

Book review

Bas C. Van Fraassen: *The Empirical Stance*.

Yale University Press, New Haven
and London, 2002, xv+282p.

Leon Horsten
University of Leuven
Leon.Horsten@hiw.kuleuven.ac.be

July 9, 2003

This book developed out of five lectures that its author gave at Yale University and some other institutions (Princeton University, Université Catholique de Louvain). Accordingly, the book is organized into five chapters (or *Lectures*), followed by three Appendices. Part of the material in the book has also previously appeared as journal articles.

The fact that the present book originates from a lectures series explains why the reading of this book is such an agreeable experience. Van Fraassen takes the reader by the hand, leads him without unnecessary complications or needless abstraction to deep philosophical problems. Once there, he considers the puzzles from unfamiliar angles and supplies new ideas and new ways of looking at them in his characteristic gentle and disarming style. Although Van Fraassen does not solve the problems he discusses completely, he always adduces new and important clues and insights. What makes this book so valuable is the fact that Van Fraassen speaks to several of the philosophical problems that seem, at first sight, especially hard for an empiricist and which he had until now, not squarely addressed at length in print.

Van Fraassen seems to have developed a habit of publishing one major book in general philosophy of science every decade —although it is rumored that his next book, devoted to a large extent to Putnam's paradox, will be out soon. His present book seems the logical next step in the development of his work in the general philosophy of science since about 1980. In *The Scientific Image* (1980), Van Fraassen articulated a new empiricist philosophy of science, labelled *constructive empiricism*, which is to a large extent immune to the objections that proved fatal for logical empiricism. But in *The Scientific Image* he had not elaborated his conception of rationality which was operating in the background. He did explicate his 'liberal' conception of rationality in *Laws and Symmetry*

(1989). But articulating his conception of rationality lead him to the very general epistemological question what it means to have a (philosophical) position in the first place. And that is the main question that Van Fraassen addresses in *The Empirical Stance* (2002).

The first lecture is mainly of a critical character. Van Fraassen here takes a stance against analytic metaphysics. What he objects to is the positing of entities beyond those that are given to us by scientific theorizing (p.29). What Van Fraassen objects to is ‘philosophical world building’. He regards this as a substitution of *simulacra* for the real, lived world. And he invokes the history of philosophy as his witness to argue that it can never work. Unlike the positing of objects in science, which is always strongly constrained by experience, the positing of objects in analytic philosophy is doomed to remain empty and sterile. In other words, Van Fraassen would predict that there will never be a time when there exists a deep interaction between scientific theorizing and the ontology implicit in it on the one hand, and the ontological theories developed by analytic metaphysics on the other hand.

The second lecture is of a more constructive nature. Together with the third lecture, it forms the central part of the book. An old generic charge against empiricism has it that the claim that experience is a privileged road to truth is itself a dogmatic, non-empirical claim. Van Fraassen replies to this charge that empiricism should be seen as a *stance* rather than as a (quasi-axiomatic) theory. He then tries to explain what a stance is, and how taking a stance differs from holding a set of principles. He points out that even though at every particular moment in time, a stance (such as empiricism or materialism) is wedded to specific concrete principles, these can later be abandoned while leaving the stance itself intact. E.g., present-day physicalists no longer subscribe to most of the theses that seventeenth century materialists subscribed to. Nevertheless, they can be taken to take the same stance, to belong to one and the same tradition. (A historical description of empiricism as a stance is given in Appendix 2.) What Van Fraassen calls a stance appears to possess many of the features of what Lakatos called a *scientific research program*. (One important difference is of course that the typical examples of Van Fraassen’s stances belong to philosophical rather than to scientific practice.) Nevertheless, in an earlier publication Van Fraassen draws another analogy. In his article **Against Naturalized Epistemology** (in: P. Leonardi and M. Santambrogio, eds., *On Quine. New Essays*. Cambridge University Press, Cambridge, 1995, p. 68-88), Van Fraassen likens adopting a stance to adopting a linguistic framework in the sense of Carnap. The reviewer found this latter article (especially its last sections) useful accompanying reading to the second lecture of *The Empirical Stance*.

The third lecture is concerned with conceptual revolutions. Van Fraassen has always accepted the thesis of the theory-ladenness of experience. As a consequence of this, he too faces the question of the rationality of scientific revolutions, an issue that was so forcefully put on the scene in the early 1960s

by Thomas Kuhn. Since then, not much progress has been made with respect to this problem except, perhaps, by Kuhn himself in his article **Objectivity, Value Judgement and Theory Choice** (in: Kuhn, Th. *The Essential Tension. Selected Studies in Scientific Tradition and Change*. University of Chicago Press, Chicago and London, 1977, p.320-339). (The reviewer wonders how much influence this article had on the development of Van Fraassen's thought.) Even though in retrospect a scientific revolution often seems rational, from the old point of view the radical conceptual changes that the new paradigm proposes seem utterly unreasonable. And if that is so, then how is the old point of view ever abandoned? To be sure, Van Fraassen does not provide a complete answer to this question, which may well be one of the deepest in philosophy of science today. But he does provide elements that must play a role in an eventual resolution of the problem if there ever will be one. First, he points to the double role that from an empiricist point of view experience plays in such situations. On the one hand, it plays a conservative role in that it allows changes in theories only on the basis of observational evidence. This implies that the theoretically unavoidable phenomenon of the underdetermination of theory by empirical evidence does not play a *practical* role in such situations. On the other hand, experience is the main engine fueling change in the sense that it is always in the first place empirical pressure which evokes a conceptual revolution. Another element which was only hinted at by Kuhn but which is brought to the fore by Van Fraassen is the role of *emotions* in scientific revolutions. In existentialist philosophy one finds the idea that emotions can make us see things differently. Van Fraassen suggests that in scientific revolutions, emotions too play this role: they can expel us from an old into a new conceptual framework. This is an intriguing idea. But the reviewer regrets that it is left somewhat in the air how exactly this works in scientific practice. It would be most helpful to see the analogy between the impact of emotions on experience in daily life and the impact of emotions in scientific revolutions be spelled out in more detail.

We have seen how in Lecture 3 Van Fraassen argued that even during revolutionary periods, science is and ought to be motivated primarily by experience. *Interpreted* experience to be sure, but experience nevertheless. In Lecture 4, Van Fraassen speaks of experience as Janus-faced (p. 134-139). On the one hand, experience is something that happens to us. In that sense, experiencing has a passive component. On the other hand, we always actively infuse experience by theory. In that sense, experience always has an active component. But the meaning of our scientific theories is always underdetermined. Here we arrive at another significant factor in the process of scientific revolutions. When the empirical pressure mounts, scientists are driven to partial disambiguations and precisifications of their theories. And these are an essential stepping stone to genuine innovation in science. In this way, ambiguity plays a decidedly positive role in the evolution of scientific theories.

Lecture 5 treats the relation between science and religion. It seems more loosely connected to the other chapters, and the reviewer cannot escape the

impression that Van Fraassen is less confident or comfortable with the material which presented in this chapter than with the content of the other lectures. Van Fraassen is at the same time an empiricist and a religious person. There were times (during part of the middle ages, during early modern times,...) when no real tension would have been suspected in such a state of mind. But times have changed. It is now the received opinion that a secular attitude towards life and the world is the natural companion to an empiricist stance in science and philosophy. Van Fraassen characterizes secularism as being the outlook which extrapolates the objectifying approach which is typical of scientific method to all realms of life (p.174-175). Van Fraassen argues, quite convincingly, that there is no need for the sciences or for empiricism to reject non-objectifying practices such as religion and the arts, nor even to reject their cognitive aspirations. For there are more forms of knowing than the objectifying way of knowing that the sciences can call their own. To the reviewer, the general line that Van Fraassen is taking in this chapter seems sound, except that perhaps one could wonder whether Van Fraassen's characterization of secularism is sufficiently complete.