COGNITIO RERUM: SOME PERSPECTIVES ON MEMORY, TECHNOLOGY AND THE FUTURE OF HISTORY

MOYSÉS MARCOS AND BENJAMIN C. STORM

Moysés Marcos earned his PhD in History from the University of California, Riverside. His research centres on late Roman historiography and political culture, particularly in the fourth-century empire. Benjamin Storm is an Associate Professor of Psychology at the University of California, Santa Cruz. His research is focused on human memory with an emphasis on the causes and consequences of forgetting.

In studying history, the "understanding of things" (cognitio rerum) is of fundamental importance.[1] For those who produce historical narratives, the advent of scanned and transcribed texts and images on websites has proven a boon in searches for that understanding. The time required to conduct searches for useful references to persons, places and things within academic monographs, journals and other publications has decreased dramatically in the digital age. Now, more and more literary texts are able to be placed in dialogue with one another in studies on the influence and continuity of language within any given society whose literary remains are digitized. For the learner, too, technology in the form of Internet and library catalogue searches has expedited the completion of required assignments and assisted in the necessary understanding of historical actors and events that underlie them. But knowing that something is easily accessible and stored externally, such as in a digital archive or in a file on one's own computer, undoubtedly has decreased interest in and the need for remembering names, dates and even outcomes of events — the facts by which history is written, discussed and understood. Technology thus has had a direct impact on historical awareness.

Technology's relationship with history, however, has not been limited to new modes and mechanisms for accessing archived information. There has also been an advent of new perspectives and methodologies that have influenced how we remember or even

1 The Latin noun *cognitio*, meaning "The act of getting to know (a fact, subject, etc.)" or "comprehension," among other things (*Oxford Latin Dictionary, s.v. cognitio*), is the source of the modern English term cognition, which denotes complex mental and neural processes, and *rerum*, from *res*, at its most basic can mean "things."

conceive of history and how we go about achieving historical understanding. In our view, "History," as a discipline within the Humanities and Social Sciences, is not about seeking "the Truth" with a capital "T" but about seeking small truths, that is, facts, from which a historical image is able to be (re)constructed and then interpreted. From this perspective, history is not the (re)telling of the past exactly as it was and as it unfolded before contemporaries that we completely understand,[2] rather it is a study of historical remains in order to improve our knowledge and understanding of people, products and processes. At best, history can provide only approximations and probabilities of "Truth" regarding the past. Thus, "the future of history" lies with improving those approximations and probabilities and the means by which they are reached.

In the writing and understanding of history, contemporary literary sources have been paramount. And they should continue to serve as the foundation of historical writing and be approached by each one of us free of preconceptions; the use of secondary literature, which offers scholarly interpretations of contemporary sources, can provide a way by which to gauge the range of possible interpretations that these sources can be subjected to. This approach is vital to the development of the skills that are needed to analyze historical remains and sources critically. And improvements on how we understand the orthography, language and syntax of primary source texts and the underlying aims and methods of their authors have improved historical narratives and what we can learn from and about the past.[3]

Historians have long been familiar with qualitative analysis of people, products and processes. Only relatively recently, however, has quantitative analysis been adopted more widely as a method for advancing our knowledge of the ancient world. For example, Keith Hopkins,[4] C. F. Noreña,[5] and E. W. Sauer[6] have all employed a quantitative and interdisciplinary approach to using historical evidence in new and illuminating ways. These scholars have explored and analyzed birth and mortality rates, the circulation, messaging and potency of hard currency, and the function of texts inscribed on specific types of stone columns in the Roman world using approaches that have enhanced historical understanding and so history. The very concept of an interdisciplinary approach is itself a byproduct of technological advances, which will continue to necessitate revisiting and updating approaches to how we view and study history. More often than not, such updating has led to advancements in our understanding of the purpose of products and processes that get us closer to a greater understanding

2 On this view, see a lengthy but illuminating essay of Peter Brunt, *The Fall of the Roman Republic and Related Essays* (Oxford: Oxford University, 1988), 1–92, esp. 87–92.

3 For example, see R. W. Burgess, "History vs. Historiography in Late Antiquity," *Ancient History Bulletin* 4.5 (1990): 116–24 and M. Marcos, "A Tale of Two Commanders: Ammianus Marcellinus on the Campaigns of Constantius II and Julian on the Northern Frontiers," *American Journal of Philology* 136.4 (2015): 669–708.

4 Keith Hopkins, *Death and Renewal*. Sociological Studies in Roman History, Volume 2 (Cambridge: Cambridge University, 1983).

5 C. F. Noreña, *Imperial Ideals in the Roman West: Representation, Circulation, Power* (Cambridge: Cambridge University, 2011).

6 E. W. Sauer, "Milestones and Instability (Mid-Third to Early Fourth Centuries AD)," *Ancient Society* 44 (2014): 257–305.

of the cognition of those people and societies under historical scrutiny. And improved understanding of human cognition in turn can get us to a greater understanding of what we were, what we are, and what we yet might be. Dates and the names of people and places by themselves mean nothing. What matters is their relation to one another and to those individuals and communities that gave them meaning, and why.

One might argue that as the access and flow of information to researchers, learners and consumers of history increases — owing to advances in digital technologies such as the Internet — the need to form or encode memories of that information will decrease.[7] In short, access to information may be used only to fulfill the needs of the moment. The result of this may be, as one might put it, a lessened or more superficial historical awareness, which then may lead to a decrease in the perceived value of the study of history as a worthwhile pursuit. Indeed, the practice of storing facts externally has the potential to alter the nature of expertise fundamentally. The ability to use information rapidly and flexibly *and* to integrate it with other information — processes that are likely to be critical for developing a deeper understanding of history — may largely depend on having information stored in actual minds as opposed to the transactive memory systems[8] or partnerships formed between researchers and digital technologies. We are optimistic, but it remains to be seen, in the undertaking of historical inquiry, the extent to which human intelligence and technology can be utilized or developed in ways that maximize the potential benefits of relying on such partnerships while minimizing the potential costs.

Research has shown that people can become habitually reliant on the Internet[9] and that using the Internet can lead to illusions of knowledge that make people overestimate what they know about a given topic.[10] And because people often select their own sources, they can easily find themselves in "information bubbles" or "echo chambers" where most of the information to which they are exposed confirms their preconceptions. In a world of "fake news" and social bots, it has also become increasingly difficult to ascertain whether a given source can be trusted, and people tend to assume that information is true until proven otherwise.[11] To be sure, even when information is known to come from an untrustworthy source, it can still exert an influence if the identity of that source is eventually forgotten, as it often is. These influences pose dangers that would seem more likely to affect everyday consumers of history than academic researchers, but there is no reason to think that anyone would be completely immune. Indeed, there is substantial

7 B. Sparrow, J. Liu, & D. M. Wegner, "Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips," Science 333 (2011): 776–778.

8 D. Wegner, "Transactive memory: A contemporary analysis of the group mind," *Theories of Group Behavior* (New York: Springer-Verlag, 1986): 185–208.

9 B. C. Storm, S. M. Stone, & A. S. Benjamin, "Using the internet to access information inflates future use of the Internet to access other information," *Memory* 18 (2017): 717–723.

10 M. Fisher, M. K. Goddu, & F. C. Keil, "Searching for explanations: How the Internet inflates estimates of internal knowledge," *Journal of Experimental Psychology: General* 144 (2015): 674–687.

11 D. T. Gilbert., D. S. Krull, & P. S. Malone, "Unbelieving the unbelievable: Some problems in the rejection of false information," *Journal of Personality and Social Psychology* 59 (1990): 601–613.

evidence from the social and cognitive psychology literatures that people can be oblivious to the sources of their knowledge and beliefs.[12]

Considering these potential drawbacks, the future of history, both in terms of individuals and communities, will be profoundly constrained by the ways in which we interact with and use the Internet and other technologies. And yet, on balance, greater access to information and data would seem to be a good thing. Human cognition has been remarkably adaptable in the face of new technologies, consistently developing new types of expertise in response to new types of challenges, and technologies can be developed in ways that harness human cognition more effectively. Moreover, "information bubbles" and "echo chambers" are not new concepts. Historical writing has consisted of varying selections and interpretations of materials and sources, and sometimes subjectively so, since history began as a field of inquiry. In fact, "history" and "evidence" have been subjected to various definitions,[13] and this is likely to continue. In any case, historical materials and sources are now more readily available, and to a broader and more diverse audience.

Ultimately, technologies like the Internet are simply tools; there is nothing inherently positive or negative about them. It is up to us as consumers and researchers of information to design tools and to take advantage of those already available in ways that bring us closer to approximating truths of what was, what is, and what will be. To deny the potential of technologies such as the Internet to advance the study of history is to deny the impact that pen, paper and binding, as technologies for preserving information, have already had. Even if a day arrives when potential historians and researchers are implanted with microchips that provide instantaneous access to the most comprehensive and up-to-date information, that information must still be processed carefully to be understood. And that will not change. Historical inquiry, even if undertaken on a short-term basis, still facilitates cognition, and, we would argue, improvement in the human condition by better understanding the range of possible and acceptable actions within a society. In the end, potential limitations notwithstanding, greater access to information and data should improve human understanding of things (*cognitio rerum*), and thus improve what we know and what we can know from and about "history" and ourselves.

12 A. Koriat, "The feeling of knowing: Some metatheoretical implications for consciousness and control," *Consciousness and Cognition* 9 (2000): 149–171.

13 For some definitions of "history," see R. G. Collingwood, *The Idea of History*, revised ed., edited with an introduction by J. van der Dussen (Oxford: Oxford University, 1994), 7–13 and R. L. Cleve, *History of the West to 1500* (Dubuque: Kendall/Hunt, 2004), 1–3. For a classic and fundamental discussion of historical "evidence," see Keith Hopkins, "Rules of Evidence," *Journal of Roman Studies* 68 (1978): 178–86.