions. Kochan tries to navigate the path's turns and terrains in original and fruitful ways.

Here, I offer reflections from the perspective of SSK and more specifically, the Edinburgh School's Strong Programme in the sociology of scientific knowledge. I contend that Kochan's work does not represent or engage with SSK satisfactorily, and is hindered in its accomplishments as a result. I begin by considering Kochan's most important claims and ambitions, before turning to my analysis.

### **The Nature of the Argument**

First, Jeff Kochan claims that Heidegger's existential phenomenology and SSK can fix each other's flaws and can together constitute a superior framework for analysing science and its epistemic work and products. Kochan elaborates this first claim by using the next two.

Second, he argues that Heidegger's work can resolve what he considers to be SSK's long-running and unresolved problem concerning the relationship between knowledge-makers and the world about which they make knowledge. Kochan claims that the Strong Programme employs a form of realism that draws a divide between the knower and the world. He refers to this realism as a 'glass-bulb model.' Kochan goes on to state that 'alternatives to [the glass-bulb model] have already begun to earn a respected place within the broader field of science studies,' (2017, 33) though he offers no examples to support the claim. He contends that Heidegger's assistance is imperative since 'science studies scholars can no longer take external-world realism for granted' (ibid.).

Third, Kochan suggests that SSK can resolve Heidegger's comparatively limited understanding of 'the social.' That is, the former can lend its social scientific perspectives and methods to bolster Heidegger's insufficient explanation of human collectives and their behaviour. Not only does SSK offer a more detailed understanding, it also contributes tools with which to carry out research.

Finally, in his reply to Raphael Sassower's review, Kochan dismisses the former's criticisms about the book's failure to address social phenomena such as capitalism, neoliberalism, and industrial-academic-military complexes (Sassower 2018) by saying, 'these are not what my book is about' (Kochan 2018, 3). Kochan contends that he cannot be faulted for not accomplishing goals that he never set out to accomplish. This response serves as the starting point for my own analysis.

I agree with the basics of Kochan's reply. Sassower's criticisms overlook or disregard the author's intents, and like all authors Kochan is entitled to set his own goals. However, the sympathy that Kochan expects from Sassower is not one that he offers David Bloor, Barry Barnes or the others in SSK whom he criticises.

His principal criticism—the second claim above—relies on a misrepresentation of the Strong Programme’s ambitions and concerns. That is, Kochan does not describe what their work is about accurately. Moreover, what Kochan looks to draw from SSK more broadly—the third claim above—features little in the book. That is, Kochan’s book is not really about one of things that it is supposed to be about.

Here, I will first explain Kochan’s misrepresentation of Strong Programme goals and the resultant errors in his criticism. Next, I will examine Kochan’s lack of concern for crucial aspects of SSK, which reflects both his misrepresentation of the tradition and his choice not to engage with it meaningfully.

### **Aims and Essentials in SSK**

Kochan’s unfair criticisms of the Strong Programme (and SSK more broadly) first involve the tradition’s treatment of ontological issues. Kochan argues that the Strong Programme does not offer a satisfactory analysis of the world’s existence. When he introduces SSK in the book’s first chapter, he does so by focusing on ‘the problem of how one can know that the external world exists’ (2017, 37). And yet, this was never a defining concern for those who developed SSK. Their work was not about ontology. For most of them, it still is not.

Kochan claims that the Strong Programme failed by not delivering a convincing argument for ‘the claim that the subject can, in fact, know that this world, as well as the things within it, actually exists’ (2017, 49). Bloor and Barnes’ realist position accepts a basic presupposition, held implicitly by people as they live their lives, that the world with which they interact exists. Kochan chastises this form of realism because it does not ‘establish the existence of the external world’ (2017, 49).

But again, this was never the tradition’s intent nor is it a requisite for their actual intents. The Strong Programme did not entirely ignore ontology. *Knowledge and Social Imagery*, in which Bloor presents the fundamental aims and methods of the Strong Programme, mentions and engages with some ontological topics (1976). Nonetheless, they form a very limited part of the book and the tradition, and so should not take precedence when evaluating SSK. Kochan’s criticism employs a form of misrepresentation similar to the one he dislikes when Sassower applies it to *Science as Social Existence*.

Moreover, Kochan faults the Strong Programme for doing what it hoped to do. He argues that the main hurdle to correcting Bloor and Barnes’s flawed realism is the scholars’ ‘preoccupation with epistemological, at the expense of ontological, issues’ (2017, 50). *Knowledge and Social Imagery* begins with an explicit declaration of ambitions, all of which concern epistemology and social studies of knowledge. Kochan either dismisses or ignores those aims in order to convey the importance and strength of his arguments. He does the same for other SSK fundamentals.

On several occasions, Kochan chooses to cast aside concerns or commitments that are vital to the Strong Programme. For instance, when he employs Heidegger’s phenomenology to challenge the Strong Programme’s criticism of external-world sceptics, Kochan writes:

from the standpoint of Heidegger's own response to the external-world sceptic, the distinction SSK practitioners draw between absolute and relative knowledge is somewhat beside the point. (2017, 48)

And yet, few things are as explicitly vital to the Strong Programme as a clear rejection of absolutism and a wholehearted commitment to relativism. In *Knowledge and Social Imagery*, Bloor writes that '[there] is no denying that the strong programme in the sociology of knowledge rests on a form of relativism.' (1976, 158) Elsewhere, he summarises the basic relation between absolutism and relativism as follows:

... if you are a relativist you cannot be an absolutist, and if you are *not* a relativist you *must* be an absolutist. Relativism and absolutism are mutually exclusive positions. (2007, 252)

Bloor's writings on the study of knowledge, like his analyses of rules and rule-following (1997), invariably draw distinctions between absolutism and relativism and unequivocally commit to the latter. As such, when Kochan treats the distinction as 'somewhat beside the point,' he is marginalising an indispensable component of what he sets out to criticise. Finally, Kochan at times disregards the importance of social collectives to the Strong Programme and SSK more broadly. For instance, when analysing Bloor's perspective on referencing as an intentional state requiring specific forms of content, Kochan writes:

For the purposes of the present analysis, whether that content is best explained in collectivist or individualist terms is beside the point. (2017, 79)

Crucial to social science is the relationship (and often the distinction) between collective and individual phenomena. The Strong Programme embraces and employs collectivism, and in part distinguishes itself through its understanding of knowledge as a social institution. Thus the distinction between individualism and collectivism is not 'beside the point,' and understanding SSK demands a dedicated concern for the social. Unfortunately, Kochan does not recognise its importance.

### **The Social and Practice**

As part of his attempt to draw Heidegger and SSK into partnership, Kochan argues that the former can benefit from SSK's comprehension of the social and its tools for exploring its phenomena. However, Kochan dedicates a surprisingly small part of his book to discussing social scientific topics. Most notably, his explanation of the social character of scientific work and scientific knowledge is very limited and lacks the detail and nuance that he offers when discussing Heidegger and ontology.

Kochan repeatedly explains the social by referring to 'tradition.' He writes that Heidegger and SSK both 'regard science as a finite, social and historical practice' (2017, 208) but relies on opaque notions of history and tradition to support the claim. He refers to the 'history of thinking' (2017, 6) that determines how a community behaves and knows, and contends that

an individual's understanding of things 'can be explained by reference to the tradition which structures the way she thinks about those things' (2017, 221).

The inherited *a priori* framework that structures thinking gains its authority from the 'tradition which both enables and is sustained by [the everyday work-world]' (2017, 224). Finally, Kochan argues that Bloor and Heidegger study normativity—a topic crucial to SSK—by 'tracing its origin back to tradition' (2017, 217).

Kochan rests his explanation of the social on 'history' and 'tradition,' but never offers an explicit, clear definition of either one. Although on occasion he employs terms like 'socio-cultural,' Kochan does not dedicate attention to SSK's concern for social collectives. He mentions the importance of socialisation, but does not support the claim with evidence or analysis. As such, Kochan does not explore or employ the field's social scientific concepts or methods, both of which he describes as the tradition's contribution to his hybrid theory.

Kochan's lack of concern for the social also involves a general disregard for scientific practice. Early in the book, Kochan states that he will demonstrate how SSK and Heidegger offer 'mutually reinforcing models of the way scientists get things done' (2017, 8). However, he does not address the lived undertakings involved in scientific work.

The way scientists get things done' concerns more than their place within an abstract notion of tradition. It also involves what practitioners *do*, including the most mundane of behaviours. Kochan criticises science studies for arguing that 'theory can be unproblematically reduced to practice. (2017, 57).

He offers no evidence that science studies believes this, though *if* it did, Kochan would be correct. Understanding science and its knowledge cannot be reduced entirely to making sense of its practices; science is more than what specific groups of people do. However, understanding science also cannot circumvent what happens in places like laboratories, fields and conferences rooms.

One example of Kochan's omission of practice is his discussion of Joseph Rouse's criticisms of Heidegger's 'theory-dominant account of the scientific enterprise' (2017, 86). Heidegger's analysis of science rests on the notion that specific forms of 'projection' underlie our epistemic engagement with entities and events. Science's start involved a 'change-over' to a mathematical form of projection called *mathesis* and a 'shift in experience within the range of possible understandings of nature opened up by the mathematical projection' (2017, 90).

Rouse criticises Heidegger for never offering a satisfactory explanation of how 'change-overs' from one projection to another occur. Kochan challenges Rouse much as he criticises science studies: by saying that the latter wants to reduce everything to practice at the total expense of theory. I believe that Kochan fails to engage with the real issue. *If* Rouse supports a practice-only explanation of science—which Kochan does not demonstrate convincingly—then the former's position is flawed.

However, Rouse's failure would not resolve Heidegger's problem. The latter would still not offer a clear explanation of what occurs in the lived world of scientific work. He would still

fail to explain how change-overs happen. It is hardly radical to suggest that science is something that was developed by communities of people doing certain things. If its birth involved a novel form of projection, then it is also hardly radical to wonder how that projection came to be.

Moreover, Heidegger's *mathesis* veers Kochan away from the particularities and nuances of scientific work. He writes:

Heidegger's account of modern science as *mathesis* began with Heidegger's insistence that facts, measurement, and experiment, broadly construed, figure as continuous threads running from modern science all the way back through medieval to ancient science. (2017, 281)

Such a claim relies on an excessively broad conceptualisation of facts, measurements, experiments and other lived components of science. It does not reflect the workings of scientific practice, which SSK seeks to investigate. In a sense, commitment to the claim involves a belittling of empirical study. It also involves marginalising one of SSK's most important contributions to the study of science: its methodologies.

### **Missing Methodologies**

Kochan does not present any analysis of SSK methodologies, nor does he offer his own. To some, methodologies might appear to be secondary components of theoretical traditions. To those in SSK and especially those who developed the Strong Programme, methodologies are all-important.

In the first and second pages of *Knowledge and Social Imagery*, Bloor introduces his aims in the book and his ambitions for the programme he is about to present. He states that the purpose of his book is to challenge social scientific and philosophical arguments that fail to place science and its knowledge 'within the scope of a thorough-going sociological scrutiny' (1976, 4). Bloor then explains that as a result, 'the discussions which follow will sometimes, though not always, have to be methodological rather than substantive' (1976, 4).

Put simply, Bloor sets out to demonstrate that science can be studied sociologically and to establish the methods with which to carry out those studies. He introduces four tenets—of causality, impartiality, symmetry and reflexivity—and states that they will 'define what will be called the strong programme in the sociology of knowledge' (1976, 7) As such, I believe that Kochan's lack of concern for methodology is another example of overlooking what SSK seeks to do. Moreover, it is an example of Kochan not incorporating SSK meaningfully into his hybrid theory.

In his introduction, Kochan summarises each chapter's aim and content. He describes Chapter 6 as an exploration of a historical episode involving Robert Boyle and Francis Line, as well as an evaluation of Bloor's concept of 'social imagery' and Heidegger's notions of 'world picture' and 'basic blueprint.' Kochan writes:

Bloor's work suggests ways in which Heidegger's concepts of 'world picture' and 'basic blueprint' might be rephrased and further developed in a more sociological idiom..." (2017, 15)

Here, Kochan seems to describe the potential of Bloor's scholarship as principally a semantic reformulation of Heidegger's ideas, or at most a set of concepts that can make Heidegger's work more accessible to practitioners in SSK and other social studies of science. I believe this is one symptom of a broader and very important trouble. Kochan does not consider the possibility that the Strong Programme and SSK involve more than concepts.

He does not acknowledge vital parts of the traditions with great potential for his mission. He chooses to mention empirical SSK studies and their research practices only in passing. For instance, Kochan does not engage seriously with the Bath School and its Empirical Programme of Relativism (EPOR), although its contributions to SSK were no less important than those of the Edinburgh School. (Collins 1981, 1983) EPOR's many case studies helped put the latter's methodological tenets into action and thus give greater substance to what Bloor defines as the core of the Strong Programme.

One can also consider the importance of methodology by returning to the issue of the external world. I have argued that the Strong Programme did not embark on an ontological mission. Kochan's criticism of what he terms a 'glass-bulb model' relies on an inaccurate representation of what the tradition set out to do. I also believe that his criticism overlooks or belittles the methodological function of Bloor and Barnes' realism. Kochan writes:

Barnes does not actually argue for the existence of the external world, but only for the utility of the assertion that such a world exists. (2017, 29)

'Only for the utility' implies that methodological uses and effectiveness are inferior parameters with which to judge the quality and appropriateness of ontological commitments. I believe that Barnes's choice is at least in part methodological. It serves a form of research not concerned with ontological questions and instead intent on studying the lived workings of science and its knowledge-making. If Kochan is allowed to set his own research and writing goals, so are the Edinburghers. Moreover, this is a case of Kochan not embracing all-important lessons from SSK. The tradition offers limited insights into the social if its methodology is not lent fuller attention.

### **From Glass Bulbs to Light Bulbs**

I began by listing three claims which I believe capture Kochan's key aims in *Science as Social Existence*. I then introduced one of his most important responses to Raphael Sassower's review. Two questions bind the four claims together. First, what is a person's work about? Second, does the work accomplish what it means to do? These help to evaluate Kochan's treatment of work with which he engages, and to evaluate his success in doing so. In both cases, I believe that *Science as Social Existence* displays flaws.

As I have demonstrated, Kochan misrepresents what Barnes, Bloor and others in SSK set out to do (he does not acknowledge what their work is about) and he does not employ SSK

material to resolve Heidegger's limited understanding of the social (he does not accomplish an important part of what his book is supposed to be about.)

One can understand the book's problems by expanding on Kochan's glass-bulb metaphor. Kochan contends that Barnes and Bloor commit to a division that separates people and the world they seek to understand: a 'glass bulb model.' His perspective would benefit from viewing the Strong Programme as a working light bulb. It may employ a glass-bulb, but cannot be reduced to it.

To understand what it is, how it work and what it can offer, one must examine a light bulb's entire constitution. Only by acknowledging what else is required to generate light and by considering what that light is meant to enable, can one present an accurate and useful analysis of its limitations and potential. It also shows why the glass bulb exists, and why it belongs in the broader system.

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