

EDITORIAL PREFACE

Diderik Batens

The contributions to the present and previous volume of this journal illustrate quite well, on the one hand, the general reluctance with respect to the incommensurability theses or their alleged consequences, and, on the other hand, the variety of lines of attack taken to avoid them. In several contributions to these volumes we find pleas for drastic changes in specific epistemological views or for a thorough revision of our theorizing about science.

The variety of approaches among the opponents of specific incommensurability claims might be seen as a weakness of these opponents. Research is undertaken in all directions and there is clearly disagreement about the domain to which the problems belong. Moreover, the variety of problem fields to which the contributions belong shows to some extent the limitation of each contribution, for a full-fledged philosophy of science should apparently address all those problem fields together. At the same time, however, the variety of approaches suggests that the incommensurability problems are rather fruitful in provoking research. Nevertheless, I consider it unlikely that they are important enough to give rise to a new form of synthesis in philosophy of science. They are challenging, but they are not challenging enough on themselves to jeopardize the core of current general views on the philosophy of science.

As in the previous volume, I shall present a concise overview of the contributions. Richard Grandy concentrates on the incommensurability problem as it appears in Kuhn's *Structure of Scientific Revolutions* in view of the postscript of the second edition. He considers the elements of disciplinary matrices which lead to incommensurability, with special attention to exemplars. Depending

on the number of shared elements required, we find different kinds of groups, and hence different kinds of revolutionary changes and different kinds, as well as variable degrees, of incommensurability. Rejecting the dilemma “no good reasons” or “good reasons for any group”, Grandy defends a relativism of good reasons. He develops the concept of truth-theoretical incompatibility, which may allow us to compare incommensurable theories. Finally, he considers the thesis of ontological differences (in contradistinction to differences in disciplinary matrix) and notes that it cannot be established by historical arguments but is in need of further philosophical scrutiny.

In the absence of a theory of meaning, Antti Hautamäki claims, the incommensurability thesis is vague. For this reason he presents an intensional (possible worlds) semantics in which theories may be interpreted in their full complexity, and studies in detail the possible relation between theories with respect to this semantics. He shows that non-cumulative progress need not prevent mutual inconsistency, and demonstrates that logical relations may obtain between theories which have different concepts, and in this sense are incommensurable. The absence of such relations, he argues, may only obtain if the theories belong to different disciplines. Finally, he also studies the theory-ladenness of observation, and discusses the merits of his approach.

In the subsequent contribution, Walter Van der Veken gives an overview of the structuralist approach of Sneed and Stegmüller to the problem of incommensurability which derives from the absence of logical relations between alternative theories in the statement view. Next he considers Kuhn’s and Feyerabend’s reactions to the non-statement view approach of theory comparison and the changes these have provoked within the views of Stegmüller, Sneed and Balzer. Finally, he points to some open problems for the structuralist approach.

Marcello Pera is the only contributor who does not propose a change to some relevant philosophical discipline, but argues that the problems deriving from the theory-ladenness of observation may be solved by introducing a typology of theories, facts, and observations. He rejects the idea that the existence of some fact would in general depend on the presence of some belief. He considers a historical case study, Galvani’s research on animal electricity, and arrives at the following typologies : explanatory, interpretative, and categorial theories; theoretical, general, and observational facts; perceptive

hypotheses, perceptions, and sensations. Observational facts, e.g., are argued to be stable, unless there would be changes in our perceptive or intellectual equipment. The upshot is that, although incommensurability cannot be avoided, the idea of an independent factual basis need not be given up.

Joseph Pitt also concentrates on the theory-ladenness of observation and on the opposition between its consequences and actual scientific practice. However, he argues for a drastic change to the philosophy of science, viz. for the incorporation of technology as a basic ingredient. He attacks a number of common epistemological presumptions, presents a model (input-output transformation) for technology which applies to tools, social structures, as well as decision making processes, and discusses the relevance of this model for the rationality of science. The feed-back features of the model, e.g., enable us to understand that acting changes the body of knowledge as well as the way in which we act. As the theoreticity of a statement can only be assessed after the test of action, any a priori distinction between theoretical and practical knowledge becomes impossible. The incommensurability problem "falls by the wayside."

Jean Paul Van Bendegem sets out by presenting an algorithm scheme as a general definition of comparability. He concecutively considers the way in which this scheme has to be substantialized according the approaches of Kuhn, Laudan and Hesse. Next he argues that Feyerabend's view presupposes that some minimal algorithm leads to comparability, and that this result may be used to enrich the algorithm in consecutive steps. He combines results from Rescher's pragmatism with a general argument that the introduction of value judgements in a comparison need not prevent the latter from being sufficiently convincing.

In the final paper I consider the threat of the incommensurability theses to the rationality of scientific development and to the very basis of the anti-dogmatic tradition. I argue that, for independent reasons, a radical contextual outlook has to be taken on meaning, communication, observation, and problem-solving in general. On this outlook, the incommensurability theses prove partly false and in no way jeopardizing scientific rationality or the anti-dogmatic tradition.

In a 1977 review (in the *BJPS*), Feyerabend writes : "Apparently everyone who enters the morass of (the incommensurability) problem comes up with mud on his head, ..." Among the kinds of

mud he mentions "give a misleading account of the phenomenon", "lump together what different authors have said on the matter," "misrepresent them," "suggest a solution that is hardly satisfactory, both from a logical and from a historical point of view." It seems to me that the treacherousness of the morass is caused to a large extent by the fact that some people have been digging around in the region without much systematicity. More importantly, it seems to me that we should not keep out of the morass because of fear for the mud. Why care about loosing a beauty contest, if one hopes to find something important at the other side of the morass.

*Seminarie voor Logica en
Wijsbegeerte van de Wetenschappen
Rijksuniversiteit Gent*

Vrije Universiteit Brussel