

The Printing Revolution

On the surface the importance of printing looks like an obvious case. However, once historians become involved the nuances of printing's impact make it a more complex issue. In *The Printing Revolution in Early Modern Europe* Elizabeth Eisenstein postulated that it was the fixed nature of printing that allowed the major revolutions in scientific thinking to take hold. Without the immutable body of printed text, and the ability to create multiple copies of those texts much quicker than scribes or copyists, Copernicus' heavens and Vesalius' anatomy would never have gained a following and thus carried the weight they did. On the basal level, the ability to create and duplicate texts allowed for paradigm shifts that led, in turn, to a revolution in disseminating information.

Marina Frasca-Spada and Nick Jardine argue in *Books and the Sciences in History* that this idea is outdated and overly simplified. They work with the theory that early printers were adept at using and manipulating marketing and distributing techniques of their times. Printers also worked within the contemporaneous ideas of ownership, including ownership of ideas, texts, and procedures. Ann Blair's contribution to the collection, "Annotating and Indexing Natural Philosophy" deals with the indices and the ways of organizing topics within this new medium. Her description of note taking within the margins of books is almost in direct opposition of Eisenstein's standardization idea. Even if texts were standardized, it is impossible for all annotations written within their margins to be.

Blair's research reveals just some of the structures for indexing works. The idiosyncratic notes taken by humanist evolved into the commonplace framework of indexing things that might be of a variety of interest to any reader. From a few words at the beginning for personal use, to long full printed commonplaces, the index allowed for seemingly singular works to reach a broad audience of professionals. Perhaps it was this organizational practice which allowed for some of the first cross disciplinary studies, as well as aiding many burgeoning polymaths?

Blair's mention of indexing segues well into Adrian Johns afterword, "The Past, Present, and Future of the Scientific Book." Johns reveals that many of the arguments against modern technology were used against the early printers. What Blair refers to as indexing or note taking, has now spilled over into online keywords tagged within blogs, articles, even online journals use these tags. Arguments that it will be the end of human memory and not allow scholars the simple ability to stumble upon something while researching something else are things Johns says were all used before. Oral traditions and human memory fared well during and after the advent of the printing press, if *Books and the Sciences in History* can be believed, it will survive the digital age as well.

Eisenstein and the Frasca-Spada/Jardine collected argument goes beyond the standard chicken-and-egg problem. Eisenstein's argument that there was only a single direction influence is a bit simplistic. That work however cannot be completely discounted since it opened up the discipline to new ideas and arguments. The collected essays within *Books and the Sciences in History* reveal a much more complex and nuanced relationship between not only scientists and the world, but scientists and printers, and printers and the world. The more detailed any study into such relationships becomes; the more areas and means of influence will be found. The same will be said for our digital age and its impact on the sciences and the world. That impact, for good or ill, cannot be explained in a simple unidirectional manner a la Eisenstein, so it stands to reason that the place and impact of the earliest printers should not be either.