

JONES, Steven E. 2016. *Roberto Busa, S.J., and the Emergence of Humanities Computing: The Priest and the Punched Cards*. New York: Routledge. Pp. 186. ISBN 9781138186774, Hardback \$165.00. ISBN 9781138587250, Paper \$59.95.

In *Roberto Busa, S.J., and the Emergence of Humanities Computing: The Priest and the Punched Cards*, Steven Jones's objective is singular: understanding the first decade of Busa's work will help us understand the emergence of humanities computing in the 1940s. While Father Roberto Busa, mythic founder of Digital Humanities (DH), is the hero of this intellectual investigation, *Roberto Busa, S.J.* is no hagiography. Jones aims to "complicate this myth with history" (3). In five concise but packed chapters, Jones tells the history of institution-sized heft and heritage (the Catholic Church, academia, capitalism) alongside the particular history of a midtown Manhattan meeting in the postwar United States between Busa, an Italian priest and scholar, and Thomas J. Watson, Sr., CEO of IBM — even then one of the top technology companies in the world.

As an origin story, *Roberto Busa, S.J.* begins with a careful definition of DH — careful, because the field in recent years has undergone multiple crises of identity that have been both vitriolic in nature (DH as neoliberal tool: ALLINGTON, BROUILLETTE, and GOLUMBIA 2016) and theoretically productive (DH as hopefully self-reflective: LIU 2016). Acknowledging these debates, Jones asserts that there are many histories (his own work in media studies and video games included) to DH, but he has chosen to piece together a history representing the origins of humanities computing, focusing on ten years of Busa's work from roughly the mid-1940s to the mid-1950s that includes his philological work with St. Thomas Aquinas and the Dead Sea Scrolls and the creation of Busa's Literary Data Processing Center in Gallarte, Italy (arguably the world's first DH center). Such a history, Jones maintains, provides an understanding of the mid-century emergence of humanities computing that gives insight into what Jones (and many of us) believes is a good working definition of DH today "as something more than a merely instrumental or practical application of tools, as a set of institutional arrangements, self-representations, and practices engaging theoretical and methodological questions" (20). This definition forms the heart of the book's approach and inspires its ultimate goal: to paint a picture of how this historic meeting between priest and CEO came to occur is to reconcile a DH much maligned in the 2000s as "merely instrumental"

with a DH as a scholarly reckoning concerned with how we think with and against traditions and technologies.

Jones begins by acknowledging his book's theoretical underpinnings and the scholarly peers with which it is in conversation, including Algorithmic Criticism (RAMSAY 2011), Cybernetics (HAYLES 2010), Information Science (NYHAN and TERRAS 2017), Media Archaeology (EMERSON 2014), and Textual Studies (MCGANN 2004). Jones' methods are primarily informed by material forensics and archival work, and, in order to ground his investigation in the realities of then and now, he visited the many historical sites discussed in this short history, including CAAL (Centro per L'Automazione dell'Analisi Linguistica e Letteraria) and the Literary Data Processing Center in Gallarte, Italy; the Thomas J. Watson Scientific Computing Laboratory at Columbia University; and the IBM World Headquarters in Midtown Manhattan, 57th Street. Jones conducted interviews with Busa's collaborators and students and read letters and other extant papers in archives in Milan, Italy, and at Columbia University, Fordham University, the IBM Corporation Archives, and the North Carolina State Archives. Nevertheless, in his desire to be fully transparent about his primary objectives, Jones asserts, "I'm not a historian" (21). This project is ultimately about DH as an intellectual endeavor.

It is appropriate that this book project was conceived in the drinks line at a DH conference at the University of Nebraska in 2013, a cultivated space representing the inner social workings of what some see as the privileged club that is DH. Indeed, Jones recognizes the inside-joke nature of it all ("a priest walks into the CEO's office") and the book overall acknowledges the priest's personal privileges as a white, Christian, well-educated male with the means and freedoms to travel globally under the auspices of his institutional privileges as an academic and a priest in the Catholic church. After all, DH is a field that depends on resources, both of human labor and materials. Consequently, this is a book concerning textual and material studies in DH and the material under scrutiny is not only the punched-cards and room-sized data-processing machines that Jones outlines in his first and second chapters, but also the institutions and infrastructures that helped to initiate and buoy the projects that then (and now) are at the heart of DH work. Humanists have done considerable work uncovering how institutional infrastructures welcome and deny (or at the very least discourage) particular bodies, histories, perspectives, personas, questions, and, some might say, theoretical critiques. Jones uses this book on Busa and Busa's

work in the postwar global economy to insist that computational work is and always has been deeply political since dangerous “claims of amorality and neutrality” often “serve to justify entanglements with immoral actors and regimes” (35). Accordingly, rigorous DH scholarship reflects a history of interrogating such grave claims.

So — a summary being in order — in chapter one, the priest walks into the CEO’s office in November 1949. In this chapter, Jones foregrounds Busa’s humanities subject matter as what inspired Busa to interrogate politics and technology, starting with Busa’s dissertation “The Thomistic Terminology of Interiority” (1949) and including his plan to create a massive concordance to the thirteenth-century philosophical and theological Latin writings of St. Thomas Aquinas. In this and the next chapter, Jones introduces a theme that continues through the book: humans and machines are entangled in the good and the bad. He troubles the history of IBM’s punch-cards, which became the central technology employed in Busa’s projects, by looking at the IBM subsidiary in Dehomag, Germany, where the technology was used by the Nazis in 1930s to track censuses that may have enabled or “at least made more efficient, the Holocaust” (35). This chapter reminds us that humans rather than punch-cards — a method for controlling machinery that goes back to the eighteenth and nineteenth centuries — are to blame for the atrocities of World War II.

In the second chapter, Jones explores what N. Katherine Hayles would call an “emergent complexity”: in the decade after World War II, there was a broad recognition in the public imaginary that there are feedback and feed-forward loops between human and machine — the two are necessarily interconnected. Jones discusses the IBM SSEC (Selective Sequence Electronic Calculator) as a marker of IBM’s transition from electromechanical punched-card machines to electronics, and as a trope he identifies in IBM and other industry advertising as “the human in the machine” where humans and machines “co-inhabit a shared abstract space of possibility, defined by mutual affordances and constraints, interconnected in a dynamic relationship” (59). An informed understanding of the period of experimentation between the end of the war and the mid 1950s, Jones asserts, “can provide a useful counter to both dystopian and utopian narratives of technology’s ‘rise’ and humanity’s coming self-transcendence (and consequent freedom from responsibility)” (60).

Chapters three through five detail Busa’s DH work, his particular “institutional arrangements, self-representations, and practices engaging theoretical and methodological questions” (20). With chapter three, “The Mother of all Humanities Computing Demos: The First Public Demo of

Busa's and Tasman's Punched-Card Method of 'Literary Data Processing' June 27, 1952", Jones describes this presentation as not only a watershed moment in Busa's work but also as representative of Jones's own definition of DH, since this moment essentialized how Busa had taken the *Index Thomisticus* from general proposal to funded project. Describing precisely the day-to-day of many DH scholars, Jones summarizes Busa's approach to getting his project off the ground: "Any major academic research project, especially interdisciplinary work, depends on the cultivation of a professional social network of potential collaborators, supporters, and peer reviewers. Especially for humanities research, Busa had a little choice but to cultivate the network himself" (87). Indeed, Jones shows that the June 1952 demo is the culmination of a paper trail of letters to local wealthy patrons, religious leaders from the Catholic hierarchy, IBM employees, academics from a variety of fields, and representatives of scholarly organizations such as the American Council of Learned Societies and the Modern Language Association.

Just as important as the guest list that day are the activities, all of which demonstrate "the *heavy* materiality" (94) of work both difficult and time-consuming. This materiality included "paper flow charts, metal accounting machines in the IBM showroom, and the punched-card system with its crucial paper components, generating piles of chad as waste" (96). Jones makes a point here that is neither subtle nor insignificant: DH has at its roots the heavy (often embodied) materiality of institutional and social networks and of resources, including paper, machines, and time. The demo discussed classical texts, but the emphasis was on the process, "on repeated testing, hand-drawn flow charts, experimental punching and handling of punch cards [. . .] on discovering and demonstrating the precise nature of the materiality of the technology involved at every turn" (96). Similarly, chapter four, "Centers of Activity: The Founding of CAAL, the First Literary Data Processing Center in Gallarte, Italy, 1954–1956", discusses how the structure of the first DH center was in many ways reflective of Jesuit culture and nineteenth-century industrialization in Italy, where students were trained to use printing presses and for global missions. It is in part this focus on process and the actual, physical work of computing in the humanities that highlights why Busa and his work are seen as an important prefiguring to DH today.

Significantly, *Roberto Busa, S.J.* concludes with what might be called the deep roots of Busa's humanistic work, his explorations in philology and the metaphysics of presence. If current conversations about DH or Artificial Intelligence are often political and ethically fraught, so too is the

subject of twenty-first-century humanities. In chapter five, “Computing Philology”, Jones reminds us that Busa’s philological pursuits were for him “ultimately a humanistic endeavor” (148). In a piece that Jones cites, Geoffrey Harpham investigates the philology that shaped Busa’s impressions of the world and what meanings we may glean from it. Calling philologists “admirable sages”, Harpham nonetheless argues that they “adduced linguistic evidence in support of racialist theorizing, promulgated learned forms of anti-Semitism, represented as a fact of nature the domination of the weak by the strong, and claimed to deduce from the study of language the superiority of western European culture and its dominant religion, Christianity” (HARPHAM 2009, 50). Indeed, Harpham warns us that “[p]hilology has bequeathed to modern scholarship the conviction that things are explained when their origins have been identified. This assumption commits scholarship to an endless quest, for origins may be construed in any of a number of ways, and every origin has origins of its own” (54). This warning is apropos when we are reading *Roberto Busa, S.J.* and are considering the origin of origins. Origins are not only complicated, they are cultivated, and this Jones makes clear: Father Busa was a pioneer as a man of his times. The work Busa accomplished was afforded by privilege and luck, but also marked and shaped by mistakes, failures, and much hard work. It may be that these origins shaped what became DH or it could be that they simply reflect the work humans (and humanists in particular) generally do, given a time and place in history; in either case, *Roberto Busa, S.J.* is an excellent reminder of the importance of understanding that process of becoming.

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FRIEDRICH, Markus. 2018. *The Birth of the Archive: A History of Knowledge*. Translated by John Noël Dillon. Ann Arbor: University of Michigan Press. Pp. 296. ISBN 9780472130689, Hardback \$75.00.

The Birth of the Archive is a delightfully engaging and erudite monograph. At times it reads like a who-done-it of the documentary evidence world from the late Middle Ages through the Early Modern period. The book begins dramatically with the story of a Parisian break-in at the *Chambre des Comptes* archives in May 1682. The theft was not, however, motivated by the value of the manuscripts, but by the resale of the parchment.

Markus Friedrich has filled the book with such incidents too numerous to mention. There is a parade of kings, religious figures, minor civil servants, and archivists all vying for the right to control, catalogue, and safekeep the written word. As Friedrich notes early on, whoever controls the archive has a singular access to memory and social history, to not only write history but to shape it. One of the joys of this book is Friedrich's ability to traverse centuries, making archival history relevant and offering precedents for today's practice.

What one learns from this impressive volume is just how fragile the documentary record has always been. This fragility is not due simply to the elements, such as fire and water, but to a growing realization in the Early Modern period that the written word is a source of power. King Philip II of France travelled with his archive — even into battle. This was an unfortunate decision when in 1194 his entire baggage train was captured by Richard the Lionheart's troops and carted away, along with the state secrets it held.

The Birth of the Archive is excellent at storytelling: dramatic yet scholarly, and full of detail about the birth of individual archives throughout