

## Finding a Place for Technology

Jennifer L. Lieberman

Literature and Science has become a recognizable and respected field in the academy, and this paper asks whether technology studies holds a place in that (inter)discipline. Before we can locate technology within literature and science scholarship, we might be tempted to ask a further question: if science and technology are intimately related concepts, why pull technology out as a subject that might be studied with literature but separately from science? This question forms the focus of my article.

I aim to demonstrate why we should formalize technology's place in the union between literature and science. My attention to this issue does not imply that I believe technology to be absent from literature and science scholarship. Discussions of real and imagined technologies frequently arise in *Configurations* and *JLS*, whether we are investigating techniques of bodily alteration, histories of media, fossil-fuel burning motors that harm the environment, or the fantastical systems we find in speculative fiction. What appears notably less often in our publications and conference panels are the methodologies of technology studies—and most especially their historical approaches. The question here is not, therefore, whether we are discussing specific technologies or not; it is whether we are analysing technology and culture in the same way that we analyse the arts and artifacts of literature and science. I argue that Literature and Science fosters research in the latter areas of inquiry significantly more than it does in the first. In fact, the Call for Papers for this special double issue of *JLS* and *Configurations* posed a question about the relationships among literature, science, and the arts. The omission of technology from that list is illustrative.

To address this issue, I propose that we establish literature and technology as a sister field to Literature and Science—not to extricate these interdisciplinary fields from one another but rather to allow for the creation of thematic working groups within Literature and Science. To make this case, I will argue, first, that the study of literature and technology has been relatively neglected within Literature and Science. Second, I will demonstrate what we can stand to gain by redressing this issue.

### Does technology fit here at all?

According to the *MLA International Bibliography*, Literature and Science journals do discuss technology with some regularity. The subject search terms *literature* and *technology* call up sixteen articles in *Configurations*, compared to the fifty-nine articles retrieved by the subject search terms *literature* and *science*. Certainly, this bibliography has blind spots. *Configurations* has published more than sixteen pieces that engage with technology. Moreover, this search does not reflect the fact that 5 of the 57 articles published in *JLS* since its inception have focused on technology—including Andrew Lacey's article on the Davy lamp (Vol.9, Issue 2), Gregory Lynall's piece on Jonathan Swift and invention (7.2), Steven McLean's study of Aeronautics (7.2), Verity Hunt's recovery of the "telectroscope" (7.1), and Rachel Hewitt's discussion of Wordsworth and the telescope in the journal's inaugural issue (1.1). Still, the ratio 16:59 rings true—and this ratio would be significantly lower for works that engage with technological history rather than presentist or futurist work in new media or post-humanism.

I posit two partial explanations for this state of affairs. First, those among us who adopt historicist methodologies inherit a disciplinary division, since the history of science and the history of technology are organised in separate professional societies. Scholars who belong to the international Society for the History of Technology (or SHOT) have clear anecdotal reasons for this disjuncture. The founder of this society, Melvin Kranzberg, famously asked if technology studies could be included in the History of Science Society. When his request was denied, he started a new academic society.

As a result of this divide, the history of science (with its professional meeting, HSS, and its related journal, *Isis*) is studied independently from the history of technology (with its professional meeting, SHOT, and its related journal *Technology and Culture*). This disciplinary structure inflects interdisciplinary practices: when historically minded scholars aspire to study literature and technology, they tend to cite more work from SHOT scholars than from HSS scholars. Literature and Science is a younger field than the history of science or technology; *Isis* was first released in 1912 and the first instalment of *Technology and Culture* appeared in 1959, while the first issue of *Configurations* came out in 1993 and the first of *JLS* in 2008. Thus, although scholars of literature and science have been more welcoming to technology studies than HSS has been historically, we still inherit that fractured tradition.

Beyond the intersections between these historical societies and our own, I propose that science has been studied with literature more frequently because it is associated with discursive practices, while technology is associated with material culture. Concomitantly, early students of literature and science such as Aldous Huxley found it more difficult to imagine studying technology together with literature. In his 1963 study *Literature and Science*, he notes that little poetry had been written about the labour-saving machine, but he recognizes that the "social, political, and economic," and the personal, cultural, "philosophical and religious" ramifications of technology might interest the literary scholar (44).

Today, we no longer believe that the study of literature and technology would mean, simply, studying a poem about a device. But the idea that science and literature could be studied together because both are discursive has remained influential for generations. Richard Grusin noted that Literature and Science has roots in the now-contested "poststructuralist axiom that everything is a text" (349). Writing in 1995, he argued that commendable scholarship founded in this intellectual tradition was marked by an "unwillingness to privilege either the literary or the scientific" (351). This symmetrical approach was significantly beneficial to our discipline, because it helped to break down the presumed barriers between the "two cultures" of literature and science. However, our field's historical emphasis on textuality may have also rendered technology a more difficult concept to grapple with than science. Interestingly, one of the issues of *Configurations* that most holistically addressed technology studies also included a fascinating debate about the "tension between the discursive and the material" (Lenoir 374).

### **The Benefits of Studying Literature and Technology**

The generative nature of such debates reveals why literature and technology should be studied together more consistently and intentionally within Literature and Science. Scholars who continue to use text-based methods of analysis aspire to approach literature and technology symmetrically, in the way that scholars have scrutinized and continue to scrutinize literature and science. Tim Armstrong, Leo Marx, Mark Seltzer,

and Cecelia Tichi have not published in *Configurations* or *JLS*, but they have blazed this trail of study by reading literature and technology in conversation with one another. More recently, Kevin LaGrandeur (who also has not yet published in these journals) has examined material technological culture and discourses about the master/slave relationship in his book *Androids and Intelligent Networks in Early Modern Culture* (2013). Using a similar methodology but focusing on rather different subject matter, Colin Milburn—who is a contributor to *Configurations*—has interrogated video games alongside technical and scientific discourses to chronicle the influential transdisciplinary fantasy that the future could be programmed in his book *Mondo Nano* (2015). With Ronald R. Kline, I have examined how Nikola Tesla and a cadre of *fin de siècle* utopians crafted an earlier fantasy that the future could be wirelessly electrified. And, in my own book, *Power Lines* (2017), I have argued that twenty-first century literary historians tend to discuss technology in a fallacious way, organizing disparate inventions together and ascribing them agency—even when we discuss historical actors who did not use the word technology. Although I did not know it at the time, I used the concept “technological fallacy” in a similar manner to Grusin’s 1994 *Configurations* article, “What is an Electronic Author?” In the same book, I also have demonstrated that metonymy plays a central role in the way that we construe electricity and technology metonymically. I argued that:

when the word *electricity* evokes the components that users see and control—the light you turned on, the power whirring through your devices—it functions as a metonym. Even if the word calls up transformers or power lines, it remains unlikely to elicit an image of the people and artifacts whose actions created, installed, and maintained those apparatuses. Metonymy thus . . . erases the fact that we regularly rely on people and artifacts we rarely (if ever) see; it accentuates only the parts of the bewildering whole that foster a sense of individual control. (Lieberman 214)

By understanding how metonymy structures the way that Americans conceptualize specific technologies and the concept *technology* more broadly, I propose that we can read technology as literature—and that we can understand literature as an actant that inflects the social meanings of technology. To posit an imperfect analogy, I suggest that science:metaphor::technology:metonymy. Perhaps, then, the study of metonymy in technological culture could become as productive a methodology as the study of metaphor in science.

Other approaches to the study of literature and technology are also emerging—though these studies are not necessarily appearing in the pages of *Configurations* or *JLS* at this time. Rosalind Williams does not attend SLSA or publish in its related journals, but her book *The Triumph of Human Empire* (2013) combines biography with philosophy in its study of literature and technology. Shortly after she published this book, she won SHOT’s lifetime achievement Leonardo DaVinci medal, indicating this professional society’s investment in her interdisciplinary approach. Meanwhile, Mark Victor Hansen has used the study of literature and technology to raise questions about methodologies that we may take for granted: he challenged the prominence of representationalism in literature and science studies and advocated for an embodied approach to the study of technology. Still other scholars, including but not limited to N. Katherine Hayles, Laura Otis, Melissa Littlefield, and Cathy Waldby and Susan Merrill

Squier, have written about technology as an implicit or explicit part of the study of literature and science.

Clearly, important work is being done in this area. Yet many of us who study literature and technology wander between conferences and journals searching for an intellectual home. We might publish the odd article in *Modern Language Quarterly* or *American Studies Journal* or *Configurations* or *JLS* or *Technology and Culture*; we might alternate the conferences we attend, working assiduously to appeal to multiple audiences. This dissemination of ideas can be useful to a certain extent—but it can also impede us from developing our own projects, finding each other's work, locating would-be mentors, or recognizing the permeable boundaries of our emerging interdisciplinary fields.

### Conclusion

If we wish to cultivate active intellectual communities with shared interests under the usefully flexible banner of Literature and Science, we should build that desire into our institutions. Literature and technology is only one area that might benefit from such a change. Literature and Science academic societies could follow SHOT's model and adopt an optional working group system, where like-minded scholars may elect to enter into subgroups. SLSA, for example, already has a number of de facto affinity groups that could easily be formalized, including literature and technology, as well as environmental studies, animal studies, new media studies, and science fiction studies to name only a few.

This strategy would serve to strengthen Literature and Science, too. Can we imagine literature without technologies of communication, or technology without blueprints, narratives, and patents? Can we imagine studying literature and science without also thinking about the apparatuses used by scientific practitioners? By reserving space for purposeful and ongoing conversations about technology studies, we can begin to develop a more coherent corpus of work in this subfield, and, in turn, we can salubriously influence the future of Literature and Science. As I have shown, scholars from various disciplines—including Cultural Studies, the History of Technology, and Literature and Science—have produced important work about literature and technology. Still, we could do more to amplify the signal of these efforts. If we do not set aside space for discussing technology more deliberately, I fear that a good amount of work in this area will remain in journals that are still organized by nation and chronology—unsynthesized by the disconnected scholars who should be working together on the questions concerning technology and literature today.

## Works Cited

- Armstrong, Tim. *Modernism, Technology, and the Body: A Cultural Study*. Cambridge UP, 1998.
- Grusin, Richard. "Introduction: Special Cluster: New American Studies in Science and Technology: Essays in Cultural Historicism." *Configurations*, vol. 3, no. 3, 1995, pp. 349-351.
- . "What is an Electronic Author? Theory and the Technological Fallacy." *Configurations*, vol. 2, no. 3, 1994, pp. 469-483.
- Hansen, Mark V. *Embodying Technesis: Technology Beyond Writing*. U of Michigan P, 2000.
- Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. U of Chicago P, 1999.
- Hewitt, Rachel. "'Eyes to the Blind': Telescopes, Theodolites, and Failing Eyesight in Wordsworth's Landscape Poetry." *JLS*, vol. 1, no. 1, 2008, pp. 5-23.
- Huxley, Aldous. *Literature and Science*. 1963. Oxbow Press, 1991.
- Hunt, Verity. "Electric Leisure: Late Nineteenth-Century Dreams of Remote Viewing by 'Telectroscope.'" *JLS*, vol. 7, no. 1, 2014, pp. 55-76.
- Jasanoff, Sheila and Sang-Hyun Kim. "Containing the Atom: Sociotechnical Imaginaries and Nuclear Power in the United States and South Korea." *Minerva*, vol. 47, June 2009, pp. 119-146.
- Jasanoff, Sheila. "Future Imperfect: Science, Technology, and the Imaginations of Modernity." *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power*, edited by Sheila Jasanoff and Sang-Hyun Kim, U of Chicago P, 2015, pp. 1-33.
- Kaplan, Ann, and Susan M. Squier, editors. *Playing Dolly: Technocultural Figurations, Fantasies, and Fictions of Assisted Reproduction*. Rutgers UP, 1999.
- Lacey, Andrew. "Rethinking the Distribution of Cultural Capital in the 'Safety Lamp Controversy': Davy vs Stephenson in Letters to the Newcastle Press, 1816-17." *JLS*, vol. 9, no. 2, 2016 pp. 1-18.
- LaGrandeur, Kevin. *Androids and Intelligent Networks in Early Modern Literature and Culture: Artificial Slaves*. Routledge, 2013.
- Lenoir, Timothy. "Makeover: Writing the Body into the Posthuman Technoscape. Part Two: Corporeal Axiomatics." *Configurations*, vol. 10, no. 2, 2002, pp. 373-385.
- Lieberman, Jennifer L. *Power Lines: Electricity in American Life and Letters, 1882-1952*. MIT Press, 2017.
- Lieberman, Jennifer L., and Ronald Kline. "Dream of an Unfettered Electrical Future: Nikola Tesla, the Electrical Utopian Novel, and an Alternative American Sociotechnical Imaginary." *Configurations* vol. 25, no. 1, 2017, pp. 1-27.
- Littlefield, Melissa M. "Constructing the Organ of Deceit: The Rhetoric of fMRI and Brain Fingerprinting in Post-9/11 America." *Science, Technology & Human Values*, vol. 34, 2009, pp. 365-392.
- Lynall, Gregory. "Scriblerian Projections of Longitude: Arbuthnot, Swift, and the Agency of Satire in a Culture of Invention." *JLS*, vol. 7, no. 2, 2014, pp. 1-18.
- Marx, Leo. *The Machine in the Garden: Technology and the Pastoral Ideal in America*. Oxford UP, 1964.
- . *The Pilot and the Passenger: Essays on Literature, Technology, and Culture in the United States*. Oxford UP, 1988.

- McLean, Steven. "Revolution as an Angel from the Sky: George Griffith's Aeronautical Speculation." *JLS*, vol. 7, no. 2, 2014, pp. 37-61.
- Milburn, Colin. *Mondo Nano: Fun and Games in the World of Digital Matter*. Duke UP, 2015.
- Otis, Laura. "The Metaphoric Circuit: Organic and Technological Communication in the Nineteenth Century." *Journal of the History of Ideas*, vol. 63, no.1, 2002, pp. 105-128.
- Seltzer, Mark. *Bodies and Machines*. Routledge, 1992.
- Tichi, Cecilia. *Shifting Gears: Technology, Literature, and Culture in Modernist America*. U of North Carolina P, 1987.
- Waldby, Cathy and Susan Merrill Squier. "Ontogeny, Ontology, and Phylogeny: Embryonic Life and Stem Cell Technologies." *Configurations*, vol. 22, no.2, 2003, pp. 27-46.
- Williams, Rosalind. *Notes on the Underground: An Essay on Technology, Society, and the Imagination*. MIT Press, 2008.
- . *The Triumph of Human Empire*. U of Chicago P, 2013.