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EXPLANATION

The argument presented in the reading, “The Underdetermination of Theory by Data and the ‘strong programme’ in the sociology of knowledge” by Okasha focuses on the of the main arguments employed by the advocates of the “strong programme” to motivate their sociological approach (284). Okasha advocates for the “strong programme” (283) aka. the underdetermination thesis or sociologist argument, all of which uphold similar idea. He tries to examine the underdetermination thesis, the responses by Brown and Laudaun and explains the different versions of the thesis and show how Brown and Laudaun’s attempts to refute the sociologists argument fails to prove it wrong. The “strong programme” was developed by David Bloor, Barry Barnes and other members of the Science Studies Unit. According to the “strong programme”, social factors represent an important and omnipresent causal influence on the cognitive lives of scientists (283). Bloor and Barnes argue that,“we need to appeal in part to social factors, citing the scientist’s own reasons for believing the theory is never enough” (284). The range of social factors admitted by the “strong programme” as possible causal influences on scientists’ beliefs is very broad, and includes; class interests, financial interests, religious prejudices, a desire for fame, and a desire to uphold the existing social order (284). Followers of the “social programme” think science has a social agenda, or social determinants. (284). The underdetermination argument states,“theories are underdetermined by data, therefore scientists’ theoretical beliefs may well need to be explained sociologically” (293). Moreover, the underdetermination argument follows that there is not enough proof from data to prove a theory and hence sociological factors must have been at play to explain the scientists theoretical beliefs. By ‘sociologically’, Okasha means social pressures. He asks the question, “can all beliefs be explained by reference to aspects of the agent’s socialization, or at least some to be explained by citing the agent’s own reasoning for holding the beliefs” (283). Laudaun disagrees with this view and aims to disprove the underdetermination argument but fails. He holds the view that “whether

deductive or ampliative underdetermination is at issue, there are no grounds for inferring that beliefs are socially caused" (293). Deductive underdetermination states that the data are always entitled by or are compatible with more than one distinct theory, ampliative underdetermination refers to when the data equally supports more than one theory (291). Following this view, Laundaun argues that it doesn't matter if the sociologist has deductive or ampliative underdetermination, it "implies nothing about the causal factors responsible for scientists adopting the beliefs which they do" (291).

Looking back at Okasha's argument on the underdetermination theory of data, the first premise of his argument holds that, "theories cannot be reasonably believed on the basis of data" (293). This follows premise 2 which is that, "theoretical beliefs cannot be explained in the standard rationalizing way" (293). The conclusion is as follows, "thus sociological explanation may be needed" (293). Taken this way the underdetermination argument says, in effect, "the because theoretical beliefs are irrational, they may require sociological explanations" (293). This contradicts the symmetry thesis, "which enjoins the sociologist to make no discriminations between the rational and the irrational (293). As explained by Okasha, this is the claim that underlies the "strong programme" (284). Moreover, in regards to the symmetry thesis, he states it should not matter if the belief is true, false, rational or irrational. This view is the opposite of the traditional approach, which is that "sociological explanations of scientists' beliefs are only appropriate if the beliefs in question are irrational" (284). According to the traditional approach, whenever possible beliefs can be explained using rational credentials, or a rationalizing explanation is given, a sociological explanation of the scientists belief is not needed. Barnes and Bloor oppose this traditional approach, they argue that a proper "scientific" approach to explaining the causes of scientific beliefs should pay no heed to distinctions between the true and the false, the rational and irrational (284). As stated by Barnes and Bloor, sociological explanations should be applied across the board (284). Furthermore, Okasha explains that the underdetermination argument speaks clearly in favour of the

traditional approach to sociology of science that Barnes and Bloor oppose (293). In the next section I will assess the arguments presented and argue in favour of Okasha.

ASSESSMENT

I agree with Okasha's argument on the underdetermination theory by data, however, I disagree with the way he argues his stance. In my opinion, as a student of science, we have been taught about internal validity and how scientific studies may have threats within the study design that may affect the results. Okasha argues that theories cannot be believed on the basis of data and cannot be explained in a standardized rationalizing way, hence a sociological explanation may be needed to explain theories. Okasha fails to explain how theories cannot be believed on the basis of data, he does not explain the different problems that may arise when explaining a theory. I agree that a sociological explanation may be needed to explain theories. However, I have come to this conclusion on the premises that; scientific studies have threats to internal validity that cannot be explained in a standardized rationalizing way. Hence, in my opinion, a sociological explanation may be needed to explain theories. Moreover, I endorse Okasha's conclusion because it follows my beliefs. However, I reject the premise of his argument because it is too vague of an explanation for the argument presented. Furthermore, I agree with Okasha on that beliefs can be explained by reference to aspects of the agent's socialization, or the agent's own reasoning for holding the beliefs (283). The reason being is that there may be internal threats or social pressures, that may influence the sociologist to change parts of the study design to favour a specific outcome. For example, a sociologist may be influenced to regress the scores towards the mean to present a more likeable outcome. Outliers in a study may be overlooked to prove a hypothesis correct. Moreover, these small details are crucial in that they can drastically change the theory presented by a study that was tampered with or presented in a way that favoured the initial hypothesis.

LITERATURE CITED

Samir Okasha (2000) The underdetermination of theory by data and the “strong programme” in the sociology of knowledge, *International Studies in the Philosophy of Science*, 14:3, 283-297, DOI: 10.1080/026985900437782