

Chapter 2

Methodological and Epistemic Framework: From Positivism to Post-positivism

When we talk about positivism, empiricism, post-positivism or the antipositivist (interpretive) approach, we mean the epistemological and methodological frame of reference that defines the attitude and relation of the researcher to the production of data and the selection of research tools and methods. At this point, we will only highlight a few aspects that are important for understanding the methodological orientation used in this book. The positivist frame of reference is mainly the subject of the philosophy of science. In the span from Comte, through logical positivism and the Vienna Circle, to critical rationalism, operationalism..., this framework has undergone several modifications and variations. It is certainly not a uniform and unambiguous category, although it has a specific core which we will try to define more clearly. Much the same holds true for post-positivism, except that the latter has only been scantily or fragmentarily treated in the literature so far (to the largest extent in Fischer 1998; Hetherington 2000). However, old and more recent versions of philosophical positivism have rather weak connection with 'practical', spontaneous positivism of empirical research. This kind of implicit (tacit) positivism or empiricism is related not only to the extensive use of quantitative techniques, the main feature is that its proponents believe that all methodological and even conceptual problems can be solved exclusively by applying these techniques while the role of theory is underestimated (Hetherington 2000).

The first thing that must be said of postpositivism is that it is neither antipositivism nor a continuation of positivism by other means. Its essence is an attempt to transcend and upgrade positivism, not the rejection of all positivist ideas and postulates of the scientific method. It has incorporated the ideas of falsificationism (Popper), fallibilism and Feyerabend's methodological pluralism (Hetherington 2000). Postpositivism also does not reject quantitative methodology, but it does attempt to harness it within a more complex research design. It is more cautious concerning strong and one-sided interpretations and restrained regarding the too extensive (or obsessive) use of (quantitative) data and methods.

It also needs to be said that one only rarely encounters explicit (post)positivist principles, but we can ascertain the existence of a hidden frame of reference and

an implicit epistemological position (Hetherington 2000). Most sociologists and economists are not concerned with the philosophy of science and with epistemological issues, but all of them must work with data and use certain methods for measurement and knowledge production. As it is understood by the author of this book, postpositivism distinguishes itself from the different variants of positivism mainly through the view that the quantification and use of sophisticated statistical methods and mathematical models in itself and a priori do not enable the attainment of scientifically relevant insights. These methods and models are useful as research tools, yet they cannot be taken as a sufficient and necessary basis for the production of valid empirical evidence and a theoretically relevant interpretation of this evidence. They cannot be applied in a routine and simple way and cannot be a substitute for theoretical elaboration. The social sciences need a more integrated and deliberative methodological approach.

It should be noted here that new methodological platforms and research strategies have been developed and implemented in recent years, which can be said to have originated as an alternative to simple quantitative (implicit) positivism. We refer to approaches such as triangulation or the integration of methods, and further meta-analyses and other combinations of quantitative and qualitative methods based on emphasising the context and specifics of the cases (case-based) such as, for example, Ragin's approach of fuzzy-set or qualitative comparative method. Widely accepted in the social sciences, triangulation thus introduces doubt as to the appropriateness of using a single method. Meta-analysis arose from the realisation that it is necessary to rely on multiple sources of data and an 'analysis of analyses', while Ragin's combinations of qualitative and quantitative elements derive from the thesis that focusing only on the variables results in fragmentation and a loss of the specifics of the concrete case (Bryne and Ragin 2010).

The postpositivist critique of implicit positivism and empiricism can be very useful as it is oriented towards a more complex and more comprehensive explanation of a specific phenomenon and the relations within it. At the same time, it cautions about the methodological errors and shortcomings inherent in the quantitative positivist approach, especially in the comparative framework of cross-national research (for more see Adam 2008 and Adam and Westlund eds. 2013). The main problem with this approach lies in the fact that it generates insufficient knowledge, and that it has no built-in mechanisms for (self)correction and (self)reflection. However, it should be mentioned that the critique of positivism does not contain a kind of ideological connotation or disqualification, but only calls attention to the methodological and epistemological dilemmas of contemporary social science research. Namely, the issue of scientific method is much more complex and ambivalent than positivism presupposes.

Put simply, one could say that postpositivism deals with three main questions relating to: (1) the quality of the (input) data; (2) the use of a more integrated approach; and (3) the context of the studied phenomenon. Positivism somehow presupposes that data are good quality and adequate if they can be quantified, and bypasses the problem of context by dealing with the multitude of variables and correlations between them. How can the positivist type of doing research be

identified? First of all, through the extensive use of quantification and the technical character of the publication, second, usually only statistical (multivariate) methods are utilised and there is no attempt at triangulation, third, one dataset or very limited sources of data is taken into account. The interpretation of findings is relatively categorical and very little attention is paid to the controversial findings.

Several arguments and indications suggest that the authors of the Innovation Union Scoreboard take an implicit positivist position. This monograph therefore focuses on finding new (additional) data and explanations that would more comprehensively and in a wider context shed light on the state and trends of innovation activities in individual countries. We attempt to explain the reasons for the divergent results or discrepancies in the interpretations. If we were to take a positivist (or antipositivist) position, we would not be interested in such attempts. The essence of the postpositivist platform is precisely in that it problematises certain taken-for-granted aspects in the research of innovation processes and their impact on society, while also trying to provide solutions and suggestions for a more appropriate measurement of these processes, as well as new possibilities of interpretation.



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