Digital Humanities Are a Two-Way Street

by Ivan Flis, Evina Steinová, and Paul Wouters

In *The History Manifesto*, Jo Guldi and David Armitage seek a panacea for what they call short-termism—the shrinking chronological focus of historical studies that leads to the over-production of micro-histories—in "new" *longue durée* histories that will rely on big data and on digital humanities.[24] We agree that big data and digital humanities offer new and valuable ways of making history, including the history of science, and their use should be encouraged. Nevertheless, we would like to point out some of the pitfalls of using big data and digital humanities in history writing, especially in history of science.

We would like to stress that digital humanities do not only entail big data. *The History Manifesto* blurs the fact that there are many different kinds of historians. Some historians resort to digital humanities because they wish to tackle the lack of data or the data's disparities, uneven distribution, or low quality. For example, the parchment analysis project at the University of York attempts to identify the species and breed of the animals used in parchment making by means of mass spectrometry; this information will contribute invaluable data about the economy and agriculture of medieval England.[25] The physicist Vito Mocella used new x-ray technology to read the charred papyri from Herculaneum buried by the eruption of Vesuvius.[26]

Big data cannot replace micro-histories, but only complement them. It does not provide a synthesis of the overabundant micro-histories but, rather, a distinct perspective on the historical record that stems from a different methodological basis. Therein also lies its special value for historians.

Digital humanities offer new possibilities to historians of science. However, historians are not the only ones to gain from using digital tools, as Guldi and Armitage note when they compare historians with social scientists. *The History Manifesto* (p. 94) supports Michael Friendly's proposal that historians should become technical experts in time-series analysis in virtually all

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[24] Jo Guldi and David Armitage, *The History Manifesto* (Cambridge: Cambridge Univ. Press, 2014), http://historymanifesto .cambridge.org/, pp. 7–8 (overproduction of micro-histories), 9 (big data), 89–95 (digital humanities). Subsequent references to the manifesto will be given in the text in parentheses.

[25] See https://www.york.ac.uk/news-and-events/news/2014/research/parchment-agriculture-history/; and https://www.york.ac.uk /news-and-events/news/2015/research/pocket-bible-parchment/.

[26] See http://www.nature.com/news/x-rays-reveal-words-in-vesuvius-baked-scrolls-1.16763.

fields.[27] Although we are not sure whether historians should have this rather grand ambition, we do think they have something that might be in even greater demand: historical sensibility. By this we mean an awareness of the historicity of data representations (graphic or otherwise) and an understanding of the context they represent, especially when they relate to social and cultural developments. This is a skill that those who already employ digital tools, but who have not received training in history, may lack. The result may be studies that are impressive at first sight but that cannot withstand critical scrutiny or fall prey to misinterpretation.

The creation of historical maps of science is an example: anyone with access to the data can now visualize the development of citation relationships among documents that are recorded in citation indexes. The inventor of the Science Citation Index, Eugene Garfield, saw his tool as a way to write the history of ideas quantitatively. Since then, a number of tools have been developed that create bibliographies of particular concepts or fields.[28] It is tempting to see these maps as the history of the relevant ideas. However, this would be an alarming narrowing of what it means to write history. Each published article in the citation index is embedded in a rich tapestry of scientific practices, chance events, and informal communications that are not recorded in the literature. Although we think that historians of science should use such tools more often, a citation-based bibliography is only one source, among the myriad of others, used for writing the history of science. If these maps are to inform choices in science management, policy, and teaching they should be enriched with historical knowledge of the scientific practices and institutions that created the cited documents.

If some historians were to become general time-series data specialists, we run the risk of treating digital humanities as a separate subfield, rather than as an auxiliary to historical disciplines. Digital humanities should not be encrusted into a separate body within the history-making profession; nor should digital historians become a new subtype of computer scientist who engage with the digital but have little understanding of the nature of their data. What we should aim for is a minimal level of computer literacy needed for historians to use and evaluate digital tools in their research. The newly founded centers for digital humanities should be a place to offer such training, a safe space for interdisciplinary interaction and for developing ways of complementing historical (or, in general, humanists') methods with the digital. An excellent example of such a measured approach to using digital humanities was published last year in *Isis*, where the exploration of archives on psychological sex research in the twentieth century was complemented by analysis that produced multispecies networks of animals used as research subjects.[29]

With its polemical tone, *The History Manifesto* helps guard against the potential insularity of digital humanities by opening up a discipline-wide discussion about standards and practices for using digital tools in historical research. Historians of science should participate and debate the usage of digital tools as a matter of shared methodological approach with other historians. This will not only open history to digital tools, it will also open computer science and linguistics, as the producers of these methods, to history; it's a two-way street where historical sensibility can improve the tools as well as the interpretations.

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[27] Michael Friendly, "A.-M. Guerry's 'Moral Statistics of France': Challenges for Multivariable Spatial Analysis," *Statistical Science*, 2007, 22:368–399.

[28] Two examples are HistCite, by Eugene Garfield: http://www.garfield.library.upenn.edu/histcomp/; and CitNetExplorer, by CWTS at Leiden University: http://www.citnetexplorer.nl/.

[29] Michael Pettit, Darya Serykh, and Christopher D. Green, "Multispecies Networks: Visualizing the Psychological Research of the Committee for Research in Problems of Sex," *Isis*, 2015, *106*:121–149.

Last, but not least, we should be concerned about a different kind of short-termism than the one outlined by *The History Manifesto*: the short-termism that expects faster, more definitive, and grander results in ever shorter times and at diminishing costs. There is a danger that university administrators will seize on the manifesto (and digital humanities in general) to promote the use of big data so that scholars can produce seemingly more abundant and relevant results, to the detriment of quality. Such an uncritical acceptance of digital tools as the method to end all others for producing supposedly measurable and marketable research should be resisted. In this, historians of science—precisely by virtue of their interest in the development, reception, and propagation of viewpoints on science and scientific methods in society—are natural critics of such misuse of big data and digital humanities.

Let's Make History More Welcoming

by Naomi Oreskes

Much debate over *The History Manifesto* has focused on its call for *longue durée* history and the question of whether its authors have accurately characterized recent work in our field.[30] On my reading of their work, however, the long view is not an end in itself but, rather, a means to the end of making history speak to our contemporary situation and earning historians a larger place at the table of public discourse. As the introduction makes clear, their problematic is "the role of history in contemporary society."[31] Their answer is that it can be a larger and more vital one if we change the way we practice our craft. I tend to agree.

Consider the backdrop of this debate, at least in the United States. In academia, few history departments have of late seen much real growth; many have shrunk. Rightly or wrongly, we feel vulnerable and act defensively: who among us has not felt, at least occasionally if not routinely, that our university administrators view us as superfluous? Some years ago, the Vice Chancellor for Research at my university asked me, "Why do historians have to go to archives?"—as if that were some kind of anachronistic practice in the age of the Internet. A world-famous scientist once told me he thought the value of history of science was "light relief." At best, we are misunderstood; at worst, we are viewed as irrelevant in an academic landscape dominated by applied science, medicine, engineering, economics, and business administration.

In public life in the United States, the situation is little better. It is true, as Deborah Cohen and Peter Mandler have stressed, that history is alive and well in outstanding museums with healthy numbers of visitors. It is also true, as Dan Kevles emphasizes, that several distinguished historians have a significant voice in American public life. Yet the voices of historians are of-

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[30] Deborah Cohen and Peter Mandler, "*The History Manifesto*: A Critique," https://drive.google.com/file/d/0BwfV0JOkw -ehY2NGc1RCOElJVHM/view.

[31] Jo Guldi and David Armitage, *The History Manifesto* (2015), http://historymanifesto.cambridge.org/files/9814/2788/1923 /historymanifesto_5Feb2015.pdf, front matter.