

# Information Society, Domains, and Culture

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In his perceptive study, *Theories of the Information Society*, Frank Webster argues there are various ways of defining what an information society is and how it differs from other kinds of societies.<sup>1</sup> He argues that information societies are defined typically in terms of (1) the introduction of technologies, (2) an economy that is highly dependent on information and information technologies, (3) changes in the nature of work and the number of workers involved with information and information technologies, (4) the emergence of information networks that cut across traditional geographic boundaries and change relations of space and time, or (5) the ever-presence and tangibility of information as a part of the culture.

Webster identifies what he regards to be the leading theorists of the information society. His list includes Michel Aglieta, Jean Baudrillard, Daniel Bell, Manuel Castells, Nicholas Garnham, Anthony Giddens, Jurgen Habermas, David Harvey, Larry Hirschhorn, Alain Lipietz, Michael Piore, Mark Poster, Charles Sabel, Herbert Schiller, and Paul Virilio. What is wrong with this list? It is entirely absent of any names associated with the history of computing or the history of any of the information domains. It includes sociologists, philosophers, economists, cultural and critical theorists, media studies scholars, and people trained in engineering, law, political science, geography, and urban studies. Poster is perhaps the closest to being an historian, but he is much more a critical theorist.

It seems as though there is a role for the historians of computing to provide a richly textured account to each of these five ways of looking at the information society as identified by Webster: technological, economic, occupational, spatial, and cultural. Although there is much impressive scholarship by computer historians, there is little that is broad enough to cover more than a single company or a single country, and many historical studies are much narrower than this. Briefly consider the state of research by historians of computing in each of these five areas.

- *Technological.* There are hundreds of computer historians who are studying information technologies, but most of them are doing so with a narrow focus that does not translate into a general understanding of the information society. The leading exception is James Cortada, who has written a number of histories of technology and management that sweep across societies.<sup>2</sup>
- *Economic.* There has been less writing among the historians of computing about the economic analysis of

the information society. It is more common for studies to focus on the business history of a firm than on the economic history of the industry. Lars Heide, Steven Usselman, and Jeffrey Yost are examples of strong business historians of computing. Cortada has done analyses across industries, and JoAnne Yates has studied one industry (insurance) in some detail.

- *Occupational.* At the occupational level, the studies by computer historians have been more qualitative, such as those by Thomas Haigh and Nathan Ensmenger concerning the contest to build professional status for computer and software workers. There has been little macroeconomic history of the rise of information workers from computer historians. One example of a strong economic historian of computing is Shane Greenstein.
- *Spatial.* Spatial accounts of information society are largely neglected by the computer historians; a notable exception is the work of Greg Downey.
- *Cultural.* The main cultural studies by computer historians tend to be those on Cold War society, such as by Atsushi Akeru and Paul Edwards, or about information rather than information technology or about earlier societies by scholars, such as by Daniel Headrick and Richard John, who are both only on the periphery of the computer history communities. Cortada has again contributed to these cultural studies.

There is more scholarship on these topics by computer historians than can be described here.<sup>3</sup> Nevertheless, the number of computer historians who are writing at the macro level and who are extending their studies to help one to understand the information society through richly textured historical study is small. The point here is to encourage computer historians to go beyond their focused studies and write about the larger meaning of information and information technology in society. This will undoubtedly provide useful complementary analyses to the sociologists, cultural theorists, and other information society theorists mentioned by Webster.

In an earlier Think Piece article, I argued that historians of computing interested in broader perspectives might benefit from the growing literature exploring "information in everyday life."<sup>4</sup> Here, I would like to briefly describe another useful conceptual tool for thinking historically about information: namely, the notion of an information domain.

An information domain is an academic field of study that gives prominence in one way or another to some

notion of information. Like other fields of study, the creation of an information domain involves identifying major issues and themes of study, attaining some general agreement about the boundaries of the field, and developing scholarly mechanisms such as conferences, workshops, journals, book series, and sometimes professional organizations that help it to carry out this intellectual pursuit. Sometimes these information domains are organized around institutions such as libraries (for example, library science and museum studies), sometimes around technologies (such as computer science or computer engineering), and sometimes around fields of application (such as management information science or bioinformatics). There may be other organizing principles as well.

The term “information domain” was introduced to me by my colleague at the University of Texas at Austin, the distinguished historian and archivist David Gracy. Gracy’s definition is similar to but not identical to the one given here. For example, he wrote this in the syllabus for his course on the history of the information domain in Spring 2011:

The Information Domain is my term for the realm of the academy that resulted from the coming together of the four fields: library science, archival science, information science, and preservation/conservation studies in the cultural record environment. As no field is or remains an island unto itself, so other fields have come into the Information Domain, notably information technology.

Because there is yet no strong integration of knowledge from the fields of libraries, archives, museums, and information technologies with other fields that study information domains (in the plural). It is an open question whether there will ever be sufficient integration across these areas to call them a single information domain. Unlike Gracy, I see multiple threads developing coevally and independently, sometimes crossing paths—not Gracy’s pattern of outliers moving into the mainstream studies of libraries, archives, information science, and conservation studies.

In recent years, Gracy has edited *Libraries & the Cultural Record*, a leading journal of library history for more than 40 years. During his years as editor, he expanded the scope of the journal to include the histories of archives, museums, conservation (of physical artifacts that represent information), and information science, although the majority

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of the papers continued to be about library history. This list of information domains corresponds well with the scope of traditional library and information studies as it has been practiced in the United States during the second half of the 20th century. However, with the educational upheaval over the past decade, known as the information school (or iSchool) movement, the field of study of these schools (including many of the traditional library schools) broadened considerably and the center of gravity changed as these iSchools began to study the role of technology in shaping information practice and as technical and social science methods augmented traditional humanities approaches to scholarship. In this new academic environment, the list of traditional information domains (or the breadth of the information domain, if you follow Gracy in believing in a single information domain) needs to be expanded to include computer science, computer engineering, management information science, bioinformatics, and operations research (among perhaps others).

To date, there has been limited crossover between the historians of computing and the historians of information. Only a few scholars—such as Geoffrey Bowker, Colin Burke, Martin Campbell-Kelly, Paul Edwards, Nathan Ensmenger, Thomas Haigh, JoAnne Yates, and myself—cross the boundaries from traditional computing history to this broadened sense of information history. In the United States, the historians of computing congregate around the Society for the History of Technology (SHOT) Special Interest Group in Computers, Information, and Society, while the historians in the iSchools congregate around the Association for Information Science and Technology (ASIS&T, formerly American Society for Information Science and Technology) Special Interest Group in the History and Foundations of Information

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Science, the Library History Round Table of the American Library Association, or the Archival History Round Table of the Society of American Archivists. Only a few pieces of scholarship are currently closely read by both groups.<sup>5</sup>

A few years ago, I became David Gracy's successor as editor of the journal, which has been renamed *Information & Culture: A Journal of History* and given a broader scope to include the historical study of any topic that would be taught or researched in one of these information schools.<sup>6</sup> The editorial board has been expanded to include strong scholars from both computing history and the history of information (including traditional library historians and archival historians). It is hoped that the journal will provide a meeting place or at least a trading zone (in the sense of Peter Galison) for these two communities of scholars.<sup>7</sup>

The main point of this discussion of information domains is to suggest that the historians of computing should become more familiar with the literature on the history of libraries, archives, museums, conservation, and information science and see how they can learn from and integrate this knowledge into their own work. The journal *Information & Culture* is one place where the historians of computing can interact with the historians of the traditional information domains.<sup>8</sup> The *IEEE Annals of the History of Computing* ought to be another.

### References and Notes

1. F. Webster, *Theories of the Information Society*, Routledge, 2002.

2. Perhaps the most important of Cortada's work from this perspective is his three-volume *The Digital Hand*, Oxford Univ. Press, 2003, 2005, and 2007. But also see his *How Societies Embrace Information Technology*, IEEE CS Press and Wiley, 2009; *Making the Information Society*, Pearson, 2001; *Rise of the Knowledge Worker*, Butterworth-Heinemann, 1998; and A.D. Chandler and J. Cortada, *A Nation Transformed by Information*, Oxford Univ. Press, 2003.
3. Moreover, this account is heavily biased toward American scholars as well as scholars who study American history. For a more comprehensive picture of the existing historical literature, see C. Burke, "History of Information Science," *Ann. Rev. of Information Science and Technology*, vol. 41, 2007, pp. 3–53; T. Haigh, "The History of Information Technology," *Ann. Rev. of Information Science and Technology*, vol. 45, 2011, pp. 431–487. There were earlier literature reviews of the history of information science. See, for example, J.H. Shera and D.B. Cleveland, "History and Foundations of Information Science," *Ann. Rev. of Information Science and Technology*, vol. 12, 1977, pp. 249–275; M.K. Buckland and Z. Lee, "History of Information Science," *Ann. Rev. of Information Science and Technology*, vol. 30, 1995, pp. 385–416; A. Black, "Information History," *Ann. Rev. of Information Science and Technology*, vol. 40, 2006, pp. 441–473.
4. W. Aspray, "Computers, Information, and Everyday Life," *IEEE Annals of the History of Computing*, vol. 35, no. 4, 2013, pp. 94–96.
5. For example, see M. Campbell-Kelly, "Victorian Data Processing," *Comm. ACM*, vol. 53, no. 10, 2010, pp. 19–21, and J. Yates, *Control Through Communication: The Rise of System in American Management*, Johns Hopkins Univ. Press, 1993.
6. See W. Aspray, "The History of Information Science and Other Traditional Information Domains: Models for Future Research," *Libraries & the Cultural Record*, vol. 46, no. 2, 2011, pp. 230–248.
7. P. Galison, *Image & Logic: A Material Culture of Microphysics*, Univ. of Chicago Press, 1997.
8. W. Aspray, "The Many Histories of Information," *Information & Culture*, vol. 50, no. 1, 2015, pp. 1–23.

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