

The problem of integration between the professional school and letters and sciences faculties is the sharpest example of interdisciplinary differences. Yet even among letters and sciences disciplines there are distinctions that can lead to schisms on academic issues. The higher rate of publication in the "hard" sciences, their use of research teams and joint publication, and their longer period of socialization (via postdoctoral appointments) all contribute to different views on academic issues from those found in the humanities.

It is unfortunate that the discussion of the academic world in other societies does not delve as deeply into variations by institution and discipline. It seems highly likely that there are both similarities and differences across national systems in the effects of these two dimensions. The sharper separation of the grandes écoles, universities, and research institutes in France implies separate preparatory, recruitment, and mobility systems. Also, the fact that French universities tend to be dominated by a single faculty (law, medicine, science, or humanities) suggests that the internal dynamics are much different from those in the United States. In the United Kingdom the separation of the more traditional academic pursuits in the universities and the more applied pursuits in the polytechnics and colleges of further education makes it likely that rather different issues will be salient in British than in American universities.

Given these many bases of differentiation across nations, within any nation, and within any level of institution, it is no wonder that some analysts insist that there is no such thing as a single academic profession. Yet, when each of the national systems is considered on its own, it is difficult to draw a line and insist that beyond that line we do *not* find the academic profession. Some would exclude the faculties of American community colleges or British colleges of further education. The authors of this volume seem to agree, however, that there are aspects of the recruitment, training, and functions of the faculties of institutions at all levels that bind them together. And regional, national, and international disciplinary associations as well as national professional associations (such as the American Association of University Professors and the AAAS) cut across all of the divisions discussed here.

Yet, the diversity cannot be denied, and it has certainly increased during the past 20 years. As Burton Clark says in a concluding statement: "What was always so is now much more so: the academic profession is many professions, a loosely coupled array of varied interests" (p. 396). The analysis of this "loosely coupled array" provided by the

authors of this volume should pose a challenge for those who seek to advance our understanding of life in the academic world. The volume offers a fascinating tour of major sectors of that world, focusing on lines of differentiation and organizational divisions. The role of social structure in the lives of academicians is clearly delineated.

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Marxism and Soviet Science

Science, Philosophy, and Human Behavior in the Soviet Union. LOREN R. GRAHAM. Columbia University Press, New York, 1987. xiv, 565 pp., illus. \$45. Revision of *Science and Philosophy in the Soviet Union*.

Loren Graham's *Science and Philosophy in the Soviet Union*, published in 1972, immediately became the standard work on the history of Soviet science and its relation with Marxist philosophy. The present volume, appearing 15 years later, is an expanded and revised second edition of the earlier work. The new title indicates the inclusion of two new chapters, "The nature-nurture debate" and "Biology and human beings: Specialized topics." The remaining chapters, covering dialectical materialism, the origin of life, genetics, physiology and psychology, cybernetics and computers, chemistry, quantum mechanics, relativity physics, and cosmology and cosmogony are essentially unchanged, although each has been brought up to date by the addition of from three to eight pages.

The outstanding strength of the volume is Graham's ability to portray the development of each of the sciences critically, lucidly, and objectively, comparing Soviet with Western developments and describing the controversies among Soviet scientists and philosophers.

Graham's thesis remains the claim that "a number of able Soviet scientists have created intellectual schemata within the framework of dialectical materialism that are sincerely held by their authors and that, furthermore, are intrinsically interesting as the most advanced developments of philosophical materialism" (p. 1). He argues persuasively that some Soviet scientists are convinced Marxists who believe that dialectical materialism influenced and influences their scientific work. There is no reason to deny that there are such scientists. What is less clear is whether scientists' philosophical beliefs—be they Marxist or idealistic or agnostic with respect to the ultimate nature of reality—make any difference to their science.

The central debate among Soviet philosophers of science is between the ontologists who defend the claim that dialectical laws operate in nature—and thus can be studied in chemistry, physics, and biology—and the epistemologists who distinguish between philosophical and scientific issues. The epistemologists tended to prevail until the mid-'70s, when the ontologists started to gain new, younger adherents. Graham tacitly sides with the epistemologists both in his characterization of dialectical materialism (which omits any claim to contradictions existing in nature) and in his implicit support of I. T. Frolov's "opinion that politics concerns only the philosophical interpretation of science, not the evolution of science itself" (p. 152).

Graham's history of the development of Soviet science chronicles the damage the political and dogmatic interpretations of dialectical materialism did to Soviet science in field after field—cybernetics, genetics, quantum mechanics, relativity theory. In each of these areas the work of Western so-called idealist (as opposed to materialist) scientists was initially rejected in the Soviet Union, only later to be embraced. That the advances in science were made by idealists did not count as proof that idealism was correct; yet somehow the dialectical materialist reinterpretations of these advances after the fact are supposed to count as the proof of the correctness of dialectical materialism. At best Graham's work shows that dialectical materialism has become sufficiently elastic that it can accommodate any development in science. Many in the West would draw the conclusion, which Graham does not draw, that dialectical materialism is thus vacuous.

Of the new material in the volume the nature-nurture debates are especially interesting. The new Soviet naturalist views (for example, genetic determination) tend to undermine the official Marxist views of the overriding importance of society in the social, psychological, and moral formation of human beings. The oddity is that reconciling the influence of genetics on human beings with dialectical materialism is fairly easy. This fact and the continuing debate highlight the little-noticed renewed political influence on Soviet science in the late '70s and early '80s.

Graham concludes his study with the claim that "contemporary Soviet dialectical materialism is an impressive intellectual achievement" (p. 430). One need not agree to find this volume interesting, sometimes, fascinating, and well worth reading.

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