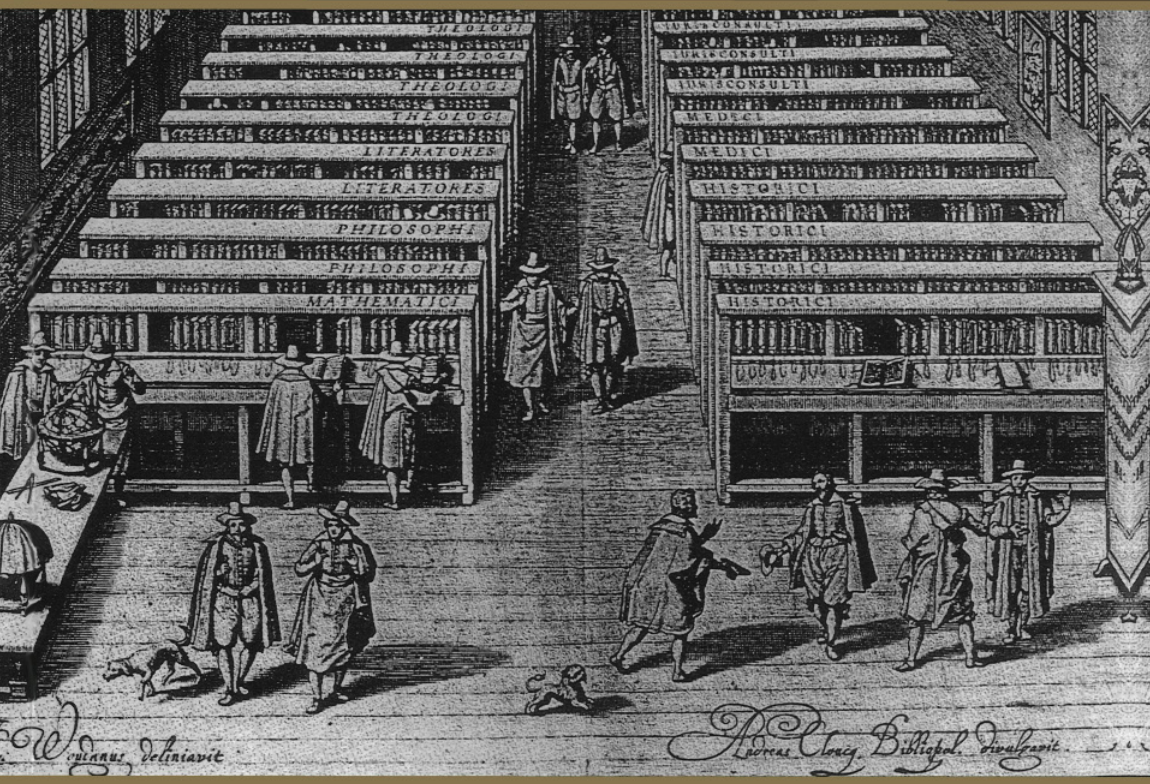
PETER BURKE

A Social History of Knowledge



FROM GUTENBERG TO DIDEROT

A Social History of Knowledge

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A SOCIAL HISTORY OF KNOWLEDGE

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Based on the first series of Vonhoff Lectures given at the University of Groningen (Netherlands)

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Preface and Acknowledgements

This book is based at least as much on forty years' study of early modern texts as it is on secondary works. The footnotes and bibliography, however, are confined to the works of modern scholars, leaving the primary sources to be discussed in the text itself. Although the focus of the study is on structures and trends rather than on individuals, it is impossible to discuss a topic such as this without introducing hundreds of names, and readers are advised that the dates as well as brief descriptions of each person mentioned in the text will be found in the index.

The study published here is the result of a long-term project which has led to a number of articles as well as to lectures and seminar papers given at Cambridge, Delphi, Leuven, Lund, Oxford, Peking, São Paulo and St Petersburg. After long simmering, the project was finally brought to the boil by the invitation to deliver the first series of Vonhoff lectures at the University of Groningen.

My special thanks to Dick de Boer for looking after me at Groningen and reminding me of the importance of changes in the knowledge system in the thirteenth and fourteenth centuries. Thanks also to Daniel Alexandrov, Alan Baker, Moti Feingold, Halil Inalcik, Alan Macfarlane, Dick Pels, Vadim Volkoff and Jay Winter for help of different kinds, and to Joanna Innes for letting me see her classic – though still unpublished – paper on the use of information by the British government.

For commenting on parts of the manuscript I am indebted to Chris Bayly, Francisco Bethencourt, Ann Blair, Gregory Blue, Paul Connerton, Brendan Dooley, Florike Egmond, José Maria González García, John Headley, Michael Hunter, Neil Kenny, Christel Lane, Peter Mason, Mark Phillips, John Thompson and Zhang Zilian. My wife Maria Lúcia read the whole manuscript and asked some usefully awkward questions as well as suggesting improvements. The book is dedicated to her.

1

Sociologies and Histories of Knowledge: An Introduction

Whatever is known has always seemed systematic, proven, applicable and evident to the knower. Every alien system of knowledge has likewise seemed contradictory, unproven, inapplicable, fanciful or mystical.

Fleck

Today we are living, according to some sociologists at least, in a 'knowledge society' or 'information society', dominated by professional experts and their scientific methods.[1] According to some economists, we live in a 'knowledge economy' or 'information economy', marked by the expansion of knowledge-producing or knowledge-disseminating occupations.[2] Knowledge has also become a major political issue, centred on the question whether information should be public or private, treated as a commodity or as a social good.[3] Historians of the future may well refer to the period around 2000 as the 'age of information'.

Ironically enough, at the same time that knowledge has entered the limelight in this way, its reliability has been questioned by philosophers and others more and more radically, or at least more and more loudly than before. What we used to think was discovered is now often described as 'invented' or 'constructed'.[4] But at least the philosophers agree with the economists and sociologists in defining our own time in terms of its relation to knowledge.

We should not be too quick to assume that our age is the first to take these questions seriously. The commodification of information is as old as capitalism (discussed in chapter 6). The use by governments of systematically collected information about the population is, quite literally, ancient history (ancient Roman and Chinese history

[1] Wiener (1948), 11; Bell (1976); Böhme and Stehr (1986); Castells (1989); Poster (1990); Stehr (1994); Webster (1995).

[2] Machlup (1962, 1980–4); Rubin and Huber (1986).

[3] Schiller (1986, 1996).

[4] Berger and Luckmann (1966); Mendelsohn (1977); Ziman (1978); Luhmann (1990).

in particular). As for scepticism about claims to knowledge, it goes back at least as far as the ancient Greek philosopher Pyrrho of Elis.

The point of these remarks is not to replace a crude theory of revolution with an equally crude theory of continuity. A major aim of this book is to try to define the peculiarities of the present more precisely by viewing it in the perspective of trends over the long term. Current debates have often stimulated historians to ask new questions about the past. In the 1920s, growing inflation encouraged the rise of price history. In the 1950s and 1960s, a population explosion encouraged research into demographic history. In the 1990s, there was increasing interest in the history of knowledge and information.

From the knowledge element in society let us turn to the complementary opposite theme of the social element in knowledge. One purpose of this book may be described in a single word: 'defamiliarization'. The hope is to achieve what the Russian critic Viktor Shklovsky described as *ostranenie*, a kind of distanciation which makes what was familiar appear strange and what was natural seem arbitrary.[5] The point is to make us (writer and readers alike) more conscious of the 'knowledge system' in which we live, by describing and analysing changing systems in the past. When one inhabits a system, it generally looks like 'common sense'. Only by comparison can one see it as one system among others.[6] As the Polish scientist Ludwik Fleck once put it, 'Whatever is known has always seemed systematic, proven, applicable and evident to the knower. Every alien system of knowledge has likewise seemed contradictory, unproven, inapplicable, fanciful or mystical.'[7]

The suggestion that what individuals believe to be truth or knowledge is influenced, if not determined, by their social milieu is not a new one. In the early modern period – to mention only three famous examples – Francis Bacon's image of the 'idols' of the tribe, cave, market-place and theatre, Giambattista Vico's remarks on the 'conceit of nations' (in other words, ethnocentrism) and Charles de Montesquieu's study of the relation between the laws of different countries and their climates and political systems all expressed this fundamental insight in different ways which will be discussed in more detail below (210).[8] All the same, the shift from insight to organized and systematic study is often a difficult one which may take centuries to accomplish. This was certainly the case for what is now described as the 'sociology of knowledge'.

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[5] Bourdieu (1984); cf. Ginzburg (1996, 1997).
[6] Geertz (1975); cf. Veblen (1918).
[7] Fleck (1935), 22; cf. Baldamus (1977).
[8] Mannheim (1936); Stark (1960).

THE RISE OF THE SOCIOLOGY OF KNOWLEDGE

As an organized enterprise, the sociology of knowledge goes back to the early twentieth century.[9] More exactly, at least three similar enterprises were begun in three different countries: France, Germany and the USA. Why there should have been a special concern with the relation between knowledge and society in these three countries in particular is itself an interesting problem in the sociology of sociology.

In France, where Auguste Comte had already advocated a social history of knowledge, a 'history without names', Emile Durkheim and his followers, notably Marcel Mauss, studied the social origin of fundamental categories or 'collective representations', such as space and time, the sacred and the profane, the category of the person, and so on, in other words attitudes which are so fundamental that people do not know they hold them.[10] What was new here was the systematic examination of 'primitive' categories on which travellers and philosophers had sometimes commented in earlier centuries, as well as the general conclusion that social categories are projected onto the natural world, so that the classification of things reproduces the classification of people.[11]

Out of this Durkheimian concern with collective representations came a number of important studies, including several on ancient Greece as well as a book about the fundamental categories of Chinese thought by the French Sinologist Marcel Granet.[12] In similar fashion the historians Marc Bloch and Lucien Febvre produced famous analyses of 'collective mentalities' or shared assumptions. Bloch adopted this approach in his study of the belief in the healing powers of the kings of France and England, Febvre in his examination of the so-called 'problem of unbelief' in the sixteenth century, arguing that atheism was unthinkable at this time.[13]

In the United States, Thorstein Veblen, best known for his theories of conspicuous consumption and the 'leisure class', was also interested in the sociology of knowledge. As befitted a former student of Charles Peirce and a colleague of John Dewey, two pragmatist philosophers who had been criticizing assumptions of 'correspondence' between reality and what we say about it, Veblen was interested in the sociology of truth. He was especially concerned with the relation

[9] Merton (1941).
[10] Durkheim and Mauss (1901–2).
[11] Worsley (1956); Lukes (1973); Lamo de Espinosa, González Garcia and Torres Albero (1994), 205–26.
[12] Granet (1934); cf. Mills (1940).
[13] Burke (1990), 17–19, 27–30.

to knowledge of specific social groups and institutions. In this area he made three important contributions.

The first of these contributions, published in 1906, considered the place of science in modern civilization, and argued that the modern 'cult of science', as he called it, including the penchant for impersonal explanations instead of anthropomorphic ones, was a consequence of the rise of industry and machine technology. In a study of the American academic establishment, Veblen went on to shine his sociological torch on the dark places in the university system, comparing academics to other 'keepers' of 'esoteric knowledge' such as 'priests, shamans, medicinemen', and noting that within the group this esoteric knowledge is regarded as universal truth, 'although it is evident to any outsider that it will take its character and its scope and method from the habits of life of the group'.

Finally, in an essay on 'the intellectual pre-eminence of Jews in modern Europe' (1919), Veblen suggested that this pre-eminence or creativity was greatest in the nineteenth century, at just the time when many Jews were becoming assimilated to Christian culture. His point was that this assimilation was still incomplete, that many Jewish intellectuals were rejecting their own cultural heritage without completely taking over that of the Gentiles. Their position on the border of two cultural worlds made them sceptics 'by force of circumstances' (below, 32), since the idols of their own tribe had 'crumbled', while they had no particular incentive to accept the idols of the Gentiles. Their detachment from the ideas taken for granted in the culture around them encouraged these intellectuals of Jewish extraction to become intellectual innovators.

In this last case, Veblen's insight doubtless stemmed from his own marginal position, in part deliberately chosen but in part the result of his being the son of Norwegian peasant immigrants, an ethnic and social background unusual among the American intellectuals of his day.[14] Typically, the outsider Veblen left no school in the strict sense, though he did inspire successors, as we shall see (below, 9).[15]

In Germany at this time, there was more interest in the sociology of ideas, sometimes following and sometimes diverging from the ideas of Karl Marx. Max Weber's study of what he called the 'Protestant Ethic', for example (first published in 1904), placed this value-system in social context as well as putting forward a theory about its economic consequences. His theory of bureaucracy (below, 118) was also

[14] Veblen (1906, 1918, 1919); cf. Lamo de Espinosa, González Garcia and Torres Albero (1994), 380–6.

[15] Veblen (1918) 1–2.

a contribution to the sociology of knowledge, even if it was not presented as such. Other sociologists in Germany, notably Max Scheler and Karl Mannheim (who began his career in Hungary and finished it in England), were arguing at about the same time as Weber that ideas are socially 'situated' and shaped by world-views or 'styles of thought'. These styles of thought were associated with periods, with nations and (for Mannheim, though not for Scheler), with generations and with social classes.

For example, Mannheim contrasted two European styles of thought which developed in the eighteenth and nineteenth centuries. On one side the French style, liberal and universalist, judging society from the standpoint of an unchanging reason. On the other the German style, conservative and 'historicist', in the sense of experiencing the world as change and using history rather than reason or religion to give meaning to experience. Mannheim's point was not to praise or condemn either style but simply to note that the social interests of a given group make the members of that group sensitive to certain aspects of social life. On this basis they develop a particular 'ideology'.[16]

All the same, according to Mannheim, intellectuals are a 'relatively classless stratum'. They were a 'free-floating intelligentsia' (*freischwebende Intelligenz*), a phrase Mannheim borrowed from Alfred Weber, brother of the more famous Max but an important sociologist in his own right. The fact that they are relatively detached from society – the qualification 'relatively' is sometimes forgotten by Mannheim's critics – allows intellectuals to see social trends more clearly than other people can.[17]

It was the German group who christened their enterprise 'sociology of knowledge' (*Soziologie des Erkennens*, *Wissensoziologie*), a description with an odd ring to it and one which was doubtless intended to shock the public. It is relatively easy to accept the idea of a history or a sociology of ignorance, even though there are still relatively few studies in this area.[18] A social analysis of the obstacles in the way of our discovering the truth, in the style of Francis Bacon, is not difficult to accept either. What is more disturbing is the idea of a sociology of knowledge, since knowing is what philosophers call a 'success verb': what we know, as opposed to what we believe, is true by definition. The idea of a social explanation of the truth, of the kind put forward by Karl Marx and Friedrich Nietzsche, still has the power to shock, as the case of Michel Foucault's discussion of

[16] Mannheim (1927).
[17] Mannheim (1925); cf. Scheler (1926).
[18] Moore and Tumin (1949); Scott (1991).

'regimes of truth' in the 1980s demonstrated. In the 1990s, to entitle a book on seventeenth-century science 'the social history of truth' was still a deliberate provocation.[19]

THE REVIVAL OF THE SOCIOLOGY OF KNOWLEDGE

After these remarkable beginnings, the study of knowledge virtually dried up or at any rate became less productive than other fields of sociology in all the three countries discussed above. The one outstanding figure between the 1930s and the 1960s was the American Robert Merton, and his work on the relation between Puritanism and science, despite its greater concern with institutions such as the Royal Society, was essentially a development of the ideas of Max Weber on Puritanism and capitalism.[20] The Polish sociologist Florian Znaniecki, who migrated to the USA, followed in the footsteps of Veblen and published a study of *Social Role of the Man of Knowledge* (1940), but then turned to other things. In Paris, the Russian *émigré* Georges Gurvitch seemed poised to revive the subject in the early 1960s, but he died before he could do more than outline his programme.[21] *The Social Construction of Reality* (1966), a collaborative work by an American and an Austrian scholar, Peter Berger and Thomas Luckmann, was well received and may have been influential, but the authors did not follow it up with substantive studies in the broad approach to the sociology of knowledge which they advocated. The main stimulus for renewal came from outside sociology, notably from Claude Lévi-Strauss in anthropology, from Thomas Kuhn in the history of science and from Michel Foucault in philosophy.

Lévi-Strauss revived interest in classification in his studies of totemism and more generally of what he called 'wild thought' (*la pensée sauvage*), defined as concrete rather than abstract. Where westerners distinguish 'nature' and 'culture', for example, Amerindian myths, according to Lévi-Strauss, are built around the opposition between the 'raw' and the 'cooked'.[22] Foucault, who was trained in the history of medicine as well as in philosophy, gradually widened his interests. He invented a whole vocabulary – 'archaeology', 'genealogy', 'regime', and so on – for discussing the relation between knowledge and power at different levels, from the microlevel of the family to the macrolevel of the state, as well as analysing the various spaces

[19] Foucault (1980), 112; Shapin (1994).
[20] Merton (1938, 1941, 1945, 1957, 1968); Luhmann (1990).
[21] Berger and Luckmann (1966); Gurvitch (1966).
[22] Lévi-Strauss (1962, 1964).

or 'sites' of knowledge – clinics, schools and so on.[23] As for Kuhn, he shocked or stimulated his colleagues by his claim that scientific revolutions recur in history and that they have a similar 'structure' or cycle of development, originating in dissatisfaction with an orthodox theory or 'paradigm' and ending by the invention of a new paradigm which comes to be viewed as 'normal science' until another generation of researchers in its turn becomes dissatisfied with this conventional wisdom.[24]

The subject of knowledge has engaged the atttention of some of the leading social and cultural theorists of the last generation. Towards the end of his career, Norbert Elias, a former assistant of Mannheim's, studied the process of intellectual detachment as well as putting forward what he called 'a theory of scientific establishments'.[25] Jürgen Habermas has discussed the relation between knowledge, human interests and the public sphere.[26] Pierre Bourdieu has put knowledge back on the map of sociology in a series of studies about 'theoretical practice', 'cultural capital', and the power of institutions such as universities to define what counts as legitimate knowledge and what does not.[27]

Bourdieu was trained as an anthropologist, and other anthropologists have made important contributions to this field. Clifford Geertz, for instance, has devoted several of his essays to problems of local knowledge, information, and common sense, placing them under the microscope in the sense of examining them in the context of the face-to-face communities which he studied in the field.[28] Jack Goody has examined alternative paths to knowledge in oral and literate cultures, while his colleague the late Ernest Gellner analysed the changing relations between the economic, political and intellectual spheres, which he described as systems of production, coercion and cognition.[29] It would be easy to add other names to this list, and other disciplines as well, from geography to economics.[30]

As is commonly the case with revivals, the participants in the 'new sociology of knowledge', as it has been called, sometimes exaggerate their distance from their predecessors.[31] Foucault, Bourdieu and Lévi-Strauss all owe a considerable debt to Durkheim and his concern with

[23] Foucault (1966, 1980).
[24] Kuhn (1962).
[25] Elias (1982); cf. Wilterdink (1977).
[26] Habermas (1962).
[27] Bourdieu (1972, 1984, 1989).
[28] Geertz (1975, 1979, 1983).
[29] Goody (1978); Gellner (1988).
[30] Pred (1973); Thrift (1985); Machlup (1962, 1980–4); Schiller (1986, 1996).
[31] Law (1986); Woolgar (1988).

categories and classification, even though, like most creative thinkers, they work within more than one tradition and distance themselves from their masters. The debate on the relation between knowledge and interests rumbles on.[32] The 'microscopic' approach, however new it may seem, was already preached by Karl Mannheim and practised by Ludwik Fleck before the Second World War.[33] As for the power to define what kind of knowledge is legitimate, emphasized in the work of Bourdieu, its importance was already obvious to the Victorian satirist who put into the mouth of Benjamin Jowett (below, 18), the claim that 'What I don't know isn't knowledge.'

In spite of these qualifications, the second wave of the sociology of knowledge still looks differerent from the first wave in its emphases, four in particular. In the first place, the stress has shifted from the acquisition and transmission of knowledge to its 'construction', 'production', or even 'manufacture', a shift which forms part of a general post-structuralist or postmodern turn in sociology and other disciplines.[34] There is less stress on social structure and more stress on individuals, on language, and on practices such as classification and experiment. There is less stress on the economics and more on the politics of knowledge and the 'knowledge-holders'.[35]

In the second place, these knowledge-holders are viewed as a larger and a more varied group than used to be the case. Practical, local or 'everyday' knowledge, as well as the activities of intellectuals, is now taken seriously by sociologists, notably those of the so-called 'ethnomethodological' school.[36]

A third way in which the new sociology of knowledge differs from the old one is in its greater concern with microsociology, with the everyday intellectual life of small groups, circles, networks or 'epistemological communities', viewed as the fundamental units which construct knowledge and direct its diffusion through certain channels.[37] Following the lead of Foucault, these epistemological communities are often studied through the micro-spaces in which they work, from laboratories to libraries.[38] In these ways the new approach is close to anthropology, and the phrase 'the anthropology of knowledge' has come into regular use.[39]

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[32] Barnes (1977); Woolgar (1988).
[33] Mannheim (1936), 46n; Fleck (1935); cf. Baldamus (1977).
[34] Mendelsohn (1977); Knorr-Cetina (1981).
[35] Pels (1996, 1997).
[36] Berger and Luckmann (1966); Bourdieu (1972); Turner (1974).
[37] Crane (1972); Latour (1986); Brown (1989); Potter (1993); Alexandrov (1995).
[38] Foucault (1961); Shapin (1988); Ophir and Shapin (1991).
[39] Elkanah (1981); Crick (1982).

In the fourth place, when the German school of sociologists asserted that knowledge was socially situated, they were thinking above all of social class (though Mannheim, at least, also took generations into account).[40] In the current phase, on the other hand, more attention is being paid to gender and to geography.

In the case of gender, there has been a series of studies of the 'obstacle race' faced by women scholars, whether their ambition was to be humanists or scientists, although there remains a need for a comparative study of the extent to which women were excluded from intellectual life in different places, moments and disciplines.[41] On the positive side, feminists have claimed that gender helps constitute experience, so that there are specific 'women's ways of knowing'.[42]

Geographers have become interested in the spatial distribution of knowledge, and, no less important, its failure to be distributed, its restriction to certain groups in certain places.[43] Curiously enough, the most famous contribution to the geography of knowledge has been made by a literary critic. In a study which has provoked considerable debate, Edward Said, following the lead of Foucault, has analysed 'orientalism', in other words western knowledge of the Middle East, as an institution in the service of imperialism.[44]

Although the author is a cultural and socal historian, this book will draw on many of these approaches in order to try to correct the specialization and consequent fragmentation so characteristic of our own world of knowledge.

THE SOCIAL HISTORY OF KNOWLEDGE

So far, relatively few historians have taken the sociology of knowledge seriously. One of the exceptions was James Harvey Robinson, a leader of the American 'new history' movement at the beginning of the twentieth century. Robinson was a friend of Thorstein Veblen's. His encouragement of a doctoral dissertation by Martha Ornstein on the role of scientific societies in the seventeenth century (below, 39) was a result of his asking himself 'what part the ancient and honorable centers of learning – the universities – had had in the advancement of knowledge. There may have been a trace of malice aforethought in

[40] Mannheim (1952); Fleck (1935).

[41] King (1976); Jardine (1983, 1985); Schiebinger (1989); Phillips (1990); Shteir (1996).

[42] Belenky et al. (1986); Haraway (1988); Durán (1991); Alcoff and Potter (1993).

[43] Pred (1973); Thrift (1985).

[44] Said (1978).

the query – some foresight of that long withheld work on *The Higher Learning* by his friend Veblen' (the book had been written around 1908 but it was only published ten years later).[45]

However, Robinson had no more followers in this direction. Between the 1920s and the 1950s, a few Marxist scholars, from the Russian Boris Hessen to the Englishman Joseph Needham, attempted to write social histories of scientific research, but they were more or less shunned by mainstream historians of science. Only from the 1960s onwards did it become normal to examine science from a social point of view. Much less has been written on the social sciences, and still less on the humanities, from this perspective, and what has been written concentrates on the nineteenth and twentieth centuries rather than the early modern period.[46]

A consciousness of this lacuna in the scholarly literature was one reason for my choice of this topic. It is an essay, or series of essays, on a subject so large that any survey which did not take a consciously provisional form would be not only immodest to attempt but impossible to carry out. I must confess to a predilection for short studies of large subjects, which attempt to make connections between different places, topics, periods or individuals, to assemble small fragments into a big picture. However, the need for such a book is particularly obvious in an area which is not normally viewed as a field at all but rather as a collection of disciplines or subdisciplines such as bibliography, the history of science, the history of reading, intellectual history, the history of cartography and the history of historiography (my original topic of research).

Anyone who argues that knowledge is socially situated is surely obliged to situate him- or herself. Some of my biases, the result of class, gender, nation and generation, will doubtless become apparent soon enough. Here I shall simply confess that the title of this book was chosen in homage to Mannheim, whose work aroused my interest in the subject forty years ago, even if I have gradually distanced myself from his approach. The book attempts a social history informed by theory, the 'classical' theories of Emile Durkheim and Max Weber no less than the more recent formulations of Foucault and Bourdieu. Chapters 2 and 3 offer a kind of retrospective sociology of knowledge, chapter 4 offers a geography of knowledge, chapter 5 an anthropology. The sixth chapter discusses the politics of knowledge, the seventh its economics, the eighth adopts a more literary approach, and the coda raises some philosophical questions.

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[45] Ornstein (1913), ix–x; cf. Lux (1991a, 1991b).
[46] Ringer (1990, 1992).

Despite this trespassing into other disciplines, it will be clear enough to readers of this study that it is the work of a historian, essentially a historian of early modern Europe. The chronological limits of this book are the Renaissance and the Enlightenment. Both spatial and temporal boundaries will be transgressed from time to time in order to make comparisons and contrasts, but the book remains a history of knowledge in 'early modern' Europe.

The early modern period will be defined here as the centuries from Gutenberg to Diderot, in other words from the invention of printing with movable type in Germany around the year 1450 to the publication of the *Encyclopédie* from the 1750s onwards. The *Encyclopédie* was a summa of the information available in its time, as well as a vivid illustration of both the politics and the economics of knowledge. As for the links between knowledge and print, they will be discussed more than once in the following pages. Here it may suffice to say that the importance of the new medium was not limited to spreading knowledge more widely and taking relatively private or even secret knowledges (from technical secrets to secrets of state) into the public domain. Print also facilitated the interaction between different knowledges, a recurrent theme in this study. It standardized knowledge by allowing people in different places to read identical texts or examine identical images. It also encouraged scepticism, as chapter 9 will suggest, by allowing the same person to compare and contrast rival and incompatible accounts of the same phenomenon or event.[47]

What is knowledge?

The question, What is knowledge? is almost as difficult to answer as the even more famous question, What is truth? Mannheim has often been criticized for describing categories, values and observations as socially determined without making distinctions between them. We also need to distinguish knowledge from information, 'knowing how' from 'knowing that', and what is explicit from what is taken for granted. For convenience this book will use the term 'information' to refer to what is relatively 'raw', specific and practical, while 'knowledge' denotes what has been 'cooked', processed or systematized by thought. Needless to say, the distinction is only a relative one, since our brains process everything we perceive, but the importance of the elaboration and classification of knowledge is a theme which will recur below (especially in chapter 5).

[47] Eisenstein (1979); Giesecke (1991); Eamon (1994).

What will be discussed in the pages which follow is what early modern people – rather than the present author or his readers – considered to be knowledge. Knowledge of magic, witchcraft, angels and demons is therefore included. Early modern conceptions of knowledge are obviously central to the social history of knowledge and they will be discussed in more detail below. At this point it may be sufficient to note the awareness of different kinds of knowledge enshrined in the distinction between *ars* and *scientia*, for example (closer to 'practice' and 'theory' than to our 'art' and 'science'), or in the use of terms such as 'learning', 'philosophy', 'curiosity' and their equivalents in different European languages. Enthusiasts for new kinds of knowledge, which they described on occasion as 'real knowledge', sometimes dismissed traditional knowledge as empty 'jargon' or useless 'pedantry'. A history of concepts, *Begriffsgeschichte* as it is called in German, is an indispensable part of this enterprise. This history is concerned not only with the rise of new words as an indicator of new interests and attitudes, but also with changes in the meaning of older terms, replacing them in their linguistic fields, examining the social contexts in which they were used and recovering their original associations.[48]

A traditional assumption which I shall try to avoid in what follows is that of intellectual progress, or as it is sometimes called, 'cognitive growth'. Such a concept may be useful insofar as it refers to a whole society, to what different people – the contributors to an encyclopaedia, for instance – know between them. It would be difficult to deny a cumulative element in the history of knowledge in early modern Europe. Reference books multiplied, libraries and encyclopaedias expanded, and more resources were available in each successive century to someone seeking knowledge on a particular topic (chapter 8).

Wisdom, on the other hand, is not cumulative but has to be learned more or less painfully by each individual. Even in the case of knowledge, there was and still is regress as well as progress at the individual level. Increasing specialization in schools and universities over the last century or so in particular has produced students with a much more limited knowledge than before (whether or not decreasing breadth has been compensated by increasing depth). Today, alternative knowledges compete for our attention and each choice has its price. When encyclopaedias are updated, information drops out of them to make room for other things, so that for some purposes it is better to consult the eleventh edition of the *Encyclopaedia Britannica*

[48] Koselleck (1972); Kenny (1998).

(1910–11) rather than the current one. In early modern Europe, a 'knowledge explosion' followed the invention of printing, the great discoveries, the so-called 'Scientific Revolution' and so on. However, this accumulation of knowledge created problems as well as solving problems, another theme which will recur in the pages which follow.

Needless to say, my own knowledge of knowledge is incomplete and it will be necessary to limit this enterprise not only chronologically and geographically but socially as well. The book originated as a series of lectures and it is intended as a reconnaissance of a vast intellectual terrain, an essay rather than an encyclopaedia. The virtual restriction of this book to dominant forms of knowledge deserves a little more in the way of explanation.

The plurality of knowledges

This book is based for the most part on texts which were published in the sixteenth, seventeenth and eighteenth centuries. It will attempt to avoid graphocentrism, by discussing oral knowledge, and even logocentrism, by treating images (including maps) as ways of communicating knowledge and by including illustrations. Material objects, from shells to coins and from stuffed alligators to statues, will also be mentioned from time to time, since they were collected with enthusiasm in this period, classified, and displayed in cabinets or museums.[49] Non-verbal practices – building, cooking, weaving, healing, hunting, cultivating the soil and so on – will also be included in the definition of knowledge. Yet a large question remains. Whose knowledge is the subject of this study?

In early modern Europe, elites often identified knowledge with their knowledge, and they sometimes argued, like Cardinal Richelieu in his *Political Testament*, that knowledge should not be communicated to the people, lest they become discontented with their station in life. The Spanish humanist Luis Vives was relatively unusual in his admission that 'peasants and artisans know nature better than so many philosophers' (*melius agricolae et fabri norunt quam ipsi tanti philosophi*).[50]

Today, following what might be called the 'rehabilitation' of local knowledge and everyday knowledge, it should be obvious that there are 'knowledges' in the plural in every culture and that social history,

[49] Lugli (1983); Impey and Macgregor (1985); Pomian (1987); Findlen (1989, 1994).
[50] Rossi (1962), 15; cf. Roche (1981), part 3; Böhme (1984); Worsley (1997).

like sociology, must be concerned 'with everything that passes for knowledge in society'.[51] One way of distinguishing between knowledges is according to their functions or uses. The sociologist Georges Gurvitch, for example, distinguished seven types of knowledge: perceptual, social, everyday, technical, political, scientific and philosophical.[52]

Another approach, closer to social history, might distinguish between the knowledges produced and transmitted by different social groups. Intellectuals are masters of some kinds of knowledge, but other fields of expertise or 'know-how' are cultivated by such groups as bureaucrats, artisans, peasants, midwives and popular healers. These fields of implicit knowledge have recently attracted some attention from historians, especially in the context of imperialism and the contribution made by indigenous inhabitants to the knowledges which European rulers, cartographers and physicians were claiming as their own.[53]

Most studies of knowledge deal with the knowledge of elites, while studies of popular culture (including my own, dating from 1978) have relatively little to say about its cognitive element, popular or everyday knowledge.[54] In this book too the emphasis, following the sources, will fall on dominant or even 'academic' forms of knowledge, on 'learning' as it was often called in the early modern period. All the same, a serious attempt will be made to place academic knowledge in a wider framework. The competition, conflict and exchange between the intellectual systems of academic elites and what might be called 'alternative knowledges' will be a recurrent theme in this study.[55] The conflicts are particularly clear in the case of medicine, as practised by the 'cunning folk', itinerant healers, Moriscos or women.[56] For a concrete example one might turn to the *Observations diverses* published in 1609 by the Parisian midwife Louise Bourgeois, who described herself as 'the first woman of my trade who has taken pen in hand to describe the knowledge that God has given me'.

If I wanted to cause a sensation, I would claim at this point that the so-called intellectual revolutions of early modern Europe – the Renaissance, the Scientific Revolution and the Enlightenment – were no more than the surfacing into visibility (and more especially into print), of certain kinds of popular or practical knowledge and

[51] Berger and Luckmann (1966), 26.
[52] Gurvitch (1966).
[53] Figueiredo (1984); Bayly (1996); Grove (1996); Mundy (1996); Edney (1997), 68, 76, 81, 98, 125.
[54] Roche (1981).
[55] Potter (1993).
[56] Ballester (1977, 1993); Huisman (1989).

their legitimation by some academic establishments. Such a claim, however exaggerated, would be no more one-sided than the more conventional assumption identifying knowledge with the learning of scholars. The knowledge gathered by Europeans in other continents, for example, was not always the result of the direct observation of nature and society, but depended on local informants (below, chapter 4).

For an example of interactions between scholars and craftsmen one might turn to Renaissance Italy. In early fifteenth-century Florence, for example, the humanist Leonbattista Alberti had frequent conversations with the sculptor Donatello and the engineer Filippo Brunelleschi. Without the help of such experts it would have been difficult for him to write his treatises on painting and architecture. Specialists in the architecture of the Renaissance have discussed the interaction between the craft traditions of master masons and the humanist knowledge of the patrons, who sometimes commissioned their houses with copies of Vitruvius in their hands. Indeed, it is hard to imagine how the text of this ancient Roman treatise on architecture could have been edited and illustrated, as it was in Renaissance Italy, without collaboration of some kind between experts on classical Latin and experts on building. When the text was edited and translated by a Venetian patrician, Daniele Barbaro, in 1556, it was with the help of the architect Palladio, who had been trained as a mason.[57]

In a number of fields, practical men or women as well as scholars had something to contribute to printed knowledge.[58] The humanist Georg Agricola's book on mining (1556) obviously owed a good deal to the oral knowledge of the miners of Joachimsthal, where he made his living as a physician. Montaigne went so far as to argue in his famous essay on cannibals that a simple man, *homme simple et grossier*, might offer a more reliable testimony of his experiences in the New World than *les fines gens*, with their biases and prejudices.

Turning to the humanities, the rise of the discipline of economics (discussed below, 101) was not an invention out of nothing. It involved not only the elaboration of new theories but also the conferring of academic respectability on the practical knowledge of merchants, an originally oral knowledge which came to circulate more and more widely in print in the sixteenth and seventeenth centuries, in treatises such as Sir Josiah Child's *Discourse of Trade* (1665), written by a

[57] Burke (1998c), 34, 175.
[58] Zilsel (1941); Panofsky (1953); Hall (1962); Rossi (1962); Eisenstein (1979).

London merchant who was to become the chairman of the East India Company.

There were similar exchanges between political theory and political practice, even if crossing the boundaries exacted a price. Machiavelli caused an uproar by stating in explicit and theoretical form some rules which men of affairs had sometimes discussed in meetings and rulers had often followed in practice. *The Prince*, a confidential document which Machiavelli had presented to a member of the Medici family in the hope of furthering his career, was published in 1532, a few years after the author's death.[59] Francis Bacon was making a perceptive general point in his *Advancement of Learning* (1605), though he was a little unfair to his predecessor Machiavelli, when he claimed that 'The wisdom touching negotiation or business hath not been hitherto collected into writing.'

Again, the knowledge of painting and its techniques, which came to be known as 'connoisseurship', was an orally transmitted knowledge which began to appear in print in the sixteenth century, notably in Giorgio Vasari's *Lives* of artists, first published in 1550. A reminder of the interactions between theory and practice in this period is preserved in the vocabulary of philosophy. 'Empiricism' is derived from 'empiric', a traditional English term for practitioners of alternative medicine, men and women innocent of theory. In his *Advancement of Learning*, Francis Bacon condemned 'empiric physicians' who knew neither the true causes of an illness nor the true method of curing it, but he was an equally severe critic of scholastic philosophers who deduced their conclusions without paying attention to the everyday world. 'The true way, as yet untried', according to Bacon's *New Organon* (1620), was to follow neither the empiric ant, mindlessly collecting data, nor the scholastic spider, spinning a web from inside itself, but the bee, who both collects and digests. The point was to begin 'from the senses and particulars' and then to rise by stages to general conclusions (Aphorisms xix, xcv). This middle way, discussed in chapter 9 below, is what we now call 'empiricism' and the French *empirisme*, a term coined in 1736 and discussed in the article on the subject in that Baconian enterprise the *Encyclopédie*.

There is a link between Bacon's empiricist epistemology and his belief – shared with Luis Vives, who tried to reform the system of knowledge a century earlier – that even the learned might have something to learn from ordinary people. The Royal Society of London carried on the Baconian tradition and published accounts of the specialized knowledges or secrets of different trades and crafts. The point

[59] Albertini (1955); Gilbert (1965).

was, as the polymath Gottfried Leibniz put it, in a characteristic mixture of German and Latin, 'to join theorists and empirics in a happy marriage' (*Theoricos Empiricis felici connubio zu conjungiren*).

Denis Diderot was another admirer of Bacon in this respect. His concern with the knowledge of artisans as well as *philosophes* is apparent in the *Encyclopédie*, in the article on 'Art' for instance, in which the distinction between the liberal and mechanical arts (below, chapter 5), is described as an unfortunate one because it lowers the status of estimable and useful people. Like the Royal Society, Diderot and his collaborators made craft knowledges public in the *Encyclopédie*, a book which was apparently of use in some practical situations. For example, the article on cannon-founding ('Alésoir') was used by a military adviser to the Ottoman sultan, when manufacturing artillery in the 1770s.[60]

Within the context of exchanges of this kind, this study will concentrate on dominant forms of knowledge, particularly the knowledge possessed by European intellectuals. But who were the intellectuals in early modern Europe? This problem will be discussed in the following chapter.

[60] Proust (1962), 177–232; Wilson (1972), 136.

2

Professing Knowledge: The European Clerisy

Learning . . . a calling . . . endowing us with light to see farther than other men.

Barrow

First come I; my name is Jowett.
There's no knowledge but I know it.
I am Master of this college.
What I don't know isn't knowledge.

H. C. Beeching

This chapter is concerned with the main discoverers, producers and disseminators of knowledge in early modern Europe. These discoverers, producers and disseminators are often known as 'intellectuals'. Karl Mannheim described them as the social groups in every society 'whose special task it is to provide an interpretation of the world for that society'. In a famous phrase, already quoted (5), he called them the 'free-floating intelligentsia', an 'unanchored, relatively classless stratum'.[1]

Continuities and discontinuities

It is often claimed that the intellectual emerged only in mid-nineteenth-century Russia, when the word 'intelligentsia' was coined to refer to the men of letters who were unwilling or unable to find posts in the bureaucracy. Alternatively, the emergence of the group is dated to the end of the nineteenth century, in the course of the French debate over the guilt or innocence of Captain Dreyfus, with the *Manifeste des intellectuels* in the captain's favour.[2] Other historians, notably Jacques Le Goff, speak about intellectuals in the Middle

[1] Mannheim (1936), 137–8.
[2] Pipes (1960); Charle (1990).