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Kevin Elliott, "Values in Science"

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Kevin C. Elliott. *Values in Science*. Cambridge University Press 2022. 75 pp. $24.95 CAD (9781009055635).

The relationship between science and values is among the most discussed and rapidly developing subjects in the philosophy of science. Dating back to the 1970s and 80s, a couple of authors initiated a general stratification of how to think about values in the context of the sciences. As real-life examples of uses and misuses of values are continuously growing in the natural, social, and medical sciences, there does not seem to be an ending point for the literature. Nonetheless, there is still no finalized terminology, problem-set consensually accepted historical heroes or evils of the field, and most discussions start either from scratch or from the fundamentals.

Elliott's previous work played a crucial role in improving the field by laying the groundwork for more consensus-driven and comprehensive debates. However, his most recent work, *Values in Science*, a part of the Cambridge Elements' Philosophy of Science series, builds upon this foundation. This latest publication represents a more concise and meticulously structured examination of the same field, driven by the same overarching objectives.

The book is structured traditionally: after a brief introduction, which treats and emphasizes the role of the recent pandemic, Elliott discusses how 'values influence science' and contrasts the value-free and the value-laden pictures. According to the defenders of the former, science shall be free of non-scientific values, typically ethical, political, economic, and personal considerations. Science, done rationally, is guided by internal, epistemic, scientific values of consistency, predictive power, coherence, and related issues. However, Elliott notes there is no consensus about which values fall *universally* on the scientific and which on the non-scientific or non-epistemic field. Though that complicates things, one can surely circumscribe a core of values that belongs to either category at a certain point. Providing numerous examples, Elliott contributes to understanding of the matter at hand and enriches our perspective on the problems.

One of the most valuable parts of the book is the third chapter, where Elliott presents the typical arguments, counterarguments, and responses to the cons with detailed references, all captured in useful tables for teachers and students as well. The Gap Argument refers to the 'evidential gaps' between data and conclusions that value-considerations, background assumptions, and auxiliary hypotheses must supplement. The Error Argument highlights the various epistemic and existential risks the scientists undergo in each situation when decisions must be made about conclusions. Needless to say, existentially less related fields (such as advanced theoretical physics) can cause less harm, while in medical contexts, more data and quicker actions shall be harmonized. After all such uncertainties, not even the aims of science are settled once and for all. How much risk one shall take and how impactful the consequences might be are to be dealt with certain values in our bag. The Aims Argument runs as follows: 'in order to achieve the non-epistemic aims of science, scientists need to take non-epistemic values into account when assessing the quality of scientific models, hypotheses, and theories' (29). Finally, the Conceptual Argument builds upon the results of decades of research into feminism and conceptual analysis. As science utilizes such concepts that are not entirely value-free, they have a "mixed" character, such as 'species,' 'race,' 'memory,' 'man,'

'development,' and non-epistemic considerations are inevitable.

All these arguments build on the idea that in most (if not every) cases of scientific practice, (non-epistemic) value-considerations enter the picture either right at the beginning (in 'steering science') or while 'doing' and 'using science' ('management of science' seems to be more trivial). There are many backdoors where banished values of morality, society, and politics just come back to have a – very often – unconscious effect on the sciences and their practitioners. These might not always be unifying and universal moves. As Elliott emphasizes, 'it is crucial to appreciate the differences between different fields of science and the different contexts in which science is used.' What works in one case will not necessarily be valid in another. Though *Values in Science* does not aim to settle the dispute about which fields and to what degree are exposed to different value-considerations, the many examples (ranging from GMO, archeology, environmental sciences, medical problems, and industrial influence) help clarify the field.

Elliott does not hide his basic stance, namely that (i) science is not value-free, and (ii) science shall not be value-free to meet all the multifaceted aims, goals, and contexts in which it operates. Nonetheless, that is one of the most important messages of the booklet: 'to abandon the value-free ideal is not to call for a free-for-all in which values of all sorts are accepted in every part of science' (37). 'Values in science' is not a topic anymore (if it ever was) of wild skepticism, nihilism, or dangerous relativism. Not anything goes, and not all values are allowed to have a take on our thinking. Thus, the question arises, 'how can we manage values in science responsibly?', is the topic of chapter four.

We have a great deal of case-studies about how values were *actually* incorporated, with further examples of when they were done on a consensual level, and even abusively. But the territory in between these is *the* field for the philosophy of science where historically, socially, and emotionally sensitive ways and modes of engagement are to be implemented by scholars. The second half of the book is devoted to such proposals, as 'right values,' 'preserving objectivity,' and pluralism of strategies.

The final section introduces a concrete proposal of 'norms' that shall 'prevent values from having inappropriate influences on science.' In that account, a value has an 'appropriate' influence until scientists follow the norms, guiding their actions and value-choices. Elliott draws one 'partial list' of possible norms for 'good science' by mixing all the previously published, historically given practices. His points and discussions are very enlightening, modest, and rational. You will not find their much-contested activism, or far-fetched extremism about *specific* values. Elliott is a real pluralist providing space for whatever might work, but he is not an *a priorist*. Nevertheless, one might still have the feeling that there is lack of in-depth discussion on what is 'good science," and what is 'appropriate' without having set those values that determine these concepts. It is not at all evident how the most contested value questions are settled by such approaches, presupposing just these issues in the first place. Nonetheless, having agreed upon a consensually accepted set of principles and values, the approach is workable in practice for a community considering accountability, transparency and all sorts of other issues.

Elliott's book and style is highly engaging. A lot of thinking went into all the details and

arguments. The book is short, but not dense, easy to follow, well-structured, and provides a lot for students and their teachers. It is for everyone who would like to have a quick look at the debate around "values in science" in philosophy of science.

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