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Steven Shapin. *The Scientific Revolution.* Chicago: University of Chicago Press, 1996. xiv + 218 pp. $19.95 (cloth), ISBN 978-0-226-75020-0.

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Steven Shapin's *The Scientific Revolution* is an attempt at understanding the massive changes which have shaped the modern world and how we have come to view it. He is a sociologically-minded historian and a historically-minded sociologist. He takes as a given that the structure of knowledge of science is both historically situated and a process which is socially driven. His methodology involves taking ideas, of seventeenth-century European philosophers (who entertained an entirely new way of thinking–i.e. a modern/scientific way of thinking) and grounding them in their wider cultural and social context. In this way he hopes to gain an insight into some of the linkages from the past to our present-day modernity.

From Shapin's perspective, the historical notion of the Scientific Revolution–which is commonly taught to school children as more or less a cataclysmic event in which the modern world of science/rationality defeats the medieval world of religion/occult–is incorrectly portrayed. In actuality, Shapin says, the development of the modern scientific worldview is much more of an evolutionary process in which every tendency that has been customarily identified as a modernizing essence, was in fact, contested by many seventeenth-century practitioners with equal claims to modernity. He describes a world of increasing fragmentization of organizational power and order. He details the eroding authority structures and the declining scope of effectiveness of institutions that had regulated human conduct for the preceding centuries. Shapin describes the shifts in culture and society that took place in response to changing intellectual agendas, political commitments, and religious beliefs. In so doing, he attempts to portray the evolving scientific orientation–not as a set of disembodied ideas–but as historically situated ways of knowing and doing.

The book is organized into three chapters that deal sequentially with 1) what was known about the natural world; 2) how that knowledge was secured; and 3) what purposes the knowledge served. Shapin primarily focuses his attention on the mathematization of the study of motion (mechanization and prediction of the forces of nature) and the destruction of the Aristotelian cosmos (the viewpoint that nature is superior to human creations and is not reducible to purely physical causes). He places emphasis upon such seventeenth-century figures as Galileo, Descartes, Huygens, and Newton–whom he views to be major proponents of this mechanical philosophy and to differing degrees, anti-Aristotelian.

The text includes a selected bibliography to serve as a guide for interested readers to much of the relevant historical work, including the literature to which Shapin relies on most heavily for this work, including I. Bernard Cohen's *Revolution in Science* (1985), Thomas Kuhn's *The Structure of Scientific Revolutions* (1970), Steven Shapin's *A Social History of Truth: Civility and Science in 17th Century England* (1994), Peter Dear's *Discipline and Experience: The Mathematical Way in the Scientific Revolution* (1995), and Charles Webster's *From Paracelsus to Newton: Magic and the Making of Modern Science* (1982).

Shapin admits that his account of the Scientific Revolution is both selective and partial. He certainly has a bias towards the empirical and experimental sciences as well as towards English citations. His rendering of the history of the beginnings of science, admittedly, is only one of many possible assessments. For what and whom Shapin considers to be important is a reflection of his contemporary perspective. It is also important to realize that the individuals that Shapin chose for this text were not known by the vast majority of seventeenth-century people, nor was there even an awareness by the populous that a Scientific Revolution was occurring. Women, who made up half of the European population, were not in a position to participate in the scientific culture that is reflected in this work, and the overwhelming majority of

both men and women at that time, were illiterate or otherwise disqualified from entering the venues of formal learning, and thus, are also not represented in this historical sketch. So it is important to realize these caveats when trying to derive insight from this portrayal of the past, as well as connections to present-day phenomena. The fact that Shapin explicitly informs the reader of these limitations is a strength of the text.

For all its weaknesses, the text does capture some important strands that are worth understanding about cultural change in the seventeenth century and the origins of modern science. Namely, 1) the mechanization of nature; 2) the depersonalization of natural knowledge; 3) the attempted mechanization of knowledge- making (i.e. objective research methods); 4) the aspirations to use the resulting reformed natural knowledge to achieve moral, social, and political ends; and 5) the evolving notion that this mechanized knowledge/mechanized-derived knowledge was pure, powerful, benign, and disinterested.

It was the intent of Shapin that *The Scientific Revolution* not be a text that catered exclusively to a professional, specialized audience, but that the focus be for a general readership, making for a more popular dissemination. He largely succeeds in that goal, but there are trade-offs in that approach. In walking the line between too much information and too little information, there are a few passages, especially in the first and second chapters, in which Shapin tends to belabor his point beyond that needed to make his case; conversely, in the first and second chapters, the reader may feel a need for additional details. Editorial differences aside though, Shapin's presentation is very readable and enjoyable without being an overly simplistic, dumbed-down version of the history of science.

Shapin also wanted a text that would be useful for teaching. In this respect, as a supplemental reader for any number os courses, it would be fine. Because of the intent to reach a general audience, readers will not be drowning in minutia, but will be thirsting for more detail. Overall, many teachers will find it a valuable addition to their reading lists.

Finally, his approach of placing people, ideas, and facts in a cultural/social context is not unique, as many historians are no longer satisfied that there was any singular, discrete event that could be localized in time and space and pointed to as the Scientific Revolution. However, many readers will find the approach that Shapin takes will get them to re-think what science is and the relationship it has with the surrounding society/culture.

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