Steven E. Jones

Roberto Busa, S.J., and the Emergence of Humanities Computing: The Priest and the Punched Cards. New York: Routledge, 2016. Pp. vi + 186 pp. Hb, \$150.

Roberto Busa (1913–2011) was a Jesuit scholar who spent much of his adult life leading a project to compile a concordance of the works of St. Thomas Aquinas, initially using punched cards and tabulating equipment, later on electronic computers supplied by the IBM Corporation. The 56-volume *Index Thomisticus* was the culmination of that effort; it is now available on the web as a subset of the *Corpus Thomisticum*, at <http://www.corpusthomisticum.org/>. A chronicle of that monumental effort is only part of the reason that Steven E. Jones has written this book. As Jones argues, Busa is regarded as the founder of the discipline of “Humanities Computing,” a precursor of what is now known as “Digital Humanities.” The definition of these terms is fluid, but one major component of the field concerns the use of computers to facilitate the processing and analysis of large quantities of text—analysis that would not be practical if done by hand. Concordances of the Bible had been done prior to the advent of digital computers, but the effort and time required discouraged scholars from providing similar treatments of other texts. Even with state of the art data processing equipment, Busa’s work occupied most of his career. We should also note that although Digital Humanities implies the use of powerful computers, Busa began with punched cards and electromechanical IBM tabulators, whose development went back to Herman Hollerith’s invention of the punched card for the US census of 1890. By the 1960s, Busa was able to use electronic digital computers, including the powerful IBM 7090, but the project was based on punched card technology and remained labor-intensive.

Central to the elevation of Father Busa to this role as a founder of a discipline was his close collaboration with IBM. Jones recounts the “creation myth,” well-known among digital humanities scholars, of a fateful meeting he had in 1949 with Thomas Watson, Sr., the head of the IBM Corporation, at IBM’s world headquarters in midtown Manhattan. According to the myth, that meeting resulted in technical and financial support, and critically, a personal commitment from H. Paul Tasman, a senior engineer at IBM who guided and shaped Busa work in the following years. The author draws on a wealth of primary sources, in Italy and the United States, to show that there is more to the creation of Digital Humanities than this meeting, as one might expect for such a dramatic story. Yet it was a fateful encounter both for the Jesuit scholar and for IBM, which at the time was eager to project its image worldwide as an agent for a peaceful and prosperous world in the face of Cold War anxieties. The Cold War is never far from the narrative—at times Busa solicited support from

Francis Cardinal Spellman, archbishop of New York and an outspoken anti-communist. And the question of whether post-World War II Italy, Busa's home, would elect a communist government was very much a concern of the United States leadership.

With one major exception, the electronic digital computer was invented to "compute"—that is, perform advanced mathematical calculations. Given the limited memory capacities of the early computers, processing text was not practical. The one exception was the British "Colossus," of which several copies were built, whose task was to analyze and assist humans in the decryption of intercepted German radio communications during World War II. Because of restrictions imposed by the British government, the true nature of the "Colossus" was not revealed until the 1970s. We can now understand that although text processing was impractical at first, the potential for textual analysis by computers was strong. Busa may have been the first to recognize this, but he was not alone. Modern computers process all sorts of information: numbers, text, graphics, images, sound. One of the world's most profitable companies, Google, bases its profits on textual searches. Young people around the world are never far from their smartphones, but in spite of the name, they are not using the phones to make phone calls; they are "texting" one another. Jones argues that it is a stretch to say that Father Busa was the founder of Digital Humanities, and it would be a much bigger stretch to connect him to Google and the iPhone. But perhaps not.

In the introductory chapter, Jones mentions that he teaches at a Jesuit university, Loyola University Chicago, although he is not a Catholic. His account of Father Busa's life and work nevertheless shows a deep appreciation for the Jesuits. A collaboration with a computer company may have seemed unusual, but not so the search for knowledge, and the discipline that enabled the project to be completed. The Jesuit vows of poverty, chastity, and obedience meant that Busa had no family obligations, mortgage, or property that would otherwise have hindered his ability to travel extensively, making frequent trips across the Atlantic. As a Jesuit, he was able to find modest but adequate lodging at Jesuit institutions at his destinations, and thus avoid expensive hotel bills. Obedience to the church enabled him never to lose sight of using the computer as a tool for a deeper appreciation of the Catholic faith, not the computer as an end itself. One can find numerous examples of scholars learning how to use a computer to facilitate their work, and then spending the rest of their careers obsessing over the computer and neglecting the reason they got the computer in the first place. That usually happened in the sciences, but occasionally in the humanities as well. (A reader who wishes to pursue this topic further may want to consult the book *Travels in Computerland* [Reading,

MA: Addison-Wesley, 1974], by Ben Ross Schneider, an English professor who tried to create an information bank for the London Stage, 1660–1800, using Digital Equipment Corporation minicomputers.)

This book is well-written and accessible to a general audience. There is little technical jargon. As a computer historian, I might have wished for more technical detail, but technology is not the main thrust of this book. I thoroughly enjoyed reading this book, and I can recommend it to a wide audience.

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