# What is Science?: An Interdisciplinary Perspective

**Jaffe, Klaus**
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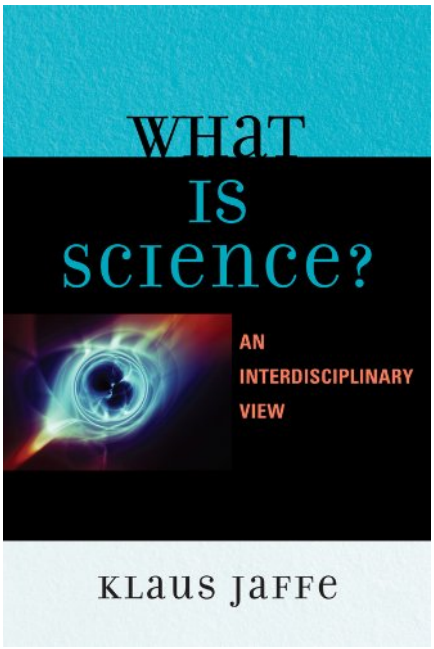
Reviewed by **Petri Ylikoski**
Department of History and Philosophy, University of Tampere




Explaining to lay audience what science is not an easy task, especially when the time or attention of the audience is limited. A book of about 100 pages (with pictures) might be useful for such a purpose. Klaus Jaffe's *What is Science? An Interdisciplinary View* is intended to be such a book. Let us see how well it serves this purpose.

The reference to interdisciplinarity in the subtitle raises an expectation that the book would integrate insights from various fields that have scientifically studied science: history of science, cognitive psychology, sociology of science, economics, and even recent naturalistic philosophy of science. This is not the case. Jaffe almost completely dismisses any insights provided by these fields. The reasons for this are not very clear, but apparently the fact that Hegel or Wittgenstein did not have much practical experience of experimental science is a good enough reason for him. Whatever the reasons, this inattention is regrettable. For example, Jaffe's application of the evolutionary theory would have been much less clumsy if he had taken into account some recent work in philosophy of biology. Similarly, his simplistic version of Popper's falsificationism would probably have been more sophisticated, had he considered a bit more carefully how theories are actually related to experiments.

The first chapter of the book outlines an evolutionary background for the emergence of science, arguing that both human drive for searching new

knowledge and the limitations of human cognition should be understood as outcomes of evolutionary process. The second chapter gives an account of ascent of experimental science. Jaffe's account of science is based on three fundamental ideas (p. 28). The first is the idea that doing science is not natural for humans, in other words, our cognitive apparatus was not created (by evolution) to do science. The second idea is the requirement that scientific theories should be rational and logical, so that any instructed human being or computer can understand them. The third idea is the old idea of falsification: any theory should be refutable by an experiment. I fully agree with the first idea, but I have problems with two others. Jaffe never specifies what he means by rationality and restricting scientific theories to ones that can be refuted by an experiment seems all too restrictive.

The third chapter is devoted to modern science and the challenges complexity creates for the scientific enterprise. It begins with a metaphor of multidimensional reality and uses it as a basis for a call for interdisciplinary study of emergent phenomena. Jaffe argues that E.O. Wilson's idea of consilience is a key for integrating the views of different scientific disciplines and suggests that computational modelling would the practical means to achieve that goal. This chapter is the most interesting part of the book, but Jaffe's sketchy account how computational metascience will reach the goal of consilience is very confusing, especially when he discusses consciousness. The chapter four discusses pseudoscience and attempts to characterize typical properties of unscientific thinking. The fallacies are easily recognizable, but Jaffe's ideas for avoiding them are less straightforward. The suggestion that enrolment in a good PhD program gives one training that helps to avoid these fallacies is not very practical, especially when the skills one will acquire are very field-specific.

The next chapters are very disappointing. The topic of chapter 5 is the relation between science and society, but the author avoids discussing any of the topics that would probably be of interest. Instead of discussing, for example, the role of scientific expertise in a democratic society, he presents statistics in support of the view that technology has contributed significantly both to population growth and accumulation of wealth. Furthermore, rather than clarifying the distinction between facts and values, he presents the following view: "ethics may eventually become a discipline which can measure its objects of study quantitatively and which will eventually be able to develop predictable and falsifiable theories." (p. 85) I hope the author just uses the word 'ethics' in a non-standard way. The final full chapter continues on similar topics and presents extremely simplistic discussion of meritocracy. The author for example expresses the opinion that

social equality is in conflict with scientific creativity as a solid fact. I would have preferred that the author would have more clearly demarcated between his political views and his account of science.

To sum up, I do not think this book is a useful resource for popularizing science. It does not describe crucial social practices that make science work (e.g. peer-review), nor does it explain the role of experiment in scientific reasoning, and it does not give a credible account of the role of science in society. Furthermore, the book would have benefited from editorial attention: the text is full of misspellings and incomprehensible sentences.

What makes an idea feel right and what does that imply for correction strategies? [more]. View project. Project. Embodied metaphors in judgment and decision making. Norbert Schwarz. David Hauser. Spike W. S. Lee.Â  This suggests that psychology may be most likely to earn recognition from its neighboring disciplines if it retains its autonomous position in the range between the biological and the social sciences. Read more. Discover more. Download citation. What type of file do you want? RIS. BibTeX. Interdisciplinary teaching provides an opportunity to explore different ideas and apply them to find out the solutions to the worldâ€™s most complex problems. Moreover, it instils critical thinking and enhances creativity which will the two needed qualities looked upon by the future recruiters. Additionally, while pursuing interdisciplinary education, students feel highly motivated as they have a vested interest in the topics they are studying.Â  A 4 year degree? Well, Iâ€™m an Interdisciplinary Studies Major. I wanted to be a secondary school teacher. Elementary and middle school teachers take some of same courses except one starts focusing on pedagogy (child development, elementary) while the other focuses on math, science and other middle school teacher courses.

Our interdisciplinary approach exposes students to problems in many different disciplines, helping them to choose a major more wisely. Whatever the specific mechanism, the use of this book is best positioned early in the curriculum. First, this positioning allows us to leverage familiar material in high school mathematics and science.Â  This book is suitable for typical first-year college students. That is, we do not expect preparation beyond what is typically required for other entrylevel science and mathematics courses. Mathematical maturity is important. While we do not dwell on mathematical material, we do refer to the mathematics curriculum that students have taken in high school, including algebra, geometry, and trigonometry. In the formation of future specialists, computer science education cannot ignore the reality of a society in which research and technological progress are based primarily on interdisciplinarity and transdisciplinarity. Throughout this chapter, we will analyze the way in which all these elements are evolving in a very closely interdependency one of each other: the evolution of computer science accelerates the development of classical sciences, and the development of classical sciences and computer science generates the emergence and progress of new border sciences and how the educational curric Science definition: Science is the study of the nature and behaviour of natural things and the knowledge that | Meaning, pronunciation, translations and examples.Â  any specific branch of scientific knowledge, esp. one concerned with establishing and systematizing facts, principles, and methods, as by experiments and hypotheses. the science of mathematics. 4. a. the systematized knowledge of nature and the physical world.