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# Science and Society in the High School

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University of New Brunswick  
 History 2060: Science in History  
 Instructor: Philip Enros  
 Full year; first offered 77/78; future unknown  
 Undergraduates  
 Course deals mainly with the social history of science with some time given to Canadian topics, especially science at the UNB.  
 Approximately 25% Canadian content.

York University  
 Atkinson College, Natural Science 171: Nature and Growth of Science  
 Instructor: Ron B. Thomson  
 Full year; first offered 77; offered every term  
 40 students (undergraduates)  
 History of science with a unit on the role Canadians play in science, the reasons, implications, and future.  
 Approximately 20% Canadian content.

Faculty of Arts, History 480: History of Technology since 1800  
 Instructor: Peter R. Knights  
 Full year; first offered 74/75; offered annually  
 12-15 students (4th year undergraduates)  
 Course stresses general theme of developing North American technology; sources largely on U.S. but Canadian topics are encouraged in student research.  
 Canadian content varies.

#### SCIENCE AND SOCIETY IN THE HIGH SCHOOL

Dr Garry Peddle  
 North York Board of Education  
 and Atkinson College

The 1950s marked a watershed in the teaching of science. Educational theorists such as Carl Rogers were calling for a change to less authoritarian methods of instruction. Under the impact of such texts as Linus Pauling's General Chemistry the content of courses was evolving from historical-descriptive to a theoretical-principles approach. The progress towards change was rapidly accelerated when Sputnik convinced some politicians that a major revision in the educational system was necessary. The result was the implementation of freer, less structured methods of instruction coupled with a curriculum based upon the theoretical-principles approach.

However, by the beginning of the seventies, it was becoming obvious (to some people) that the grand experiments in methods had failed and a swing back to a more structured system is currently under way. In addition, there has been a reaction

by some educators against courses that expose the student to the molecular orbital treatment of chlorine, but fail to reveal that chlorine is a poisonous, straw-yellow gas. As a result, pressure to increase the descriptive content of courses is increasing. Other groups, such as the A.A.A.S., have suggested that while the current courses may serve the needs of students who intend to study science at university, they fail to increase the 'scientific literacy' of the average student. A number of educators have developed courses that deal with the social interaction of science, but for the vast majority, trained in the tradition of the 'hard sciences,' such courses are rejected as 'Mickey Mouse.'

The situation in Canada at the present time is further complicated by a variety of factors. The 'back-to-basics' movement may reverse what little progress has been made in the implementation of science and society courses. The reduction of teaching staff over the next decade will delay the infusion of new ideas from the universities into the high schools. There is a shortage of appropriate material for use in high schools and most of what is available is oriented toward American concerns in hope of American sales. Finally, since most of the educational journals that teachers receive are American, it is difficult to inform teachers about Canadian concerns.

Having outlined the problem, I wish that I could suggest a remedy. The best hope is probably for the involvement of prestigious organizations such as the Science Council and the universities, acting through ministries of education, to convince teachers of the validity of the concerns. A second course is for university staff to make themselves available for talks to teachers on professional development days and at teachers conferences.

Koestler in the 1940s had a dark vision of democracy being destroyed by a scientifically illiterate electorate making decisions based upon personality and self-interest. Only the schools provide a wide enough population base to prevent such a scenario from becoming reality.

#### THE PROBLEM OF SUITABLE CLASSROOM LITERATURE

R. A. Jarrell

Everyone with whom I have spoken who is teaching a course in our subject, or adds some Canadian content to science or history courses, inevitably has the same problem: the lack of suitable texts and readings. I faced this problem in 1974 when I introduced a full-year course on the subject at York University, and I still face it teaching a half-course at Toronto. The fact that approximately one-quarter of this latter course deals with science policy doesn't change the problem for there is little readable material in that subject. Bibliographies for courses are always makeshift at best, depending as they do on course