

On the “Maker Turn” in the Humanities

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The move to read big data in the humanities necessitates new forms of reading, new types of interpretation. As we consider macro-level readings of large corpora, visualization is especially helpful. The most effective way to draw meaning from large data sets is through visual forms and patterns. Stephen Ramsay (2011) makes a claim for “the primacy of pattern as the basic hermeneutical function” (xi), meaning the display of visual patterns is a form of interpretation. Rather than “translating” those patterns into textual form, humanists can retain them as evidence of reading. Ramsay maintains that visual forms do indeed constitute a reading since “any reading of a text that is not a recapitulation of that text relies on a heuristic of radical transformation. The critic who endeavors to put forth a ‘reading’ puts forth not the text, but a new text in which the data has been paraphrased, elaborated, selected, truncated, and transduced” (16)—converted into another form.

Now that the maker movement has come to the humanities, and digital fabrication tools and computer numerical control (CNC) machines are potential parts of the humanist’s tool kit, what sorts of things will humanists make? In this chapter, I argue that these tools provide humanists with the means to fashion and trace new forms of evidence of their readings. The kinds of material forms I am imagining are similar to the visual patterns identified by Ramsay, not as two-dimensional diagrams on a printed page, but as three-dimensional physical objects. Humanists may sculpt into material form the visual patterns of humanistic texts. If the goal of interpretation is to unlock meaning, then one approach to making in the humanities is creating physical objects as an interpretive act. These things are not simply aesthetic objects or “pretty pictures.” As art historian Esther Pasztory (2005) observes, “Thinking of things as having cognitive rather than purely visual value is to release them from the low position in which technologies such as writing have placed them” (24). The experience of things often involves pre-linguistic or pre-discursive forms of knowing, where meaning is derived from thinking with



Figure 2.1. *Style in History*, a data visualization of several classic works of history, exhibited at the “Digital Media in a Social World” conference at Ohio State University in 2011. Making interpretive objects like this often means novel types of venues for publication. Author’s photograph.

objects. As I demonstrate in this chapter, making, designing, and experiencing these visual, tactile, and material objects are hermeneutic acts, which afford the kind of inquiry expected in the humanities. Or, to state it another way, creativity is a form of scholarship.

Figure 2.1 depicts *Style in History*, an example of radical transformation. My team in the Harvey Goldberg Center at Ohio State University developed a tool that would identify the parts of speech from any text and color-code that word based on whether it was a noun, verb, adjective, etc. The length of each block is the length of the word in the text. (We literally replaced words with colored blocks.) For this display, we looked at a randomly chosen section of one thousand words from a dozen classic works of history and displayed them side-by-side.

Before I displayed this work at a conference, I shared it with my colleagues in the Department of History to get their reactions and feedback. Many described the work as “creative,” which they meant, and I took, as a compliment. But hiding beneath that compliment was the judgment, voiced by some, that this work was not “scholarship.” In describing it as creative, my colleagues understood this work to be art, perhaps. However, it was not scholarly because it did not conform to prescribed models, defined by writing, by prose, by words on the printed page. I should not have been surprised by this reaction. Indeed, *Style in History* does appear more like an artwork than humanities scholarship: it is non-textual and was designed to be viewed and exhibited rather than read. Yet it also serves as an example of one approach to making in the humanities. While the result resembles an art object, what my team and I created is a humanistic object.

Style in History is the product of my particular approach to digital humanities, a term with ambiguous definition and scope. My belief is that to effectively answer the question, “What are the digital humanities?” people must first answer the question, “What are the humanities?” And that question is not so easily answered. Even with lists of departments and specializations that comprise the humanities, humanists are less certain as to what makes the humanities cohere. “Unlike academic departments,” notes Geoffrey Galt Harpham (2011), “the category of the humanities seems even to humanists themselves a mere administrative convenience, a kind of phantom entity rather than a real principle of identity; and like all things administrative, it is resisted with indifference. The humanities are something like ‘North America,’ a level of organization with neither the urgency of the local nor the grand significance of the global” (21).

The humanities study the human, although one could argue that the social sciences study the human, too. Is there, then, a common method that unifies the humanities such that they are distinguished from other disciplines? Harpham offers a simple and elegant definition: “The scholarly study of documents and artifacts produced by human beings in the past enables us to see the world from different points of view so that we may better understand ourselves” (23). I will amend Harpham’s definition here to state that humanists interpret texts, and the evidence of that reading is a written performance. Humanists, of course, take an expansive view of what is meant by a text, widening that definition and expanding the range of objects to read, all to their benefit.

On the other hand, their performances, their evidence of that reading, remain limited to only a few forms. James Anderson Winn (1998) observes that the humanities “have identified themselves excessively with analytical processes based narrowly on language, thus disassociating themselves from performance in most of its guises” (3). Winn describes the object of humanistic inquiry as a written textual performance. “Our conception of the humanities,” he concludes, “remains largely confined to [as Alexander Pope noted] ‘the pale of Words’” (74). Extending Winn’s observation, the practice of the humanities is also defined by textual performances. Humanists produce written monographs, articles, and papers as their principal forms of scholarly performance, and the representation of their readings and interpretations is almost always written.

The digital humanities are disruptive precisely because evidence of a reading is often displayed in forms other than text and written prose. Consider the use of databases, maps, graphs, and diagrams, for instance.¹ Digital humanists are, in my formulation, those who read and interpret texts with the aid of digital tools; and, importantly, the evidence of their reading is a digitally mediated performance. The screen expands the possibilities for how humanists demonstrate evidence and proves especially valuable as a space for visual representations and visualizations. The screen also affords new options for what humanists can make, beyond what is possible with print.

In 2009, George Mason University invited me to design a work that employed their newly created VideoWall, a 4×4 panel of screens. I designed *syncretism:mashup*, a large-scale collage of text and images. I was interested in exploring the idea of syncretism as a cultural phenomenon and chose images for the display that physically embodied the syncretism of two or more cultural forms. The display was based on the principle of associative linking. I arranged and reconfigured the images in random patterns such that a viewer would encounter different juxtapositions at any given moment. Associative linking involves seeing patterns of similarity in the midst of apparent differences. The visual argument of the piece, therefore, was that seemingly disparate items—from Pokémon and Dangermouse’s *Grey Album* to a McDonald’s menu in India and Australians playing cricket in an Indian league—are conceptually linked. My reading of these texts derives from the associative and analogical connections a viewer draws from their unique experience.

Although the conference organizers devoted a session to this site-specific installation, my idea was to let the display run throughout the conference, allowing participants to view it at their leisure. In displaying *syncretism:mashup* in this fashion, I was commenting on the rhetoric and culture of conference presentations: viewing the piece like an artwork expanded how humanists might share work with colleagues beyond whatever messages that work contains. *syncretism:mashup* was also a statement about how humanists might manufacture alternative, interpretive “things.”



Figure 2.2. *Writing Space*, a site-specific digital installation exhibited at THATCamp 2010. Author’s photograph.

The next year, I was invited back to George Mason to once again design something using the VideoWall (see Figure 2.2). Rather than juxtaposing images, I wanted to explore the idea of the VideoWall as a writing space. One of my interests as a digital humanist is to explore the affordances of the screen beyond what is possible with the printed page. *Writing Space* was a large-scale text collage that was displayed throughout the conference. I was interested in the idea of “reading” as a humanist in public and at a large scale, unencumbered by the limitations of the page or book. The piece consisted of quotations, each concerning the use of grids (like the display itself), commonplace books, text fragments, negative space, collage, or the screen as a writing space. The text fragments appeared and disappeared in a random pattern of juxtaposition, including interesting asymmetrical patterns of negative space. The quotations and their juxtaposition were also self-referential, drawing attention to the installation itself as an interpretive object. The meaning of the piece was thus a feature of the particular moment as well as the particular juxtapositions a viewer might encounter.

Humanists do not have a name (other than “art” or “performance”) for an interpretation or reading that is not written. Thus, pieces such as *Style in History*, *syncretism:mashup*, or *Writing Space* might appear as works of art or design, but they belong in humanities departments. The idea that humanists might use tools to make things may sound counterintuitive; however, humanists already make things: textual things. These things are not usually identified as such, and their material production goes largely unnoticed. The article in a journal, the monograph from a university press, and even the paper read aloud at a conference are all things, just of a certain and very limited kind.² The philosopher Frank Ankersmit (2001) describes the historical representations produced by historians as “narrative substance,” emphasizing the “thingness” of textual objects. On the one hand, there is the past itself, the thing that historians study. “On the other hand,” observes Ankersmit, “there are linguistic things (narrative substances), in terms of which the historian tries to make sense of the past. In other words, one (linguistic) thing is used for understanding another thing (that is part of historical reality)” (138).

Humanists rarely acknowledge the material production of their textual objects. In the prefaces to written texts, they may thank the editors at the press, but they rarely acknowledge those who produce the material form of the text. Humanists like to think of their work as solitary, that the text is the result of the work of a single author. But to produce textual objects requires a team: I am writing these words, and thus I am doing my part in creating this textual object. The editors and reviewers also construct the object, as do those who set up the words for printing, or the coders and programmers who will design the digital version of this text, to say nothing of those who make the paper, who bind the pages, who ship the objects, and so on. The texts humanists produce as evidence of reading are manufactured objects; as Ankersmit concludes, “The narrative substance is a linguistic object that satisfies all the ontological requirements of objectness”

(137). In this formulation, a written text—as evidence of a reading—is an interpretive object.

A humanist using a 3-D printer to fashion a material object reflects a difference in degree rather than a difference in kind. In pointing to an example such as *Style in History*, I seek to expand the definition and practice of interpretive objects. The objects I create as evidence of my reading are non-textual and perhaps even non-discursive objects. When humanists fill pages with words (a design act), they fill them according to conventions.³ Textual objects are frequently based on templates, and the humanist’s act of making text rarely has an interpretive dimension.⁴ That is, the act of making text plays only a small role in the hermeneutic act of evidencing a reading, in that the materials are already known and the form is already given. The “maker turn” expands the range of objects humanists might construct. Since there are few standardized templates, each object—each evidence of a reading—must be imagined anew. Once freed from the printed page, the design of an interpretive object foregrounds the act of making as an important feature of the interpretive act. Design is thus a crucial part of interpretation and making in the humanities.

When humanists expand their definition of the objects they can make, they assume characteristics of designers, where design means “giving form.” Humanists might produce objects like those from the Witness Tree Project at the Rhode Island School of Design (RISD). Using fallen trees provided by the National Park Service, design students study the history that the tree would have “witnessed” and make objects from the wood of the tree that represent the history so witnessed (Somerson and Hermano 61). There are no templates for the designer to follow when making these interpretive objects. Interpretive meaning is instead derived from context and the material itself. “A successful scholarly paper,” observes Daniel Cavicchi, who teaches the Witness Tree Project studio course, “follows a clear sequence to make a persuasive argument. By contrast, a successful studio object often abides by very different principles of layering, suggestion, association, and provocation. John Dewey explained this as the difference between a statement, which one deciphers, and expression, which one experiences” (68–69). The objects produced by the RISD students are derived from humanist form-giving and viewer experience. Cavicchi concludes that “object-making seems at least as well-suited for the practice of history as writing does. The relationship between objects and the past, after all, is a deep one; in history seminars . . . we make history by ‘reading’ the past in old artifacts. In the Witness Tree Project studio, students make history too, only they do so by ‘writing’ the past into new objects. If anything, the Witness Tree Project aligns, to mutual benefit, the realms of creativity and scholarship” (69).

When thinking of non-textual objects as evidence of reading, the first act is to design the form of the object. This act is a little like designing a game board before a game is played. Visualizing form is an important interpretive practice, which is uncommon in humanities teaching, learning, and research. But, for an example from the humanities, consider *FHQIII*. A team I led from Ohio State University and the

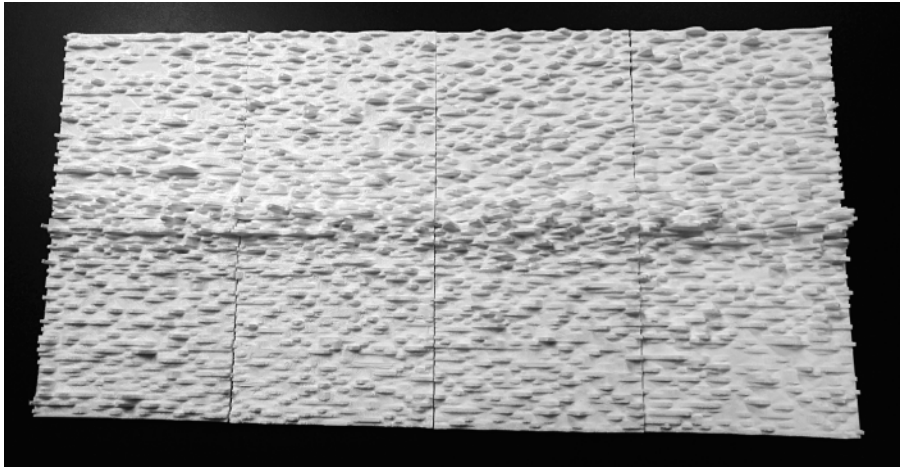


Figure 2.3. *FHQ III*, a 3-D printed data sculpture depicting the top 100 key terms across the entire history of the journal, *The Florida Historical Quarterly*. Exhibited at the Lumos Gallery in Columbus, December 2014. Author's photograph.

University of Central Florida designed a 3-D–printed model of the entire run of the *Florida Historical Quarterly* (*FHQ*) in visual, material, sculptural, and haptic form (see Figure 2.3).⁵

Using the term frequency–inverse document frequency (TF-IDF) statistical method provided by JSTOR's Data for Research application, we machine-read over 1,500 articles, identified the top hundred key terms, and then determined the number of times those key terms appeared per year. This analysis produced a representation of subjects and topics of interest to historians of Florida: Native American culture, the Seminole Wars, and eighteenth- and nineteenth-century history, for instance. However, the analysis did not share what those historians say about particular topics or how they say it. Using a 3-D printer, we created a “sculptural model” of this data set.⁶ This sculpture was displayed at two academic conferences, but was also exhibited at the Lumos Gallery in Columbus, as part of a show on 3-D–printed art.

Arranging the *FHQ* data proved to be a complex issue. We debated how we would represent the key terms. We experimented with grouping or clustering them based on shared characteristics, but we found that some terms might align with more than one group while others might defy clustering with other topics. In the end, we settled on a pattern where the y-axis contained key words in order of frequency, and we numbered those terms by placing the largest key term in the middle of the axis, the second above, the third below the first, the fourth above the second, etc. These were arrayed initially as a two-dimensional graphical plot, revealing a concentrated cluster across the middle of the display that appeared to “fan out” after the 1960s. (We attributed this phenomenon to an editorial shift from a concentration on relatively few topics to an expanded range of topics.) When 3-D–printed, the numbers of key terms per year were shown on the z-axis as “peaks” of varying

height, producing a ridge-like structure that some viewers thought of as a mountain range. Giving form to these data was an interpretive act. How we chose to frame the data was a physical expression of our reading practices. We were, at the same time, revealing and constructing a pattern.

A viewer’s physical orientation to *FHQIII* plays a role in how the data are viewed and understood. The presence of the body and its position relative to the data are integral parts of the experience and interpretation. I have long had a fascination with the idea of placing a viewer in physical proximity to a visualization. What would be the result if a viewer were able to “climb inside” a visualization? Indeed, an early version of *FHQIII* was a 3-D digital model that a viewer could rotate and spin in any direction. Were they to choose, a viewer could also “climb inside” the data and experience it from within. I was interested to watch how viewers interacted with the printed sculpture in comparison with the digital model. Their first impulse (when it was displayed flat on a table) was to crouch down and look at the peaks and valleys from a horizontal perspective. Unlike a flat, two-dimensional graph, a viewer was able to examine the data from a variety of perspectives. Their second impulse, usually expressed with hesitant reservation, was to ask, “Can I touch it?” This gesture made embodiment a clear part of the interpretive experience. With textual objects, embodiment is mostly limited to the movement of the eyes across the page; with *FHQIII*, the desire to touch the data and to shift physical positions relative to it suggests an expanded role for a viewer’s body in the interpretive act.⁷

Using the same statistical techniques as we did with *FHQIII*, the team and I have machine-read the *American Historical Review*. We will similarly display the top 50 key terms across the entire history of the journal, only this object will be a multi-story installation. Our working title is *Leaves of History*, which we are designing for the interior of a rotunda in a building at Ohio State University. We will represent the key terms as rectangular squares (like the leaves of a page), which will hang down from the top of the rotunda. We will construct each leaf by using a CNC router to cut key terms from gator board. A string of leaves will represent a year; the size of the individual leaf will reflect the frequency with which that term appeared in a given year. Taken together, the 3,700 leaves will appear like a tree.

While a viewer will not be able to move inside *Leaves of History*, the size of the installation will nevertheless envelop their body. They will be able to see the data from a variety of perspectives: underneath it when entering the rotunda on the ground floor and looking up, around it as they encircle the display, and at various levels as they walk up the stairs to one of three floors. As with *FHQIII*, *syncretism:mashup*, and *Writing Space*, movement and embodiment will be an integral part of how meaning is made.

Creating humanistic objects means rethinking venues for the display of performances in the humanities. Textual objects have established sites for their presentation and preservation: conferences, journals, and libraries. Where will other types of physical objects be displayed and preserved? Many of my objects have been

displayed at academic conferences, which may continue to be important venues. However, humanities conferences may need to alter the definition of a “session” and value display more than they currently do. For example, think of poster sessions, which do not have the prestige of papers or talks. Perhaps humanistic objects will be displayed, like public art, in more public venues. The library might serve this role as well, as both site for display and agent for preservation. Art museums and galleries might also extend their infrastructures to humanist makers.

Whatever the location may be, humanists should carve out a space for interpretive objects. In the same way they have expanded not only the definition of a text but also the range of texts to read, humanists may approach the maker turn as an occasion to expand their definition of reading and interpretation by treating creativity as a scholarly act.

NOTES

1. For instance, see Moretti.
2. Kant, for instance, talks about books as things, as an *opus* (Latin for “object”). See Wellmon, 127.
3. I note how Nick Sousanian in *Unflattening* challenges this idea—how the comic form subverts the conventions of the printed page. Indeed, he contends that the design of the page represents the shape of our thoughts.
4. Of course, there have been experiments with form; consider the journal *Rethinking History*. But, while the types of narrative historians write might evolve, the conventions of print continue to exert such an influence.
5. See Staley, French, and Ferster.
6. See Staley.
7. See this 3-D visualization from the *New York Times*: <http://www.nytimes.com/interactive/2015/03/19/upshot/3d-yield-curve-economic-growth.html>. While not a physical sculpture, a viewer’s orientation to the data is important for how those data are to be interpreted.

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