

The author “had long been dissatisfied with the prevailing explanations for the intellectual revolutions of early modern times.” She decided to investigate:

What were some of the most important consequences of the shift from script to print? Anticipating a strenuous effort to master a large literature, I began to investigate what had been written on this obviously important subject. To my surprise, I did not find even a small literature available for consultation. No one had yet attempted to survey the consequences of the fifteenth century communications shift.

In this century there has been a communications shift, which is still continuing, and whose consequences are likely to be as important and durable as that of the fifteenth century (from script to print). The telegraph was followed by the telephone, radio and then television. Electronic computers (built out of radio valves, telephone exchange parts and the like) were the next development. Magnetic recording technology (developed for voice and music) was adapted for use by computers, moving from tapes to cards, drums and discs. Telephone lines were used to transfer data and thus to link geographically remote computers. The latest in the technological revolution is the Internet or World Wide Web, CD-ROM, and the beginnings of what are called portable documents.

History is more than a sequence of Kings and Queens, or in our case a list of technological Aces and Jokers. This technology came from somewhere. Its creation appears to be influenced by political, economic and social forces. For example, universities support science. In our case, fundamental contributions of Faraday, Maxwell, Planck, the Curies, Einstein, Rutherford, Heisenberg, Schrödinger, Bohr, Dirac and many others have laid the scientific basis for the present shift from paper to digital or electronic media.

From where then did science arise? Was Newton chance? What effect did science and religion have on each other? How did what we may call early modern Europe emerge from late medieval society? Was it due to the Renaissance? Eisenstein’s book is a carefully considered and well-written discussion of the emergence of a human culture based on printed communication, that began in the late fifteenth century, and its influence on the humanities, on religion and on science. This print culture was something new, just as the film and television culture of today is new. Each has an effect on the human mind.

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**Book review: *The Printing Revolution in Early Modern Europe***

Jonathan Fine

Elizabeth L. Eisenstein, *The Printing Revolution in Early Modern Europe*. ISBN 0 521 44770 4 (paperback) £7.95, \$11.95, 300 + xiv pages, Cambridge University Press (Canto imprint).

This book is an abridgement for the lay reader of a full-scale work written for scholars, the result of a decade of study. It is that rare and valuable thing, a scholarly work accessible and interesting to the educated general reader.<sup>1</sup>

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<sup>1</sup> Originally published in *Baskerville* vol. 5, no. 5 (1995, pages 15–17. Republished with permission.

Before describing the text of this book, some comments about illustrations. They have been well chosen. There are about sixty illustrations, mostly pages from rare books, but sadly they are not indexed. They have reproduced well, and add greatly to the book. For Bibles, there is a page from the Gutenberg Bible compared to a contemporary hand-copied Bible, the so-called wicked Bible of 1631 (which misses the 'not' from the adultery commandment), and the frontispiece and beginning of Genesis from Christopher Plantin's great Antwerp Polyglot Bible of 1571. There is the title page of Galileo's final treatise (printed by the still flourishing Elsevier), and its appearance on the (printed) Vatican index of prohibited books. There are many other useful and illuminating illustrations, including an extract from a pattern book for tailors and dressmakers (Seville, 1588) which made the Spanish fashion "visible through the far-flung Hapsburg empire".

The quotations and incidental facts are also well chosen. Here are two such gems. The hazards of having a famous face are not new to this century. Eisenstein writes:

The difference between the older repeatable image which was stamped on coins and the newer by-product of print is suggested by one of the more celebrated episodes of the French Revolution. The individual features of emperors and kings were not sufficiently detailed when stamped on coins for their faces to be recognized when they travelled incognito. But a portrait engraved on paper money enabled an alert Frenchman to recognize and halt Louis XVI at Varennes.

while to open the Preface she quotes Joseph Ames (1749) who wrote:

I do ingenuously confess that in attempting this history of Printing I have undertaken a task much too great for my abilities the extent of which I did not so well perceive at first.

The book is divided into two parts. The first, "The emergence of print culture in the West", can be thought of as an essay on the differences between the earlier scribal culture and the new print culture. Before print each book was a unique item, and each new copy would have new copyists' errors. It rarely makes sense to talk of an edition of a hand-written book. Printed books come in editions, of hundreds or thousands or beyond. Each copy will be identical, from one to the next, except that printers too can make errors.

Even without the commissioning of new works, the wider circulation of scribal texts is a significant change. For example

as a student at Cracow in the 1480s, the young Copernicus probably found it hard to get a look at a single copy of Ptolemy's *Almagest* — even in a corrupted medieval Latin form. Before he died, he had three different editions at hand. As a fourteen-year-old in Copenhagen in 1560, the young Tycho Brahe could purchase all of Ptolemy's work, including an improved translation of the full *Almagest* made from the Greek.

Perhaps the most important consequence of the shift was the emergence of an expanding republic of letters. The reading public, their booksellers and printers, their authors and illustrators.

As the key figure around whom all arrangements revolved, the master printer himself bridged many worlds. He was responsible for obtaining money, supplies, and labor, while developing complex production schedules, coping with strikes, trying to estimate book markets and lining up learned assistants. He had to keep on good terms with officials, while cultivating talented authors and artists who might bring his firm profit or prestige. In those places where his enterprise prospered and he achieved a position of influence with fellow townsmen, his workshop became a veritable cultural centre attracting local literati and celebrated foreigners, providing both a meeting place and message centre for an expanding cosmopolitan Commonwealth of Learning.

Christopher Plantin, whose activities are briefly discussed, is an outstanding example of a master printer: "After settling in Antwerp and establishing ties with Leiden, Plantin decided to learn Dutch. Never one for wasted effort, he 'placed in piles and in alphabetical order' each new word that he learned. Thus was launched a collaborative venture which resulted in . . . the 'first Dutch dictionary worth its name.'" For more on Plantin's remarkable life and legacy, consult Colin Clair's biography.

The second part of the book is entitled "Interaction with other developments". In it "possible relationships and connections are explored with the aim of providing a basis for some tentative conclusions concerning the effects of the communications shift upon three movements which seem strategic in the shaping of the modern mind."

The first is the Renaissance, which has long been something of a challenge for historians to understand. Eisenstein suggests that it would be productive for historians to “direct attention to something that really did happen, that was obviously of crucial importance, that occurred in the second half of the fifteenth century and at no other time in the history of the West”. This is of course the shift to print culture. Later she writes “early humanists, from Petrarch to Valla, owe their still vital reputation as culture heroes to the prosaic print-made knowledge industry. . . . Earlier scholars had been less fortunate.”

The second is “Western Christendom disrupted”. Protestantism was “the first movement of any kind, religious or secular, to use the new presses for overt propaganda and agitation against an established institution. By pamphleteering directed at arousing popular support and aimed at readers who were unversed in Latin, the reformers unwittingly pioneered as revolutionaries and rabble rousers.” Between 1517 and 1520, we are told, Luther’s thirty publications sold well over 300,000 copies. Even by modern standards this is a considerable achievement.

This book was originally written as a contribution to historical debate. Its main thesis is that the effect of print as an agent of social change has been ignored or underestimated. “One of the mysteries of Reformation history [is] how this proposal for academic disputation [Luther’s theses], written in Latin, could have kindled such enthusiastic support and thereby have such far-reaching impact”, wrote one modern scholar. To dispel this mystery, Eisenstein suggests that we should

instead of jumping directly from church door to public clamor, move more cautiously, a step at a time, looking at the activities of printers, translators, and distributors who acted as agents of change. Probably we ought to pause with particular care over the interval in December 1517 when three separate editions were printed almost simultaneously by printers located in three separate towns.

“On the whole,” the author concludes, “it seems safe to conclude that all the problems associated with the disruption of Western Christendom will become less baffling if we approach them by respecting the order of events and put the advent of printing ahead of the Protestant Revolt.”

The third movement is “The book of nature transformed: printing and the rise of modern science”. As with the Reformation, the author argues

that “the advent of printing ought to be featured more prominently by historians.” This theme is developed mainly with regard to maps and astronomy, the trial of Galileo and the publishing activities of the Royal Society. Copernicus has already been mentioned. Newton was encouraged to publish. Galileo discouraged.

One of the illustrations is of a grandly titled “A description of the whole world” (1606), and another is a printed challenge from Blaeu (1622) to find any errors in his printed sea charts. He wrote, “Whatsoever there is yet resting to be corrected or made better, is as easie to be corrected in the Cardes [charts] that are printed, as in them that are written, which we also are readie to doe at our charge, if any man can by good prooffe shewe us any thing, that is to be corrected in the Cardes that are printed by us.” This is an early example of errors being, if not rewarded, at least corrected without charge.

The author gives many useful examples of the opportunities for (self-)promotion that print provides. We know much about the early history of print from the documents they printed about themselves: “Indeed, their use of title pages entailed a significant reversal of scribal procedures; they put themselves first. Scribal colophons had come last.”

The author cogently argues the importance of print for the creation of accurate maps: “But this kind of checking could not occur until voyagers were provided with uniform maps and encouraged to exchange information with map publishers.” Before print, maps, like books, were usually held in fixed and safe locations. They were much too rare and valuable to be subjected to the hazards of a voyage to foreign parts. Information from merchants was sent back to trained cartographers, but without print this information could not then be sent back out for the use (and checking) by others. The development of maps (and globes) contributed to the European discovery of the rest of the world.

In the conclusion the author writes

This book has stopped short in the age of the wooden handpress. It has barely touched on the industrialization of paper making and the harnessing of iron presses to steam. Nothing has been said about the railway tracks and telegraph wires which linked European capitals in the mid-nineteenth century, or about the Linotype and Monotype machines which went together with mass literacy and tabloid journalism. The typewriter, the telephone, and a vast variety of more recent media have been entirely ignored. Too much territory has been traversed too rapidly as it is. Because

contrary views have been expressed, however, it seems necessary to point out that there are irreversible aspects to the early modern printing revolution. Cumulative processes were set in motion in the mid-fifteenth century, and they have not ceased to gather momentum in the age of the computer printout and the television guide.

And so we are back again in the present, with its own communications shift from paper to electronic media, from print to computer. I have read this book through several times and on each occasion (I am not well educated in history) I get a richer deeper understanding of the present time. I strongly recommend it to anyone who wishes to develop for themselves an understanding of the human and social consequences of the growing move towards electronic publishing and the information superhighway.

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