

Stefan Amsterdamski und M. Norton Wise

## Theory vs. Practice

In recent years the landscape for historical and philosophical interpretations of scientific knowledge has altered dramatically. Strongest of the new contenders for epistemological recognition are social constructivist accounts, which analyze in detail how knowledge is produced within and given shape by particular social and ideational settings, including the instruments and procedures of particular laboratories and the economic and political realities of particular societal groups. That is, the new accounts are *case studies*, using the techniques of cultural and physical anthropology. They are not general epistemologies. The local character alone of these studies raises the question of the degree to which they can ever provide generalizable epistemological claims. A second question concerns the more specific focus of social constructivist accounts on the independent role of *practice*, a term used to cover a multitude of activities associated with instruments, apparatus, experimental design, rules, procedures, mathematical techniques, computer programs, and other practical tools, as opposed to pure theory. What status has practice in scientific knowledge?

These two foci of social construction — case studies and practice — raise a variety of secondary issues which have spawned animated debates in colloquia and workshops of the Wissenschaftskolleg over the past year. These debates have been the more stimulating because they involve not only difficult intellectual issues but also strong commitments. Both aspects appeared in Stefan Amsterdamski's critical examination of social construction, which he presented as a reflection on other papers written and discussed during the year. They appeared as well in the response that Norton Wise gave at the same meeting. The two papers that follow represent the character of the debate at the end of the year. They remain discussion papers, however, rather than formal presentations. To sharpen the focus we have limited ourselves to three issues: universalization, theory versus practice, and value implications.

*Universalization* concerns the problem of how claims to knowledge — here theoretical knowledge — come to be accepted outside the local context in which the knowledge was produced and within a variety of settings where quite different practices, problems, and political and social factors were at work. Since neither of us holds a realist view of theories, our dif-

ferences revolve around whether the idea of an intellectual "background consensus", imposing universal standards of rationality and methodology throughout the scientific world, can provide an adequate account of universalization. Can a theory of practice offer more?

When we consider *theory versus practice* we have in mind recent critiques of theory-dominated conceptions of science, especially of the positivist view that the truth of scientific knowledge inheres essentially in logically coherent sets of sentences forming articulated theories, so that the basic activity of science consists in forming and testing such sets of sentences. Dissenters argue that the means for doing things, for acting in the world through practical techniques and material systems, are at least as constitutive of our knowledge as these theoretical sentences are. Ought then experimental science and applied science to be characterized as the testing and application of knowledge claims; or are they knowledge-producing?

Discussion of the preceding issues has often taken place against a background of concern about maintaining the rationality and autonomy of science as primary *values* in western culture. We therefore consider the role of the ideal of pure theory and the disinterested pursuit of truth as a defense against ideological manipulation. Does the ideal provide such a defense? Is a practice criterion of truth any worse or any better?

The following reflections depend heavily on free-wheeling, provocative discussions by our colleagues in the "culture of science" *Schwerpunkt*, organized by Timothy Lenoir. We thank him and them for intensive interactions.