

Recollecting *La Technique*: Industrial Heritage Sites and the Rhetoric of Technology

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Submitted in Partial Fulfillment of the Requirements
for the Degree of

DOCTOR OF PHILOSOPHY

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[August 2019]
Submitted July 2019

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ACKNOWLEDGMENT

I believe every graduate student who, at long last, sits down to write the acknowledgment section of their dissertation draws a bit of a blank. Hallelujah! We've entered the promised land. Now, what to write? Entering the same situation, I found myself furiously flipping through departmental dissertations from years past, looking for some hint of direction. Confronted with page after page of prose, I soon fell into despair. Visions of special occasion speeches I once taught in Introduction to Public Speaking flashed before my eyes.

Oh, God.

They're not all just going to say "thank you" for ten pages straight, are they? Is an acknowledgment section just a bad Oscars acceptance speech masquerading in Ph.D. robes?

Perhaps.

To break the mold, I want to quote a book dedication that I read years ago. Penned by E.L. Magoon—a nineteenth-century rhetorician and fellow lover of history—the dedication can be found in his *Orators of the American Revolution*. It's been stuck in my mind since I first read it.

"To students who are not drones, Christians who are not bigots, and citizens who are not demagogues, this book is respectfully inscribed."

Grandiose for a dedication though it may be, I believe its sentiment is worthwhile. Rather than drone on thanking every individual who helped me make it through graduate school in excruciating detail, I'd like to compose a collective acknowledgment to you all because without you as a group, none of this would be possible. You all know who you are. It is because of you that I've learned to not drone about, following academic rules and expectations with no understanding of why they exist. It is because of you that I've learned to cultivate my own morals and beliefs while respecting others' morals and beliefs. It is because of you that I've learned to use my rhetorical skills to teach

and not to provoke. Without you, I wouldn't be the person I am today, and without being the person I am today, this dissertation would not exist.

Thank you.

I look forward to many years of continuing friendship with you all, and I will strive to be as good of a mentor for my own students as you have been for me.

ABSTRACT

Industrial heritage sites are locations that exemplify both public memory and the rhetoric of technology. In this dissertation, I interpret three examples of industrial heritage sites to identify and characterize their common rhetorical features. Using Lowell National Historical Park, I identify how industrial heritage sites root their rhetoric in the technological sublime. Using the National Museum of Industrial History, I describe how industrial heritage sites invite their guests to orient toward workers' experiences using textual, visual, and experiential displays. Finally, using Thomas Edison National Historical Park, I identify how industrial heritage sites situate sublime technology and guests-as-workers within a technocratic, national scene. With these three features considered, I then argue that industrial heritage sites, and thus the rhetoric of technology they invoke, can be understood as manifestations of what Jacques Ellul terms *la technique*. I conclude by suggesting an alternative way to recollect the technological past that draws upon virtue ethics.

Prologue: At the Confluence of Memory and Technology

“The most remarkable trend of modern thought . . . is an appreciation of the work done by those who have gone before. During this busy age of specialties in every profession, the active thinking men that can spare the time from bread-winning are engaged more or less in looking backward. Retrospection is surely the watchword of the modern philosopher. . . . In the world of applied science, no less than the domain of ideas, we must reverse our mental telescopes, if we would measure the glory of human achievement.”

John Elfrith Watkins, *The Beginnings of Engineering*, read before the American Society of Civil Engineers.¹

Memory and Technology

These words, spoken and written by John Elfrith Watkins in 1891, were composed shortly before he became curator of mechanical technology at the National Museum in Washington D.C. Trained as an engineer and a one-time employee of the Pennsylvania Railroad, Watkins took more of an interest in history than most engineers of his time.² As his sentiment in *The Beginnings of Engineering* shows, he was a firm believer in the ability of past technical achievements to inspire the future. Watkins worked hard during his time at the National Museum to legitimate the worth of putting technical artifacts on display for the public. At its core, the collection that Watkins drew together portrayed “an inevitable upward march from trial and error empiricism to an ever-increasing application of scientific principles,” thus providing “an organizational framework for reconstructing the chain of events linking past to present.”³ This type of teleological approach to the organization of technical artifacts strongly influenced Watkins’ curatorial heirs, who also arrived with engineering backgrounds and corporate connections. The most notable of these heirs is Carl W. Mitman. Mitman’s goal was to convince the Smithsonian Board of Regents to expand the mechanical technology curatorship into a standalone National Museum of Engineering and Industry. His proposal’s many supporters hoped that such a museum would serve not only as a proclamation of the United States’ post-

WWI industrial strength but also as a “training ground for future engineers” in which “the nation’s developing commercial and trade network” would provide the basis for display.⁴ In short, the museum would use artifacts from the nation’s industrial past as a map with which to navigate its future.

While Mitman’s dream of a National Museum of Engineering and Industry never came to fruition—derailed by financial restrictions and an exceedingly grand vision—today a range of industrial heritage sites that exhibit technologies from the nation’s past are scattered across the United States, fulfilling the same essential functions that Mitman envisioned during the 1930s. Yearly, these sites are visited by countless thousands of guests—among them school children, aspiring engineers, and those who generally wish to learn more about the United States’ technological heritage. Administrated by the National Park Service, the Smithsonian, a variety of state and local agencies, and many private organizations, these sites demonstrate that the American public perceives the industrial past as something worthy of contemplation and preservation. The powerful reach of technology in the modern United States is also discernable here, as well as the nation’s propensity to look to its past when trying to understand the present and determine the future.

A poignant reminder of recollected technologies’ power over the American consciousness is observable in the most recent election. In the months before November 2016, politicians jockeying for their chance at presidential power constantly invoked positive recollections of the technological past, drawing upon beliefs that large, technical systems and the labor associated with them possessed the power to reverse the nation’s economic misfortune. Then presidential candidate Donald J. Trump’s campaign slogan “Make America Great Again” is perhaps the best representation of how longing for an industrial past impacts political life.

Trump's pedaling of this slogan at struggling factories, mines, and other industrial sites across the country demonstrates how recollection of past industrial and technological prowess can impact policies and beliefs in the present. Inevitably, the logic goes, following the blueprint of successful technological planning in the past will lead to similar success in the present. It is suggested that a factory or coal mine brought back into production will necessarily ensure a good life for all involved. While politicians like Trump are certainly not the gatekeepers of technological recollection, the rhetoric they release onto the political stage *is* rooted in and reinforced by the institutions that present industrial history to the public. Thus, national institutions of memory like the Smithsonian Institute, the National Park Service, and their employees, which play significant roles in preserving the nation's industrial past, possess the ability to enable and resist national discourses that draw upon industrial history. The recollections these gatekeepers promote intertwine with other discourses—political or otherwise—manifesting in a spectrum of beliefs and practices, all of which inevitably are rooted in our collective understanding of the technological past.

Often, the public's first interactions with official memories of the technological past takes place at industrial heritage sites. Given their goal to recollect the past, the aspects of the past that they recollect, and this recollections impact on the present, industrial heritage sites sit at the confluence of two powerful phenomena—both of which have an impact on the character of American life: technology and public memory. Industrial heritage sites' position at this confluence makes them important cultural institutions worthy of analysis. More than simple musings about the nation's industrial past, recollections of the United States' industrial history that take place at its many industrial heritage sites are part and parcel of the nation's *collective memory*. The work of Maurice Halbwachs—the now well-known theorist of the notion of

collective memory—shows how these recollections work in at least two ways. First, industrial recollections can come to influence social relations by impacting how individuals identify, interact with their families, and position themselves and their families within society.⁵ In this role, they might see a family identify as steelworkers and, as a result, influence that family to associate closely with other families that hold values associated with being a steelworker, or to relocate to a region traditionally associated with the trade. Second, industrial recollections impact technical and organizational activity insofar that they teach and root that activity in recollections of the past.⁶ Thus, the traditional activities performed in a line of work, how those individuals and groups perform those activities, and what an efficiently completed job looks like can be influenced by how we recollect similar activity from the past. In both scenarios, the recollection of the nation’s industrial past provides a framework of memory that helps us both “locate ourselves within the social framework,” orient ourselves, and pass judgment in an increasingly technological and industrial world.⁷ The potential of frameworks of memory rooted in industrial heritage to impact identity and technical practices lends credence to Mitman’s hope that such sites could provide guidance for the public about the origin of the United States’ technological know-how and the future paths it might follow.

William C. Kurlinkus’ *Nostalgic Design: Rhetoric, Memory, and Democratizing Technology* lends credence to the idea that how technology is recollected can impact and guide the present. Here, Kurlinkus argues that nostalgia for past technological designs can become “a force for inclusive innovation” if it is used as “a tool for structuring conversations about inclusivity for those who seek truly human centered designs.”⁸ In this view, the way in which the public recollects a technology can be used as a guide toward designing future products that they will readily accept. “Understanding nostalgia as not only a love of the past that halts progress but

also as a resource for designers to listen carefully to the losses and longings of citizens who have been excluded from innovation,” Kurlinkus argues, “affords designers a chance to think outside themselves for lost values [and] resources.”⁹ Ultimately, this line of thought demonstrates how the manner in which we remember technology holds power over the types of technologies and designs that we use in the present. In many ways, Kurlinkus’ argument is a modern echo of Mitman’s hope that collective memories of technology can guide the present and further reinforces the need to attentively consider sites of places of public memory that concern technology like industrial heritage sites.

Compounding the importance of industrial heritage as a component of the United States’ collective memory is the rhetorical nature of both. Rhetoric, of course, is a far-reaching subject that is variously associated with persuasion, discourse, identity, materiality, design, myth, narrative and any combination of these therein. At its core, however, rhetoric can be understood as *architectonic*—responsible for the organization of human thought and necessitating creative manifestation of what the public views as true to effect change.¹⁰ The form that rhetoric takes—and the human interests involved in encouraging that form—exudes a powerful influence on public thought and praxis. Memory’s status as rhetorical is at least as old as rhetoric itself, with the oft-told story of Simonides’ ill-fated dinner party rooting it firmly in the same Greek soil from which rhetoric sprouted. More contemporary takes on the rhetorical nature of memory color it as a complex, multifaceted phenomenon that intimately connects with public life. Of this, Greg Dickinson, Carole Blair, and Brian Ott provide probably the most thorough description, arguing that when it is considered rhetorical, we can assume that “1) Memory is activated by present concerns, issues or anxieties; 2) memory narrates shared identities, constructing senses of communal belonging; 3) affect animates memory; 4) memory is partial, partisan, and thus often

contested; 5) memory relies on material/or symbolic supports; and 6) memory has a history.”¹¹ Similarly, Kathryn Lafrenz Samuels shows that heritage broadly—and industrial heritage specifically—is rhetorical because of its capacity to mobilize the past in the present, allowing it to become “a standpoint, a performance, a metaphor, an ironic juxtaposition, an alternative vision, or a competing narrative” in a range of social, political, and economic settings.¹² In short, the rhetorical nature of collective memory and industrial heritage, in conjunction with their ability to impact technical activity and identity in industrial settings, suggests at least one avenue through which rhetoric can impact social practices that surround technology.

The rhetorical nature of collective memory and industrial heritage make industrially oriented places of public memory—like Mitman’s proposed National Museum of Engineering and Industry—locations where recollections of the industrial past impact the technological present. This connection indicates the role that public memory itself plays in the rhetoric of technology, as this type of rhetoric is that which “accompanies technology and makes it possible—the rhetoric that makes technology fit in the world and the world fit in technology.”¹³ Because collective memory bears upon identity and technical activity, it is reasonable to assume that the form that it takes—what Halbwachs terms its “framework”—plays a role in how the public perceives its relationship with industrialism and how the technologies of industrialism are designed and used. In this view, the intersection of rhetorically recollected memories about the United States’ industrial past with contemporary anxieties, identity, the built environment, affective environments, and political concerns suggests to those who encounter that intersection particular beliefs and actions associated with industrialism. Moreover, because these suggested beliefs are claimed as heritage, and thus have intrinsic cultural value, it is easy to overlook their rhetorical selection and rhetorical ability to organize how we understand industrialism.¹⁴ In short,

it is easy to come to view the lessons imparted by industrial heritage sites as historical facts rather than rhetorical creations.

Dissertation Goals and Chapter Layout

Encouraged by the possible role of public memory in the rhetoric of technology and industrial heritage's potential to exemplify this role, in the present dissertation I look to industrial heritage sites to explore the relationship between technology and public memory. Here, it is important to stress that I am not interested in modern technology's capacity to aid memory—although this is no doubt an exciting and vital line of inquiry. Instead, I am interested more in how collective, public recollections of technology can come to impact our relationship with technology in the present. By pursuing this line of inquiry, I hope to contribute to the rhetoric of technology by suggesting that public memory is at least one dimension through which our relationship with technology is constituted rhetorically. Importantly, making this argument requires that I bring together literature from the fields of rhetoric, memory studies, and technology studies. It is my firm belief that the confluence of this literature, when used in critical analysis, holds the potential to illuminate how memory rhetorically manifests to influence our relationship with technology. Despite the prominence of technological development in our decidedly technological society, I believe that this relationship is relatively overlooked.

This dissertation accomplishes two goals. First, by using Lowell National Historical Park, the National Museum of Industrial History, and Thomas Edison National Historical Park as case studies, I demonstrate common rhetorical features of industrial heritage sites in the United States. Moreover, through showing these common rhetorical features, I articulate how they might construct and constrain the potential messages imparted to guests at industrial heritage sites. Second, I contextualize the rhetorical messages of these industrial heritage sites using literature

drawn from the rhetoric of technology, memory studies, and technology studies. By using the intersection of this literature to contextualize the rhetorical messages of industrial heritage sites, I show that public memory plays a role in how we perceive our relationship with technology. Moreover, I demonstrate that this intersection also shows how we might better understand the rhetoric of technology by considering it in relation to the theory of autonomous technology—a theoretical understanding of how technical logics come to permeate how we understand and interact with the world.

To accomplish these goals, I have organized this dissertation into six chapters. In chapter one, I review relevant literature from the fields of the rhetoric of technology and memory studies. After defining the rhetoric of technology and providing it with a brief background, I am here mainly interested in demonstrating that public memory is one part of the rhetoric of technology. As well, I also draw from the literature of technology studies to define and provide a history of the theory of autonomous technology. In particular, I draw heavily upon the work of Jacques Ellul. I close the chapter by suggesting that the rhetoric of technology, when understood to encompass aspects of public memory, indicates at least one mechanism by which *la technique*—a term at the heart of the theory of autonomous technology—functions.

In chapter two, I elaborate upon the methodological approach I use to interpret industrial heritage sites in chapters three, four, and five. Here, I pay particular attention to emerging methods of rhetorical fieldwork, as well as more traditional methods of rhetorical analysis that focus on textual and visual objects. Also, I justify the choice of Lowell National Historical Park, the National Museum of Industrial History, and Thomas Edison National Historical Park as my sites of analysis.

In chapter three, I begin my analysis of the rhetorical features of industrial heritage sites by turning to Lowell National Historical Park (LNHP). Using LNHP, I demonstrate how the rhetoric latent in the displays at and the material surroundings of industrial heritage sites typically roots its depiction of industrial technology in the technological sublime. I accomplish this demonstration through attention not only to the site's specific rhetorical features in displays but also to how such explicit rhetoric resonates with the built environment of Lowell in a manner that suggests industrial technology is necessary for the good life. Through doing so, I show how assumptions about the progressive potential of industrial technology assign blame for industrial decline to select higher-ups (for example, managers, owners, and technocrats) who are deemed to be unable to understand the needs of industrial technology. As well, I argue that the depiction of industrial technology as sublime and the assignment of blame to higher-ups posits a special relationship between workers and industrial technology. This relationship can be understood as similar to that between a shepherd and his flock, with both agents in the relationship providing benefit to one another so long as their relationship is not interfered with by outside forces.

In chapter four, I turn my analysis of the rhetorical features of industrial heritage sites to the National Museum of Industrial History (NMIH). I argue that layered atop of industrial heritage sites depiction of industrial technology as sublime is a tendency to orient guests toward the experiences of workers. I show that experiential features of industrial heritage sites, coupled with their displays, recollect the industrial past in a manner that both privileges workers' history and suggests to guests that they imagine themselves as industrial workers. I argue that through orienting guests in this manner, industrial heritage sites further strengthen the assumption that a special relationship exists between workers and industrial technology. Moreover, I also contend that, by eliding the experiences of higher-ups, industrial heritage sites ultimately suggest to

guests that it is their heritage to be excluded from the process of technological innovation. I conclude by suggesting that recollecting the industrial past in a manner that excludes guests from choices about innovation further entrenches the *autonomous* nature of technology into society.

In chapter five, I use Thomas Edison National Historical Park (TENHP) to demonstrate how guests-as-workers' relationship with sublime, industrial technology sits within a larger, idealized, technocratic industrial system. As well, I show that this site depicts this system as efficient as a result of the decisions made by competent higher-ups (as opposed to the incompetent higher-ups who are identified in chapter three). To do so, I pay particular attention to TENHP's textual and visual displays, as well as to the site's use of *in situ* space, arguing that these components depict Thomas Edison as a technocrat who is rightfully in control of the industrial scene—unlike the higher-ups depicted at LNHP. Drawing on Kenneth Burke's dramatisitic pentad, I further show how TENHP depicts Edison as an agent whose characteristics determine the scene, while simultaneously depicting the public and workers as agents who are primarily impacted by the scene that Edison creates. Ultimately, I use TENHP to articulate further how industrial heritage site's positioning of guests as workers within an industrial system that necessitates technocratic control suggests to guests that they divorce themselves from the process of technological innovation. In other words, guests come to believe that innovation should be left to expert technocrats.

In chapter six, I argue that the rhetorical characteristics I identify in the previous chapters suggest that the rhetoric of technology is related to the theory of autonomous technology. I contend that national industrial heritage sites recollect the industrial past in a manner that divorces guests from technological innovation and thereby affirms that this separation is, in fact, part of their national heritage. More specifically, I claim that what Ellul terms *la technique* is

claimed as national heritage. The reification of the widespread belief that only a select few individuals are qualified to make decisions about the course of technology reinforces capitalist logics that have guided the development of technology for over a century.

In the epilogue, I conclude by suggesting potential strategies for using public memories of technology to encourage the democratization of technological innovation.

Notes

¹ John Elfrith Watkins, "The Beginnings of Engineering," *Transactions of the American Society of Engineers* 24, (1891): 2.

² Arthur P. Mollela, "The Museum that Might Have Been: The Smithsonian's National Museums of Engineering and Industry," *Technology and Culture* 32, no. 2 (1991): 244.

³ Mollela, "The Museum that Might Have Been," 244-245.

⁴ Mollela, 255-256.

⁵ Maurice Halbwachs, *On Collective Memory*, ed. Lewis A. Crozer (Chicago: University of Chicago Press, 1992), 54-83.

⁶ Halbwachs, *On Collective Memory*, 160-166.

⁷ Halbwachs, 175-176.

⁸ Willaim C. Kurlinkus, *Nostalgic Design: Rhetoric, Memory and Democratizing Technology* (Pittsburgh, PA: University of Pittsburgh Press, 2018), 9-10.

⁹ Kurlinkus, *Nostalgic Design*, 13

¹⁰ Gerard A. Hauser and Donald P. Cushman, "McKeon's Philosophy of Communication: The Architectonic and Interdisciplinary Arts," *Philosophy and Rhetoric* 6, no. 4 (1973): 231-232.

¹¹ Greg Dickinson, Carole Blair, and Brian L. Ott, "Rhetoric/Memory/Place," in *Places of Public Memory: The Rhetoric of Museums and Memorial*, ed. Greg Dickinson, Carole Blair, and Brian L. Ott (Tuscaloosa: University of Alabama Press, 2010), 6-7.

¹² Kathryn Lafrenz Samuels, "Heritage as Persuasion," in *Heritage Keywords: Rhetoric and Redescription in Cultural Heritage*, ed. Kathryn Lafrenz Samuels and Trinidad Rico (Boulder: University Press of Colorado, 2015), 7.

¹³ Charles Bazerman, "The Production of Technology and the Production of Human Meaning," *Journal of Business and Technical Communication* 12, no. 3 (1998): 385.

¹⁴ Barbara Kirshenblatt-Gimblett, *Destination Culture: Tourism, Museums, and Heritage* (Berkeley: University of California Press, 1998), 149.

Chapter One: Rhetoric, Memory, and the Theory of Autonomous Technology

Introduction

This chapter provides a review of the literature that is relevant to my forthcoming analysis of industrial heritage sites. It is composed of three main sections. In the first section, I review literature about the rhetoric of technology. I define the rhetoric of technology as well as identify trends in the field. In the second section, I review relevant literature from the field of memory studies. Through reviewing this literature, I demonstrate how public memory potentially is a component of the rhetoric of technology. Finally, I give a brief overview of the theory of autonomous technology. Here, I demonstrate how the rhetoric of technology, when understood to intersect with memory studies, provides depth to our understanding of the theory of autonomous technology, especially *la technique*. I conclude by suggesting that industrial heritage sites are one example of how the rhetoric of technology appropriates public memory in a manner relevant to the theory of autonomous technology and *la technique*.

The Rhetoric of Technology

In this section, I provide an overview of the rhetoric of technology scholarship to define it as a field and specify my dissertation's contributions to it. While asking what it is that the rhetoric of technology refers to seems simple at face value, "offering a substantive answer to the question is challenging."¹ Despite this, a variety of descriptions of the field exist. In the prologue, I have already alluded to Charles Bazerman's definition of the rhetoric of technology, which suggests that it "is the rhetoric that accompanies technology and makes it possible—the rhetoric that makes technology fit in the world and the world fit in technology."² While Bazerman provides a concise and encompassing conception of the rhetoric of technology, his

conception is by no means the only one. Carolyn Miller proposes that the rhetoric of technology encompasses discourses about technology that emphasize practice and are anonymous, *autonomous*, and ubiquitous.³ Moreover, John Lynch and William Kinsella argue that “a rhetorical study of technology . . . is about how agency is reconfigured by the rhetorical strategies that attend the steps in inventing and disseminating a new technology.”⁴ Together, these definitions suggest that the rhetoric of technology is a field concerned with how deliberation about technology occurs, how it is justified, how the public is taught to use it, and how it becomes an accepted and unquestioned part of daily life. More succinctly, the rhetoric of technology contains discourses that impact how the social practices that surround technology come into being and how they are maintained rhetorically.

To give depth to this admittedly broad understanding of the rhetoric of technology, I believe it is worth further parsing out its constituent terms: *rhetoric* and *technology*. The term rhetoric likely first was used by Plato and came to signify a set of verbal practices of persuasion and argumentation.⁵ George Kennedy argues that “what we call ‘rhetoric’ can be traced back to the instinct to survive and to control our environment and influence the actions of others in what seems the best interest of ourselves, our families, our social and political groups, and our descendants.”⁶ Derivation from such an impulse casts a wide net for sure, but it is important to note because it draws attention to the wide range of practices that can be labeled “rhetorical.” In short, there are any number of practices that can be used to influence others in ways deemed useful. In ancient Greece, a variety of such practices had existed long before they were called *rhetoric* by Plato and his student Aristotle. Over time the use of the term rhetoric has caused confusion about what precisely it refers to—a problem that still bubbles up today in interactions between rhetoricians who study topics as disparate as public address, materiality, performance,

debate, visuality, and any number of areas in between. Robert Hariman argues that how we understand rhetoric intimately ties with the discourses and ways of communicating that we do not want rhetoric to encompass, and it seems that rhetoric refers to everything or nothing, depending on whom one asks.⁷

While a much newer word, the term *technology* has a similarly complex pedigree. Having a variety of definitions, today most popular conceptions of the word technology are comparable to Jose Ortega y Gasset's formulation of "invention of a procedure which guarantees, within certain limits, that we can obtain at our pleasure and convenience the things we need but do not find in nature."⁸ In other words, technology is something that makes it easier to get what we want. Seen this way, technology, like rhetoric, casts a wide net. This breadth is again important to note because it draws attention to the existence of "technological" practices that were present before the coining of the term *technology*. By most accounts, the term technology was rarely used in the United States before Jacob Bigelow published his *Elements of Technology* in 1829, and even after, the term saw little use outside of the book until at least the 1840s.⁹ According to David Nye, between the years 1860 and 1870, the word technology is only mentioned 145 times in popular American periodicals, while the word *invention* appears 24,857 times.¹⁰ This, of course, does not suggest that there were no practices that we would today classify as technological during this time frame. It would be suspect even to propose this, as the nineteenth century was the heyday of the industrial revolution in both Europe and the United States. Instead, the rare occurrence of the word technology suggests the existence of a variety of practices embedded into an eclectic range of social institutions. Practices that we now describe with the monolithic word *technology* were once seen as potentially a part of mechanical arts, useful arts, invention, science, engineering, alchemy, craft, warfare, art, and many other contexts.¹¹ It was

not until after World War I that the word *technology* came to subsume “the mechanic arts collectively.”¹² Leo Marx suggests that the emergence of new words for old practices often “serve as markers, or chronological signposts, of subtle, virtually unremarked, yet ultimately far-reaching changes in culture and society.”¹³ In this case, at least part of the change was a shift in perception that saw technological practices come to relate more to one another than to their contextual uses. The result is general confusion about what precisely the word technology denotes.

Examining the origin of the terms “rhetoric” and “technology” draws attention to the fluid nature of each concept. In both cases, the concepts “result from a gathering of and deployment of existing resources,” whether those resources be extant devices and scientific principles or “ideas and arguments that form the basis for a finished discourse.”¹⁴ As a result, they reside in places that spill over into a variety of contexts and fields of study in “rhetoric and across the humanities.”¹⁵ Both rhetoric and technology might be seen as subjects in their own right or be subsumed under the umbrella of some more extensive field of study, all the while making use of whatever resources are available. Charles Bazerman’s *The Languages of Edison’s Light* helps to highlight this phenomenon. In an essay reflecting upon how his book might help to articulate the rhetoric of technology, Bazerman writes that the project ended up being as much about the patent system and civil court proceedings, financial systems, investment and the stock market, nineteenth-century newspapers, magazines, small group collaboration, corporate organization, civil regulation, political machines, and technical design as it was about the rhetoric of technology—showing how it is often difficult to distinguish the rhetoric of technology from other fields of study.¹⁶ It is likely that the fluid nature of rhetoric and

technology as constituent fields of study contributes dramatically to the difficulty of staking off specific areas that might encompass the rhetoric of technology.

The work of Arnold Pacey brings some clarity to the situation. Using the concept *technology practice* to refer to the conglomeration of different practices that comprise what we commonly understand to be technology, Pacey's work takes strides toward mapping how technology intersects with various other fields of study. Pacey articulates technology practice as the intersection of the cultural, organizational and technical aspects of technology.¹⁷ As well, in later work, Pacey adds a fourth dimension that consists of how individuals personally experience technology.¹⁸ Thus, technology practice is “the application of scientific and other knowledge to practical tasks and ordered systems that involve people and organizations, living things and machines” with the meaning of this application dependent upon personal experience.¹⁹ Pacey's view finds technology to be more than merely hardware and machines and includes the social milieu within which these things exist, including that which is rhetorical. Thus, for example, American beliefs about the virtues of the pastoral landscape were at one time an essential part of the nation's civic religion. As deeply embedded values, they have been shown to influence both the construction and design of new technologies.²⁰ Conversely, such narratives also often are challenging to discern when technologies resonate strongly with other social values or organizational principles—Taylorism and Fordism, for example, leave little room for pastoral individualism.²¹ In either case, understanding the success and design of technologies requires us to pay attention to more than merely technical specifications—comprehending the interplay between all components of technology practice is integral to grasping how and why technologies function. For the purposes of this dissertation, technology-practice is the understanding of technology that I adopt.

Pacey differentiates between the technical, which refers solely to nuts-and-bolts hardware, and technology, which refers to the technical plus social.²² Approaching the study of technology in this manner necessitates the consideration of practices that are traditionally thought of as separate from technology as well as draws attention to the ways that rhetoric and technology are interwoven with each other and into an assortment of other less-than-obvious contexts. For example, at Lowell National Historical Park, technics that the park displays, such as automatic looms, comprise only a part of the technological system that the site commemorates. To understand the system in its entirety, as I will show, we must also be given an account of workers, managers, and the general cultural milieu within which a technic exists. To put it simply, the implications of rhetorical and technological systems stretch far beyond what they appear to encompass at first glance. However, because rhetoric and technology are both interwoven with one another and with the resources they appropriate, the possible contexts within which the rhetoric of technology exists are many.

David Nye's contemplation of the relationship between narrative and technology draws our attention to a critical similarity between rhetoric and technology. In the opening of *Technology Matters*, Nye contends that physical tools and narratives are similar insofar that they both "are part of systems of meaning, and they express larger sequences of actions and ideas."²³ Clarifying, Nye asks us to consider how using a tool or technology necessarily involves visualizing a sequence of events through which we attempt to effect some change in our environment. Without the narratives that give a tool or machine its function that tool or machine is effectively nothing more than a piece of our material background. "Ultimately," Nye argues, "the meaning of a tool is inseparable from the stories that surround it" and that they "always have embodied latent narratives."²⁴

Similarly, rhetoric has been shown to rely upon narrative. In 1984, Walter Fisher famously drew attention to the relationship between narrative and communication, arguing that human rationality itself relies upon our fidelity to the narrative structures that give our lives meaning (what Fisher terms “narrative fidelity”).²⁵ Instead of judging the worth of rhetoric by its adherence to scientifically derived “proof” (what Fischer terms the “rational world paradigm”), it is evaluated by how well it deploys and interacts with our common narratives. For example, citizens of the United States who overlook scientific facts about climate change often do so because the facts about climate change challenge their belief in the essential goodness of industry and the free market—a view that is generally supported by narratives about the past greatness of the nation. As a result, arguments—about policy or otherwise—that are faithful to these narratives tend to carry added weight, regardless of scientific fact. It is in this way that discourses that guide and give meaning to our social existence also have latent narratives woven into them that, while always in a state of flux, supply our lives with purpose.

The presence of narrativity at the center of both technology and rhetoric lends credence to my claim that the rhetoric of technology primarily concerns the discourses that surround and permeate technology—convincing us to accept it and suggesting to us how we might use it. As Bazerman notes, “technology has always been a part of the rhetorical barnyard . . . articulated in language at the very heart of rhetoric . . . technology must always overtly appeal to the marketplace, political ambitions, and personal desire.”²⁶ Such discourses, however, are many, and here it is important that rhetoric is not merely limited to being “text and talk.” Drawing this out, Carolyn Miller argues that at least three types of discourse comprise the rhetoric of technology: 1) *rhetoric about technology*, which refers to “public representations or debates in public policy forums; 2) *rhetoric within technology*, which refers to “private, proprietary

discourse by which technological work gets done”; and *rhetoric from technology*, which refers to “the ways in which values and thought patterns developed by technological work extend to and pervade other cultural arenas.”²⁷ Together, we can understand these three sub-areas of the rhetoric of technology as intersections between narratives specific to particular technologies and narratives circulating in public discourses outside of such technology.

The success or failure of any given technological system rides on its ability to either appropriate or mesh with dominant narrative ways of understanding the world. Such rhetorical work might take place in any of the three arenas described by Miller. Thus, some technology or tool might gain momentum via its design embodying certain narratives, the actual narratives used to pitch it resonating with what is already accepted, or through fitting well within contemporary technical discourse. Technological narratives circulate between discourse and material embodiment in some technology, much in the same way that commodities and value link in circulation in Marxist theory and persuasive power and rhetorical claims link in circulation in rhetorical theory.²⁸ As Bazerman writes, “there is a dialectic between rhetoric and the material design as the technology is made to fit the imaginably useful and valuable . . . technological discourse is a special coalescence of the many discourses of the world.”²⁹

Examples of the intersection of narrative and technology within Miller’s proposed domains are plentiful. Demonstrating *rhetoric about technology*, the Apollo Program of the 1960s was successful in gaining public support by discussing the goals of its technological systems in terms of a frontier narrative.³⁰ This narrative meshed well with what Janice Hocker Rushing calls the western myth—intimately tied to the United States’ traditional sense of national identity—enabling the Apollo program to fit squarely within a well-established American identity.³¹ Another example—which demonstrates *rhetoric between technology*—is

found in the discourse surrounding Thomas Edison's incandescent light bulb. Here, we find wide coverage and rave reviews of Edison's invention in the popular press, but limited coverage in technical and professional journals, where Edison failed to establish himself as a major name. This lack of coverage encouraged Edison's competitors who were plugged into the electrical engineering community to continue designing and implementing competing systems despite Edison's clear acceptance in the marketplace.³² Ultimately, the technical journals' narrative, or lack thereof, of Edison's accomplishments failed in the face of the more widely accepted public narrative. Another case comes from the life of Peter Palchinsky, a Soviet engineer who believed in designing technical systems tailored to the communities that were to use them. During the erection of the Dneprostroi Dam in the 1920s, several engineers, including Palchinsky, opposed its construction on the grounds that several smaller, less impactful dams would provide that same amount of electricity, the site of the dam itself was poorly chosen, and the construction of the dam would force thousands of locals off their land.³³ Palchinsky's opposition to the dam and other projects eventually saw him executed, as his understanding of the narrative of the proposed dam was at odds with the Soviet leadership's understanding. Regardless of the appropriateness of its technical specifications, the rhetoric exuded from a large, impressive, and difficult to build dam resonated well with the industrial socialist narratives of the time—a clear demonstration of *rhetoric from technology*.³⁴

Further drawing out the rhetoric of technology, Miller characterizes how *ethos* and *kairos* function within technological narratives. Both terms have long histories in the field of rhetoric. Traditionally, *ethos* in Aristotle's rhetoric refers to the character that a rhetor crafts through discourse and the audience's reception of that character. Thus, to increase the acceptability of their message rhetors typically strive to cultivate a sense of character that is amenable to an

audience with which they engage—a process that ensures successful rhetoric is generally in touch with common beliefs. Building on this, Miller argues that *ethos* in the rhetoric of technology operates as a form of consciousness insofar that technology spawns “complex conceptual systems” that “intervene between the technologist and the material world.”³⁵ In other words, the logic of any given technology has the potential to become the lens through which we view the world around us and with which we come to judge the ethical worth of rhetorical discourse. In a similar vein, Joshua Welsh contends that both *endoxa*, which refers to the opinions of the public, and enthymeme work to accommodate the public to given technologies by echoing the rhetoric of those technologies. As a result, the technologies themselves come to “create an aura of common sense.”³⁶ Here, it is likely that what we find are the narratives embedded in a given technology and the discourse surrounding that technology resonating strongly with one another so much so that to live in any way apart from them—both the machines and the narratives—becomes ethically unthinkable to the general public. The rhetoric of technology is thus instrumental in how we come to accept some technologies and reject others. This idea resonates with Langdon Winner’s notion of technological somnambulism, according to which we “willingly sleepwalk through the process of reconstituting the conditions of human existence.”³⁷ If we find ourselves sleepwalking through our chances to effect technological change or change some aspect of technology, it is surely because the narrative *ethos* of that technology has lulled us to sleep.

Kairos in the rhetoric of technology, for Miller, concerns “kairotic constructions” that have “become completely naturalized in a wide variety of technical and policy discourses.”³⁸ These constructions help to create “opportunities for opportunity” that set the stage for particular types of technologies to be accepted or constructed.³⁹ This understanding of *kairos* builds upon

the notion of *kairos* handed down from the Greeks, which typically sees it as related to proper timing in the conveyance of some idea—the understanding of which derives from metaphors of an arrow falling upon its target or drawing yarn through the cloth on a loom.⁴⁰ Miller articulates *kairos* in the rhetoric of technology as more than strategies used by individual rhetors, however, and instead as common linguistic and metaphorical constructions that set the stage for design and deliberation.⁴¹ Examples of these constructions include spatial imagery, generational metaphors, temporal metaphors, talk about change, allusions to progress, and technological forecasting. Thus, for example, talk about designing iPhones in terms of generations sets the stage for future acceptance of new iPhone designs through generation talk and allusion to progress. More specifically, R. John Brockman provides a poignant historical example of how kairotic constructions can set the stage for change in technology practice in his work on steamboat legislation during the nineteenth century in the United States.⁴² He points out that “an effective law was finally passed in 1852 because 1852 was the moment of *kairos*” when design faults in steamboat boilers finally resonated with a public desire to regulate dangerous technologies. In this case, waves of public outrage helped to create the sense that the time for regulation had arrived—a reality that was eventually embedded rhetorically into the design of popular technologies. Expanding on Miller’s kairotic constructions, J. Blake Scott contends that *kairos* in the rhetoric of technology is also responsible for shaping the perception of future risk. He argues that “the construction of risk, both immediate and ongoing, can be used to create an urgent desire to control such risk and even opportunistically profit from it,” a reality that helps set the stage for the technological fixes we believe we need for any given problem at hand.⁴³

Characterizing *kairos* in the rhetoric of technology in this way casts it as more than a utilitarian notion of a rhetor seizing the moment of opportunity. Beyond this interpretation, it

sees *kairos* as a dialogue between realist and constructivist approaches to rhetoric—a moment can be seized, constructed, or some combination of the two. Understanding the term in this way is not altogether dissimilar from Bruno Latour’s more theological understanding of *kairos*. Latour supposes that in addition to a moment of opportunity, *kairos* refers to the entire character of a time period, be it a few seconds or hundreds of years. For example, the Renaissance provided a sense of placement within a time for those who lived during it in the same way to a short ride in an elevator might also establish a sense of placement within time for those on the elevator. Various *kairoi*, in Latour’s view, exist at any given time and must interact with one another. From this view, *kairos* refers to multiple collective and personal times living in unison or disharmony with one another.⁴⁴ As such, *kairos* in the rhetoric of technology involves more than technologists seizing the moment by creating salient technologies, but also must contend with the ways that circulating narratives of technology characterize how we experience those exigencies and how a change in these narratives creates friction between people who experience them differently. Ultimately, the way that various experiences and characterizations of technological *kairos* interact sets the stage for the form any given technology takes.

By examining industrial heritage sites, I aspire to elucidate how public memory is an essential aspect of rhetorical concepts like *ethos* and *kairos* in the rhetoric of technology. I am particularly interested in these two terms because they are articulated more thoroughly than other terminology within the rhetoric of technology and provide an adequate theoretical framework from which to begin my work. Because of this, focusing on them allows me not only to expand the breadth of what *ethos* and *kairos* in the rhetoric of technology can encompass (a task that Carolyn Miller calls for) but also allow me to establish that public memory plays an essential role in the rhetoric of technology in general. I believe memory itself may serve what Miller

describes as a kairotic function, thus playing an indispensable role in influencing how we design technologies and if the public will accept those technologies. As well, memories of technological *ethos* likely also affect how *kairos* sets the stage for technology, manipulating what we perceive as ethically sound discourse and what we perceive as not. Lastly, I believe that doing so will help to expand the field of the rhetoric of technology, encouraging it to think more about the implications of the material realities of our technological society in addition to its purely political or scientific realities.

Importantly, work that discusses how rhetoric comes to impact the shape of technology is not unheard of, a fact that ensures that my coming inquiry roots in prior interest about the topic. Perhaps the most relevant example is Magnus Johansson's book/dissertation *Smart, Fast, and Beautiful*, which explores the intersection of rhetoric and technology studies via a study of discourse about the development of computer technology in 20th century Sweden.⁴⁵ Johansson uses a historical-rhetorical approach to explore how talk and technology are intimately related. Johansson's basic premise is worth quoting in full.

One basic assumption has been that a certain technology gives rise to images, and that the words and metaphors used to describe it, decide how a specific product is designed and also how it will be used in practice. Contemporary visions and beliefs are projected onto technology, and influence not only how technology in itself is conceived and/or interpreted, but also what kind of technology is believed to be useful for "solving" problems, both close at hand and for a society as a whole.⁴⁶

Working from this premise, in this dissertation I aim to inquire into how narratives about the past embodied in industrial heritage sites influence how we perceive our relationship with technology.

Memory Studies

This section reviews relevant literature from the field of memory studies. I demonstrate how memory studies intersect with the rhetoric of technology and articulate how this dissertation contributes to memory studies. I am especially interested in memory studies literature that focuses on sites of public memory—such as monuments and museums. As a result, I also connect memory studies with literature about industrial heritage, suggesting these sites themselves connect with and help constitute the rhetoric of technology.

The study of memory in the field of rhetoric has experienced a renaissance since the early 1990s. Encouraged by the expansion of what are considered to be “texts” and the rediscovery of the importance of memory in historical, rhetorical practices like epideictic speechmaking, rhetoricians have reopened inquiry into the relationship between memory, rhetoric, and place. Carole Blair, Marsha Jeppeson, and Enrico Pucci Jr. insist that places of public memory “. . . are rhetorical products of some significance.”⁴⁷ As rhetorical products, sites of memory activate when juxtaposed with the concerns or anxieties of the present, narrate a common identity, are animated by affect, are contested, rely on material support, and possess their own history.⁴⁸ Memory sites come in many forms. Public monuments, public infrastructure dedicated to an individual (for example, a bridge), ephemeral demonstrations, museums, and countless other sites all present various types of text that impart narratives and history to those who visit them.⁴⁹

The potential of memory sites to impact guests stems strongly from both their status as physical locations that present specific experiences and how we come to expect those experiences to feel before we ever encounter a site. Important to this point, and thanks to their ability to evoke collective memories, is how memory sites promote collective identity. In this vein, Greg Clark writes that “Rhetorical experiences, whether discursive or not, present powerful

symbols of shared identity that teach people whom they ought to aspire, individually and collectively, to be.”⁵⁰ Importantly, for Clark, the ability of a memory site to inspire collective identity functions regardless of whether or not a given individual has experienced that site, so long as the rhetorical reach of the site is strong enough that large portions of the public come to envision it in similar ways. For example, while a significant portion of the American population has not visited the Lincoln Memorial, that site’s pervasive presence in popular culture and wide depiction in American material culture mean that most American’s can imagine the site in relatively similar ways. Thus, “as tourists are first prepared to encounter, and then actually encounter, such landscapes for themselves, they experience privately a powerful sense of public identity” that ultimately connects them to each other via the commonality of potential messages of a site itself. Similarly, Blair and Michel argue that the possible meanings a memory site holds are strongly influenced by how guests encounter the landscape within which that site is immersed, suggesting that the meanings and identifications a memory site prompts are intimately tied to its material confines and how we are conditioned to expect to experience those confines.⁵¹ Further yet, M. Christine Boyer suggests that the landscape of a site not only influences its potential messages and the types of identification it promotes but also impacts guests’ behaviors at the site.⁵²

Building upon the assumption that sites’ landscapes and material confines impact guests’ experiences, a significant amount of literature has sought to illuminate the rhetorical dimensions of this impact. Terming these sites “places of public memory,” Greg Dickinson, Carole Blair, and Brian Ott argue that these sites provide locations *par excellence* for analysis of how memory sites are rhetorically influential. They root this claim in six generalizations about memory places, arguing that 1) memory places serve as rhetorical signifiers capable of encouraging collective

identity; 2) memory places “construct preferred public identities for visitors by specific rhetorical means;” 3) memory places are “characterized by extraordinary partiality;” 4) memory places “mobilize power in ways not always available with other memory techne;” 5) memory places “always incorporate products of various memory techne,” and; 6) memory places possess their own histories.⁵³ Drawing upon these claims, Dickinson, Blair, and Ott demonstrate that the characteristic of a memory place—such as its materiality, the messages it imparts, its location, and who visits it—necessarily impart a message about the past that tends to privilege the rhetorical agenda of its designers. Dickinson, Blair, and Ott remind us that although the landscape and material confines of a place of public memory are central to how guests experience them, often these aspects are rhetorically composed or associated with rhetorics from outside of the site itself.

Museums provide an example of how the landscape and material confines of a memory site impact and constrain the messages a place of public memory imparts. Museums as didactic institutions, widespread systems of imparting knowledge, and guardians of public memory first began to take shape *en masse* during the nineteenth century. Their rise, simultaneous with the development of industrial technologies, coincided with a burgeoning desire to situate nation states within historical narratives that justified their power and existence, as well as their right to regulate public identity.⁵⁴ Primarily, museums achieve regulatory power through what Bennett terms the “exhibitionary complex,” which comprises “the transfer of objects and bodies from the enclosed and private domains in which they had been previously displayed . . . into progressively more open and more public arenas where, through the representations to which they were subjected, they formed vehicles for inscribing and broadcasting the messages of power throughout society.”⁵⁵ This conception of the museum is influenced by Foucault’s *Discipline and*

Punish and its central notion of panopticism—a system of technological innovations that allow for state policing of the body. The museum itself, however, is less a form of punishment and more of an institution that preempts the need for incarceration by exhibiting both positive and negative examples of desired social behavior through which the public becomes informed.

Relevant to how the exhibitionary complex functions—and thus to the ability of a museum as a place of public memory to influence its audiences—are its placement and design. Because the objects on display in museums must be both chosen from an infinite quantity of objects and placed within a designed space, the notion that museums are places where objects “can be neutrally exhibited” is “invalid.”⁵⁶ Here, of the utmost importance is the designed space of the museum. Designed with consideration for how to draw guests’ attention to specific objects and to influence how guests progress through exhibits, museums demonstrate how the desire to encourage certain behaviors in visitors transforms museums into rhetorical spaces.

The rhetorical impact of the design and physical location of museums is well-articulated by M. Elizabeth Weiser in *Museum Rhetoric*. Weiser argues that national museums’ material design—such as their architecture, how their internal space is laid out, and so on—influences the narratives they tell, thus prompting guests to reflect on the nature of their national identities. In particular, she argues that a museum’s design impacts how guests’ “bodies move through museums . . . being moved by the stories they encounter and being persuaded toward certain stances in response to those narratives.”⁵⁷ Importantly, the manner in which displayed narratives and objects encourage guests to move through the designed space of a museum highlights how museums ask visitors to move “not only through time, the chronology of the exhibit, but also through space, the architecture and arrangement of a display, in a way lacking in books, films, or any other form of narrative.”⁵⁸ As such, museums demonstrate how the rhetoric imparted to

guests at a place of public memory resides not only in the selected nature of the memories that a site recollects but also in how it displays those memories via its design.

The design of a place of public memory, however, does not always encourage the preferred memories of a given moment in time. Often, this occurs when a place of public memory attempts to modify how it recollects the past after its opening to the public. When this happens, it shows how a site's design and location carry meaning that is much more subtle than the meaning it explicitly displays. Here, museums again provide a useful case study. In *The New History in an Old Museum*, Richard Handler and Eric Gable show how at places like Colonial Williamsburg new, critical recollections of social history are often overshadowed and appropriated by traditional, "just the facts" versions of history.⁵⁹ Important to Handler and Gable's discussion is the understanding that "mimetic realism," wherein what is displayed is assumed to be a faithful reproduction of the past, promotes an understanding of the past as a "puzzle" that can be "brought to life" through accurate recollection.⁶⁰ Unfortunately, mimetic realism is often little more than a tool for maintaining dominant understandings of the past. For example, the authors show that attempts to critique instances of the injustice of slavery at Colonial Williamsburg have been instead co-opted by celebrations of George Whythe that take place at his former residence—celebrations that ultimately paint the struggle to benefit oneself as the American struggle, and thus eliminate the uniqueness of slaves' positionality from recollection.⁶¹ Because a major, original theme of Colonial Williamsburg aims at showing how settlers "became American," displays and recollections of the past that fit this understanding are assumed to be accurate even as the lessons the site wishes to impart change. In other words, attempts to intervene in the general understanding of the past are reexplained in terms acceptable to the "facts" of the situation so that the "authenticity" of the site can be maintained. When

aspects of Williamsburg's design and landscape come to be rooted in mimetic realism, attempts to recollect the past in ways that diverge from the preferred narratives promoted by design can be easily overshadowed, demonstrating the rhetorical power of the design of the site in itself.

Given the rhetorical nature of places of public memory, scholars have sought to analyze and critique their messages in two distinct ways. First, many studies critically interpret places of public memory by shining a light on their messages through discussion of how they both highlight and elide events, beliefs, and individuals. Second, a significant portion of these studies also seeks to investigate how individuals' personal experiences of monuments impact how they perceive those monuments' meanings. Typically, however, studies that rhetorically analyze places of public memory do so in a manner that privileges sites that commemorate social events, traumatic experiences, and national histories. Even a cursory glance at the landmark literature in the field confirms this. James Young's widely cited book, *The Texture of Memory*, explores memory practices surrounding the Holocaust.⁶² John Bodnar's popular *Remaking America* traces the relationship between public memory and patriotism during the twentieth century.⁶³ Marita Sturken explores the intersection of national trauma and consumerism in *Tourists of History*.⁶⁴ This list could go on *ad infinitum*, and I suspect that most need little convincing of my assertion. Such work has made important contributions to our understanding of how public memories change over time, elude codification, are constantly being negotiated, are political, and "express a society's need for temporal anchoring" in the shadow of a rapidly changing world.⁶⁵

This dissertation, however, pivots away from places of public memory that recollect explicitly traumatic national memories toward those that focus on industry and technology. While the general function of such sites is essentially the same as what I previously mentioned, I believe that this pivot adds breadth to the potential contributions of memory studies by providing

a different object of analysis. Typically identified as industrial heritage sites, places of public memory that center their attention on industry and technology provide their visitors and the communities in which they exist the opportunity to come to terms separation from working-class ancestors and a chance to locate “themselves more securely within a changing postindustrial economy.”⁶⁶ Moreover, industrial heritage sites also provide a means through which the public can come to understand how the technological past has become the technological present—that is, how technology grew and how that growth has impacted the nation. The existence of professional organizations dedicated to the cultivation of its practice and the establishment of exhibition standards highlights the significance of the relatively nascent notion of industrial heritage. The most prominent of these is the International Committee for the Conservation of Industrial Heritage (TICCIH). This organization strives to encourage the preservation of industrial heritage and produces a guidebook entitled *Industrial Heritage Retooled* that addresses questions like “Why Preserve Industrial Heritage?” and “How to Choose what to Preserve?” “The industrial landscape is a misunderstood heritage,” one contributor writes, “At worst urban rustbelt, dangerous, a toxic wilderness; at best, an outstanding historical resource to be re-used, regenerating communities, offering real richness and opportunity, reinforcing cultural identity and creating new commercial prospects.”⁶⁷

Responding to the growth of industrial heritage, a handful of studies have begun to flesh out the relationship between industrialism and public memory. The earliest of these is Cathy Stanton’s book *The Lowell Experiment*, which explores how the industrial history of Lowell, MA has been coopted and exhibited at Lowell National Historical Park (LNHP).⁶⁸ LNHP is an important case because it represents one of the first instances of the preservation of industrial history—creating a model that has been emulated both across the United States and around the

world.⁶⁹ Stanton's research at the park is primarily concerned with how the narratives told at LNHP were constructed through interaction between the National Park Service (NPS) and the local community as well as with cultural implications of discourse about the city of Lowell's past. Similarly, Carolyn Kitch's book *Pennsylvania in Public Memory* also explores the role of industrial heritage.⁷⁰ Unlike Stanton, Kitch casts a wide net, documenting and analyzing a variety of industrial memory sites around the state of Pennsylvania. In doing so, Kitch explores how beliefs about Pennsylvania's industrial past are used both to smooth over negative details about industrialism and to promote cultural pride in economically struggling areas. In this vein, she argues that a variety of factors—including baby-boomer nostalgia, ethnic pride, post-Vietnam disillusionment, and the growth of nationalism in response to globalization—influences the movement toward creating industrial heritage sites.⁷¹ More interpretively oriented analyses of places of public memory that are concerned with industrial heritage also exist. In most instances, these analyses highlight the tendency of industrial heritage sites to convey corporate-friendly messages about the benefits of technology. For example, in a review of the National Air and Space Museum, Michal McMahon demonstrates that exhibits concerned with the history of technology impart “a fundamental message which proclaims the fact and value of technological progress—of the unmixed blessings of continued technical advance and, by implication, economic growth.”⁷² Similarly, in an analysis of post-cold war nuclear museums, Bryan Taylor shows how industrial heritage sites utilize “reflexive and entangled space” to “reproduce nuclear cultural politics” and instruct “visitors in what to believe about, and how to feel and act toward” various technologies and the institutional supports upon which they sit.⁷³ Although such sites hold the potential to carry various meanings, Taylor contends, most present the material in a

manner that does little to challenge or critique the “preferred narratives” of institutional patrons.⁷⁴

As might be expected, the existing literature on industrial heritage sites suggests that such sites are locations where collective identity that was once granted by the presence of industry is kept alive in the absence of that industry. Ultimately, the reclamation of this identity provides the foundation for declaring such sites as part and parcel of the nation’s industrial heritage. Moreover, Industrial heritage is often seen as both a boost for economically depressed post-industrial communities and a source of regional identity. Stanton contends that industrial heritage sites are primarily a way for cities to “repair . . . the social and infrastructural damage done by the loss of industries.”⁷⁵ From this view, industrial heritage sites are places where communities reclaim industrial culture for economic benefit, and as such authors who see them this way situate them within the wider milieu of tourism-based memory sites. Heritage sites themselves have been well-documented by existing literature. Heritage, Barbara Kirshenblatt-Gimblett argues, is “the transvaluation of the obsolete, the mistaken, the outmoded, the dead, and the defunct” that is “created through a process of exhibition.”⁷⁶ Transvaluation adds value to “existing assets that have either ceased to be viable or that were never economically productive.”⁷⁷ As well, most scholars of heritage note that “heritage is part of the memory complex and forms an important factor in the construction of . . . identities . . . providing evidence of roots, authenticity, legitimation, and unity.”⁷⁸ By situating industrial heritage sites within the auspices of the heritage industry writ large, previous authors on the topic make strong claims about how the remembrance of particular technology practices contributes to the economic and cultural centeredness of a region or nation.

Likely because of its capacity to craft identity and influence economic practice, heritage has a robust persuasive dimension. Kathryn Lafrenz Samuels writes that heritage is a kind of strategy that rhetorically “illustrates transformative action and future-oriented possibilities, drawing on the past to suggest new social formations.”⁷⁹ Resonance with accepted political and cultural institutions augments the potential of beliefs about heritage to influence the future. In this vein, Malcolm A. Cooper discusses how friction often occurs between the public and regulatory bodies when it comes to discourse about heritage.⁸⁰ He writes that attempts to cultivate heritage involve more than merely mechanical acts of legislation, and instead that such attempts must contend with “a range of influences,” including, but not limited to political influences and media pressure.⁸¹ While Cooper’s primary concern is with regulatory bodies’ need to pay closer attention to the demands of the public when working from a top-down approach, what his work makes exceedingly clear is that manifestations of heritage are most successful when political systems and the public are on the same page. To couch the discussion in another way, it appears that the persuasive power of heritage and heritage sites is a function of how “vernacular” and “official” beliefs about the past coalesce.⁸² When this happens, ideas about heritage exert remarkable influence.

Because industrial heritage sites, as places of public memory, are rhetorical and because heritage itself is rhetorical, I believe that industrial heritage sites present ideal locations to explore the intersection of public memory and the rhetoric of technology. As I have argued, the rhetoric of technology comprises discourses that impact how the social practices that surround technology come into being and how those discourses are rhetorically maintained. As industrial heritage sites rhetorically reconstruct the past to maintain identities and practices associated with industrial technology, it stands to reason that this redeployment is within the scope of the rhetoric

of technology insofar that the rhetoric of technology is concerned with the justification and maintenance of the rhetorical milieu that surrounds technology.

The Theory of Autonomous Technology

In this section, I suggest that the theory of autonomous technology is a theoretical framework within which the intersection of the rhetoric of technology and public memory can be more clearly understood. To make this suggestion, I provide a brief history of the theory of autonomous technology and demonstrate how the intersection of the rhetoric of technology and public memory is one mechanism through which *la technique* functions. As well, by suggesting that the rhetoric of technology and public memory can contribute to our understanding of the theory of autonomous technology, I aim to demonstrate the worth and timeliness of the present study.

The term *autonomous technology* refers to the theoretical perspective that modern technology has come to develop with a logic that, in most instances, exceeds the control of humanity, despite its origin in humanity's works. Throughout the twentieth century, several noteworthy philosophers of technology have written on the subject—including, but not limited to, Lewis Mumford, Jacques Ellul, Martin Heidegger, Herbert Marcuse, and Langdon Winner. Of these, Ellul provides what is perhaps the well-known and substantial account. As such, and because a complete review of the theory of autonomous technology is beyond the scope of this dissertation, I focus attention on Ellul's account of autonomous technology formulated in *The Technological Society*.

In *The Technological Society*, Ellul takes a broad view of technology. Doing so, he “rarely addresses the effects of individual technologies, instead focusing on technology at the

highest level of abstraction; as a system, a worldview, and a way of life.”⁸³ From this view, he argues “that we have entered a historical phase in which we have given up control over human affairs to technology and the technological imperative” and in which “technology has become autonomous and automatic, self-augmenting or expanding at an ever increasing rate and encompassing every sector of human society.”⁸⁴ Important to Ellul’s account is the absence of ideology in technology. That is, large technical systems “represent no large ideas or value systems” other than themselves.⁸⁵ It is society that comes to orbit the will of technology and not technology that comes to orbit the will of society.

Central to Ellul’s account of autonomous technology is *la technique*—a system of organization, practices, and infrastructure born of humanity’s relationship with technology. *la technique* is best understood as the way in which a society that adopts large, technical systems must also adopt practices that make the operation of those systems efficient. An oft cited historical example resides in the railroad system. When steam powered railroad systems were first constructed it became necessary to regiment time by zone. This was done so that passengers and cargo were guaranteed an accurate arrival time and that more than one train could be run on a single track without risk of accident. Eventually, to ensure that railroads operated efficiently and that people became accustomed to their presence, time practices associated with railroads were adopted in all corners of society, ultimately regimenting nearly all other activities. Not only did the change eliminate regional distinctiveness but it also ensured that peoples became bound together by virtue of the technical systems they collectively relied upon. The example of timekeeping and the railroad demonstrates how the desire to operate technical systems in an efficient manner necessarily molds human practices around those systems’ needs. For Ellul, this

is the essence of *la technique*—how a technical system can shape how people understand and interact with the world.

In a more theoretic terms, Ellul argues that “*la technique* integrates the machine into society. It constructs the kind of world the machine needs and introduces order where the incoherent banging heaped up ruins. It clarifies, arranges, and rationalizes; it does in the domain of the abstract what the machine did in the domain of labor. It is efficient and brings efficiency to everything.”⁸⁶ In Ellul’s account, *la Technique* is a phenomenon with ancient roots that has traditionally been kept in check by traditional forces but which has been freed with the modern degradation of those forces. He argues, for example, that the erosion of institutions like the church has increased the influence of *la technique* by eliminating social practices and ethical convictions that once provided a counterbalance to *la technique*’s impetus to reorganize society. The rise of industrialism and capitalism, for Ellul, is essentially a symptom of humanity’s newfound acceptance of anything ordained by *la technique*. From this view, *la technique* is less of a new force in human history and more of an emergent phenomenon associated with the adoption of large, technical systems.

As a historical force, *la technique* and its logic is understood to operate with or without human intervention—a reality born of its rootedness in the material conditions of technology. This, of course, is not to say that *la technique* exists without the presence of humans. Rather, it is a claim that the logic of *la technique* influences what humanity sees as possible to such a degree that it becomes difficult to understand how choices were once made without it—ultimately allowing *la technique* to grow by its own logics more or less unchallenged. Thus, for example, today it is difficult for most industrialized peoples to imagine life without regimented timekeeping first introduced by the railroad industry, meaning that other systems and ways of

being predicated upon its existence essentially go ignored. Drawing upon this reality, Ellul argues that once we make foundational choices about the design, purposes, and needs of technological systems, *la technique* ensures that technical choice becomes automated, humans self-augment themselves to the needs of technical systems and that various manifestations of *la technique* become interconnected.⁸⁷ Importantly, this process removes the public from most decisions regarding technological innovation, ensuring that, at best, they are merely along for the ride. In short, the theory of autonomous technology articulates a world within which political, organizational, and economic decisions about technology become “automated” by the logics and needs of technical systems themselves.

Here, it is important to distinguish the theory of autonomous technology from traditional accounts of technological determinism. Critics of the theory of autonomous technology have often used the banner of anti-determinism to undermine its conclusions. In doing so, however, critics often accuse the theory of espousing a Heilbroner-esque view of socio-technical development, within which technology determines the characteristics of the prevailing socioeconomic order.⁸⁸ From this view, opponents accuse the theory of autonomous technology of arguing that technology not only requires particular social organizations and beliefs as evidence of its success but also that there is a nearly one-to-one correspondence between eras of history and stages in technological development. For example, Donald MacKenzie, in an analysis of the evolution of missile guidance systems, contends that belief that large technical systems operate by a logic of their own is “the most pervasive and paralyzing determinism” that makes the technological worlds seem “out of control, following its own course independent of human needs and wishes.”⁸⁹ In response to their understanding of the theory of autonomous technology, MacKenzie, and others like him, propose an understanding of technological

development that hinges on the view of technical systems as socially constructed objects. In this vein, Pinch and Bijker draw from the sociology of science to argue that a “multidirectional model” of innovation—in which human choice factors into how and why specific technical designs succeed, and others do not—is a better tool with which to understand how technology evolves.⁹⁰ In principle, such a sociological approach to understanding technological development is intended to address what is perceived to be the deterministic pitfalls of the theory of autonomous technology by orienting toward the effects of human choice.

Unfortunately, however, these points of refutation “do not speak to” the theory of autonomous technology’s “actual position.”⁹¹ Langdon Winner argues that the social constructivist responses “to the idea of the autonomy of technology is almost always superficial, dealing with surfaces rather than deeper patterns.”⁹² In most accounts of the theory of autonomous technology—especially Ellul’s—arguments about the relationship between technology and societal characteristics are much more subtle than those of hard determinism. Rather than proposing a hard determinism that writes human choice out of the equation, the theory of autonomous technology “does not assert . . . that *la technique* springs from anything other than social aggregates and activities.”⁹³ For example, Ellul writes that “modern men are so enthusiastic about *la technique*, so assured of its superiority, so immersed in the technical milieu, that without exception they are oriented toward technical progress . . . essentially, *la technique* progresses as a result of this common effort.”⁹⁴

Similarly, Mumford argues that “Man is his own supreme artifact,” and that “Despite the elimination of subjectivity from the mechanical world picture, the desire for perfection, the need to defy and circumvent fate, the impulse to transcendence, can be observed in technology, too” because of its connection to humanity.⁹⁵ Still, further, Marcuse contends that humanity’s “private

space has been invaded and whittled down by technological reality. Mass production and mass distribution claim the entire individual . . . The result is not adjustment but mimesis: the immediate identification of the individual with his society, and through it, society as a whole.”⁹⁶ In all cases, human choice is depicted as interrelated with and constrained by technology, not determined by it.

Winner provides what is perhaps the most spirited defense of the theory of autonomous technology, as well as one of the most comprehensive depictions of its relationship with human choice. Instrumental in Winner’s account is the enormous complexity of modern technological systems. As they become increasingly more complex, he writes, “the possibility of directing technological systems toward clearly perceived, consciously chosen, widely shared aims become an increasingly dubious matter,” as an “overload of information” replaces democratic, “active participation” with “haphazard monitoring.”⁹⁷ That is because technological systems evolve into networks so complex that no one person can fully comprehend how they operate the ability to completely oversee and direct of those systems erodes. Ultimately, however, this erosion does not eliminate human choice. Rather, the complexity of technological systems, coupled with the inability to grasp how they work completely, means that logics designed into those systems become the standard by which we make decisions. Human autonomy remains—but trapped within a technological maze of our own construction. As Winner writes, “the most important consequence of this situation is that, in a fundamental way, the whole of society runs off track. The idea that civilized life consists of a fully conscious, intelligent, self-determining populace making informed choices about ends and means and taking action on that basis is revealed as a pathetic fantasy.”⁹⁸

It is here, in the gap between the complexity of technological systems and human agency, that I believe the rhetoric of technology and memory studies stands to make a contribution to the theory of autonomous technology. To date, most scholarship that deals with the theory of autonomous technology typically does so through the lenses of political science, the philosophy of technology, sociology, or history. While their contributions are notable, I believe that rhetoric's role as both an organizer of knowledge and a symbolic means of inducing cooperation situates it well as a means to understand how what Ellul terms *la technique* constrains human choice and encourages the logics of various technics. More specifically, because the rhetoric of technology lays claim to discourses that are concerned with how human practices that surround technology come into being and how they rhetorically are maintained, I believe it is reasonable to suspect that the rhetoric of technology itself can be—at least in some instances—a component of *la technique*. Perhaps alluding to this, Miller argues that “our culture is a highly technological one, and the ethos which it inspires must necessarily be technological.”⁹⁹ Similarly, Scott contends that the disposition of *kairos* in rhetoric *about* technology sets the stage for what technological developments seem worthwhile at any given time.¹⁰⁰ Situating such claims within the theory of autonomous technology, and thus suggesting that they are a function of *la technique*, not only gives depth to their arguments but also illuminates the rhetorical situation within which they reside. Fundamentally, it supposes rhetoric itself can become a tool that perpetuates a system of knowledge that privileges *la technique*. Even Ellul himself seems to suggest as much, arguing that as humanity's relationship with technology becomes more close-knit “education will no longer be an unpredictable and exciting adventure in human enlightenment, but an exercise in conformity and apprenticeship to whatever gadgetry is useful in a technical world.”¹⁰¹

In the previous section, I proposed that how the industrial past is recollected impacts the technological present. As well, I have also suggested that the rhetoric of technology might fruitfully be considered to contain recollective discourses about technology (for example, industrial heritage). Here, given my conclusion that the rhetoric of technology is potentially a component of *la technique*, I argue that recollections of technology too can be understood as contributing to *la technique*. Importantly, I believe that this argument meshes well with Halbwachs' assertion that collective memory bears upon technical organization and group practices regarding technical matters.¹⁰² Situating the full spectrum of technological recollections in relation to the theory of autonomous technology, then, ultimately shows how *la technique* influences not only human practices but also collective identity. Recollections of technology, of course, can, and do, include several different types of discourse, showing that this influence might occur through various means. For example, choice forms of human relationships with technology might be recollected as praiseworthy, such as being a worker or an inventor. As well, the impact of certain types of technology might be remembered as beneficial or worth the risk that they brought, such as how early coal-burning factories are often remembered as bringing economic prosperity to a region. Still, further, the recollection of successful innovation might celebrate certain forms of industrial organization over others. Whatever the form of recollective discourse, however, I believe that prevalent trends in how we recollect technology are given more meaning when we view such recollection considering the theory of autonomous technology.

Still, further, I believe that associating the recollection of technology with the theory of autonomous technology gives greater depth to our understanding of the terms within the rhetoric of technology. For example, *kairos* in the rhetoric of technology, which has been described by

Miller and Scott as setting the scene for future technological development, resonates loudly with descriptions of *la technique*. Because *la technique* is the force through which technological systems organize their context in ways beneficial to themselves, the ability of recollections of past technology to suggest the appropriateness of certain decisions regarding modern technology suggests their kairotic potential. That is, recollections of the technological past can be considered to be part of the rhetoric of technology as a function of their ability to provide input about when particular types of technological policies are fitting. More specifically, we might consider the kairotic function of recollections of the technological past as a component of what Miller terms “rhetoric from technology”—discourse derived from patterns of thought that are a direct result of how technology influences our daily lives.¹⁰³

Given the prevalence of places of public memory in contemporary practices of public memory, as well as their ability to construct preferred identities and mobilize power, I believe that such locations offer worthwhile artifacts through which to understand how to memory and *la technique* intersect.¹⁰⁴ This assertion is bolstered by the explosive growth of industrial heritage sites, which explicitly recollect historical technologies to preserve the human practices and identities they once inspired. If *la technique* is responsible for ensuring that human choice is constrained in ways that ensure modern technological systems are allowed to develop by their own logics more or less unimpeded, then it stands to reason that recollection of past versions of those systems as part of the nation’s industrial heritage might serve as a conduit through which practices and beliefs important to those systems are transmitted. In this way, how past technologies are remembered can be understood to impact our relationship with technology in the present.

Conclusion

In this chapter, I have put in conversation literature about the rhetoric of technology, memory studies, and the theory of autonomous technology. I have argued that memory studies can fruitfully be understood as contributing to the rhetoric of technology, and that memory as a component of the rhetoric of technology gives depth to our understanding of the theory of autonomous technology. Moreover, I have also argued that places of public memory in the form of industrial heritage sites provide a fitting site of analysis within which we can analyze public memory as a component of autonomous technology. In the next chapter, I outline my approach to studying three industrial heritage sites: Lowell National Historical Park, the National Museum of Industrial History, and Thomas Edison National Historical Park. Analyzing these sites via rhetorical fieldwork, in the remainder of my dissertation, I explore how the rhetorical tendencies of these industrial heritage sites suggest that they contribute to *la technique*, and thus can be evaluated using the theory of autonomous technology.

Notes

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- ³ Carolyn R. Miller, “Learning from History: World War II and the Culture of High Technology,” *Journal of Business and Technical Communication* 12, no. 3 (1998): 308-309.
- ⁴ Lynch and Kinsella, “The Rhetoric of Technology,” 4.
- ⁵ Edward Schiappa, *The Beginnings of Rhetorical Theory in Classical Greece* (New Haven, CT: Yale University Press, 1999), 7.
- ⁶ George A. Kennedy, *A New History of Classical Rhetoric* (Princeton, NJ: Princeton University Press, 1994), 12.
- ⁷ Robert Hariman, “Status, Marginality, and Rhetorical Theory,” *Quarterly Journal of Speech* 71, no. 1 (1986): 45.
- ⁸ Jose Ortega y Gasset, “Man the Technician,” in *Toward a Philosophy of History*, (New York: Norton, 1941), 94.
- ⁹ David E. Nye, *Technology Matters* (Cambridge, MA: The MIT Press, 2006), 11.
- ¹⁰ Nye, *Technology Matters*, 12.
- ¹¹ Nye, 12.
- ¹² Leo Marx, “Technology: The Emergence of a Hazardous Concept,” *Technology and Culture* 51, no. 3 (2010): 562.
- ¹³ Leo Marx, “Technology,” 563.
- ¹⁴ Lynch and Kinsella, “The Rhetoric of Technology as Rhetorical Technology,” 1.
- ¹⁵ Lynch and Kinsella, 1; Bazerman, “The Production of Technology,” 383.
- ¹⁶ Bazerman, “The Production of Technology,” 381; Charles Bazerman, *The Languages of Edison’s Light* (Cambridge, MA: The MIT Press, 1999).
- ¹⁷ Arnold Pacey, *The Culture of Technology* (Cambridge, MA: The MIT Press, 1983), 6.

- ¹⁸ Arnold Pacey, *Meaning in Technology* (Cambridge, MA: The MIT Press, 1999), 8.
- ¹⁹ Pacey, *The Culture of Technology*, 6.
- ²⁰ Leo Marx, *The Machine in the Garden: Technology and the Pastoral Ideal in America* (Oxford: Oxford University Press, 1964), 145-226.
- ²¹ David E. Nye, *Narratives and Spaces: Technology and the Construction of American Culture* (New York: Columbia University Press, 1997), 61-73.
- ²² Pacey, *The Culture of Technology*, 7.
- ²³ Nye, *Technology Matters*, 3.
- ²⁴ Nye, 5.
- ²⁵ Walter Fisher, "Narration as a Human Communication Paradigm: The Case of Public Moral Argument," *Communication Monographs* 51, no. 1 (1984): 9.
- ²⁶ Bazerman, "The Production of Technology," 383.
- ²⁷ Miller, "Learning from History," 307.
- ²⁸ Karl Marx, *Capital Vol. 1*, Trans. Ben Fawkes (New York: Penguin, 1990), 253; Catherine Chaput, "Rhetorical Circulation in Late Capitalism: Neoliberalism and the Overdetermination of Affective Energy," *Philosophy & Rhetoric* 43, no. 1 (2010): 13-14.
- ²⁹ Bazerman, "The Production of Technology," 385.
- ³⁰ James L. Kauffman, *Selling Outer Space: Kennedy, the Media, and Funding for the Project Apollo, 1961-1963* (Tuscaloosa: The University of Alabama Press, 1994), 30-49.
- ³¹ Kauffman, *Selling Outer Space*, 33-34; Janet Hocker Rushing, "The Rhetoric of the American Western Myth," *Communication Monographs* 50, no. 1 (1984): 15-17.
- ³² Bazerman, *The Languages of Edison's Light*, 112-140.
- ³³ Loren R. Graham, *The Ghost of the Executed Engineer: Technology and the Fall of the Soviet Union* (Cambridge: Harvard University Press, 1993), 55.
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³⁵ Carolyn R. Miller, "Technology as a Form of Consciousness: A Study of Contemporary Ethos," *Central States Speech Journal* 29, no. 4 (1978): 234.

³⁶ Joshua Welsh, "Common Sense and the Rhetoric of Technology," *Poroï* 10, no. 1 (2014): 28.

³⁷ Langdon Winner, *The Whale and the Reactor: A Search for Limits in an Age of High Technology* (Chicago: The University of Chicago Press, 1986), 5.

³⁸ Carolyn R. Miller, "Opportunity, Opportunism, and Progress: *Kairos* in the Rhetoric of Technology," *Argumentation* 8, (1994): 92.

³⁹ Miller, "*Kairos* in the Rhetoric of Technology," 93.

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⁴³ J. Blake Scott, "Kairos as Indeterminate Risk Management: The Pharmaceutical Industry's Response to Bioterrorism," *Quarterly Journal of Speech* 92, no. 2 (2006): 119.

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⁴⁵ Magnus Johansson, *Smart, Fast, and Beautiful: On Rhetoric of Technology and Computing Discourse in Sweden 1955-1995* (Linköping, SE: Linköping University, 1997).

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⁴⁹ Barry Schwartz, "The Social Context of Commemoration: A Study in Collective Memory," *Social Forces* 61, no. 2 (1982): 377.

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⁵¹ Carole Blair and Neil Michel, "Commemorating in the Theme Park Zone: Reading the Astronauts Memorial," in *At the Intersection: Cultural Studies and Rhetorical Studies*, ed. Thomas Rosteck (New York: Guilford Press, 1998), 59.

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⁵⁵ Bennett, *Birth of the Museum*, 60-61.

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⁵⁸ Weiser, *Museum Rhetoric*, 49.

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⁶⁷ Neil Cossons, “Why Preserve Industrial Heritage?” in *Industrial Heritage Retooled: The TICCIH Guide to Industrial Heritage Conservation*, ed. James Douet (Lancaster: Carnegie, 2012), 14.

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⁷⁵ Stanton, *The Lowell Experiment*, 4.

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- ⁸⁵ Strate, 28.
- ⁸⁶ Jacques Ellul, *The Technological Society* (New York: Vintage, 1964): 5.
- ⁸⁷ Ellul, *The Technological Society*, 79-148.
- ⁸⁸ Robert L. Heilbroner, "Do Machines Make History," in *Does Technology Drive History*, eds. Merritt Roe Smith and Leo Marx (Cambridge, MA: The MIT Press, 1994), 54-65.
- ⁸⁹ Donald MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* (Cambridge, MA: The MIT Press, 1990), 4.
- ⁹⁰ Trevor J Pinch and Wiebe E. Bijker, "The Social Construction of Facts and Artifacts: Or How the Sociology of Science and Sociology of Technology Might Benefit Each Another," in *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, eds. Wiebe E Bijker, Thomas P. Hughes, and Trevon Pinch (Cambridge, MA: The MIT Press, 1989), 29.
- ⁹¹ Langdon Winner, *Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought* (Cambridge, MA: The MIT Press, 1977), 62.
- ⁹² Langdon Winner, "The Enduring Dilemmas of Autonomous Technique," *Bulletin of Science, Technology & Society* 15, no. 2 (1995): 67.
- ⁹³ Winner, "The Enduring Dilemmas," 67.
- ⁹⁴ Ellul, *The Technological Society*, 85.
- ⁹⁵ Lewis Mumford, *The Myth of the Machine: The Pentagon of Power* (New York: Harcourt, 1964), 417-418
- ⁹⁶ Herbert Marcuse, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society* (Boston: Beacon Press, 1964), 10.
- ⁹⁷ Langdon Winner, *Autonomous Technology*, 295-296.
- ⁹⁸ Winner, *Autonomous Technology*, 296.

⁹⁹ Miller, “Technology as a Form of Consciousness,” 234.

¹⁰⁰ Scott, “Kairos as Indeterminate Risk Management,” 119.

¹⁰¹ Jacques Ellul, *The Technological Society*, 349.

¹⁰² Halbwachs, *On Collective Memory*, 160-166.

¹⁰³ Miller, “Learning from History,” 307.

¹⁰⁴ Dickinson, Blair, and Ott, “Rhetoric/Memory/Place,” 27-29.

Chapter Two: Investigating Industrial Heritage Sites with Rhetorical Fieldwork

Introduction

In this chapter, I outline the methodology that I use to analyze the rhetorical features of industrial heritage sites. I begin by identifying and justifying my choice of Lowell National Historical Park, the National Museum of Industrial History, and Thomas Edison National Historical Park as locations for analysis. In doing so, I argue that because national governmental organizations both operate and are affiliated with these sites and because these sites are heavily trafficked by visitors, they can collectively be used to gauge how the United States generally perceives its industrial heritage. Together, I believe that these conditions make the sites useful for parsing the rhetoric of industrial heritage sites and how that rhetoric impacts guests. Once I have described and justified my sites, I then articulate the method I use to interpret and analyze those sites. Specifically, I demonstrate that my method is rooted in rhetorical fieldwork.

Sites for Analysis

I have identified three sites that my dissertation will examine to determine how industrial heritage shapes and is shaped by the rhetoric of technology. All of the sites I have selected are located in the United States and recollect aspects of the American industrial past. Of course, it is worth noting that industrial experiences and claims of industrial heritage are by no means confined to the United States. Many similar sites exist in other cultural contexts. My focus on industrial heritage sites in the United States is a function of my desire to allow my analysis of each site to layer seamlessly upon one another in a manner that allows me to discover common themes therein. While I do not dispute the importance of sites in other cultural contexts, I believe that they would be better addressed in separate research that can pay adequate attention to their

own cultural nuances. To further ensure that the sites I have selected present a reasonably bounded whole, I have chosen locations that are a part of either the National Park Service or are Smithsonian Institute affiliates. Importantly, affiliation with the NPS or the Smithsonian Institute ensures that a site is associated with the U.S.'s official narrative of the past and intimately connected with how citizens come to identify as Americans. In this vein, Thomas Patin observes that “politicians, government officials, artists, and activists have long used national parks, monuments, and wilderness areas as implicit and explicit sites of political argument.”¹ Similarly, Weiser reminds us that national museums, like the Smithsonian Institute and its affiliates, play “an important role in . . . psychic transformation from local subject to national citizen,” as well as “provide a material demonstration of a national rhetoric that is voluntary, aesthetic, and polyphonic, and that can have a strong motivational effect on civic life.”² When national parks and national museums alike present information about science and technology, what is displayed and how it is displayed bears on what is pronounced as “belonging to the proper realm of ‘science’” and as being “something an educated public ought to know about” if they are to fit well into society.³ Together, these factors ensure that the messages the sites I have selected impart are not only intended to reach a national audience but also bear upon how that audience understands technology and identifies their relationship with technology.

Importantly, the sites I have selected are located in the Northeast of the United States, placing them within the footprint of the earliest part of the nation to be impacted by the industrial revolution. Because of the historical significance of their location, their association with the industrial revolution, and their association with national organizations, these sites offer a window onto the rhetorics that pervade industrial heritage in the United States broadly. Together, they provide a relatively bounded set of sites that I believe will illuminate different aspects of how

industrial heritage and the rhetoric of technology interact. In the following sections, I briefly characterize and justify the sites I have chosen. However, more in-depth histories of each site are located within their respective chapters.

1. *Lowell National Historical Park* is the oldest national industrial heritage site in the United States. I have chosen LNHP as a location for analysis because it has played a significant role in setting the standard for other American industrial heritage sites. I believe that the information I gather here will likely characterize results that I find at the other industrial heritage sites I analyze and those outside of the scope of my dissertation. LNHP is centered around the textile mills built in Lowell, MA during the nineteenth century. Because of its role in the early industrial revolution in the United States, the park bills itself as a place where one can “Discover the Continuing Revolution.”
2. *National Museum of Industrial History*. Opened in 2016, NMIH is located in Bethlehem, PA and housed on the former site of Bethlehem Steel. Affiliated with the Smithsonian, the site hosts a range of artifacts that span the history of the industrial revolution in the United States. I believe this site contributes to an understanding of the general beliefs about the United States’ industrial past, as well as shows how local heritage is integrated into the national story of industry. The stated mission of the site is “to forge a connection between America’s industrial past and the innovations of today by educating the public and inspiring the visionaries of tomorrow.”
3. *Thomas Edison National Historical Park*. TENHP is located in northern New Jersey and is comprised of Thomas Edison’s research laboratory and home. This site is home to a significant collection of period tools and technologies. I believe that this site illuminates how industrial heritage bears upon the organizational and cultural aspects of technology,

as it focuses closely on what was the nation's first corporate research laboratory. The park bills itself as a place where visitors can "Discover where America's greatest inventor changed our world forever."

Using these three sites, I outline common rhetorical features to industrial heritage sites and discuss how these features relate to both the rhetoric of technology and the theory of autonomous technology. However, because each site that I have selected exemplifies similar rhetorical features, I use each site to explore a single feature. That is, each of the subsequent chapters focuses solely on a particular rhetorical feature, using one of three sites I have selected as a case study. Each feature is paired with the industrial heritage site that exemplifies it best. As the chapters progress, I layer these analyses upon each other, building a broader picture of the intricacies of the rhetoric of technology at industrial heritage sites.

Rhetorical Fieldwork

In this section, I address the methodology that I use to identify and interpret the rhetorical features of my selected industrial heritage sites. To carry out my analysis of industrial heritage sites, I use a methodology oriented toward rhetorical fieldwork. Unlike more traditional rhetorical scholarship that focuses on discursive artifacts, rhetorical fieldwork claims a wide array of phenomena as texts as well as pays close attention to aspects of embodied experiences that are difficult to capture textually. Examples that fall within the purview of what rhetorical fieldwork has been used to analyze include the built environment, monuments, ephemeral oral communication, movement, displayed objects, affective environments, and even the human body.

Defining the Field

Because of the situated nature of such artifacts, rhetoricians are often required to encounter them *in situ*, as viewing rhetoric in the contexts within which it thrives allows “the nexus where rhetoric is produced, where it is enacted, where it circulates, and . . . where it is audienceed” to be observed.⁴ Encountering rhetoric *in situ*, then, requires fieldwork that is attuned to rhetoric. Importantly, rhetorical fieldwork and its broad understanding of what can constitute a rhetorical artifact allow rhetoricians “to attend to the way discourse moves, articulates, and shapes the material realities of people’s lives in the everyday, in the public, and in their communities.”⁵ Moreover, it permits rhetoricians to come to know the “often-unseen ways that individuals and groups respond, resist, and try to revise” their rhetorical actions.⁶ In short, venturing into the field provides rhetoricians with a more nuanced and intimate understanding not only of what can be claimed as rhetoric but also of how audiences interact with that rhetoric.

As rhetorical fieldwork is used to investigate rhetorical artifacts that often reside in liminal spaces or are not immediately apparent as a bounded whole, those who adopt it as a methodological approach must identify and justify the bounds and structure to their work. As well, they must also identify what aspects of that bounded whole they intend to interpret and how they intend to do so. Perhaps the most important step toward doing this is the determination of a rhetorical artifact in the form of a field location. To do so, rhetoricians must first define and delimit what they consider to be the field relevant to their research. The field can be understood as a “socially constructed place imbued with meaning(s) that simultaneously enables, constrains, and constitutes rhetorical practices.”⁷ How rhetoricians delimit the field relevant to their research necessarily influences the conclusions to which they may arrive. Selection of the locations and artifacts that are to be analyzed must be approached with care, as the “difference between context

and artifact often is not clear when using rhetorical field methods.”⁸ In other words, because the message of an object of analysis is tied to its surroundings, then how those surroundings are considered in relation to that object of study bears upon our understanding of it. Importantly, in selecting a field, researchers must necessarily eliminate from consideration certain features, as considering too broad a context can overcomplicate a study.

The importance of delimiting a field is demonstrated well by Carol Blair and Neil Michel in their oft-cited essay, "Commemorating in the Theme Park Zone: Reading the Astronauts Memorial." Here, using the Kennedy Space Center and Walt Disney World as examples, Blair and Michel argue that as guests travel across their “experiential habitat” (or, landscape created by their journey) they “forge a series of intertextualizations” that necessarily “constrain” and create rules for how they interpret meaning in the phenomena they encounter.⁹ Because each rhetorical artifact that an individual encounters can be loosely understood as a text, how these texts interact with one another by virtue of that individual’s movement through a landscape. Thus, intertextualizations create “rules for reading” that are intimately bound to a delimited location and how individuals proceed through that location.¹⁰

To delimit my own fields at Lowell National Historical Park, the National Museum of Industrial History, and Thomas Edison National Historical Park I pay close attention to locations that are explicitly claimed by and associated with those sites, as these likely strongly impact the way guests intertextualize. Here, it is essential to note that most industrial heritage sites, as well as heritage sites more broadly, are *in situ* locations comprised not of a single location, but instead of series locations spread across a given region.¹¹ The spread-out nature of industrial heritage sites increases the size of what might be considered the field exponentially. In response to this, my initial analysis focuses on locations explicitly associated with the industrial heritage sites I

examine, such as museum locations and preserved environments. However, as I work through these sites with an eye toward guests' behavior, I will also pay attention to locations near or around the industrial heritage sites that may impact how those guests come to understand the sites themselves. As such, the text that I interpret will consist of the areas each site explicitly claims plus related areas to which guests' behavior appears to grant importance.

In the present dissertation, attention both to the official bounds of a park and to guests' behavior has impacted what I consider to be critical aspects of the field in several instances. For example, Lowell National Historical Park's bounds are explicitly provided to guests in the form of maps and other interpretive material given to guests at the site's welcome center. In all cases, my analysis begins with general boundaries like this provided by the respective site's administrative organizations. However, the specific locations within those sites' official boundaries that concentrate my analysis upon are determined by observation of guests' behavior, my own interpretation of the site's, and feedback from park employees and volunteers. For example, at Thomas Edison National Historical Park, my analysis of guests' movement through the main museum is informed by both my own observations of guests and information provided to me by the park's rangers, which suggest that the main museum is the site's central attraction. Attending to the site in this manner allows me to observe how its rhetoric operates *in situ*, allowing me to interpret how it "moves, articulates, and shapes" guests' understanding of the memories the site recollects.

As well, I identify locations that are not officially a part of each site but linked to how it is experienced by guests.¹² Blair and Michel refer to such locations as components of guests' "experiential habitat"—places that are not obviously a component of a location that still constrain and influence its meaning.¹³ My process for identifying these locations is essentially

the same as the process I use to identify important locations within the official boundaries sites and centers primarily on the observation of guests, information from park employees, and my own understanding of the sites. Thus, for example, in chapter four, I identify the SteelStacks attraction in Bethlehem, PA as part of the experiential habitat of the National Museum of Industrial History's guests by asking the park's employees what attractions people who visit Bethlehem, PA usually visit. Once identified, I include the SteelStacks within the bounds of my analysis.

Interpreting the Field

Once the bounds of the field and noteworthy locations within the field are identified, researchers who engage in rhetorical fieldwork must also determine the way which they interpret these locations. Because rhetoric in the field is often comprised of a diverse array of potential objects of analysis, a variety of interpretive methods can be used. For example, a museum may contain displayed objects, audio recordings, explanatory texts, interactive displays, guided tour monologues, designed floorplans, and a variety of other facets that all potentially have their own, unique rhetorical force. As a result, these objects all invite varying, and sometimes divergent, modes of analysis. Designing a method that can easily encompass the multiple nodes of meaning found in the field can be difficult. In response to this, researchers who engage in rhetorical fieldwork often orient their perspective toward that of individuals who commonly visit a site to allow those individuals' behavior to determine the best way to approach interpretation. Because all guests orient toward a site and its rhetoric through its features, the way they interact with those sites' features is not entirely spontaneous and often produces discernable patterns. By attuning to those patterns, objects, and features that exemplify a sites' rhetoric can be identified. In other words, researchers use guests' behavior to allow individuals' behavior as a tool to

augment their own critical judgment. Ultimately, it is through a combination of attention to guests' behavior and the researcher's judgment that specific artifacts are selected for analysis at a site.

In the present dissertation, I use a similar combination of participant observation and my own judgment to determine what displays and other curatorial practices of a location are important to my analysis. However, in addition to the observation of guests and my own interpretation of the sites' rhetorical features, my dissertation also addresses what guests and park employees themselves have to say about the sites. Importantly, conversations with others who also inhabit a field-based text can be understood as a type of embodiment through which that text is interpreted, as it allows the researcher to attune with guests visceral and ambient experiences of a site's displays.¹⁴ While my dissertation does not use in-depth, formal interviews, I do make an effort to engage casually with others as I explore industrial heritage sites. Primarily, this engagement centers on conversations with sites' employees and volunteers as I encounter them. I also converse with other guests when appropriate—typically, when they prompt the conversation. Importantly, I do not fully record my interactions with other guests or employees, but rather note relevant statements and use these conversations to guide my own journey through the sites. Because of the non-invasive nature of my engagement with the sites' employees and other guests, there is minimal possibility of harm for those with whom I interact, and their involvement is entirely voluntary. As well, industrial heritage site employees who are responsible for curation or interpretation of the site typically work in positions that require them to interact with the public while on the record. The explanation of curatorial choices is, therefore, an integral part of their work. Thus, my interactions with employees and volunteers are within the bounds of how any other guest may interact with them.¹⁵

Using the combination of methods covered above, in the present dissertation, I am able to identify several locations and displays within my selected sites that are critical to my analysis of those sites' rhetoric. For example, at Lowell National Historical Park I identify the site's restored, automatic looms as objects worthy of analysis based on guests' tendency to linger in their presence. Similarly, at the National Museum of Industrial History, I identify the site's experiential displays as central to guests' experience from guests' proclivity to asks guides questions about information related to those displays after they had interacted with them. Furthermore, at Thomas Edison National Historical Park, I demonstrate that the site's rhetoric portrays Edison as in control of the national, industrial scene through observation of guests' tendency to deify him in their interactions with parks interpreters, as well as in my own analysis of the site's displays. In all cases, the specific features that I interpret are chosen as a result of their apparent importance to guests and my own ability to locate them within the broader themes of a site.

Concerning these display and curatorial practices at the heritage sites I analyze, I aim to investigate how the design of industrial sites and any exhibits therein might persuade or dissuade visitors toward particular attitudes about technology. I am especially interested in how the compositional aspects of the sites constitute narratives that in turn might influence visitors' understanding of technology-practice and their own role within it. Lawrence Prelli reminds us that rhetorical displays necessarily both reveal and conceal.¹⁶ In other words, when designers of displays make decisions about information to be displayed, they also, consciously or not, make decisions about the information that should not be displayed. For example, at the National Museum of Industrial history, I find that by highlighting the experiences of workers the site also overlooks the experiences of who I term "higher-ups." Similarly, Bryan Taylor argues that the

configuration of elements at a heritage site, including their displays, shapes but does not determine visitors' attitudes toward nuclear heritage, encouraging them to accept one of two guiding narratives.¹⁷

By identifying how guests interact with what industrial heritage sites display and juxtaposing that behavior with what information those sites do not emphasize, as well as with what information is emphasized but overlooked by guests, a better understanding of how industrial heritage sites come to position guests in relation to technology can be gained. Critical to this understanding is what Weiser terms *deep narrative*. Deep narrative “implicitly tells visitors how they should interpret the artifacts, the placards, [and] the supposedly neutral object-based epistemologies they are examining.”¹⁸ Typically, deep narratives are most easily identified in the underlying assumptions of displays, what is left out of those displays, and how guests are encouraged to interact with those displays. In the present dissertation, through analyzing what my selected industrial heritage sites display, my goal is to identify deep narratives that bear upon how guests come to interpret their relationship with industrial technology. Each subsequent chapter addresses a particular deep narrative in detail.

Imitating Guests

To more fully understand guests' behaviors and how they interact with displays, rhetoricians who engage in fieldwork often mimic them, putting themselves into the same situations as guests. Mimicking guests' behavior—that is, performing the same behaviors yourself—enables the researcher's own experience of the site to be augmented by that of other guests, thus providing an added layer of experience that can be used in the analysis of a site. Importantly, mimicking moves field research beyond simple observation, helping the researcher to articulate embodied practices that are not easily observed. Mimicry can be understood as a

variation of *imitatio*, a rhetorical practice used by ancient rhetoricians to improve their comprehension of how and why great pieces of rhetoric were compelling. By mimicking individuals' behavior within a field-based rhetorical text, rhetoricians take part in “a form of vernacular imitation, a ‘bottom-up’ and polyvocal embodiment of live rhetorical activity that displaces the centrality of the liberal humanist subject to be endlessly emulated.”¹⁹ Ultimately, the use of *imitatio* enables rhetoricians to come to terms with the reproducible nature of the artifact they study and to more intimately understand how that artifact is interpreted by those who experience it—an understanding that guides how their own interpretation of the artifact proceeds.

In light of this form of *imitatio*'s ability to give depth to participant observation, in the present dissertation I have adopted it as a central methodological practice when working in the field. Importantly, my use of this form of *imitatio* has enabled me to understand my selected sites and the areas around them as bounded wholes—a use that also has augmented my ability to select aspects of each site for close analysis. Once guests' behavior has been observed, I then emulate that behavior myself. For example, at the National Museum of Industrial History, once I identified SteelStacks as a location within guests' experiential habitat, I found that visiting the museum after walking through SteelStacks changed my perception of the museum's displays. Similarly, at Lowell National Historical Park, mimicking how guests traveled through the site (either by foot or by trolley) drew my attention to rhetorical features common to both experiences. Ultimately, this allowed me to identify these features as vital to the site's message.

Conclusion

In this chapter, I have outlined this dissertation's methodological approach. Choosing to explore three industrial heritage sites using a method that roots in the tradition of rhetorical

fieldwork, I aim to meet the rhetoric of technology in the field, gathering insight that can then be related to the theory of autonomous technology. In the next chapter, I begin this analysis by turning to Lowell National Historical Park. Using this site, I argue that the rhetoric of technology at industrial heritage sites draws upon the technological sublime in a manner that augments its ability to praise technology's perceived potentials.

Notes

¹ Thomas Patin, "Naturalizing Rhetoric," in *Observation Points: The Visual Poetics of National Parks*, ed. Thomas Patin (Minneapolis: The University of Minnesota Press, 2012), xi.

² Weiser, *Museum Rhetoric*, 2, 8.

³ Sharon Macdonald, "Exhibitions of Power and Powers of Exhibition: An Introduction to the Politics of Display," in *The Politics of Display: Museums, Science, Culture*, ed. Sharon Macdonald (London: Routledge, 1998), 2.

⁴ Sara L. McKinnon, Robert Asen, Karma R. Chavez, and Robert Glenn Howard, "Articulating Text and Field in the Nodes of Rhetorical Scholarship," in *Text + Field: Innovations in Rhetorical Method*, eds. Sara L. McKinnon, Robert Asen, Karma R. Chavez, and Robert Glenn Howard (University Park: The Pennsylvania State University Press, 2016), 4.

⁵ McKinnon, Asen, Chavez, and Howard, "Articulating Text and Field," 4.

⁶ McKinnon, Asen, Chavez, and Howard, 4.

⁷ Samantha Senda-Cook, Michael K. Middleton, and Danielle Endres, "Interrogating the 'Field,'" in *Text + Field: Innovations in Rhetorical Method*, eds. Sara L. McKinnon, Robert Asen, Karma R. Chavez, and Robert Glenn Howard (University Park: The Pennsylvania State University Press, 2016), 25.

⁸ Samantha Senda-Cook, Michael K. Middleton, and Danielle Endres, "Interrogating the 'Field,'" 28.

⁹ Carole Blair and Neil Michel, "Commemorating in the Theme Park Zone: Reading the Astronauts Memorial," in *At the Intersection: Cultural Studies and Rhetorical Studies*, ed. by Thomas Rosteck (New York: Guilford Press, 1998), 59.

¹⁰ Blair and Michel, "Commemorating in the Theme Park Zone," 59.

¹¹ Barbara Kirshenblatt-Gimblett, *Destination Culture: Tourism, Museums, and Heritage*. (Berkeley: University of California Press, 1998), 153-154.

¹³ Carole Blair and Neil Michel, "Reading the Astronauts Memorial," 59.

¹⁴ Sarah Pink, *Doing Sensory Ethnography* (London: Sage, 2015).

¹⁵ During these interactions I make no special effort to identify myself as a graduate researcher in an effort to understand the typical interaction between guest and employee.

However, I do identify myself if it becomes pertinent to the conversation (for example, if a guide asks why I am interested in what most people who visit a site find interesting).

¹⁶ Lawrence J. Prelli, “Rhetorics of Display: An Introduction,” in *Rhetorics of Display*, edited by Lawrence J. Prelli (Columbia: University of South Carolina Press, 2006), 2.

¹⁷ Bryan C. Taylor, “Radioactive History: Rhetoric Memory and Place in the Post-Cold War Nuclear Museum,” in *Places of Public Memory: The Rhetoric of Museums and Memorials*, eds. Greg Dickinson, Carole Blair, and Brian L. Ott (Tuscaloosa: University of Alabama Press, 2010), 58-79.

¹⁸ Weiser, *Museum Rhetoric*, 58-58.

¹⁹ Joshua P. Ewalt, Jessy J. Ohl, and Damien Smith Pfister, “Rhetorical Field Methods in the Tradition of *Imitatio*,” in *Text + Field: Innovations in Rhetorical Method*, eds. Sara L. McKinnon, Robert Asen, Karma R. Chavez, and Robert Glenn Howard (University Park: The Pennsylvania State University Press, 2016), 49.

Chapter Three: The Technological Sublime in Industrial Heritage— Lowell National Historical Park

“. . . we will stop on the slight elevation by the gate and view the mills. The one to the left rears high its huge sides of brick and mortar, and the belfry, towering far above the rest, stands out in bold relief against the rosy sky. The almost innumerable windows glitter, like gems, in the morning sunlight. It is six and a half stories high, and, like the fabled monster of old, who guarded the sacred waters of Mars, it seems to guard its less aspiring sister to the right; that is five and a half stories high, and to it is attached the repair-shop. If you please, we will pass to the larger factory,—but be careful, or you will get lost in the mud, for this yard is not laid out in such beautiful order . . .

. . . We will just look into the first room. It is used for cleaning cloth. You see the scrubbing and scouring machines are in full operation, and gigging and fulling are going on in full perfection . . .”

Josephine L. Baker, from “A Second Peep at Factory Life.”¹

Introduction

In this chapter, I turn my attention to Lowell National Historical Park. Using this site, I show how industrial heritage sites’ rhetoric characterizes industrial technology—especially machinery—as sublime. Doing so, I argue that displays at industrial heritage sites direct guests’ attention to the assumed sublimity of industrial technology through the intertextualizations they afford with one another and with the physical remnants of industry within which such sites are immersed. As such, characterizations of industrial technology as sublime at industrial heritage sites are evoked by more than laudatory language in textual displays. Beyond such language, these characterizations are necessarily a function of how industrial heritage sites’ displays—in textual and visual forms—are experientially and spatially disposed. Arising from industrial heritage sites’ propensity to find sublimity in industrial technology, I argue, is a rhetorical situation that does not call guests to critically examine the implications of industrial technology and how it is designed. I argue that the sites failure to prompt guests to critically think about industrial technology results in the scapegoating of human agents for the problems associated with industrial technology.

Technology, Sublimity, and Heritage

Mapping out the implications of recollecting industrial technology as sublime first requires a foray to the confluence of sublimity and technology. Of this well-trodden region, David Nye provides perhaps the most thorough and engaging account. Drawing upon Longinus, Edmund Burke, and Kant, Nye articulates how sublimity flows into perceptions of technology, arguing that the sublime is ultimately the current that pushes forward the American “enthusiasm for technology.”² Identifying this confluence, Nye terms the perception of technology-as-sublime the *technological sublime*—an experience related to but distinct from the experience of sublimity in landscapes or other more natural contexts. “The technological sublime,” Nye argues, “is an integral part of contemporary consciousness, and its emergence and exfoliation into several distinct forms during the past two centuries is inscribed within public life.”³ Whether we are aware of it or not, the technological sublime plays an important role in how we understand technology, both historically and in the present.

Nye proposes that experiences of the technological sublime emerge from the dominant characteristics of large, technical systems. These characteristics take a variety of forms but always draw forth a sense of astonishment in response to the raw power and potential benefits of a technology.⁴ More often than not, this astonishment “suspends the mental faculties” of individuals who experience the technological sublime, inviting them to gaze in contemplation upon the object that prompted their experience in an effort to integrate its function into their understanding of the world.⁵ “The experience,” Nye writes, “has a basic structure. A [technical] object . . . disrupts ordinary perception and astonishes the senses, forcing the observer to grapple mentally with its immensity and power.”⁶ Because the “immensity and power” of a technical object is typically associated with its productive capacity, the technological sublime is often

associated with the potential of a technology to improve humanity through how it produces. For example, Nye argues that the characteristic of dynamism—or ability to move from place to place rapidly—of railroads provoked a sense of the technological sublime in those who first encountered them because of the astonishment they created. Similarly, he also identifies the technological sublime in the largeness of technological infrastructure, geometrical symmetry, productive volume, the immenseness of electric cityscapes, and variety of other cases. Ultimately, Nye argues that the ability of these characteristics of large, technical systems to evoke the technological sublime can transcend political and economic differences. “Keeping with democratic traditions,” he writes, “the . . . sublime was for all.”⁷

Importantly, the technological sublime’s inscription into public life and public practices “represents a way to reinvest the landscape and works of men with transcendent significance.”⁸ Through how various forms are prompted by the characteristics of technical systems, the technological sublime has played a central role in the American attitude toward new and developing technologies, easing their acceptance into and integration with daily life, as well as instilling a belief that humanity has connected with a progressive force of nature that will eventually solve its most pressing problems. Even now, during a time when more people have become increasingly jaded to the effects of technological progress, a belief that “despite setbacks, the intentional appropriation of technology enhances the human condition” persists.⁹ In this sense, the technological sublime might be understood as an interpretive device that enables the *autonomous* nature of technology and thus *la technique*.

The confluence of sublimity and technology flows not only through experiences of cutting-edge technologies but also through experiences of technologies from bygone eras. Because experiencing a sublime object or a landscape is intrinsically connected to pleasure,

emotional excitement, charm, and the use of imagination in ways that both attract and repel us from what is being perceived as sublime, the reality that these experiences transcend what is new means that the perception of the technological sublime is not restricted to what is new.

With regard to industrialism, rapid deindustrialization of regions like the rust belt has left the technological remnants of industry scattered across the American landscape. The derelict and unused nature of these remnants, however, does not impede the experience of sublimity that was ascribed to them when they were new and functioning. To refer to the experience of sublimity when in the presence of aging remnants of industry, Steven High and David Lewis have coined the term *deindustrial sublime*. For High and Lewis, the deindustrial sublime emphasizes “a sense of being swept away by the beauty and terror of economic change,” drawing attention both to the ability of industrial technology to create profound change and to what happens when industry goes awry.¹⁰

Layered atop the technological sublime, the deindustrial sublime still orients those who experience it toward the power and capabilities of industrial technology—for even if it draws attention to the negative attributes of economic change, the point of reference for what is lost when industrialism fails is necessarily a belief that industrialism had something to offer in the first place. In this sense, the intersection between the deindustrial sublime and the technological sublime lends itself to nostalgia for an industrial past, whether or not that past was ever desirable or ever existed at all. Of this, Barry Brummett argues that when a machine’s “original functionality is no longer possible to achieve” we must necessarily come to comprehend “the machine as something linked to the self” in a manner that calls us to “identify with the ruin.”¹¹ That is, by ceasing to be productive, a defunct machine requires us to understand it in terms of our past relationship with it (or, perhaps, in terms of an imagined relationship) and what our

identity was within that relationship. Thus, the experience of identifying with a decayed machine and its associated ruins “is one of nostalgia” that invites those who view it to contemplate it for “what it was and used to be able to do.”¹² Because reflection on the potential of a technic is linked to the evocation of the technological sublime, the nostalgia that decaying machinery prompts demonstrates how even defunct machinery can still prompt awe for the potential of technical systems. Often, the loss of the productive capacity of defunct technologies is understood to be connected to the *autonomous* advance of technical systems themselves, as even the foreclosed possibilities of obsolete technologies are assumed to give way to the future possibilities of the technologies that replace them.

In either case, a longing for the benefits of technological systems is palpable, and at industrial heritage sites, this longing is chiefly oriented toward the past. Calling the way that industrial ruins provoke a longing for the industrial past *smokestack nostalgia*, Jefferson Cowie and Joseph Heathcott argue that the predilection for interpreting industrial machinery as fixed, permanent, and lifegiving imbued industrial culture with “an aura of permanence, durability.”¹³ Because it appeared to be durable and permanent, the experience of and beliefs about industrial technology became woven into the fabric of daily life, ostensibly becoming the heritage of industrial society. Thus, the experience of the technological sublime has become part and parcel of how the past two centuries are recollected.

Cowie and Heathcott bemoan the “creeping industrial nostalgia” that has come to pervade how industrial history is recollected and how industrial heritage sites present the past to their guests.¹⁴ Echoing this, Ruth Milkman reminds us that it “is all too often forgotten in the age of deindustrialization” that “factory work in the golden age of mass production was deeply problematic in its own right,” with workers yearning “to escape its relentless and dehumanizing

rhythms.”¹⁵ The labor movements and wide-spread unionization of the 20th century attest to this reality. In the absence of tangible evidence of the negative aspects of industrialization and in light of the slow dismantling of the gains of the labor movement, however, smokestack nostalgia radiates from the deindustrial sublime and, as I will argue, possesses the ability to overpower recollection of the negative aspects of industrialization. Embodied in the rhetoric of industrial heritage sites and in the sublimity of the objects those sites preserve, smokestack nostalgia influences how industrial technology is perceived—an influence that potentially affects how we perceive ourselves and the communities within which we live.

In the remainder of this chapter, I use Lowell National Historical Park (LNHP) as an example through which to demonstrate how the experience and perception of the technological sublime at industrial heritage sites impacts the way industrial heritage sites recollect the past. To do so, I first provide a brief background overview of Lowell National Historical Park (LNHP). Then, I move on to analyze the site’s intersection with the technological sublime, paying particular attention to how this intersection impacts the ways that guests might interpret the site’s messages. In doing so, I treat the technological sublime as both a discrete phenomenon that guests experience and as something that they are guided toward through the content and disposition of the site’s displays. This dual understanding of how an industrial heritage site embodies the technological sublime allows me to account for the subtle experiential and material components of the site as well as how “textual representations of mechanical technology . . . allow the reader to see the technology through a particular set of eyes” that focus on the importance of industrialism to national heritage.¹⁶ Ultimately, through analysis of the varying ways that technological sublimity manifests at LNHP, I argue that the site’s orientation toward

the technological sublime creates a situation within which the onus of blame for the negative consequences of industrialism is shifted to human agents.

Lowell National Historical Park: A Background

The mills at Lowell, Massachusetts historically have long played a significant role in American culture and have set precedents for the United States on at least two occasions. The first, and most enduringly important, of these occasions was during the early nineteenth-century when Francis Cabot Lowell gambled on the potential of the Merrimack River to provide the power necessary to create a thriving industrial center. Cabot's gamble on Lowell proved to be clairvoyant, creating a blueprint for industrial growth that quickly spread throughout the United States.¹⁷ Most famously associated with young, white, mill girls clad in white dresses and carefully attending automatic looms, the Lowell mills provided "an administrated way of life" to its workers.¹⁸ For this endeavor, the mills were extolled, with countless commentators praising their ability not only to produce textiles efficiently but also for their apparent ability to create a well-trained and well-behaved workforce. As the first successful center of industrialized mass production in the fledgling United States, Lowell's working machinery became "a visual metaphor for the promised cornucopia of production."¹⁹ Today, nearly two centuries since Lowell's mills first spun into production, recollection of the mills' vision for the future and of their perceived potential has earned them a firm place in the industrial memory of the United States.

Less known than the precedent they set during the birth of industrialism, however, is the precedent Lowell's mills set during the late 1960s and early 1970s. It was at this time that deliberation over the creation of a new national park—one centered on the recollection of Lowell's industrial past—was taking place on a local and national level. The result of this

deliberation was the establishment of Lowell National Historical Park during 1978, a place of public memory that used a culture-centered approach to stimulate a failing local economy. The culture that LNHP drew upon, of course, was inextricably linked to the city's past as an industrial manufacturing hub. At a time when deindustrialization of what was to become known as the rust belt saw industry rapidly flee and urban decay run rampant, Lowell's residents decided to turn to their past to secure their future. Their effort, though not unique, succeeded where other attempts had failed—providing a blueprint for industrial heritage sites that is still closely followed today.²⁰ The repurposing of detritus from Lowell's industrial past—in the form of aging factories, machinery, and infrastructure—created a new type of cultural tool that would bring commerce back to the city and begin to influence the notion of American industrial heritage strongly. By giving up “standardized urban renewal schemes for an urban planning concept that focused on the city's history,” Lowell showed that cultural practices inscribed upon the American public by industrial technology still powerfully called to a society that was quickly exiting an era of mass industrialization.²¹

Lowell's central place both in the evolution of industrialism and in the emergence of industrial heritage has made it a point of interest across several fields of study. Of this, interest in LNHP has been especially prevalent. The most exhaustive study of LNHP and a landmark work at the intersection of industrial heritage and public history is Cathy Stanton's *The Lowell Experiment*. Stanton's goal in this study is to “understand professional public historians as social actors within a postindustrial city undergoing considerable socioeconomic and demographic change.”²² Through the lens of popular tours provided by LNHP's park rangers, Stanton explores how typically progressive public historians interact with locals to create narratives for public consumption about Lowell's industrial past. Stanton's exploration of this process demonstrates

how negotiation between local, vernacular voices and an organization with a vested interest in propagating an official, national narrative of the past necessarily leads to the omission of some information and imbues other information with importance. Such selection and deflection of information in the displays and construction of a place of public memory are necessarily rhetorical, highlighting the rhetorical dimension of the industrial heritage movement in general.²³ Importantly, Stanton argues that LNHP's potential to provoke visitors into critically engaging with the legacy of capitalistic industrialism, and how that legacy influences the present, remains untapped.²⁴ This suggests that, despite having the rhetorical tools necessary to do so, the narratives and experiences that LNHP imparts fail to transcend beliefs influenced by the technological sublime that took root at the birth of industrialism.

The perception that LNHP misses the mark when interpreting Lowell's industrial history is widely present in much of the scholarly literature about the site. Thomas Leary contends that the experience at Lowell is "very strong on the topics of labor history and shop floor experience, but . . . deals with textile technology in a haphazard fashion and is unimaginative in conveying the business side of the story."²⁵ "Neither scholarship nor collections," he continues, "ensured the creation of exhibits that realized their full potential as an educational medium."²⁶ Similarly, Thomas Leavitt, in a decidedly scathing review of Lowell, critiques what he sees as both its haphazard design and its inattention to explaining technical details of the site. "By presenting [the] story in this format," he declares, the curators "have failed to do justice to their subject."²⁷ Intriguingly, both Leary and Leavitt's critiques of LNHP appear to be at odds with Stanton's observation of a missed opportunity to critique the tools of industrial capitalism. Rather than desiring a move toward a critique of industry, Leary and Leavitt bemoan LNHP's decision to focus on a more vernacular than official story of the capitalist roots of industrial heritage. As I

will show, silhouetted against Stanton, Leary, and Leavitt's accounts of LNHP is the propensity of the site's displays and experiential components to center on an idealized relationship between humans and machines. It is this tendency of LNHP that is criticized by both approaches, with Stanton calling for this relationship to be further probed and Leavitt and Leary calling for it to be less attended to entirely. Poignantly, in their criticisms of the site, all three authors circle but do not identify, the influence of the technological sublime on LNHP.

In the forthcoming sections, I demonstrate how the technological sublime is rhetorically woven into LNHP and how the tapestry that this creates suggests a heritage that idealizes the relationship between humanity and machines by rhetorically imbuing machines with sublimity and the potential to alter humanity's future for the better. In demonstrating this, I approach LNHP with an understanding that it is located within an *experiential habitat* that guests must contend with as they work their way through the site. The notion of an experiential habitat presumes that the meaning of a place of public memory or other places of public gathering "is forged by a series of intertextualizations on the part of the visitor" wherein the landscape acts as a text.²⁸ Because LNHP is "not a neatly bound piece of real estate owned by the National Park Service" but instead a "series of buildings and open spaces within the downtown area," viewing the site as an experiential habitat illuminates guests' journeys throughout the site and provides insight into how they interpret the meaning of displays and experiences encountered in LNHP's formal museums. As well, because to treat an experiential habitat as a text is to place importance upon how guests proceed through a site and because procedure is necessarily rhetorical, exploring the primary ways that guests move through LNHP adds rhetorical depth to more traditional readings of the site's textual displays, showing how some messages come to be emphasized more than others.²⁹ To allow the importance of procedure to bear upon my analysis

of the technological sublime at LNHP, I examine the site in a manner true to the typical procedures followed by guests as observed by both myself and various employees of the park.

At the Visitor Center: “Lowell, the Continuing Revolution”

Arriving at LNHP, guests begin their visit at the visitor center. The visitor center is located on the bottom floor of one of Lowell’s many repurposed mill buildings and can be initially difficult to find. In addition to housing the visitor center, this building also houses a variety of businesses, including a yoga studio, art gallery, and a telecommunications store, imbuing what is a historic built environment with lived reality. More to the point, the presence of these businesses highlights LNHP’s mantra that “the park is the city and the city is the park,” a slogan that highlights LNHP’s positionality within an experiential habitat that affords access to more than the industrial heritage site itself.³⁰ As at most visitor centers operated by the National Park Service, once guests have arrived, they are provided a map, guidance from a park ranger about how to proceed through the park, access to a few introductory exhibits, and access to a gift shop.

At LNHP, the visitor center primarily serves as a basic introduction to the history of Lowell. Importantly, it also provides visitors their first contact with LNHP’s tendency to imbue industrial technology with sublimity through how it recollects the past. As a result, the themes and messages that the center imparts strongly bear upon the way that guests interpret the meaning of the site in general. One park ranger’s suggestion that I take my time while reading displays at the visitor center because “they help most people get a handle on what Lowell is all about” underscores their importance. The main vehicle with which the visitor center familiarizes guests with LNHP is a short film titled “Lowell: The Continuing Revolution.” This film lasts about 15 minutes and traces the history of Lowell from its inception as Francis Cabot Lowell’s

“industrial utopia” to LNHP’s foundation during 1978. Perhaps the most striking feature of the introductory film is its remarkably self-aware portrayal of the city, as it both historicizes the locations contained within guests’ experiential habitat and extends the park’s interpretive gaze to the present. The film’s title, “The Continuing Revolution,” emphasizes the historical chronology that LNHP embraces, underscoring Lowell’s past and present importance. As well, it alludes to an assumption that is part and parcel of the park’s *ethos*—that industrial technology is progressive and changes humanity in positive ways. Because of this, the new Lowell—in the form of LNHP—“celebrates past and present,” as both owe a debt to the heritage of industry. The subtle allusions to the progressive power of industrial technology in “Lowell: The Continuing Revolution” idealizes the relationship between industrial technology and human agents in a manner that frames it as an important aspect of LNHP’s historical relevance. As guests progress through LNHP, the site’s emphasis of this relationship bears upon potential interpretations of the site.



Figure 1: Visitor Center. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

The way that LNHP's introductory film recollects past relationships between industrial machines and human agents is reinforced by a series of four displays located in the space outside of the screening room. These four displays divide Lowell's history into four themed periods: 1821-1836 ("Factory Village in the Country"), 1836-1860 ("From Village to City"), 1860-1920 ("Immigrant City"), and 1920-2000 ("Remaking Lowell"). These period-based themes prove to be a central frame through which Lowell's history is interpreted. Spatially disposed in chronological order, the first three displays tell the story of a quickly industrializing city that attracts workers—first local, then international—to opportunities for self-improvement and monetary gain provided by its textile mills. An example of how LNHP imbues industrial technology with sublime characteristics, these industrial opportunities are described as more than merely occupational. For example, the first display, "Factory Village in the Country," portrays Lowellians' lives in idyllic terms. "In contrast to the teeming slums of Europe's large industrial cities," it states, "early Lowell boasted factories encircling green courtyards, landscaped canals, and tree-lined boulevards." This description of early Lowell invokes what Leo Marx terms the American middle-landscape, a pervasive understanding of the United States as a place where industrial peoples thrive without having to forfeit the benefits of a pastoral lifestyle.³¹ Historically, middle-landscape narratives played an important role in justifying industrial development in the United States by suggesting that the negative aspects of industrial lifestyles could be purified with pastoral landscapes. Importantly, the notion of the middle-landscape provides an early example of how sublimity in a natural landscape was slowly associated with industrial machinery if that machinery was perceived to be in harmony with the landscape—a transference that eventually suggested the moralizing potential of each. By characterizing early Lowell in terms that resonate with the middle-landscape—a notion that still exercises power over

the American imagination, even in contemporary discourse—this display suggests to LNHP’s visitors that people flocked to Lowell not only for employment but also for access to intangible benefits that could only be obtained in a place where sublimity thrived.

References to the technological sublime continue in the displays that explain the preceding two periods. “From Village to City” portrays Lowell as a growing town “dominated by textile corporations . . . but increasingly lead by middle-class residents who confronted the rising social and physical problems of an expanding urban population.” As a result of their efforts, “the city’s thriving downtown drew factory workers, artisans and middle-class residents to its stores, churches, and social halls.” Here, though the narrative of the middle-landscape has receded into the background, we find another instance of industry described as providing opportunities to live well—this time as a member of the middle class. As the story progresses, Lowell’s natural landscape recedes into the background. Instead of straddling two positions, sublimity comes to reside fully within the technological, its magnetic appeal making industry the commonsense solution to problems caused by Lowell’s expanding population—a population with problems that are conveniently not linked to industrialism itself. “Immigrant City” continues this trend, proclaiming that after the Civil War “newcomers streamed into Lowell . . . seeking economic opportunity or fleeing political or religious oppression.” This display suggests that while living conditions in an industrial town may have been sub-par when compared with other American ways of life, the opportunities afforded by Lowell’s mills provided social conditions that were a drastic improvement over the “old country.” Again, yet in a different form, industrial technology is portrayed as a path forward to prosperity and a better standard of living. The final display, “Remaking Lowell,” demonstrates what happens when a city deindustrializes and loses its grip upon the life-altering potentials of industrial technology. “By

the 1920s, Lowell’s industrial prominence was fading . . . casting thousands out of work . . . whole neighborhoods were demolished and many residents departed,” it proclaims. Fortunately for the city, by the early 1970s civic leaders had discovered how to resurrect Lowell through historic preservation. The successful preservation of Lowell’s industrial identity constitutes its continuing revolution, as well as highlights another way that the presence of industrial technology—even that which no longer produces—can bring prosperity.



Figure 2: The Continuing Revolution. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

Overall, the way that industrial technology is described in the visitor center paints a picture of its positive, transformative power. Describing industrial technology in this manner at the beginning of guests’ visit to LNHP encourages recollection of idealized relationships between human agents and industrial technology—a collective, prosthetic memory that primes

guests to experience LNHP as a site that defends what is ostensibly the heritage of this relationship.³² The substance of this heritage is comprised of a belief that, to evolve toward a better future, humanity must be allowed to use innovative technologies to better itself. In this idealized relationship between human agents and technology, it is humanity that is improved by using technology and not technology that is improved by humanity, as in narratives of technological progress the advance of technology is viewed as inevitable, rational, and merely in need of discovery.³³ The relationship that LNHP recollects is drastically different from the contemporary view that networked relationships connect humans and machines—relationships within which all agents exercise influence upon one another and, at times, stand in for one another. Rather, in LNHP’s recollection, industrial technology is the central actor that exercises influence upon its surroundings—namely, humans—in relatively predictable and beneficial ways. Much like how a sublime landscape is understood to be constant over time, in LNHP’s recollection of Lowell’s history the essence of industrial technology changes only superficially and access to its power is gained through patient contemplation.

How the sublimity of industrial technology is articulated in the visitor center varies—in one instance located within the middle-landscape, in another through the creation of the middle-class, and in yet another in the ability to provide solutions to the problems of Europe. In all cases, however, the underlying references to the technological sublime assume the positive power of industry undergirds how Lowell’s residents’ relationship with industrial technology. This recollection of technology as sublime leads to a latent assumption, what Weisser terms *deep narrative*, that emerges from LNHP’s opening displays: that the shortcomings of industrialism are not the fault of industrial machinery, but instead the fault of human agents who mismanaged that machinery.³⁴ In each of the displays at LNHP’s visitor center, identification of industrial

technology's role in the deindustrialization of Lowell is foregone in favor of critiques of human agents who were also involved in the city's deindustrialization. When these displays describe aspects of Lowell's industrial history that run contrary to how the potential of industrial technology is framed—for example, when the introductory film informs guests that the installation of steam turbines caused the elimination of many jobs—they are nearly universally linked to the actions of human agents. These human agents are inevitably described as failing to use industrial machinery to its full potential. Thus, the high unemployment rate that plagued Lowell after its mills converted to steam power is ascribed to the desire of managers to increase productivity or to the desire of owners to increase their profits. On the other hand, the design of the steam turbine and its role as an actor in the situation are not interrogated—suggesting that it is human agents in the industrial network, not industrial technology itself, that go awry.

Historically, interpreting the relationship between human agents and industrial technology in this manner is endemic to how Americans recollect industrialism. In the United States, industrial technology is a key component of national self-representation. Over time, the rhetorical force of industrial technology has seen it come to be represented as “an abstract force in history”—something into which humanity harnesses and joins for the ride.³⁵ This attitude is markedly different from how other, Western nations have reacted to industrialism. The most commonly used historical instance against which the American approach is juxtaposed is the English Luddite Rebellion of 1811-1816. This is an oft-told story in technology studies. Beginning in 1811, “textile workers whose livelihoods were threatened by the introduction into the workplace of new machinery set out to destroy the offending technology,” crafting a belief system that interpreted industrial technology as designed in a manner that harmed commoners' livelihoods.³⁶ From the American perspective, this type of reaction to technology is “a fatalistic .

. . . confusion about the nature of technological development” that interferes with change-for-the-better that industry is thought to necessarily bring.³⁷

As a site of industrial heritage that aims to recollect the American experience of industrial technology, LNHP’s framing of the historical relationship between human agents and technology errs toward the American tradition, implicitly ascribing sublimity, virtue, and progressive potential in industrial machinery. As a result, blame for the negative effects or unintended consequences of industrialism is typically assigned to human agents. In the coming sections, I argue that this is a rhetorical move that, when layered over guests’ experience of the rest of LNHP, leads to the scapegoating of human agents for the complex problems of deindustrialization.

Getting to Mills—The Experience and Aesthetics of Deindustrialization

Leaving the visitor center, guests are directed to begin journeying toward the Boott Cotton Mills Museum, LNHP’s main attraction. Guests can reach the mills either on foot or by riding a trolley that periodically runs between the two locations. Because LNHP is scattered across Lowell, embedded within a living city, and immersed within guests’ experiential habitats, both options provide unique opportunities to experience the modern city. As park rangers are quick to point out, Lowell is as much a part of LNHP as the sites’ more official exhibits.

The contrast between how Lowell is recollected in the visitor center’s displays and present-day Lowell are striking and must be confronted by guests as they exit the visitor center and begin their journey through the city. Modern Lowell, like many industrial boom towns located in the rust belt, is a shadow of its former self. While a plethora of industrial infrastructure and buildings steeped in industrial architecture still stand throughout the town, it is difficult not to sense that some once important piece of Lowell is now absent. An aura of disrepair permeates

the city, suggesting that its ability to maintain itself has long since vanished. Lowell's mills are now silent, and workers flock to retail business sites rather than massive machines. John Jakle and David Wilson articulate this feeling well in their work on derelict American landscapes: "nothing strikes a sense of pathos more than a ruined factory . . . to see them derelict is to see failed dreams."³⁸ Similarly, Tamara Hareven and Randolph Langenbach suppose that the palimpsest-like remnants of industrialism in deindustrialized areas bear witness to a lost "way of life and . . . sense of continuity."³⁹ The material characteristics of Lowell's modern landscape are rhetorically provocative and difficult to ignore.

If LNHP's visitor center dwells on the good that industrial technology brings, the experiential habitat within which guests travel to the Boott Cotton Mills Museum shows guests the consequences of deindustrialization. Because industrial ruination possesses a sublimity of its own that is rooted in the technological sublime, it too calls for contemplation of the potential of industrial technology.⁴⁰ In the following sections, I flesh out how the juxtaposition of the visitor center's emphasis on the technological sublime with the deindustrial sublime impacts guests as they travel across Lowell. I argue that this juxtaposition provokes guests to contemplate how industrial technology can fall short of its sublime potential. More specifically, I show how this juxtaposition creates an exigency that calls guests to raise questions about what caused Lowell's deindustrialization. Ultimately, guests' experiential habitats' abilities to provoke questions like this invests authority into the way that Boott Cotton Mills Museum recollects Lowell's past as guests progress toward it.

Walking

Guests who walk to the Boott Cotton Mills Museum must do so through Lowell's downtown, which is still a living, urban core. Walking here, guests are confronted with the

fragmented nature of Lowell's present in a manner that allows them to recollect the past collectively and individually. This duality makes guests' experiences of walking individually unique while also allowing them still to fit snugly within a larger, collective interpretation of the past.⁴¹ Making this possible is Lowell's hodgepodge of historical buildings and displays of historical information that juxtaposes with the realities of modern life in New England. While it is not possible for me to account for every possible path that guests might walk en route to the Boott Cotton Mills Museum, I can here sketch out characteristics that are common to all. The main commonality is that all guests must venture through an "experiential habitat rendered by . . . [their] journey," creating a text that is "forged by a series of intertextualizations."⁴² As a type of spatial chronology, experiential habitats err toward what Weiser terms a *lyric chronology*—one in which guests are given minimum direction and free to intertextualize at their leisure.⁴³ As such, guests' experiential habitats in LNHP offer them the opportunity to experience the city in uniquely meaningful ways that are commonly bounded by Lowell itself.

While guests who walk to the Boott Cotton Mills Museum are afforded a wide berth of meaning, it is important to underscore how pervasive the specter of deindustrialization is and how difficult it is to separate deindustrialization from the potential meanings of LNHP. Because the meanings that industrial heritage areas afford are necessarily limited by what is contained within them, the types of locations, objects, and displays that guests encounter constrain the breadth of potential meanings that are afforded to guests within them.⁴⁴ In Lowell, as I have argued, the confines of LNHP are dominated by "the deindustrial sublime"—its presence highlighting both the aesthetically pleasing and sorrowfully emotional aspects of deindustrialization.⁴⁵ Importantly, smokestack nostalgia prompted by the deindustrial sublime often provokes uncritical celebration of industry.⁴⁶ Juxtaposed with how LNHP's visitor center

describes Lowell's relationship with the technological sublime, the nature of the city's modern, deindustrial aesthetic inspires nostalgia for the industrial past and curiosity about its absence. One casual conversation with a park ranger underscored the impact of this juxtaposition when she confessed to me that she wished she could have seen the city during its heyday. When I inquired as to why her response was poignant. "I mean, look at it," she said, gesturing to the city, "It's run down now but still beautiful. Imagine it back then." This remark highlights the powerful longing for the industrial past that deindustrial landscapes can engender—even in those trained to examine them and guide others through them critically. Ultimately, this type of restorative longing leads to questions—What happened? Who is responsible?



Figure 3: Lowell Streets. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

The *pathos*-charged absence of industry at LNHP is emphasized by historical markers that LNHP has attached to many of the city’s buildings. The markers are ubiquitous on the way to the Boott Cotton Mills Museum. Scattered throughout the town, these markers identify how many of Lowell’s older buildings were used during the city’s industrial heyday. They aid guests’ recollections of locations related to many different eras of Lowell’s history. For example, the National Streetcar Museum, a site maintained by the New England Electric Railway Historical Society, is located in a building identified by LNHP as the W.A. Mack Building—“the former headquarters of an extensive ironworks business.” Because these markers are located only on buildings that are no longer used for industrial purposes, their presence dramatically underscores the already noticeable deindustrialized state of Lowell by claiming absence in locations that have been revitalized. These claims of absence are poetically punctuated by the fact that many of the marked buildings are currently museums, adding depth to what guests can recollect as lost.



Figure 4: Canal Path. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk. (2019).

Because site-specific installations, like markers attached to historic buildings, “signify that ‘this happened *here*’ and . . . activate a visceral perception that operates on a non-linguistic and non-rational level,” they call those who encounter them to imagine their experiential habitat differently from how it appears at face value.⁴⁷ Relatedly, Greg Dickinson argues that the placement of historical markers on buildings pulls structures “out of the commonplace present, distinguishing [them] as a special place both spatially and historically,” as well as exclaims that “reality happened here, once.”⁴⁸ With this in mind, I argue that the markers attached to buildings in Lowell by LNHP ask those who encounter them to imagine Lowell as if it were still a place of industry. Because such markers highlight the absence of industry, their power to give guests a prosthetic memory of Lowell’s past ensures that guests who encounter them when walking to the Boott Cotton Mills Museum arrive there with an imagined version of the city’s industrial past on their mind. While not all guests might come to question how industrial Lowell came to be deindustrialized, the experience of walking through Lowell affords the Boott Cotton Mills Museum’s recollection of Lowell’s decline a potential symmetry with guests’ experiences before they even enter the door.

Riding the Trolley

Guests who ride LNHP’s trolley to the Boott Cotton Mills Museum encounter a juxtaposition between deindustrialization and the technological sublime as well, albeit in a less visceral and fragmented manner. On a trolley, visitors are presented with a much more curated, cinematic experience in which “the style of one building blends with the next . . . [appearing] to be a movie set.”⁴⁹ The constraints of this experience are a product of how Lowell’s modern trolley system runs on the city’s historical rail infrastructure—once used to move industrial goods within the town and in and out of the region. Traveling on this rail network from the

visitor center to the Boott Cotton Mills Museum, guests view a sweeping panorama of modern Lowell with two features of note: a musealized steam locomotive and Lowell's historic canal system.

Maintained by the Boston and Maine Railroad Historical Society (BMRHS), Locomotive 410 and its accompanying baggage car sit directly astride the trolley line and are one of the more noticeable displays of industrial technology in Lowell. Perhaps with some hyperbole, BMRHS's website claims Locomotive 410 to be "the visual centerpiece of the city," a declaration that emphasizes the exhibit's considerable visual impact.⁵⁰ More than merely visually striking, steam locomotives also have prominent cultural meaning in the United States. By most accounts, steam locomotives are the most enduring symbol for American industrial progress, representing victory over space and time as well as symbolizing the industrial might of the early American republic—"a liberating machine."⁵¹ In many ways, the locomotive is the visual representation *par excellence* of the interpretive frame with which LNHP recollects the past. Unlike the impressive machines that gave birth to this imagery, however, Locomotive 410 is little more than a prop, placed in Lowell to emphasize the city's industrial heritage. Carolyn Kitch argues that restored and displayed steam locomotives "invite historical imagination of a past world that is simultaneously romantic and heroic."⁵² The conjuring of such memories, however, also reminds us that they are, in fact, just memories. Embedded into the landscape of the modern city, Locomotive 410's immobility and obvious status as a preserved technical object emphasize the absence of industry. The steam engine's presence forces recognition of the absence of the industrial activities with which it was once closely associated. Today, displayed in Lowell is a steam locomotive, but no steam whistle or belched smoke, and, importantly, no mills from which to haul the fruits of industry. The absence of these sensory experiences emphasizes "foreclosed

possibilities” that come with deindustrialization.⁵³ A nearby display makes textually present Lowell’s deindustrialization, informing guests that the town’s workers once called the area a “street of lightning” because of the railroad’s presence and that in the past “the continuing prosperity of industrial Lowell depended on efficient shipping of materials.” The locomotive, now immobile, is no longer able to bring prosperity to Lowell. Its silence and stark beauty underscore Lowell’s deindustrialization.



Figure 5: Locomotive and Trolley. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

Viewing Locomotive 410 from LNHP’s trolley, or while waiting for the trolley to arrive, also accentuates Lowell’s deindustrialization by making apparent the trolley’s status as a leisure activity. Typically, most tourism-based train and trolley rides at historic sites “embrace historic themes” and “have little to do with history.”⁵⁴ Such attractions provide guests rides with a

mishmash of thematic information, anachronistic reenactment, and a feeling of relaxed serenity, traveling through scenery that gives little hint of their former role in industry. In many ways, an attraction like this “belies its own history.”⁵⁵ By avoiding the more unsavory aspects of industrial history, rail rides are, in short, intended to be fun. They become an escape from labor and no longer a component of it. As a result, railroad and trolley rides often prompt their riders to forget about the stark realities of deindustrialization. The enjoyment they provide “comes from letting go of history rather than holding onto it.”⁵⁶

The trolley ride at LNHP, however, has difficulty distracting guests from the realities of deindustrialization by virtue of the site’s embeddedness within an experiential habitat that is accented by deindustrialization. The presence of Locomotive 410 astride the trolley line, along with Lowell’s inescapable industrial backdrop, suspends the illusion of active industry that riding the trolley may have otherwise encouraged. An overheard conversation between a father and daughter who were visiting LNHP demonstrates this well. After boarding the trolley, the young girl spotted Locomotive 410 to the right after the ride had embarked. Looking back at her father, she excitedly asked, “Can we ride that too?!” The father awkwardly explained that they could not ride Locomotive 410 because it was part of the museum and thus not meant for “fun.” This response highlights how the musealization of machinery can suggest the absence of industry even as portions of industrial infrastructure are resurrected by a community’s “desire to maintain an industrial identity.”⁵⁷ The magnetic draw and metonymic power of industrial machinery—especially a locomotive—to represent the promise of industry comes to emphasize industry’s absence when it is juxtaposed with simulacra of industrial labor that are intended for enjoyment.

The canal system along which LNHP’s trolley travels similarly displays the absence of industry. One of the industrial infrastructures built in the city, Lowell’s canal system has

survived since the nineteenth century. Today, it provides a historical, industrial aesthetic that resonates strongly with the city's factory architecture. Patrick Malone, who studied Lowell's canals for *The Historical American Engineering Record*, tells how the canals played an important role in the history of American technology, spurring "industrialization in the United States."⁵⁸ Constantly present from the trolley ride to the Boott Cotton Mills Museum, the canals visually make present Lowell's industrial heritage in the form of deindustrialized infrastructure. Today, the canals are no longer used for industrial purposes. Instead, they have been appropriated by LNHP as a popular ride on which guests tour Lowell by boat and are provided lessons about its industrial past—an activity altogether similar to LNHP's trolleys' use of the city's rail infrastructure. To see tour boats in the canals is like seeing a preserved locomotive next to an active rail line, as both instances suggest how Lowell's industrial infrastructure has come to be used for leisure activities amidst a background of deindustrialization.

The visual cues of the city's deindustrialization become more pronounced as LNHP's trolley approaches the Boott Mills. Here, the trolley line becomes surrounded by a veritable canyon of industrial architecture that occludes modern Lowell. At this point, guests who ride the trolley are afforded little choice but to reflect on the grandeur of Lowell's industrial structures. Confrontation with the deindustrial sublime is difficult to avoid. The intensity of this portion of guests' journey to the Boott Cotton Mills Museum underscores the deindustrialization of the town in general. Because the deindustrial sublime is linked to an understanding of the lost potential of industry, the final immersion of guests into factory architecture as they approach the Boott Cotton Mills Museum underscores Lowell's deindustrialization. This absence is made more pronounced by the way LNHP's visitor center's characterizes industrial technology with

descriptors related to the technological sublime. As one ranger announced to guests on the trolley, “As you can see, Lowell isn’t what it used to be.”

The Boott Cotton Mills Museum

Whether traveling by foot or by trolley to the Boott Cotton Mills Museum, guests’ experiential habitats and the deindustrial sublime that pervades them underscore the absence of industry in modern Lowell. What they do not do—and are perhaps incapable of doing—is provide an answer to questions that are inevitably raised in response to the experience of deindustrialization: Why? Where did it go? Whose fault was it? The answers to these questions, as I will show, are offered by the Boott Cotton Mills Museum itself. As such, the museum is, procedurally, the heart of LNHP. The story of Lowell’s industrial history recollected by its displays gives depth to how guests can interpret the discrepancy between LNHP’s framing of industrial technology as sublime and the realities of modern, deindustrial Lowell. Ultimately, the rhetoric of the Museum’s recollection of Lowell’s past protects the sanctity of the technological sublime and directs the park’s critical gaze from machines to humans.



Figure 6: Boott Cotton Mills Museum. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

Arriving at the Boott Cotton Mills Museum, guests are fresh from experiencing how Lowell's palimpsest of industrial remnants allow the city to become a museum of itself, creating a sense of industrial heritage that "is the transvaluation of the obsolete, the mistaken, the dead, and the defunct."⁵⁹ By endowing objects and locations with a sense of their importance to national, industrial development, LNHP invites guests to imagine Lowell as it once was, emphasizing what has been lost and implying questions about the process of change. In this sense, recollection at industrial heritage sites is an inherently "imaginative process through which visitors . . . 'relive' something both far beyond and long before their own lives."⁶⁰ At LNHP, this process of industrial recollection is augmented by the plethora of deindustrial architecture that provides the backdrop with which guests intertextualize as they journey through

the park. Though much of Lowell has been revitalized, in most places it is still exceedingly obvious that buildings once used for industry are no longer used for that purpose, underscoring the loss of the city's former prosperity. It is this experience that the Boott Cotton Mills Museum promises to flesh out for guests, addressing questions that the juxtaposition of technological sublime and deindustrial sublime raises.

The Boott Cotton Mills Museum is housed within a circa 1836 building that once belonged to the former Boott Cotton Mills—a textile corporation founded by Kirk Boott. One of the original structures preserved by the park during the 1970s, the Boott Mills possesses the most complete infrastructure of Lowell's remaining mills. While most of the Boott Mills have been repurposed for business and residential use, the museum occupies two floors and 22,000 square feet of the site, making it the largest single space solely administered by LNHP. The first floor of the museum is taken up by a gift shop and replica of a circa 1910 weave room, while the second floor of the museum houses “interactive exhibits and oral history videos about the industrial revolution and Lowell's working people.”⁶¹ After disembarking from the trolley and making their way by foot through Lowell, guests enter the museum by crossing over what is the original footbridge used by workers, according to a nearby textual display. The entrance to the museum is located inside the Boott Mills courtyard, which, according to another textual display, “is one of the finest examples of mill architecture in the United States.”

The First Floor

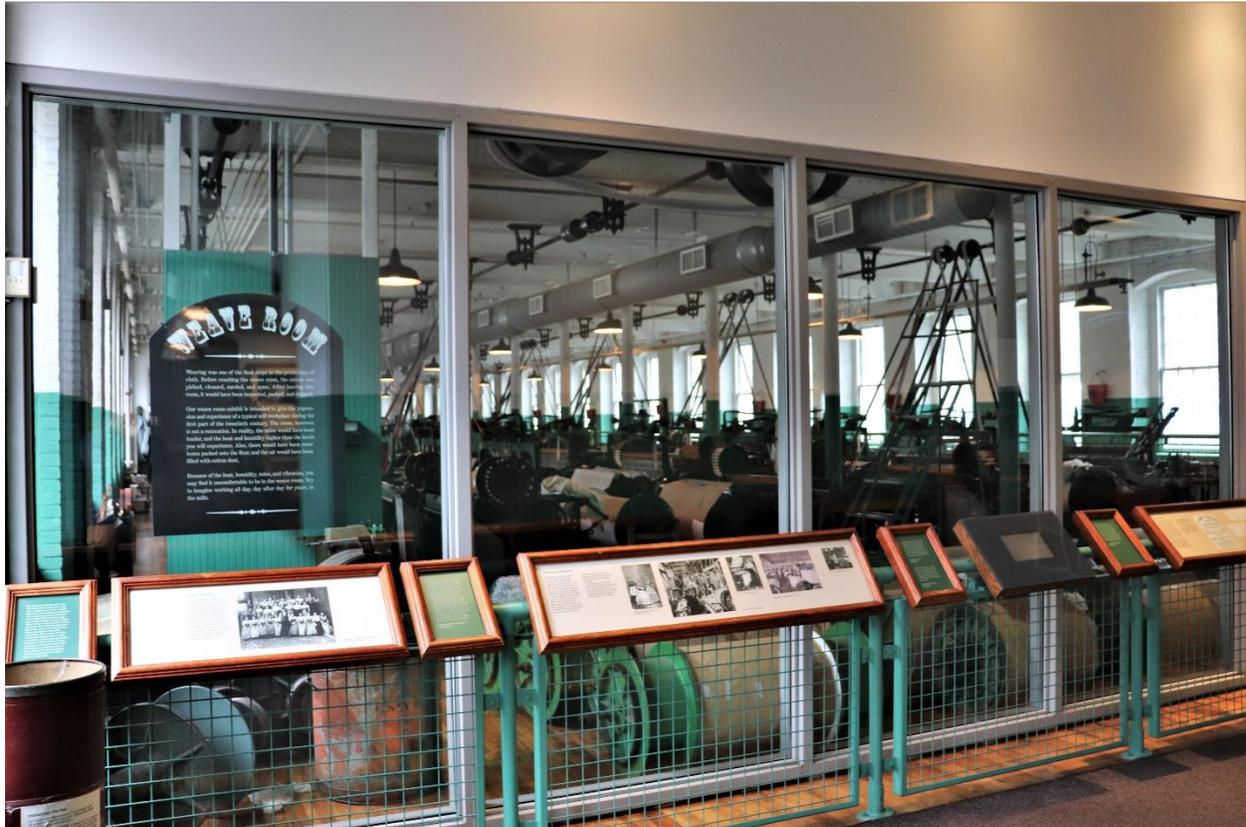


Figure 7: The Antechamber. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

Visitors enter through the mill's original entrance, passing an impressive spiral wooden staircase that connects all floors. Once they have paid a six-dollar entrance fee, and perhaps have wandered for a few minutes around the gift shop, guests proceed to the first floor of the museum. Immediately there appears a massive mill floor filled with operating automatic looms. To contain the noise and vibration of the looms, LNHP has constructed a substantial, sound-proof glass wall, creating a small antechamber through which guests must proceed. Here, guests encounter a brief textual display that informs them about the mill room they are about to enter.

In these displays, which are intended to give depth to the experience of the automatic looms, the Boott Cotton Mill Museum provides information about the roles that workers would

have played in such an environment. This rhetorical move allows LNHP to explain deindustrialization in a manner that does not challenge the technological sublime. The displays in the antechamber provide guests with a brief introduction to what life was like for workers on the mill floor. These displays are comprised mostly of quotes by former mill employees, descriptions of the jobs those employees performed, and descriptions of the machinery with which they worked. In contrast with the visitor center, which elides most detailed information about the day-to-day experiences of workers, the narrative here is much more explicit about the harsh realities of working in an industrial textile mill. For example, one display, titled “Working Conditions,” reminds guests that “Weave rooms were hazardous working environments. Life-threatening accidents and long-term health disabilities were common byproducts of employment in the textile mills . . . the lighting was poor, the hours were long, and the machinery and belting dangerous.” Similar to the visitor center’s suggestion that deindustrialization was not the fault of industrial machinery, these exhibits shift blame for poor working conditions to human agents—typically, to owners and managers. For example, the closing sentences of the “Working Conditions” display claims that, despite attempts by the government to make mills safer, “many manufacturers easily evaded the law,” thus implying that Lowell’s poor working conditions were less a product of the dangers of industrial machinery and more a product of how it was administrated. This emphasis in the museum’s opening displays allows for industrial technology to remain characterized in ways consistent with the technological sublime. While the displays acknowledge that the working conditions for those who worked in the mills may not have always been ideal, industrial technology’s utility and contribution to society are hardly questioned—suggesting that it was never the real problem in the first place.



Figure 8: Automatic Looms. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

The mill floor itself immerses the visitor in an overwhelming sensory experience. While the antechamber allows the low hum of machinery to be heard through the soundproof glass, this low hum belies the cacophonous clanging, clacking, and humming of the automatic looms upon the main floor of the mill. While LNHP outside of the first floor of the Boott Cotton Mills Museum is dominated by the deindustrial sublime, the first floor flips the script to provide guests an experience that affords a glimpse of the technological sublime—privileging the “dynamism of moving machinery and powerful forces.”⁶² As distinct from the experiential habitat that guests traverse *en route* to the museum, which draws attention to the realities of deindustrialization, the first floor of the Boott Cotton Mills Museum ostensibly shows guests exactly what full industrialization looks like. The mill floor contrasts drastically with Lowell’s post-industrial

landscape, appearing to be pristine—as if the machinery never went off-line and industry never left Lowell.

The mill floor itself is devoid of any significant informational displays. Instead, the automatic looms, incessantly in motion, serve as the primary didactic instrument. Gazing upon the automatic looms, guests learn about not only their operation but also about the sensory experiences of the workers who once used them. Such sensory knowledge is, of course, gathered through a safe recreation in the present. By editing out many of the elements that once made the mill floor unsafe—cotton dust, poor ventilation, machinery without guards, no muffling of noise—LNHP extols the machinery’s character as an “orderly” and “well-run” enterprise. This focus, ultimately, draws guests’ attention to the potential of well-managed industry.⁶³ By putting guests into an experience that forecloses the potential of danger, the sheer power and awesomeness of the automatic looms become the central display of the mill floor. It is difficult here to fully describe the intoxicating sense of power that standing next to the loom machines imparts. Their obvious power underscores their importance and their potential as tools that can augment human society. Moreover, the control exercised over their safety restricts “the sense that the machine might rage out of control,” allowing guests to focus on the positive potential of industry.⁶⁴

A handful of tactile displays further draw attention to the positive potential of the machines displayed in the weave room. Hanging on the railings that line the walkways through the mill floor are examples of cloth for guests to examine, providing a tangible expression of the products of industrial mill technology and linking it closely with products that are still in use. Historically, such cloth was used for a myriad of domestic purposes, including, but not limited to, use in clothing, cleaning rags, and curtains. The emphasis of the cloths’ wide range of

applications directly links the raw sublimity of the looms to useful, domestic application. However, the looms' continuing production of cloth allows LNHP to reinforce this message in ways that also allow guests to show their approval of it through consumption. Ekaterina Haskins reminds us that "a museum excursion usually culminates in a trip to a museum shop," a reality that enables guests to purchase souvenirs that reinforce the messages a museum imparts long after guests have left.⁶⁵ LNHP is no exception to this tendency, as samples of the cloth that is produced in the weave room and provided to guests as a tactile display can be purchased at the site's gift shop. By selling the cloth produced by the weave room's experiential displays, LNHP completes the illusion that the Boott Cotton Mills still function—at least to some extent. Importantly, this illusion suggests that the way the mills are operated today is the proper way to run them, as guests are shown that the products they produce are high quality and that the machinery used to produce those high quality products does not pose a serious threat to those who encounter them. In other words, it suggests that the automatic looms can be operate safely while maintaining efficient production of desirable products.

Materially and spatially, the soundproof enclosure of the mill room on the first floor of the Boott Cotton Mills Museum suggests that industrial machinery is less dangerous when proper safety precautions are taken by those who manage it. This enclosure shows guests what appears to be an accurate replica of a loom room that, in fact, is rife with modern safety mechanisms. Because they are components of an overall scene that purports to recreate a historic, automatic loom room, it is easy to overlook the fact that soundproof glass, earplugs, and effective ventilation did not feature in Lowell's mills during the nineteenth and twentieth centuries. Many guests, for example, suggest that the mill room experience "isn't as bad" as they thought it would be, indicating a failure to associate the room with its modern components. Such safety

precautions are contemporary additions required by the contemporary managers of the site. Their use underscores an important belief held by many of LNHP's current employees. One interaction I had during my fieldwork at the site provides a worthwhile example of this belief. During a conversation with a park ranger, I asked if anyone had been injured by the historic machinery since the museum's opening. The ranger's response, while lengthy, pointed toward a belief that those who now work in the loom room were not being pushed to the same extremes to which workers were once pushed during the nineteenth and twentieth centuries, and, as a result, were not placed into the same types of dangerous situations. "You should be more excited than worried about getting hurt," he suggested as our conversation ended. If a similar attitude is imparted by LNHP's other interpreters to guests (which, based on my time at the park, is likely), the belief that the park operates the mill's machinery in a safe manner underscores the way that LNHP orients toward the impact of human agents who did not administrate machinery safely. By giving guests a chance to experience a safely operating mill floor that uses contemporary safety strategies, LNHP creates an illusion that suggests a safe, productive industrial environment can be created with ease—an illusion that makes the failure of Lowell's historical managers to do so all the more damning.

Further drawing attention to the role of human agents in the operation of Lowell's mills is a period timeclock that hangs on the wall near the entrance to the mill floor. A small display next to the timeclock informs guests that "time clocks helped managers enforce the rule of the clock on workers" and requests guests to "punch in" to record their own visit. Here, it is important to recognize that objects that are displayed in a museum—especially those that ask guests to interact with them physically—are chosen because they exemplify the ideas a museum tries to impart.⁶⁶ Moreover, hands-on exhibits within historical museums, like the timeclock, are often

used as a way to help visitors imagine themselves within a historical environment, in many cases making the sensory experience appear to be authentic.⁶⁷ Therefore, the text of LNHP's timeclock display and the actions it requests guests to perform can be considered further evidence of how the museum orients guests toward the role that human agents played in the day-to-day operation of industrial factories. Because it draws attention to human actions and the impact of human-human surveillance, the time clock display suggests that the guiding narrative to which LNHP looks when choosing objects to display is one that tells the story of the impact of people's actions. As well, by giving guests firsthand experience of the sensation of having their actions measured by managers, the time clock display resonates with LNHP's narrative orientation toward the role of human agents by showing *how* managers surveilled the productivity of workers' time. Still further, the experience of clocking in on a period timeclock helps make more real the illusion of a functioning mill environment that is created by the presence of the automatic looms. Because LNHP has taken steps to make the experience of being on the mill floor safe, the illusion of authenticity that guests experience when clocking in further implies that a safe and productive industrial workplace was historically feasible and, as a result, helps to shift blame for Lowell's deindustrialization to the management.

The Second Floor



Figure 9: Visions of Industrial America. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

The second half of the Boott Cotton Mills Museum features a more traditional museum setting. The sole exhibit on this floor is titled “Lowell: Visions of Industrial America.” This exhibit begins by posing three questions: 1) What were the innovations in technology and business that propelled the growth of the factory system, 2) How did these innovations affect workers and managers on the job, and 3) More recently, how did Lowell and the textile industry weather the global economic shifts of the twentieth century? In this section, I argue that the way “Lowell: Visions of Industrial America” answers these questions, in conjunction with the museum’s first floor and guests’ experiential habitat outside of the Boott Cotton Mills Museum, answers questions about what factors lead to Lowell’s deindustrialization. Importantly, the way that “Lowell: Visions of Industrial America” recollects the events that lead to Lowell’s

deindustrialization protect LNHP's framing of industrial technology as sublime by shifting blame to human agents—managers and owners—and avoiding critical assessment of industrial machinery itself. To fully flesh out how the rhetoric of “Lowell: Visions of Industrial America” accomplishes this, I explore each question that the exhibit poses in turn.

What were the innovations in technology and business that propelled the growth of the factory system?

The first question is most succinctly answered by early portions of “Lowell: Visions of Industrial America” that depict the transformation of the preindustrial city of East Chelmsford into the city of Lowell. Here, the exhibit tells a tale of the explosive growth that industrial technology brought to New England. Before the arrival of Francis Cabot Lowell's industrial system, the region depended on agriculture for its livelihood—a reality that forced residents to “grow their own food and make their own clothing.” An influx of industrial technology after the American revolution, the exhibit teaches, brought tremendous wealth and prosperity to what was to become Lowell. A notable example of this narrative is located on a display titled “East Chelmsford Transformed” that describes how the construction of canals and other industrial infrastructures in the region caused businesses to “spring up.” This depiction suggests that even the smallest instance of industrial technology can have drastic economic consequences.

Throughout the entirety of the exhibit, industrial technology is depicted as increasingly efficient. Initially, the narrative goes, these machines were powered by water but became steam powered as industrial systems became more and more efficient. A list of technologies deemed important by the exhibit reads like an industrial sales catalog: the ring spinning frame, the throstle spinning frame, water turbines, steam turbines, the Northrop Battery, the Crompton and Wyman Piled Fabrics Looms, and so on *ad nauseum*. In many instances, LNHP displays these

technologies either as artifactual objects or in photographs, allowing guests vividly to imagine how industrial technology was used. In their capacity as displays, these technical objects and their mediated representations become a “tangible record of human endeavor.”⁶⁸ Their arrangement in the exhibit constitutes what Weiser terms a *multimodal chronology*, within which various media are used to tell a central narrative around which the exhibit is spatially organized.⁶⁹ In the case of “Lowell: Visions of Industrial America,” technical objects’ are arranged in order of their development. Such arrangement not only gives weight to the notion of technological progress but also suggest that technical progress goes hand-in-hand with the increasing benefits of industrial society by their symmetry with the growth of Lowell itself.

While the list of technologies that contributed to Lowell’s development is a rather cut and dry answer to the first question posed by “Lowell: Visions of an Industrial City,” what is important to the broader meanings of LNHP are the way those industrial technologies are characterized. While it is not my intent here to critique what the exhibit does and does not display, it is important to note that “Lowell: Visions of an Industrial City” does not display what might be colloquially referred to as dead-end technologies—technologies that failed to create significant technical or social progress.⁷⁰ Because decisions about what information is included in a display and what information is not included are necessarily rhetorical, the decision to not include dead-end technologies illuminates the preferred narrative assumptions of LNHP.⁷¹ The absence of dead-end technologies, of course, is not a practice only found at LNHP, but also is endemic to discourse about science and technology in general. Commonly—especially in popular venues—the evolution of scientific theory and technical instruments is characterized as a gradual revealing of *a priori* knowledge and designs—an ontology that depicts science and technology as a steady, progressive march toward a determined goal.⁷² Often, the development of

new technology, because it grows within social systems strongly influenced by older, more widespread technologies, appears to emerge from that social system naturally.⁷³ This propensity has been persuasively shown in Charles Bazerman's account of the development of the lightbulb by Thomas Edison and his associates, within which Bazerman demonstrates that "new technology must locate itself against a product already established . . . [and] identify or create dissatisfaction with the current technology."⁷⁴ In the case of the Boott Cotton Mills Museum, industrial textile technologies are portrayed as constantly improving—the result of what one of the exhibit's displays claims as the "superior skills" of American mechanics. Importantly, the depiction of technological progress as logical and orderly in "Lowell: Visions of an Industrial City" resonates strongly with the way that industrial technology is framed for guests in the visitor center, showing how the first question that the exhibit poses assumes that technology brought growth to Lowell—an assumption that preserves the sanctity of the technological sublime.

Beyond their portrayal as progressive and rational, the technologies displayed in "Lowell: Visions of an Industrial City" are often highly aestheticized, which contributes to their utopian aura. An exhibited Throstle Spinning Frame, for example, is described as a "graceful, decorated machine" that received its name because it "produced a noise like the song of a thrush." A ranger who was stationed as an interpreter in the exhibit approached me after he noticed me reading and asked if I had ever thought about sewing machines as if they were birds. My honest answer, "I haven't," prompted him to launch into a relatively unrelated story about how some of the most important technologies were modeled after things that inventors observed in nature. Regardless of the veracity of the ranger's comments or their relevance to the display at hand, their spirit emphasizes LNHP's propensity to aestheticize industrial technology. Descriptions like that of the

Throstle Spinning Frame, which reference nature, also invoke Marx’s notion of the middle landscape, where technologies and nature coexist with one another at great benefit to humanity.

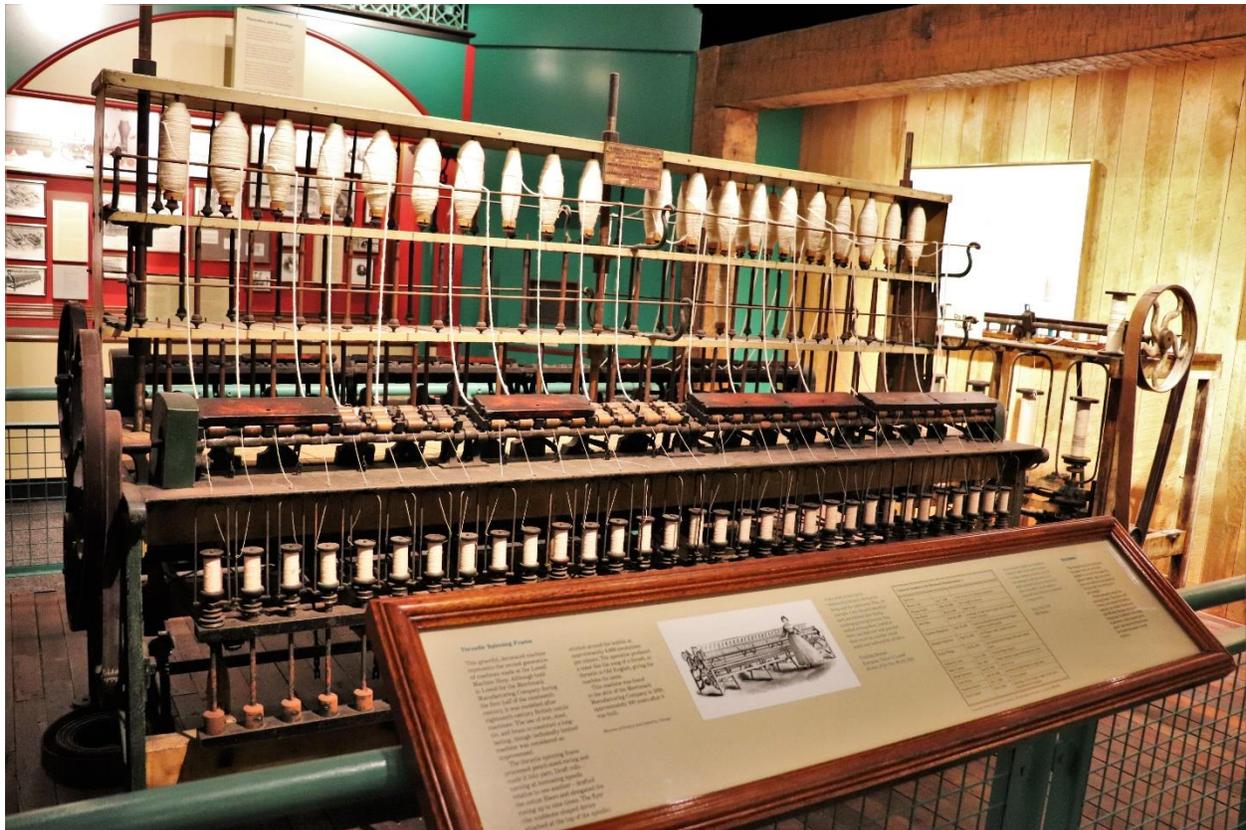


Figure 10: Throstle Spinning Frame. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

Lastly, it is worth noting the organizational technologies linked by “Lowell: Visions of an Industrial City” to the city’s growth. Here, innovations in business practice take center stage. While instances of business innovations described by the exhibit are limited when compared to mechanical technologies, when they are mentioned they typically revolve around the utility of capitalism and the role of government. The exhibit’s most commonly referred to business practice is the willingness to gamble on an investment. For example, nearly all the Bostonian capitalists that were involved in Lowell’s development are depicted as embodying a willingness to invest in industrial technologies despite uncertainty about return. In one display, entitled “The

Waltham Experiment,” Francis Cabot Lowell is depicted as having “ambitious” plans in which “his associates were hesitant” to invest. Despite their initial risk “the venture proved extremely profitable.” However, business innovations are often displayed in a negative light as well, creating a dichotomy between the positive aspects of technological innovation and how those innovations can be mitigated by business practices out-of-control—a stance that ultimately shifts blame to human agents. A recurring illustration of this is found in displays documenting how managers and owners increased productivity and profits by hiring unskilled workers at low wages. For example, “Lowell’s Heyday” describes how managers “decreased wages or changed piece rates” both to exercise control over workers and increase profit. The contrast between displays about positive technological innovations or workers and the negative impact of business innovations continues LNHP’s trend of placing blame for ills on human agents.

How did these innovations affect workers and managers on the job?

Throughout the exhibit, this question is perhaps the most substantially and commonly answered of the three questions posed by “Lowell: Visions of an Industrial City.” As Gregg Kimball notes, LNHP’s “exhibitions are heavily weighted toward the people who created and made Lowell work,” a situation that creates a plethora of answers to the second question the exhibit asks.⁷⁵ Typically, the answers provided to this question revolve around deteriorating working conditions that plagued Lowell as time wore on. While the “white-nuns” of Lowell may have had it good, the exhibits argue, the managers’ incessant drive to improve the productivity of their workforce drove the women away—eventually to be replaced by lower waged and less skilled immigrants. As a result, immigrants and managers were forced into a “subtle human struggle.” Unsurprisingly, and despite a lack of attention to them, the innovations that are portrayed as affecting workers and managers most are those related to business management

practices. Technological innovations, on the other hand, are nearly universally billed as positive, except when those innovations are explicitly appropriated by managers as a way to control their workers. As a result, the second question posed by the exhibit is primarily answered via displays about the early labor movement.



Figure 11: Wheels of Change. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

A short video that runs on loop near the entrance to “Lowell: Visions of an Industrial City” provides an example of how the negative effects of technological innovation are often blamed on human agents and their business practices. The film, titled “The Wheels of Change: The First Century of American Industrialism,” chronicles the history of early industrialism in the United States. Despite its name, however, the film focuses closely on the labor movement. In line with other displays in the exhibit, the film’s narration continues LNHP’s trend of

characterizing industrial technology as fundamentally positive yet corruptible by human agents. The most noteworthy example of this in the film comes as the story it tells reaches the American Civil War—a conflict it describes as pitting Southern agrarians against Northern industrialists. Intriguingly, the film describes both Southern agrarianism and Northern industrialism as forms of slavery—one as chattel slavery and the other as wage slavery. Despite the equation of the northern industrial system with wage slavery, however, the film adopts a triumphant attitude toward the victory of what it terms “industrial Yankee ingenuity,” claiming that the union victory ushered in an era of growth, prosperity, and drastic change. While the twin problems of poor working conditions and low wage are constantly identified by the film, they are ubiquitously considered to be the fault of wealthy industrialists and their business innovations. The film’s portrayal of Andrew Carnegie—a wealthy capitalist responsible for the growth of the American steel industry—demonstrates this well. Carnegie’s actions during the Homestead Strike, which led to the death of ten steelworkers, are invoked in the film with great effect. Primarily, the film uses them to demonstrate how wealthy industrialists’ relentless pursuit of efficiency and profit was a detriment to the working class. If northern industrialism is wage slavery, it seems that it is wealthy industrialists who are the slave masters and not the innovative machines to which laborers were yoked.

Elsewhere in “Lowell: Visions of an Industrial City,” a display entitled “The Complexity of Conflict” gives a relatively detailed depiction of labor conflict at Lowell that also channels blame for the ill effects of industrialism toward human agents. The impetus for struggle in the mills, the display contends, were both “conflict between skilled and unskilled workers and conflict among ethnic groups.” An example of a dilemma between skilled and unskilled workers informs guests of how the development of “ring spinning machines . . . threatened the mule

spinners' job security." The development of this new technology threatened to put skilled laborers out of work, replacing them with unskilled laborers who would merely shepherd a spinning machine. Ostensibly, this is a story very much in the Luddite tradition where innovative technology is placed at fault for the loss of working-class livelihoods. However, the display takes pains to redirect blame, closing with a statement that "Because they cut costs, ring spinners were attractive to managers. Thus, an advance in technology gave managers an edge in their struggle with the mule spinners in the 1870s." Here, again, sustained critique of the implications of technological design are forgone—lost in a pivot toward human agency.

The assignment of blame for the negative changes that accompanied industrialism to managers is also found in "Working in the Mills," a display dedicated to informing guests about the working conditions of Lowell's textile mills. This display immediately opens by informing guests that "In Lowell's textile mills, machines made cloth, but people invented, operated, and improved the machines," drawing attention toward the human story of Lowell and away from what is depicted as rote technology. Here, the human aspect of the story, as in other parts of LNHP, is evoked to deflect criticism from industrial technology itself. The display continues, suggesting that "Most factory floors were—and still are—places of tremendous noise and subtle human struggle. Managers tried to get the most out of workers by speeding up machinery . . . and kept pay as low as possible." Despite the greed of managers and owners, "laborers tried to maintain a degree of control over their work, improve conditions, increase wages, and obtain fair piece rates." By suggesting that if workers had been given their way conditions would have improved, the display contends that the nature of technological innovation itself would have solved the problems of low pay and working conditions. Thus, it must be the managers who blocked these supposedly natural improvements from occurring.

More recently, how did Lowell and the textile industry weather the global economic shifts of the twentieth century?

The final question posed by “Lowell: Visions of an Industrial City” draws together guests’ experiences at LNHP, directly addressing the deindustrialized state of the city of Lowell and its consequences. Importantly, this question is answered primarily toward the end of the exhibit, coming after sections that focus heavily on Lowell’s early technological innovation and labor history. Because “Lowell: Visions of an Industrial City” is spatially arranged in a way that requires guests to progress forward through the industrial history of Lowell, the positioning of answers to the third question near the end of the exhibit suggest a causality that links the answers to information provided before it.⁷⁶ As such, it is worth reviewing the procedure that guests to LNHP have typically followed to this point. To provide a broader picture, I recap what average guests experience as they arrive at the park and journey to the Boott Cotton Mills Museum. First, guests arrive at the visitor center to receive general information about the park. Here, they are directed to view a short video and read through a small display. Both the video and the exhibit allude to the power of industrial technology to positively transform a region. Silhouetted against how LNHP frames industrial technology is the deindustrialized state of contemporary Lowell. The absence of industry in Lowell is emphasized by the experiential habitat through which guests trek as they traverse Lowell *en route* to the Boott Cotton Mills Museum. Upon entering the Boott Cotton Mills Museum, guests exit deindustrialized Lowell to enter a recreation of the city’s industrial heyday in the form of functioning automatic looms. Once guests experience the recreation of Lowell’s industrial past, they arrive on the second floor of the Boott Cotton Mills Museum and are provided information about how innovative technologies—like the automatic looms—made Lowell prosperous. Thus, when guests encounter information that is intended to answer the third question that “Lowell: Visions of an Industrial City” poses, they do so at a point

which bridges the gap between the historical information about Lowell that LNHP provides and guests' experiences in the city as it exists today.

The bridging of this gap occurs toward the end of “Lowell: Visions of an Industrial City” when guests encounter a section of the exhibit titled “Crisis.” It is here that, after their excursion through the grandeur of Lowell’s past, a large display on the wall pulls guests back to the reality of modern Lowell—an industrial boomtown in a deindustrial slump. The opening display in this section declares that industrial “closures devastated Lowell. Huge mill complexes were shuttered, the downtown shopping district declined, and several city center neighborhoods suffered physical decay. Residents struggled to find work as unemployment soared.” Based on this opening text, the easy answer to the question of how Lowell fared the twentieth century is “poorly.” This implied answer resonates strongly with the experiential habitat through which guests travel to arrive at the Boott Cotton Mills Museum, giving words to the experience and reinforcing the assumption that the presence of industrial technology changes a city for the better.

What, or who, is portrayed as responsible for Lowell’s industrial decline, then? The display titled “Crisis” explicitly informs guests of the cause of these woes—the managers and owners. The beginning of “Crisis” opens as follows:

We cannot compete! We will have to close the mills! Move the mills south! So proclaimed Lowell’s textile manufacturers. Workers responded: Don’t cut our wages! Reinvest in the mills! These words echoed through Lowell during the hard times of the 1920s and 1930s. A few of the city’s older textile firms continued to operate in the 1950s. Others relocated to the south or closed down.

In this display, we find a dramatized portrayal of workers begging management to remain in town, raise their wages, and stop hoarding wealth. Featuring these words prominently, the “Crisis!” section of “Lowell: Visions of an Industrial City” frames the city’s decline in starkly

human terms. Importantly, this framing echoes other informative displays at LNHP, which focus on the role of human agents when discussing times of crisis in Lowell's past. Here, however, blame is expressly assigned, and not merely implied. Quite literally, Lowell's crisis of deindustrialization becomes a conflict between managers and workers. Thus, the cause of Lowell's downfall is located not in the relationship between human agents and mechanical agents, but in the relationship between human agents and human agents. It is the conflict between human agents that ultimately, per the story told by LNHP, interferes with humanity's ideal relationship with machines.

Because the "Crisis!" section of the exhibit focuses on human conflict, technological innovation is absolved from blame by virtue of a lack of sustained critique of its consequences. In fact, quite the opposite is found throughout this portion of the exhibit. A recurring trope in this section is a belief that technology could have solved Lowell's economic ills were it given the opportunity. One display claims "if only the managers had been willing to invest in more innovative technology" the entire crisis of deindustrialization would have been avoided. Other displays, like "Crisis!" draw attention to workers' pleas to management to reinvest in the mills, suggesting a pervasive belief among Lowell's workers that new technologies would bring prosperity back to the town, as well as a belief that management was purposely forestalling the potential of such technology. Moreover, a continuing belief in the transformative power of technology is evident in another display that informs guests about the fate of mill firms that moved south. For example, a display, titled "Moving South," claims that "Southerners sought to create a New South' by embracing the market system and investing in factories . . . Within two generations, the textile industry had helped transform the way people lived in the South—just as it had in the north about 100 years earlier." While the rest of this display provides a much

harsher critique of working conditions than found in other areas of “Lowell: Visions of an Industrial City,” (likely a response to lingering bitterness over losing millwork to Southern towns), the assumed positive impacts of industrial technology remain unchallenged.

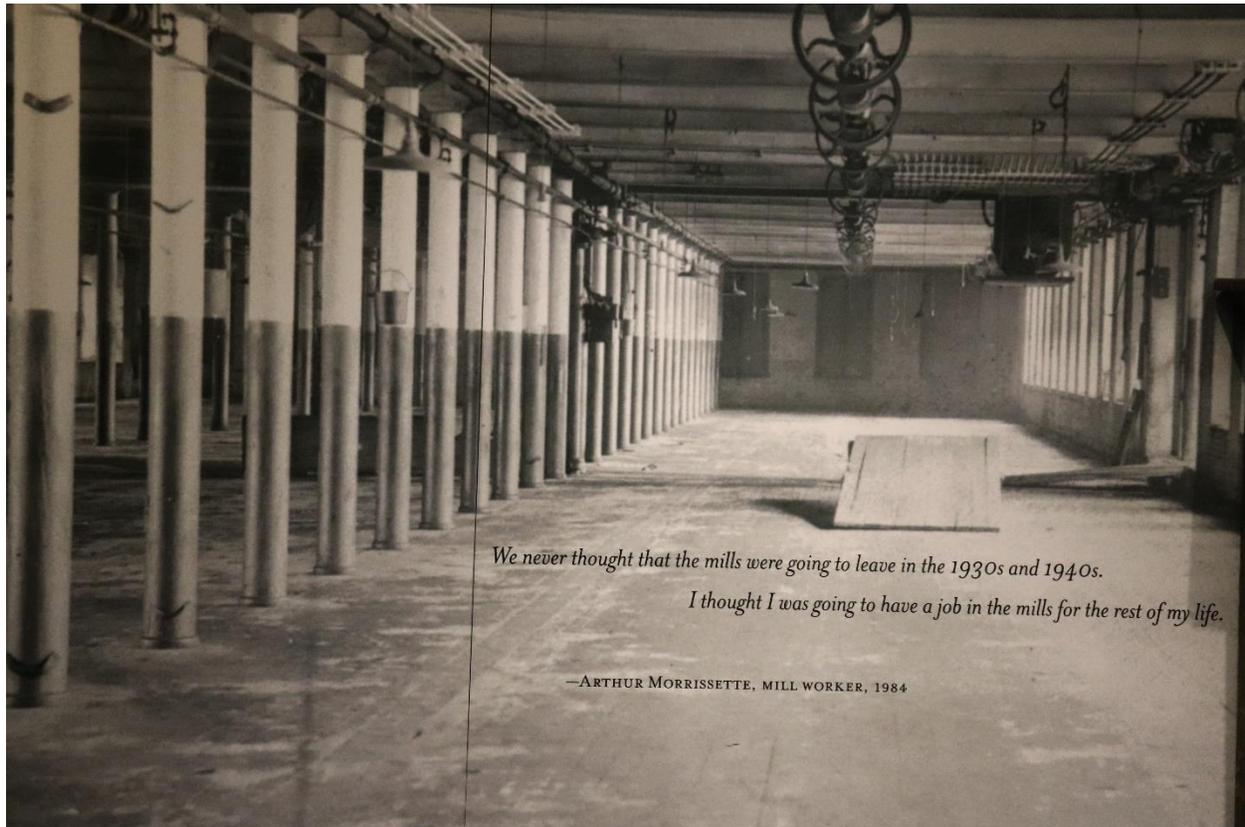


Figure 12: Crisis Display. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

In addition to its defense in textual displays, the power and sublimity of industrial machinery is made experientially present in the “Crisis!” portion of “Lowell: Visions of an Industrial City.” While not an intentional design feature of the site, how the experience of machinery occurs on the second floor of the Boott Cotton Mills Museum is a function of the site’s design. As I have described, the first floor of the museum contains a reproduction mill floor that displays functioning automatic looms. While the intent of the experiential display on the first floor is to transport guests into a portion of Lowell’s industrial past, it impacts guests on

the second floor in a subtler, ambient way. When guests near the end of “Lowell: Visions of an Industrial City” and encounter the portion of the exhibit that discusses the deindustrialization of Lowell, the steady, powerful vibration of the automatic looms can be felt through the floor. Standing here and reading about Lowell’s industrial demise at the hands of owners and managers, guests are sensorially reminded of the power, potential, and sublimity of the functioning machinery below. This experience is a worthwhile metonym for the entirety of LNHP—a place where industrial technology is framed as sublime while juxtaposed with the realities of deindustrialization. In the Boott Cotton Mills Museum, as outside in the streets, mourning for industry is palpable and the impulse to assign blame for its loss looms large.

Conclusion

“Lowell: Visions of an Industrial City” ends with an exhibit titled “Reflections on Industrial America.” Ostensibly, this exhibit offers visitors the opportunity to think critically about the full spectrum of social impacts of the industrial revolution. Poignantly, however, it is one of the largest spaces in “Lowell: Visions of an Industrial City” yet contains the least amount of material. Clustered in the center of the room are quotes from notable figures in American history about the legacy of industrialism. Again, showing how LNHP’s displays preserve the sanctity of the technological sublime, these quotes range from ambivalent to glowing when referring to the legacy of industrial technology. Continuing this trend, “Reflections on Industrial America” also prompts guests to write and share their own family stories about working in America. This interactive aspect of the exhibit invites guests to post their stories on a public wall for other guests to read, thus allowing them to participate in the messages that LNHP imparts. Because displays that allow guests to include self-written text promote a sense of shared history and mitigate distortions to the narratives a museum imparts, the location of this interactive display at

the end of “Lowell: Visions of an Industrial City” creates a unifying moment within which guests collectively acknowledge the impact that industry has had on their lives.⁷⁷ Together, these written messages tell a story of families who, using the tools of industry, wove their lives into the fabric of American society. As if providing proof of the benefits of technology to non-believers who may have found fault in LNHP’s rhetoric, these stories both show guests’ majority acceptance of how LNHP frames industrial technology and suggest their beliefs in a continuing need for industry. While industrial work was never easy, the stories go, it provided and can still provide immense opportunities, transforming families’ lives for the better.



Figure 13: Reflections. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

It is perhaps unsurprising that LNHP rarely critiques industrial technologies directly, given the pervasiveness of the belief that “a limitless human future” can be achieved “by means of intentionally appropriated technologies.”⁷⁸ By the same token, it is also unsurprising that, when given the opportunity, guests echo the same ideas nearly wholesale, thus showing their tight entanglement with *la technique*. Characterizations of industrial technology as sublime generally situate that technology within progress narratives and belief systems that ascribe to it an inevitability and *autonomy* of its own. Consequently, those who view technology critically are usually cast “in the position of an obscurantist, and opponent of the good technological future, virtually an enemy of humanity.”⁷⁹ The strand of thought that colors technology as a near-universal good is drawn tightly through American history and its presence at a site of industrial heritage lends evidence to the claim that “heritage is a new mode of cultural production in the present that has recourse to the past.”⁸⁰ As an institution predicated on the belief that industrialism is a form of national heritage, LNHP turns to Lowell’s industrial past in search of values, lessons, and practices, persuading guests to reaffirm those values and bring their “future actions in line with those values.”⁸¹ Giving weighted importance to the historical attitudes toward industrial technology that LNHP recovers is how these attitudes, when labeled as heritage, play a wide role in “social, political, and economic struggles in our contemporary world.”⁸² By helping guests to root in historical precedent their propensity to experience the technological sublime when coming into contact with new and developing technologies, LNHP and other industrial heritage sites ultimately allay fears of technology out-of-control and stymie the impulse to critique technological actors.

Because sublime technology is understood as a tool with which we improve ourselves and achieve our dreams, criticizing it is tantamount to criticizing our collective ability to reach

those dreams. At LNHP, as I have argued, a lack of sustained critique that treats industrial technology as its own actor leads the site's displays to assign blame for the failures of industry elsewhere in the industrial network. In particular, a tendency to assign blame for deindustrialization to human agents—especially to industrial managers and industrial owners that are deemed to be incompetent—stems from the sublime aura of industrial technology that LNHP recovers from the past as it sifts through Lowell's history in search of the values and lessons that comprise industrial heritage. The degree to which managers and owners were truly to blame for deindustrialization in Lowell and across the United States is historically a point of debate (a point I will return to in this dissertation's conclusion).⁸³ The complexity of industrial networks—which link together productive technologies, research interests, investment interests, capital, transport, managers, and workers—makes it difficult to triangulate the cause of any emergent phenomenon therein.⁸⁴ In any case, blame is unlikely to rest in any single corner of the network, instead being born of a complex convergence of factors. Importantly, it has not been my intention to exonerate of wrongdoing the groups upon which blame comes to rest. Rather, by not letting any agent “off the hook,” I believe that a more complex and worthwhile picture of the “narrative productions” of industrial heritage can be gained.⁸⁵ Eliding the opaque qualities of deindustrialization, exhibits like “Lowell: Visions of an Industrial Future” engage in a type of public forgetting—one that lets the complexity of industrial crises fade into the ether of oblivion, nurturing “efficacious symbolic bonds” between groups who collectively find power, potential, and worth in the productive capabilities of industrial technology.⁸⁶ Ultimately, this is the cornerstone—precarious though it may be—of the appeal of industrial heritage and the source of power that allows the *autonomous* nature of technology systems to grow unchecked.

Unfortunately, and perhaps alarmingly, forgetting the complexity of industrialism and searching for blame among human agents results in two endemic rhetorical features in LNHP's discourse. The first feature resides in the site's tendency to scapegoat the managers and owners of Lowell's mills to avoid addressing the complexity of the past. To phrase this rhetorical feature in Kenneth Burke's terms, the tendency of industrial heritage sites to preserve the sanctity of technological sublimity by averting sustained criticism of industrial technology creates a *perfection* in industrial technology that is rooted in the way it is perceived as able to bring forth progress. While deindustrialization may truly be a product of the complex relationship between humans and machines, the characterization of industrial technology as possessing



Figure 14: Statue of a Manager. Lowell, Massachusetts. Photo Credit: Christopher Lee Adamczyk (2019).

perfection leads to the scapegoating without trial of human agents qua managers and owners. Because “the negative helps to radically define the elements to be victimized,” projected upon managers and owners are the traits that must be purged from our understanding of industrial technology to preserve its value as the foundation of industrial heritage.⁸⁷ Thus, the less-savory side-effects of the use of industrial technology—such as a need for constant production to offset costs, unhealthy working conditions, the need for hierarchical organization, and the need for cheap labor—become the characteristics *par excellence* of how managers and owners are recollected.⁸⁸ These characteristics layer over historical traits of the managerial and capitalist classes that, in their own way, contributed to deindustrialization, creating a scapegoat worthy of rhetorical victimization.

But why does this rhetoric of industrial heritage, then, fault managers and owners? If human agents are to be targeted for the blame of deindustrialization, then all groups are fair game when it comes to taking the bullet. This quandary brings us to a second endemic, rhetorical feature of LNHP’s rhetoric—one that, I argue, is pervasive among industrial heritage rhetoric at large: a tendency to orient guests toward the experiences of workers. Because the antithesis to perfection that scapegoating provides helps unify groups on the side of perfection, groups who have the closest relationship with sublime technology are brought together by rhetoric which castigates the villains standing in its way.⁸⁹ Being closely tied to the care and operation of industrial machinery, it is common wage workers that both identify closely with the power and potential of industrial machinery and are unified on its side.⁹⁰ As such, the close relationship between workers and industrial machines makes the experiences of workers a prime positionality for guests—meaning that to not disrupt the sublime experience of industrial technology at an industrial heritage site, blame for deindustrialization must be located elsewhere in the industrial

network. For this, managers and owners are easy targets. In the next chapter, I explore this rhetorical feature in more depth, fleshing out the implications and intricacies of how guests to industrial heritage sites are oriented toward the experiences of workers, as well as what happens when managers and other higher-ups are recollected not as obstacles to technological success but as integral to it.

Notes

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Chapter Four: Guests as Workers—The National Museum of Industrial History

“A child was born in Bethlehem,
The son of a steel worker union man.
He grew up tall and he grew up strong,
And when he came of age,
All the steel was gone.

Go to China,
To Vietnam,
There's no more steel left in Bethlehem.
There's no more steel left in Bethlehem.

He wants gold,
There's no more steel left in Bethlehem.
Save our souls,
Cos there's no more steel left in Bethlehem.”

Delta Rae, from “Bethlehem Steel.”¹

Introduction

In this chapter, I turn my attention to how industrial heritage sites orient guests toward the experiences of industrial workers. I consider how this orientation invites guests to imagine themselves as the idealized caretakers of industrial machinery. Because national heritage museums reclaim historical values, lessons, and practices so that guests might be persuaded to bring their “future actions in line with those values,” this invitation encourages guests to adopt values drawn from the United States’ industrial past and claimed as part of its industrial heritage.² Importantly, when imagining themselves in the position of workers, guests are also encouraged to imagine themselves interacting with industrial machinery in a manner that reinforces its status as *autonomous* and sublime. As I will show, by orienting guests toward workers’ experiences and experientially placing them into idealized representations of workers’ lives, industrial heritage sites use an exhibition strategy that suggests policy decisions about the adoption and design of industrial technology are best left to managers, technologists, and owners (a group that I refer to as higher-ups).³ Thus, while the previous chapter demonstrates how

higher-ups are scapegoated when industry fails, this chapter explores how and why the same individuals are considered praiseworthy when industry succeeds—or, perhaps, even as necessary for that success. I conclude by suggesting that higher-ups recollected as praiseworthy are those that do not interfere with the *autonomous* nature of industrial technology.

Industrial City, Industrial Tableau

To understand how industrial heritage sites invite guests to adopt values associated with an idealized representation of industrial workers, I draw upon the work of M. Christine Boyer. Boyer's *The City of Collective Memory* illuminates how material and aesthetic qualities of public spaces provide a backdrop against which culturally appropriate actions and beliefs are performed.⁴ While Boyer is primarily interested in how the preservation of historic architecture draws on recollections rooted in idealized and commercialized historical imagery, her overall premise is relevant to places of public memory in general. Boyer's argument hinges upon the *tableau vivant*, a type of artistic entertainment that derives from a "series of show pictures or show architecture" displayed to visiting royalty or other people of importance during medieval street pageants.⁵ Typically, tableaux vivants were composed of backgrounds "copied from tapestries or illuminated manuscripts."⁶ In front of these backgrounds, human actors "pantomimed a historical picture or an allegorical grouping."⁷ The background image that comprised a tableau vivant essentially determined the types of performances that were appropriate, ensuring that human actions were resonant with the events evoked by the background. Extrapolating the practice of medieval tableaux vivants, Boyer argues that modern cityscapes, which have become heavily influenced by historical preservation, set a background in front of which the public performs idealized actions ostensibly rooted in tradition and collective memory. In reality, Boyer suggests, the aesthetic and material qualities brought to cities by

historic preservationism, which influence the actions performed and beliefs adopted by individuals within those cities, have often come to be dominated by outside interests whose concerns are less with recollecting the past and more with ensuring a historical district's profitability.⁸ Playing off the notion of a tableau vivant, Boyer refers to such spaces as *city tableaux*.

Heritage sites and the museums contained within them are related to city tableaux insofar that they are typically located *in situ* and are part of redevelopment projects rooted in historical preservationism. Being in an experiential habitat compositionally and aesthetically modeled after recollections of the past, heritage sites are places of public memory that also produce backdrops against which guests perform—what might be termed a *heritage tableau*. As such, when visiting heritage sites, guests' behavior is necessarily influenced in two ways. First, guests are encouraged to comply with locations' designation as explicit places of public memory—in particular, their designation as museums. Appropriate museum behavior is usually understood as a performance of intellectual interest that does not interfere with other guests' abilities to perform similar behavior. Colloquially, this behavior is why museums are depicted as relatively calm places of contemplation, though the degree to which these ideals are embodied depends on other qualities that a museum strives toward (for example, being accessible to children). Museum behavior derives from museums' roles as public places of education within which knowledge and behavior are exhibited and observed.⁹ Secondly, guests' behavior at heritage sites is also influenced by the background tableaux of those sites, which suggest that guests perform actions appropriate to those tableaux's aesthetic and design. The performances that background tableaux at heritage sites elicit run parallel to and beneath performances of museum behavior. This is a result of heritage sites' *in situ* locations, which possess scenes and aesthetics that were designed

for purposes other than being a museum and possess their own rhetorical force. For example, a heritage site located on a historic farm might elicit performances both of behavior appropriate to a museum and behavior appropriate to a farm.

In this chapter, I am especially concerned with how background tableaux at industrial heritage sites impact guests' behaviors, how guests interpret displays, and influence the values and beliefs that those sites label as heritage. I suggest that background tableaux can resonate with a site's displays by adding experiential depth to the narratives those displays privilege. By providing experiential depth, background tableaux subtly guide and constrain how guests interpret a site and the types of lessons they perceive as being taught by a site. In this capacity, background tableaux are one way in which deep narratives are constituted at heritage sites. Present "both below and above the surface" of a museum's exhibits, deep narratives "implicitly tell visitors how they should interpret the artifacts, the placards, and the supposedly neutral object-based epistemologies they are examining."¹⁰ That is, a deep narrative is a set a values or preferred interpretations that are not explicitly stated but are discernable through a close reading of the general disposition and timbre of a place of public memory. Because "the space of a museum itself and the space it inhabits in society can determine responses to an object" it exhibits, to conjecture that the background tableaux of heritage sites play a role in deep narrative is not unreasonable.¹¹

As industrial heritage sites are generally located *in situ* on the former sites of industrial production they recollect, they possess distinct background tableaux against which their exhibits display and guests perform. Background tableaux at industrial heritage sites contain elements like abandoned factories, smokestacks, rusting machinery, economically depressed cityscapes, and other "interrelated sites across a wide landscape that contain evidence of how the factors of

production were organized, brought to a place where they were transformed into goods and services and from there distributed to their market, leaving waste and landscape change.”¹² I term these backgrounds *industrial tableaux*. Industrial tableaux are, of course, related to guests’ experiential habitats at industrial heritage sites, which I have discussed at length in the previous chapter about Lowell National Historical Park. However, whereas the notion of an experiential habitat is primarily concerned with how guests intertextualize meaning within a given region, thus focusing on the autonomy of guests, industrial tableaux are concerned with how an industrial heritage site’s aesthetic and material qualities impact guests’ behavior by exercising influence on the experiential habitat as a whole. While both notions describe how experiential interactions within and without an industrial heritage site impact guests, the notion of an industrial tableau provides a more specific lens through which to investigate how the characteristics of a site orient guests toward certain beliefs, values, and practices by constraining the extent to which guest can intertextualize meaning.

Using the National Museum of Industrial History as an example, in this chapter I demonstrate how industrial tableaux constitute part of a deep narrative that subtly orients industrial heritage sites’ guests toward an idealized portrayal of workers’ experiences, thus influencing and constraining how guests interpret a site. NMIH’s industrial tableau, coupled with the site’s displays, places guests into a position of compliance with industrial values. This provides guests with knowledge about how industry functions but does not necessarily encourage them to critique industry. Ultimately, I contend that NMIH’s orientation of guests toward workers’ experiences subtly suggest that decisions about industry and technology are best left in the hands of higher-ups. By leaving these decisions in the hands of higher-ups, however, industrial heritage sites ensure that all critique for the implications of industry comes to rest on

their shoulders. That is, because (as the previous chapter demonstrates) industrial technology is recollected as sublime and the workers' experience is claimed as national heritage, higher-ups necessarily become the only aspect of technology-practice that can be reasonably critiqued. When higher-ups' actions are recollected as enabling industrial technology to reach its sublime potential, they are praised. When not, they are scapegoated. In either case, guests—by virtue of heritage being identified with the experiences of workers—are positioned as the caretakers of industrial machinery and not as those who possess the capacity to make policy decisions about industry. Divorcing the public from policy decisions about technology in this manner fundamentally contributes to the phenomenon of autonomous technology.

The National Museum of Industrial History: A Background

First opened to the public on August 2, 2016 and located in the Lehigh Valley of southeastern Pennsylvania, the National Museum of Industrial History (NMIH) is one of the newest national museums of industrial heritage in the United States. The museum's official mission is "to forge a connection between America's industrial past and the innovations of today by educating the public and inspiring the visionaries of tomorrow," and in the process, "to inspire tomorrow's inventors, . . . showcase the global contributions of America's industrial innovators, . . . Educate audiences about the transformation of America from an agrarian society to an industrial giant," and to "Work with public, private, and non-profit partners to attract local, regional, and national visitors to explore America's and the Lehigh Valley's industrial roots."¹³ Given its location and its mission, NMIH is part of a tradition of industrial tourism in Pennsylvania that dates back to at least the 1870s and part of a tradition of industrial *heritage* tourism in Pennsylvania that dates back to the 1920s.¹⁴ As such, NMIH has assumed an

important role in the experiential habitat of industrial tourists in Pennsylvania and the surrounding region.



Figure 15: NMIH. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2018).

Although it opened recently, the museum’s roots go back 20 years or more. The first whispers suggesting a museum of industrial history in the Lehigh Valley sounded during the aftermath of the Bethlehem Steel Corporation’s closure during the end of 1995.¹⁵ In an effort to reduce the economic impact of the plant’s closure on the people of the Lehigh Valley, Bethlehem Steel planned to redevelop the company’s former campus in Bethlehem—a project that included plans for an “ambitious museum . . . that would include hundreds of Smithsonian artifacts” and

focus on telling the story of America's industrial heritage.¹⁶ Initially, the museum was to be the lynchpin of Bethlehem's redeveloping, urban core. In the years between the museum's proposal during the late 1990s and its ribbon-cutting ceremony in 2016 is a story of stagnation, bankruptcy, mismanagement, and general difficulties that, while not necessarily relevant to the present dissertation, shows the difficulties that arise when communities attempt to "stage their own rebirth as displays of what they once were, sometimes before the body is cold."¹⁷ The project stabilized when Brent Glass, former head of the National Museum of American History, joined NMIH during 2014 to reevaluate the project's leadership. Glass's eventual appointment of Amy Hollander—a native of the Lehigh Valley—to the directorship of the NMIH project lead to its completion in 2016 and a close working relationship with the Smithsonian.¹⁸

NMIH's affiliation with the Smithsonian significantly influences the corpus of its collections. The bulk of this influence resides in the museum's collection of nearly 100 items related to the 1876 Centennial Exposition of Philadelphia. These objects are on loan to NMIH from the Smithsonian's 1876 collection and were previously displayed in the Smithsonian's "1876: A Centennial Exhibition" exhibit housed in the Arts and Industries Building between 1976 and 1996.¹⁹ Historically, the Smithsonian's 1876 collection was its first major acquisition of technologically oriented objects, coming into its possession at the end of the exposition. Some of the most significant objects in the collection include "examples of industrial tools and machinery" that were displayed in the exposition's Machinery Hall.²⁰ In fact, it was the institute's possession of objects from the Exposition of Philadelphia's machinery hall that eventually prompted George Brown Goode, John Elfrith Watkins, Carl W. Mitman, and other high-ranking Smithsonian officials to begin conceptualizing a new national museum dedicated to industry and engineering. The connection between NMIH's possession of the industrial

components of the 1876 collection and its focus on industrial history loosely position it as the spiritual successor to the failed National Museum of Engineering and Industry imagined at the beginning of the twentieth century.

In addition to objects from the Smithsonian's 1876 collection, NMIH also houses significant collections related to Bethlehem Steel and other industries associated with the Lehigh Valley. As well, NMIH houses objects intended to supplement the 1876 collection that are not necessarily a part of it (mostly, these are objects that were present at the exposition but not gifted to the Smithsonian). The bulk of these items have been acquired either through donations or by loan from other institutions of industrial heritage, such as the American Precision Museum in Windsor, VT. As well, donated items also comprise a large portion of NMIH's exhibits. For example, NMIH's exhibit about Bethlehem Steel includes objects donated by Bethlehem Steel itself after the company permanently closed its doors. Similarly, NMIH's exhibit about the history and development of the propane industry was chiefly funded and designed by a local propane company.

Workers' Community, Workers' Surroundings, Workers' Heritage

Despite its origin as a corporate project and its acquisition of collections from without Bethlehem's community, NMIH is heavily influenced by its local surroundings, both material and human. The observation that places of public memory "accrete their own pasts" is here applicable.²¹ Like many industrial heritage sites, which are usually located in regions where industry once thrived, NMIH is nestled into an industrial landscape that possesses its own distinct history. Intimately tied to local recollections of the past, this history "represents an array of specialized interests" that "convey what social reality feels like" within a local community.²² Because industrial heritage sites are typically *in situ* in the remains of this history, it is this

history that constitutes the first accreted layer of the heritage site's history. As such, the industrial history of a heritage site and its surroundings reflect the attitudes of the era and community that erected them, regardless of what is displayed in the present.²³ Moreover, similar to Lowell National Historical Park and other industrial heritage sites, the local community's historical relationship with the material confines of an industrial heritage site influence the emphasis of exhibits and the manner in which objects are displayed.

Because NMIH is situated in an industrial landscape populated by a community of locals who were once heavily involved with the steel industry, an orientation toward the experience of industrial workers pervades the site. This orientation toward the worker at NMIH is an echo of the site's first layer of accreted history—subtly present in the background, yet still influential to the site in its contemporary form. The accretion of a past that is oriented toward the worker takes form in various ways—including, but not limited to, stories that are told about the site, facts that are deemed relevant, structures that are highlighted, objects that are displayed, and the material spaces of the site itself. Often, these aspects of the site provide an idealized image of what it meant to live in an industrial town. Together, these accretions form the industrial tableau of NMIH. In various manifestations, this industrial tableau expresses local, vernacular experiences, using them as a bridge to understand the national industrial heritage that NMIH strives to impart. In this capacity, the industrial tableau of NMIH allows the experiences of a community of workers to become a lens through which guests to the site are given a vantage point upon the industrial history of the United States. Importantly, because “most heritage reflects personal or communal self-interest,” framing national industrial heritage as the heritage of local workers via an industrial tableau invites guests to imagine themselves as industrial workers.²⁴

NMIH's orientation toward workers' experiences became apparent to me during my fieldwork at the site. Whether exploring NMIH alone, talking with a volunteer interpreter, or touring the site with a group, I noticed that themes related to industrial workers' lives permeated NMIH's displays and its built environment. Importantly, this orientation appeared to influence the ways that guests, including myself, responded to the site, subtly guiding both the information that guests sought and the information that volunteer guides provided. In all cases, however, the power of the sites' orientation toward the worker appeared to be rooted in the situatedness of NMIH. The history, aesthetics, and human components of the site—what I am calling its industrial tableau—intersected with various forms of display at NMIH. It is through this intersection of accreted pasts with displays that local heritage “is mobilized in the present” and becomes a “standpoint, a performance, a metaphor, an ironic juxtaposition, an alternative metaphor, or a competing narrative for making strategic moves in a broader struggle.”²⁵

In the following sections of this chapter, I identify the ways in which NMIH's industrial tableau orients the site's displays toward workers' experiences as well as how those displays invite guests to imagine themselves as an idealized version of industrial workers. The rhetorical selectivity of displays manifests mainly in three ways: “1) the verbal depiction of the visual and the visual depiction of the verbal, 2) the disposition of place and the placing of disposition, and 3) demonstrations as rhetorical display and rhetorical display as demonstrations.”²⁶ This taxonomy guides my interpretation of NMIH's displays. I group my analysis into sections that respectively focus on the textual/visual, spatial, and experiential aspects of NMIH's displays, detailing how they highlight and conceal information about industry in ways that create a deep narrative that privileges workers' experiences.

Orienting Toward Workers Textually and Visually

True to the notion that “whatever is revealed through display simultaneously conceals alternative possibilities,” in this section I argue that NMIH’s textual and visual orientation toward workers’ experiences is a function of how the site elides detailed information about higher-ups.²⁷ That is, NMIH’s recollection of the past is rooted in objects, experiences, and other primary source materials that are intimately connected to the historical experiences of laborers and workers—individuals who interacted with industrial machinery on a day-to-day basis in ways determined by higher-ups. On the other hand, NMIH presents a paucity of information about the day-to-day experiences of higher-ups themselves. In this section, I demonstrate how the absence of detailed information about the lives of higher-ups constrains guests’ ability to identify with them. As well, I contend that, by inviting guests to imagine themselves in the position of idealized workers, higher-ups who are recollected as making possible that position are praised.

Before I begin, however, I wish to qualify my argument. By arguing that NMIH’s textual and visual displays orient guests toward the experiences of workers, I am not contending that higher-ups are left completely out of the picture. Those in positions of power *are* certainly mentioned. However, when information about them is displayed, it is done in a manner that gives them little *presence*—a manner of presenting information that “enhances the value of some of the elements of which one has actually been made conscious.”²⁸ Presence has been shown to make both textual and visual information more acceptable through the use of “powerful, vivid evidence” that makes it more relatable for a given audience.²⁹ When NMIH’s displays do refer to higher-ups, they typically do so using chronologies, straightforward statements of fact, and visual depictions that focus on informing about singular individuals. Moreover, information

about higher-ups is generally not repeated or emphasized by the site's displays. This type of textual and visual representation leaves little room for a richness and presence of information that might make the lives and experiences of higher-ups relatable. In contrast, textual and visual information about industrial workers is thick with description and copious throughout the museum. Workers' lives are visually depicted in a variety of ways, including archival photographs and film.

Given that NMIH is situated within an industrial tableau that is accented by an orientation toward workers, this rhetorical presence of information about workers is unsurprising. As a result, displays of information about workers tend to make their lives significantly easier to imagine—a fact that layers over the reality that most visitors already have a lot in common with workers before they even enter the museum. On one hand, NMIH's guests are provided information about higher-ups that is designed to help them learn about higher-ups at face value. On the other hand, they are provided information about workers that is designed to allow them to make judgments about what those workers' lives were like. If selectivity is the fountain of rhetoric in textual and visual displays, then at NMIH the selection of textual and visual materials that make workers' lives relatable and the elisions of textual and visual materials that make the lives of higher-ups relatable is a noteworthy rhetorical move.

Let us examine an instance of how detailed information about higher-ups is elided, giving it little presence. Take, for example, a placard about John Fritz—the chief engineer and general superintendent of Bethlehem Iron Company from 1860-1892—that is displayed in the site's exhibit about Bethlehem Steel. This short placard, one of the few that focuses exclusively upon one of the company's higher-ups, depicts Fritz in terms of the projects he oversaw. Fritz is textually described as having “installed the most modern blast furnaces,” “built Bessemer

converters,” “installed open-hearth furnaces,” and being generally responsible for the rise of the steel industry in Bethlehem. This placard is accompanied by black-and-white photographs of Fritz in his office and other black-and-white photographs of the factories that he helped to bring to the city of Bethlehem. While this information certainly does describe Fritz’s life, it does so using language that is not particularly vivid, as guests are exposed to it by reading “abstract, impersonal language and statistics.”³⁰ As a display of listed material about Fritz and archival photographs of his life, this portion of the exhibit about Bethlehem Steel that focuses on Fritz does little to make present and open the *experience* of his life up to guests. Instead, the displays about Fritz seem more like a turn of the century, virtue imparting exhibit described by Tony Bennett than a modern museum piece.³¹



Figure 16: John Fritz. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

It is worth noting that Fritz's display textually and visually depicts his life in more detail and presence than most other higher-ups mentioned in NMIH's exhibits. For example, Charles Schwab—the well-known president of Bethlehem Steel during its heyday in the early twentieth century—is only tangentially mentioned in exhibits, and then only when some action of his is necessary to fully elaborate upon the conditions that industrial workers faced. Information about him is primarily displayed in sections of the Bethlehem Steel exhibit that focus on the unionization of the company's workers. There are no visual depictions of Schwab. Similarly, Walter Snelling—the man primarily responsible for turning propane into a marketable commodity—is mentioned in the exhibit about the propane industry, but only insofar as he is identified as the industry's creator and with non-vivid textual and visual elements similar to those used in Fritz's display. Moreover, in the 1876 exhibit, the creators and manufacturers of machines are mentioned only in passing, while the bulk of the text about the displayed machines focuses on what they did and who (read: the workers) used them. All-in-all, NMIH's displays of textual and visual information about higher-ups are sparse and, when present, provide little relatable content with which guests can both imagine themselves as a higher-up and make judgements about the lives and experiences of higher-ups.

On the other hand, exhibits in which textual, visual, and experiential displays depict the lives and contributions of workers do so vividly and in a manner that imbues the information with presence. These displays tend to be rich in detail and altogether less terse and utilitarian than displays of information about higher-ups. They contain vivid information that “takes the form of concrete and imagistic language, personal narratives, pictures,” and “first-hand experience.”³² For example, a turntable style exhibit, titled “Working in the Mills,” that allows guests to learn about the experiences of various types of workers in Bethlehem stands in stark

contrast to displays about individuals in positions of authority. In “Working in the Mills” multiple categories of workers—men, young men, women, or young women—are described to inform guests about what those workers’ lives were like. Common realities of life like “men made \$9.33 a week” and “women worked their way up to weaver” are juxtaposed with text that explains how all types of workers were divided into hierarchies and had to work hard to advance within those hierarchies. Such realities of life are at once relatable to most of NMIH’s guests, as working for wage and advancing within an organization are still realities of life in a capitalist society.



Figure 17: Working in the Mills. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

Moreover, the way that workers are categorized on the turntable as either men, young men, women, or young women is open enough to allow most guests to imaginatively assume the

position of industrial workers. That is, by not singling out specific, named workers and by providing multiple instances of related information—as opposed to how individual higher-ups are singled out in only a few displays—the display more easily allows visitors to imagine themselves in the position of workers.

The relationship between textual descriptions and images of workers also enables guests to easily imagine themselves as a worker. This is primarily accomplished with the use of non-specific language in images' captions. In museums, the use of such language over more specific nouns enables the emergence of a “we” with which guests can begin to communally identify.³³ In displays about workers at NMIH, language that identifies images of workers as distinct individuals with names is foregone in favor of non-descript pronouns. For example, an image of workers within a steel factory, located near the display about John Fritz, is captioned with the text “workers around a Bessemer converter and in a pit below.” Elsewhere, in an exhibit about arc welding, a prominent image of a lone woman is captioned with the simple text, “woman arc welder.” The relationship that exists between these types of textual and visual material enables guests to more easily imagine themselves as workers in displayed images insofar as it is easier to imagine oneself as the “woman arc welder” while looking at an image of a woman arc welder than it is to imagine oneself as “John Fritz” while looking at an image of John Fritz (Hariman and Lucaites refer to this as an “individuated aggregate”).³⁴

Within NMIH, the tendency to highlight information about the lives and experiences of workers operates on a scale that transcends the displays within which this tendency is most obvious. As a result, textual and visual information that might at first seem relatively unrelated to the lives of workers becomes selective material that favors guests' ability to orient themselves toward workers' experiences. For instance, at the beginning of the exhibit about the silk industry,

a placard describes how the “wives and children of steel workers” were used as a cheap labor source for picking, doffing, and weaving. Astride this placard are images that depict unidentified wives and children of steel workers. Despite the anonymous nature of these women and children their lives are described richly and vividly. Near to these placards and within the same exhibit, several additional placards describe the process of making silk within a factory in a step by step manner—the precise activities that these workers would have been engaged in on a day-to-day basis. Because proximity of visual elements suggests a relationship between them, juxtaposing the display of information about the process of creating silk with textual and visual information that depicts silk workers as anonymous affords guests greater ability to intertextualize, making it easier for them to imagine workers’ day-to-day realities. As such, the proximity of these textual and visual elements allows rote information about technical processes to transcend their face value to give presence to the lives of workers described elsewhere in the exhibit.

Quotes that are displayed in prominent locations of NMIH also comprise texts that tend to privilege the experiences of workers, or at the very least that encourage guests to view the site’s exhibits from the mindset of workers. One of the more explicit examples of this is a large quote by John Gilbert that is painted onto a wall that guests walk by as they descend into the second half of the Bethlehem Steel exhibit. The quote states, “You can’t work in a steel mill and think small.” The display of Gilbert’s quote is *epideictic* in tone insofar that, given its context, it praises those who work in a steel mill for having big thoughts (thinking big, after all, is a desirable trait in industry). Because epideictic rhetoric uses praise or blame to persuade or dissuade an audience to accept some set of values, it is here reasonable to argue that the epideictic tone of the display of Gilbert’s quote suggests to NMIH’s guests that the values by which industrial workers lived are worthy of emulation.³⁵ Of course, the epideictic dimensions of

displays must account for who actually become their audiences and “the unique orientations or points of view” they bring to the encounter, meaning that even the most carefully crafted epideictic discourse can be interpreted by an audience in varying ways.³⁶ At NMIH, however, the site’s consistent orientation toward the workers appears to place guests in a mindset that opens them to epideictic discourse that praises workers. Evidence of such suasion comes from an overheard conversation between two guests in a tour group. When reading Gilbert’s quote, one guest turned to the other and loudly exclaimed that, “We could learn a thing or two from them.” To this, the guest’s interlocuter quickly replied, “We sure could,” suggesting an appreciation of the mindset that that quote praises. Ultimately, the display of Gilbert’s quote, and other quotes like it, vividly makes present the virtue of experiencing industrial history through the eyes of a worker, while eliding the experiences of higher-ups.

In the preceding paragraphs, I have demonstrated how NMIH privileges the experiences of workers in its displays, thus orienting its guests toward those experiences and helping them to imagine themselves in the role of a worker. Often, this occurs as a function of NMIH’s display’s proclivity to elide detailed information about higher-ups. Importantly, however, the way that higher-ups are textually and visually depicted does not necessarily demean the types of work they once performed. Focusing on higher-ups’ accomplishments in a straightforward manner—for example, by simply listing them out—imbues these individuals with an aura of accomplishment. Because NMIH’s textual and visual displays do not explicitly criticize higher-ups, the way in which they inform guests about higher-ups implies that their jobs, while easy to imagine, were performed well. As such, higher-ups at NMIH, unlike at LNHP, are depicted as being able to divine the proper ways to develop and administrate industrial machinery. As a result, workers’ experiences—which are thickly and evocatively described—are also depicted as

operating within a well-run industrial network—a fact that ultimately helps to maintain a depiction of industrial technology as sublime, *autonomous*, and not in need of critique. Moreover, by portraying managers as capable but veiling the precise nature of their work, NMIH constrains information with which guests can imagine themselves as higher-ups while ensuring that guests could imagine themselves as working within a system operated by higher-ups.

Orienting Toward Workers Through Place and Disposition

NMIH's guests are also oriented toward the experience of industrial workers through “the disposition of space and the space of disposition.”³⁷ Disposition of space and space of disposition, typically, are most readily observable at a site of memory through its material aspects, such as in its material structure and other more tangible features.³⁸ The built environment of NMIH, as I have argued, is composed of an industrial tableau upon which an industrial history that predates NMIH has accreted. In this section, I provide specific examples of how this industrial tableau is a primary contributor to NMIH's proclivity to orient guests toward the experiences of workers. I have argued in the previous chapter about Lowell National Historical Park that a memory site must be understood as a “point of reference amid other parts of the landscape”³⁹ wherein memory site and landscape combine to create what Blaire refers to as an “experiential habitat” for guests.⁴⁰ Accordingly, I will also discuss NMIH's industrial tableau as situated within guests' experiential habitat when that habitat bears upon how guests come to interpret NMIH. Ultimately, it is through how NMIH's built environment—in the form of its industrial tableau and guests' experience of that tableau through their experiential habitat—resonate “with symbolic implications generated through selective namings, conventions, styles, and rituals” that visitors become disposed to the dominant messages a site imparts—namely, a deep narrative that orients guests toward the experiences of workers.

Located within a former building of the Bethlehem Steel Corporation, NMIH's built environment is not one that is explicitly designed to be a place of public memory. This characteristic of NMIH does not make it atypical, however, as industrial heritage sites commonly are located within the confines of the former industrial sites they recollect (for example, all three sites that I explore in this dissertation are located within buildings originally constructed for industrial use).⁴¹ Despite the trend of locating industrial heritage sites within former sites of industry, however, the implications of the practice should not be overlooked. As structures designed for industrial use, the architecture, design, and general affective impact of former industrial buildings bear directly upon how places of public memory that are now located within them come to be experienced. That is, these structures have a direct relationship with an industrial heritage sites' disposition of space and space of disposition. To this, NMIH is no exception.

When considering how the material aspects of NMIH's industrial tableau orient guests toward workers' experiences, we must first consider guests' experiential habitat—in particular, the aspects of Bethlehem's cityscape that guests typically encounter before they enter NMIH. When considering guests' experiential habitats, NMIH presents a relatively unique case of industrial memory. The reader may recall how a significant amount of time elapsed between proposing NMIH be constructed and the site opening to the public. Initially planned to be the centerpiece of the redeveloped Bethlehem Steel campus, the delay of NMIH's opening allowed the redevelopment of the Bethlehem Steel Campus to move forward without NMIH—a sequence of events that today situates NMIH at the periphery of that redevelopment. As such, NMIH is situated in Bethlehem adjacent to what has become known as “SteelStacks.” SteelStacks is a “ten-acre campus dedicated to arts, culture, family events, community celebrations, education

and fun” that is literally in the shadow of Bethlehem Steel’s abandoned blast furnaces.⁴² Despite the initial intent to have NMIH serve as the focal point for the redeveloped Bethlehem Steel campus, SteelStacks has clearly assumed this role, each year offering the community access to approximately 1,000 live concerts, eight cultural festivals, films, community classes, restaurants, an arts center, a city visitors’ center, and various nods to Bethlehem’s industrial past. Since its opening in 2014, SteelStacks has drawn over one million visitors and received more than \$70 million in funding from federal grants, corporate donors, and private contributions. During tours of NMIH, I found it quite common to overhear other visitors mention that their visit to the museum was prompted by how convenient it was to access from SteelStacks, which was their primary destination. This suggests the importance of SteelStacks within the spatial scheme of NMIH’s experiential landscape.

The most important location at SteelStacks with regard to how guests interpret NMIH are the five blast furnaces that dominate its skyline and serve as the backdrop of SteelStacks’ outdoor concert venue. Once the technological centerpiece of the Bethlehem Steel Corporation, it is now difficult to express in either words or photographs how vast these furnaces are and how they loom over the town. It would be appropriate, therefore, to refer to them as part of the technological or deindustrial sublime. The value that Bethlehem’s community has placed upon the simple act of *looking* at the furnaces is underscored by the community’s construction of the Hoover Mason Trestle—a 46 foot tall, 2,000 foot long catwalk that allows visitors to get “up close and personal with the blast furnaces.”⁴³ The Hoover Mason Trestle is heavily trafficked with visitors taking pictures of and with the blast furnaces, as well as silently sitting and gazing upon them in contemplation. Several walking tours hosted by former employees of Bethlehem

Steel demonstrate its role as more than merely a recreational space, bringing the human traces of the past directly into contact with the pleasure of gazing upon traces of the past.



Figure 18: SteelStacks. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

While not all NMIH's guests visit SteelStacks or walk along the Hoover Mason Trestle before visiting the museum, it is difficult to not come into view of the blast furnaces when arriving at NMIH. While the furnaces are quite obviously the backdrop of SteelStack's music venue, they also are the centerpiece of Bethlehem's industrial tableau and of the industrial past of the town, creating a sense of connectedness between locations from which they can be seen. SteelStack's blast furnaces are an example of how experiential landscape and industrial tableau intersect in regions of deindustrialization. As a component of guests' experiential habitat and a significant piece of Bethlehem's industrial tableau, seeing the blast furnaces from NMIH or

visiting them before entering the museum imbues NMIH with a sense of being knit into Bethlehem and into the deindustrial remains of Bethlehem Steel. As a result, despite being affiliated with a national institution, NMIH becomes spatially disposed in a vernacular cityscape—a vernacular cityscape dominated by former industrial workers and their descendants.



Figure 19: Hoover Mason Trestle. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

Moreover, because NMIH is housed in a building that was once Bethlehem Steel’s electrical plant, the architecture of the museum itself suggests a connection to what is now the SteelStacks, and, by extension, to the experiences of workers. This is a function of the sites’ common, accreted histories. Bethlehem Steel’s deindustrial remains—of which most buildings in the vicinity are apart—include warehouses, processing areas, railroads, the former headquarters building of Bethlehem Steel, and notably, the furnaces that now provide the backdrop for

SteelStacks. Their common origin materially and spatially binds them together. Perhaps the best example of this is found in a set of railroad tracks, once part of the plant, that emerge from the vicinity of SteelStacks and lead directly to the entrance of NMIH, suggesting that the site is still connected to the surrounding area. Even though NMIH is no longer the lynchpin of the redeveloping Bethlehem Steel campus, it still orbits it closely by virtue of its location, aesthetic, and the industrial tableau that binds it to the region's experiential landscape. Importantly, these aspects of the region's industrial tableau, preserved for their historical importance and aesthetic worth, still carry with them the visual and spatial experience that Bethlehem Steel's workers once encountered on a day-to-day basis.⁴⁴ When touring the area, guests must still walk through the same entrances, open the same doors, and see the same skylines with which workers once interacted.

Similar to the propensity of NMIH's textual and visual components and resultant from how NMIH is spatially woven into the industrial tableau, the spatial and material disposition of the site privileges the experiences of workers by eliding the experiences of higher-ups. This, of course, is likely unintentional—a byproduct of Bethlehem Steel's desire to give back to the city of Bethlehem by redeveloping deindustrial detritus in the form of the company's former campus. As this campus was mostly used by workers on a day-to-day basis, guests who visit NMIH are necessarily oriented toward the experiences of workers in and around the museum. Higher-ups, as I will show, typically inhabited a different space, located miles away. Intentional or not, however, the conservation of areas closely associated with the common worker results in an experience for NMIH's guests that is decidedly worker oriented. Significantly, and as with the same phenomenon in textual and visual form, the elision of these experiences does not

necessitate critique of higher-ups. Rather, it reinforces a divide between higher-ups and guests-as-workers that is rooted in each's role in relation to sublime, industrial technology.

The Bethlehem Steel General Office Building (SGO), directly across from NMIH, provides an example of how the city's industrial tableau orients guests toward the experiences of workers while occluding the experiences of higher-ups. Apart from the blast furnaces, the SGO is the largest structure in the immediate vicinity of NMIH, and thus commands the attention of anyone near it. The SGO was the headquarters of Bethlehem Steel until the 1970s, when corporate operations were moved to the Martin Tower several miles away.⁴⁵ Officially abandoned in the 1990s, the building still served as a base of operations for managers and other Bethlehem Steel employees well after the official move, making it a location that would not have been frequented by the average worker. Despite their lack of access to the SGO, workers on the campus of Bethlehem Steel nevertheless would have seen and had to navigate the structure, making it an integral part of their experience of the Bethlehem Steel campus regardless of their position within the company. Today, those who visit the redeveloping campus of Bethlehem Steel, and guests to NMIH in particular, must also contend with the SGO. Ornate and clearly designed to radiate authority, the building is directly visible from the entrance of NMIH. Because it has yet to be redeveloped, the building still is closed to the public, making it even more inaccessible to NMIH's guests than it was to many of Bethlehem Steel's employees.

The SGO's ability to position guests as workers became apparent to me during one visit to NMIH. During this visit, as I headed toward the entrance of NMIH, I overheard a pair of guests who were leaving the museum comment that they wished the exhibits had mentioned "more about what happened in that building"—referring to the SGO. While this comment was aimed primarily at information imparted within the museum via text and experience, it



Figure 20: SGO. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

demonstrates well the impact that the SGO has upon guests who are entering and exiting NMIH. That is, the building is difficult to ignore, and its presence is made more obvious by the absence of information about it. Overhearing the admittedly brief comments drew my attention to that fact that while the story of Bethlehem Steel told within NMIH focuses on the experience of workers—a feature of the site that prompts little to no protest from guests—the material components of the site’s industrial tableau are much less subtle in the way they orient guests toward the experiences of workers. By being inaccessible both materially and informationally, the SGO suggests to guests the types of information and experiences with which they are expected to identify. In this capacity, the SGO’s interaction with material components of the area’s industrial tableau resonates strongly with the way textual and visual displays within the museum constrain and highlight information.

Aspects of NMIH’s interior design also orient guests toward the experiences of workers. This orientation occurs in two main ways: as a function of NMIH’s interior aesthetics and as a function of the spatial layout of the museum. Because NMIH is located within the building that once housed Bethlehem Steel’s electrical shop, the interior of the museum also invites guests to orient toward workers’ experiences. The most obvious way that this occurs is through the aesthetic qualities of the space itself. A former building of Bethlehem Steel constructed during the early twentieth century, NMIH’s space is a typical industrial design from that era. Its interior walls are made of exposed brick, its ceiling is unenclosed leaving electrical and HVAC components visible, its floors are concrete, and its windows are tall and arched to allow a maximum amount of light to enter the building. Because they are something that industrial workers would have worked within, the presence of industrial architectural elements like these place guests to NMIH in a similar material position as the average worker.⁴⁶ The way NMIH’s

interior aesthetics encourages those who enter to think of a common worker is evidenced by a statement made by a volunteer tour guide, who informed his tour group that every time he entered the building it reminded him of his father who used to work for Bethlehem Steel, suggesting a close association between the human and aesthetic components of industry. Put another way, the aesthetic and material qualities of NMIH orient guests toward workers' experiences because they were designed for workers to use—another instance of how the accreted history of NMIH's industrial tableau comes to permeate the museum.

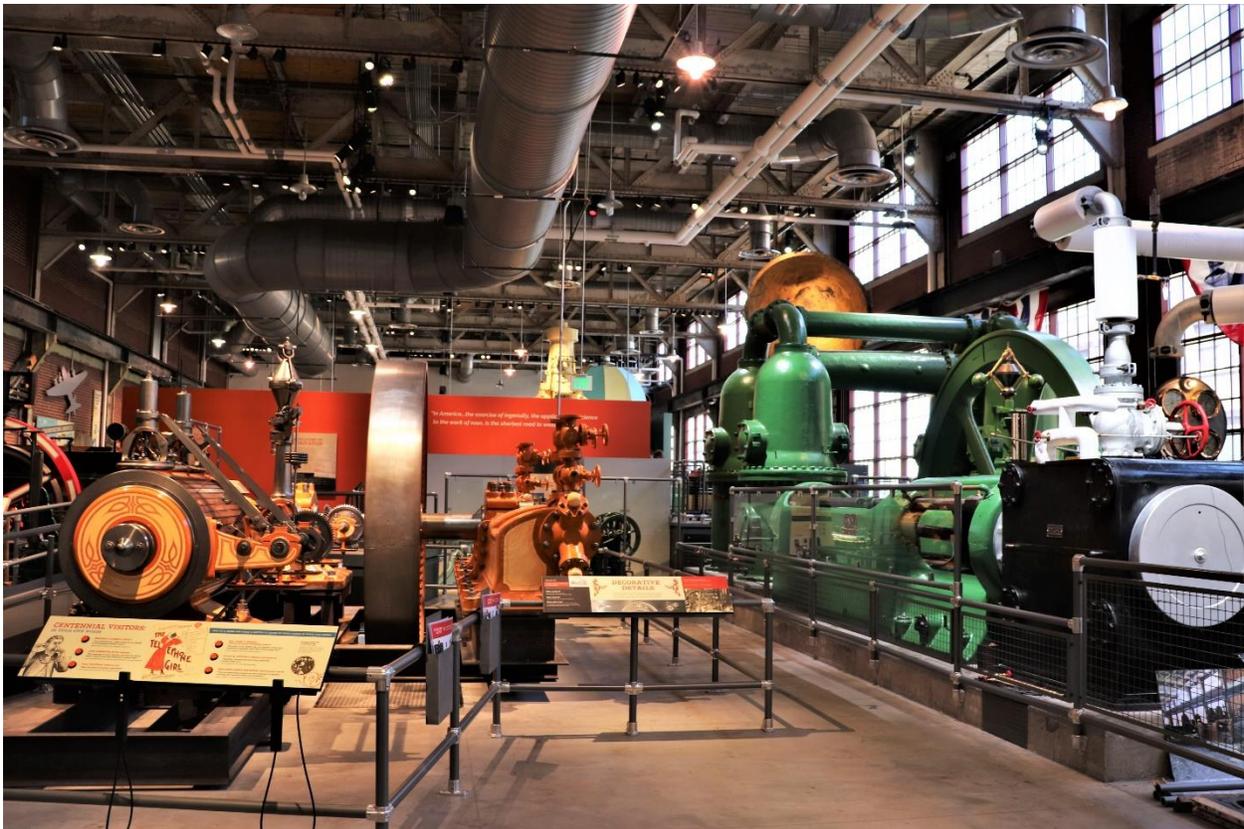


Figure 21: Interior NMIH. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

How industrial architecture is recollected as sublime too plays a role in how guests come to be positioned as workers. As mentioned in the previous chapter about Lowell National Historical Park, architectural elements like arched windows and large brick buildings are often

associated with the sublime—deindustrial, technological or otherwise. These aesthetic qualities of industrial technology and its confines are closely associated with industry’s ability to bring about prosperity and progress and, potentially, what happens to progress when industry disappears.⁴⁷ Importantly for the present discussion, the technological sublime—especially that which emanates from factories and other areas of production—has historically been shown to divert potential workers’ criticisms of labor conditions in favor of awe about the power, potential, and beauty of industrial enterprise.⁴⁸ However, at a site of industrial heritage like NMIH, the industrial sublime enables more than mere deflection of criticisms of industrial technology. Consider that, historically, when confronted with the industrial sublime, individuals often proclaim their excitement at the prospect of joining the collective enterprise of industry in the same manner that someone might be eager to explore the Grand Canyon once they have seen it for the first time. In instances like these, the experiences of the sublime in industry tempers inhibitions that might normally prevent a person from imagining themselves as working in industry. While the industrial campus within which NMIH is located may no longer be operational, the sublimity of its interior aesthetics, when coupled with other elements of displays at the museum that present an idealized version of industrial life, still suggest to guests that working in industry might be a worthy task.

The absence of operational industry at the site further enables this phenomenon, as any indication of the drawbacks of industrial technology is not locatable *in situ*, and instead must be demonstrated by the museum’s displays and the surrounding industrial tableau. In a situation like this, the experiences that guests have at a heritage site are of the utmost importance, as the absence of active, industrial production may lead guests to find authenticity in contemporary, idealized performances of industrial heritage.⁴⁹ While I will discuss experience and performance

at more length in the next section, we can here note that guests' performances are guided by textual and visual displays and the material confines of a site. At NMIH, this is a reality that allows contemporary performances of heritage that position guests as workers to suggest to those guests the virtue of workers' positionality. Moreover, as I argue in the previous chapter, the presence of critical inquiry into industrial technology at industrial heritage sites is thin at best, ultimately granting increased power to the allure of industry via the technological sublime. In short, the potential sublimity of NMIH's aesthetic features—which are designed in a manner that encourages those within them to assume the position of a worker—afford the site an increased ability to invite guests to imagine themselves as industrial workers.

Beyond the aesthetic elements of the site's industrial tableau, the spatial disposition and design of many of the museum's exhibits themselves also position guests as workers. The best example of this is found in the general spatial disposition—layout—of the site's exhibits. Here, it is important to note that when NMIH gained possession of Bethlehem Steel's former electrical shop, the building itself was a large, open space. Thus, while the aesthetics of the building's architecture were not necessarily chosen by the museum, the way the space within the museum came to be divided and the aesthetics of those divisions were conscious choices. Within NMIH, all walls and rooms—aside from the exterior walls—were designed with the museum's purpose in mind. Because, within a museum, exhibit design and disposition of space is necessarily rhetorical, it impacts the agency and potential meaning of what is displayed.⁵⁰ At NMIH, the designed spatial dispositions also strongly suggest that guests position themselves as workers.

The view that guests encounter as they enter the interior of NMIH demonstrates this well. Upon arrival, guests are immediately directed to the giftshop to purchase tickets. From this location—and from any other location in the opening foyer—guests are afforded a view down a

long hallway that leads to the main exhibition space of the museum. At the end of this hallway are visible a myriad of large, industrial machines that comprise the 1876 exhibit. Of these, the most notable is the Corliss engine, which towers above the other machinery and dominates the view. The entrance hallway's size and central position make it the focal point of the foyer, almost as if the hallway itself frames the main exhibits of NMIH beyond. During my first visit to NMIH, I found it difficult not to look down the hallway as I entered the museum and caught myself stealing glances down the hallway even as I conversed with employees and volunteers. Similarly, on more than one occasion I observed other guests pointing down the hallway to show members of their party the visible machinery or to exclaim in excitement when they got their first glimpse of that machinery. Volunteer guides at the museum make use of this framing as well, often gesturing down the hallway when explaining some detail about the museum and the types of objects or information it was created to display. From these instances we can conclude that the arrangement of walls and space at the entrance of the museum are designed, intentionally or not, in such a way that attention is drawn to NMIH's main objects of display—machinery.

The visual and spatial emphasis on the machinery in the 1876 exhibition is important to note because of the connotations of seeing machinery within a space so obviously designed to be a factory. Here, some attention must be paid to the nature of museums' exhibited objects—especially to how they come to have meaning. Simon Knell argues that exhibited objects' meaning is grounded in the experiences of guests rather than in the objects themselves, suggesting that guests' understandings of exhibits rely heavily upon knowledge learned before they ever step foot within a museum.⁵¹ Building upon this, Weiser argues that “any preparation that primes visitors to ‘see’ an object, then, begins well before its interpretive signage in the museum” and that because of the meaning of exhibited objects in a museum might be considered

as constitutive acts within which past experiences mingle with narratives articulated in the museum.⁵² Ultimately, it is this interaction that grants exhibited objects their wide—but more or less constrained—range of potential meanings. Importantly, however, interaction between objects and narratives requires that guests be in contact with both, lest only guests' previous experiences with objects guide their interpretation.



Figure 22: 1876 Exhibit. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

As guests enter NMIH and encounter the view of machinery in the 1876 exhibition that is framed by the entrance hallway, they view exhibited objects apart from the narratives and information that NMIH provides about them. It is my contention that the experience of these objects without their narrative context helps to position guests as workers by freeing the machinery from its designation as exhibits from the 1876 Centennial Exposition. Freed from this

interpretive context, the machinery of the 1876 exhibition appears to be a collection of work equipment that exists within a building that, by virtue of its situation within an industrial tableau, is obviously designed to be a factory. Without contextual information provided by NMMIH to place these objects *in context*, guests' initial interpretation of those objects must be guided by their previous experiences with tools and machinery in similar settings—namely, places of work. In this vein, Brummett argues that when we view mechanical devices together in one place, we cannot help but to consider ourselves as shepherds and users of those machines.⁵³ When individuals encounter such a scene, they imaginatively “merge with the . . . machine” and “enact, embody, and perform the aesthetics of the automated machine.”⁵⁴ Ultimately, Brummett contends that the invitation to imagine oneself working with a displayed machine also invites imagination of ourselves as the “ideal industrial worker,” embodying “efficiency” to “match the task” at hand.⁵⁵ Thus, experiencing a museum exhibit that displays machinery is similar to that of entering an active workspace full of tools and machinery where the obvious assumption is that, regardless of whether one knows what the tools are used for, the space is a place of work. Here, of course, I do not intend to assert that guests do not know that they are entering a museum and that they are clueless to the fact that displayed machinery will be interpreted for them. Rather, I stress the resemblance of entering NMMIH to that of entering a factory and how the designed disposition of space at the site highlights this.

Whether an industrial workspace is real or simulated, it possesses affective power to draw one who experiences it toward the idea of work.⁵⁶ Nye argues that much of a visitor's attraction to factory like-spaces is rooted in “their combination of complexity and order on a massive scale.”⁵⁷ The combination of these elements within architecture designed to house them has been observed to impact individuals, peaking their curiosity in both potential productivity and the

types of work necessary to industrial enterprise. A notable example is found in Andrew Jackson's 1833 visit to the mills at Lowell, Massachusetts. As I suggest in the previous chapter, the mills at Lowell readily display the aesthetic qualities of industrial architecture to the point of their being considered part and parcel of the industrial sublime. Upon encountering the industrial architecture of Lowell, Jackson is recorded to have become so interested in the operation of the mills that he requested that one be brought into production (the mills had been closed for his visit) and that the workers demonstrate their craft to him.⁵⁸ His actions demonstrate clearly the interest in the positionality of the worker that machinery within space designed for machinery creates. That is, Jackson is not recorded to have had interest in the jobs of the managers at Lowell—if he did have interest it was not so great as to merit note—but was instead drawn to the experiences of workers by the material confines of industry. Importantly, the brevity of his visit—and many others like it—allowed the more negative experiences of the common workers to be overlooked.⁵⁹

At NMIH, entering the museum and seeing exhibited machinery without context creates a situation similar to entering a factory, an experience that lends itself heavily toward positioning guests as workers. The orientation toward workers is amplified by the disposition of space elsewhere in the museum. Several examples of this stand out. Once guests have paid their entrance fee and begin to move down the entrance hallway into the main space of the museum, they immediately encounter a time clock situated on the left-hand side of the hallway. While I will discuss NMIH's ritual surrounding the timeclock in more detail in the next section of this chapter, it is worth noting that the position of the timeclock within the space of NMIH—at the head of the entrance hallway—closely mimics the placement of a timeclock in industrial work settings. Having to pass a timeclock as one walks toward a factory room full of industrial

machinery further positions guests as workers in a spatial sense while eliding the experiences of salaried employees who did not have to clock-in. As well, on the right-hand side of the entrance hall is a large display case filled with items related to the former workers of Bethlehem Steel. Items displayed in the case include postcards sent from steam ships by immigrants, training material, photographs of former workers with their families, and a myriad of other items that emphasize the human aspects of Bethlehem's industrial tableau. In conjunction with the framing of the 1876 exhibit by the entrance hallway and the timeclock, the collage of workers' possessions exhibited within the display case further orients them toward workers' experiences while eliding higher-ups' experiences.

In the main space of the museum, once guests encounter textual displays about the site's exhibited machinery, the spatial disposition of exhibits still creates a situation that is oriented toward the experience of workers. Understanding how this occurs necessitates an understanding of how the site's exhibits are laid out and the ways that guests move between them. From the entrance hallway, guests immediately enter the 1876 exhibit. This exhibit is primary, and there is no way to bypass it. From here guests are directed to navigate NMIH in a clockwise manner, moving through exhibits about Bethlehem Steel, the silk industry, and the development of propane. While there is no explicit narrative progression between these exhibits—each tells its own story with no reference to the others—they do constitute a *polyphonic chronology* wherein “multiple voices are juxtaposed” to “invoke in the visitor a correspondingly more complex . . . stance toward the narrative.”⁶⁰ It is through these exhibits' distinct voices that NMIH intends to tell the larger story of American industrialism. However, because the elements making up this story are oriented toward workers' experiences via its industrial tableau, within the polyphony of

the exhibits lurks a deep narrative that encourages guests to interpret the exhibits from a workers' standpoint.⁶¹

While the overall positioning of guests as workers is a type of deep narrative at both NMIH and most other industrial heritage sites, NMIH's progression of exhibits demonstrates how this positionality subtly ties together exhibits that at first glance may not appear closely related. Although they broadly thematize "American industry," the exhibits within NMIH are linked by no chronological sequence or common narrator. With the exception of resonance between the Bethlehem Steel exhibit and the silk industry exhibit, which are linked through their association with the male and female inhabitants of Bethlehem, no common thread is pulled through the entirety of the site. Highlighting this are the transitional phrases used by tour guides and interpreters as they move between exhibits, which typically state that it is time to "move on to the next exhibit," or that "the next exhibit teaches us about" something other than the exhibit before it. However, the paucity of explicit connection between exhibits made by the staff of NMIH textually and orally belies more subtle connections rooted in how guests are positioned in relation to the exhibits. In the following paragraphs, I argue that the exhibits at NMIH individually root themselves in the sublimity, practicality, and innovation of industry in ways that similarly position guests and create a logical, albeit subtle, progression.

The 1876 centennial exhibit is closely related to my arguments from the previous chapter about Lowell National Historical Park insofar as it is distinctly concerned with the sublimity and potential of industrial machinery. I argue that the 1876 exhibit positions guests as workers and that its sublime aspects prompt guests to contemplate their relationship to the industrial machinery on display. The presence of sublimity in the 1876 exhibit, of course, is no surprise given its stated purpose of partially recreating the Machinery Hall exhibit from the 1876

Centennial Exposition of Philadelphia. Nineteenth and twentieth century industrial expositions—like the World’s Fair—were often used by inventors, industrialists, and capitalists as a forum to demonstrate and popularize new and developing technologies.⁶² In doing so, they often alluded to the idea of progress and emphasized the raw power of industrial machinery in ways that ultimately emphasized its sublime characteristics. Such emphasis created a “quasi-religious experience of escape into an ideal future equally accessible to all” and made the expositions “shine of modernity, offering what seemed to be an achievable future . . . a monumental perfection.”⁶³ At the Centennial Exposition of Philadelphia, Machinery Hall—which the exhibit at NMIH partially reconstructs—the exhibiting of a large Corliss steam engine that was used to power the exhibition was considered to be one of the main attractions of the fair, with guide books recommending that guests begin their visit to the exposition by gazing upon it. “The first thing to do is to see the tremendous iron heart,” one guide book declared, “whose energies are pulsating around us.”⁶⁴ The expositions’ guests were noted to have visited the Corliss engine in great numbers, gazing upon the humming machinery in silent contemplation. Importantly, the instance of the Corliss engine’s popularity at the 1876 Philadelphia Exposition draws attention to the technological sublime’s proclivity to invite contemplation of humanity’s relationship to the machinery within which it is embedded. Thus, while the guests at the exposition were observers and tourists first and foremost, machinery hall’s sublimity invited them to consider what their relationship to industry would be outside of the exposition. As Nye writes, “Machines like the Corliss engine became synecdoches for the . . . factory system” and “expressed the demand of new corporations for mass production . . . economies of scale and greater subdivision of labor,” drawing attention to both their potential and the labor needed to achieve that potential.⁶⁵ In

relation to this, most of the exposition's guests would have been consumers, users, and—most importantly—workers.

Spatially, by locating the 1876 exhibit at the head of the museum and ensuring that all guests must move through it to visit the site's other exhibits, NMIH implicitly asks its guests to contemplate their relationship to both industry and the machinery at hand before they experience the rest of the site. While the impact of the machinery hall reconstruction is likely not what it was during 1876—after all, the technology is now outdated and quite obviously on display in a museum—NMIH's embeddedness within an industrial tableau still allows the recreation to suggest that guests' relationship with the exhibit be one that revolves around the worker. The suggestion of this relationship is amplified by NMIH's volunteers and guides, who often impart information about how workers used the exhibited machinery and emphasize that much of the machinery on display is either still in use or that it directly led to the development of tools that we currently use today. In both cases, the emphasis on use subtly points toward the experience of the worker, as workers are the individuals who directly interface with such machines daily. Much like at Lowell National Historical Park, the sublime aspects of the 1876 exhibit call attention to the potential of machinery when it is used “properly” and when the relationship between machine and worker is unimpeded.

Contemplation prompted by the subtle sublimity of the 1876 exhibit resonates with NMIH's later exhibits about Bethlehem Steel and the silk industry via a deep narrative that orients guests toward worker's experiences. If the deep narrative of the 1876 exhibit is rooted in contemplation of the potential of industrial machinery, then the next two exhibits focus closely on the practicality of industrial technology using historical examples. As I have demonstrated in the previous section on textual and visual display, both the Bethlehem Steel and silk industry

exhibits contain elements that position guests as workers using information in text and images. Guests' movement through these exhibits after the 1876 exhibit further draws attention to the positive potentials of contributing to industry as a worker. By eliding information that would allow guests to envision themselves as the higher-ups in these two respective industries, the two exhibits that follow the 1876 exhibit provide a picture to guests of workers in industry contributing positively to society using machinery similar to that encountered in the 1876 exhibit. In this manner, the spatial disposition of NMIH plays off the technological sublime to call attention to an idealized relationship between worker and machine. Overheard comments by guest, like "It's amazing what they [the workers] were able to do with these things," and "Can you imagine how cool it would be to work with something like this [in reference to steel machinery]" point toward how calling forth this idealized relationship allows guests to overlook elided information about other aspects of the industrial enterprise—namely, information about higher-ups.

Positioning Guest as Workers with Demonstration and Experience

A third way that NMIH's exhibits orient guests toward the experiences of workers is through the experiential aspects of the museum's displays. Displays that operate through demonstration or experience aim to "enact a rhetorical performance that anticipates the presence of others," often through the "staging of a spectacle to be seen."⁶⁶ Such displays typically attempt to recreate aspects of exhibited objects that help guest to imagine those objects as *in situ*—that is, they attempt recreate the circumstances within which an object originally existed. "At their most mimetic," Kirshenblatt-Gimblett argues, "in situ installations include live persons, preferably actual representatives of the cultures on display."⁶⁷ Importantly, with regard to places of public memory that focus on heritage, the performative dimensions of experiential display can

imbue the information with a sense of authenticity not available to more traditional forms of display.⁶⁸ However, because experiential, *in situ* displays select information for display and as a result must leave out information, they are necessarily rhetorical and not neutral, meaning that the perception of authenticity can occlude critical judgement about the information a site imparts.⁶⁹ To this NMIH is no exception. In this section, I argue that by appearing authentic to NMIH's industrial tableau, the site's experiential and demonstrative displays orient guests toward the experiences of workers in a manner that experientially positions them as idealized workers, thus suggesting the authenticity of the idealized persona.

By experientially positioning guests as idealized workers, NMIH further demonstrates to guests the worth of being a worker within a system that is run well by higher-ups. Because the experiential demonstrations of workers' lives at NMIH are rhetorically idealized, the juxtaposition of these experiences with the way the site recollects higher-ups as having performed their jobs well suggest that workers' experiences were better under management that could effectively attune to industrial machinery's needs. Alike in the previous two sections, this suggestion is bolstered by how NMIH's experiential components elide but do not necessarily critique higher-ups' experiences. By eliding but not critiquing experiential information about higher-ups, NMIH does not afford guests the opportunity to experience how higher-ups made decisions on a day-to-day basis while simultaneously reassuring them that the higher-ups made those decisions well.



Figure 23: Time Clock. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

NMIH’s first and most poignant experiential display that orients guests toward the experiences of workers is one that I have already mentioned in the previous section about the site’s spatial disposition: the timeclock. Located in a place of central importance—the entrance hallway to the main space of the museum—the timeclock is a component of a ritual in which all guests are asked to participate. Once they pay their entrance fee, guests are provided a timecard and directed to the timeclock so that they can “clock in” before they enter the museum. The card itself has space upon it within which guests are able to write their own name, thus personalizing the card and providing “proof” of the time they spent in the museum. The timeclock itself is authentic, stamping guests’ timecards with their exact time of entrance and time of exit from the museum, thus not only providing proof of their attendance, but also a quantitative measure of the amount of time they put into absorbing the site’s messages.

The time clock routine exemplifies experiential play that helps explain the persuasive power of orienting guests toward the experiences of workers. Traditionally, time clocks are embedded within a network of labor technologies, including, but not limited to work schedules, pay structures, managed efficiency, and other methods of control and surveillance. Once clocked in, industrial workers would be subject to the control of these technologies, creating an oft critiqued situation within which workers' rights to control many details of their lives was forfeited. Guests participating in the time clock ritual at NMIH, on the other hand, are not subject to such constraints once they are "on the clock." Despite this, NMIH's employees and guides still encourage guests to take the ritual seriously. During my first visit to NMIH, I immediately inquired about the ritual. When pressed about why I needed to clock-in, one employee responded, "So you can get paid, of course!" Intrigued, my follow up question aimed to sort out exactly with what I would be paid. To this, the same employee responded that I would be paid with knowledge and information, but also that, really, the entire act of clocking in was just for fun. On another occasion, a different employee qualified the request that I clock in on her own by telling me that doing so wasn't necessary but would help me get into the spirit of things.

The suggestion that the timeclock be used to help guests simultaneously "get into the spirit of things" and to just have "fun" demonstrates the way in which those guests are provided with a seemingly authentic experience that is divorced from its more undesirable historical aspects. Because the experience of clocking is rooted in expectations established by NMIH's industrial tableau, it suggests to guests an authenticity of experience that provides a window into the experiences of workers who once worked in industry. For example, a mother telling her child that she has to "punch her timecard like a real worker" underscores authenticity that is ascribed to an experiential aspect of NMIH that is far removed from how it was once experienced by

workers. In response to such faux authenticity, when thinking about the time clock I am inclined to agree with Kirshenblatt-Gimblett, who argues that heritage sites are a “value added” industry. Because “heritage adds value to existing assets that have either ceased to be viable . . . or were never economically productive to begin with,” the most innocuous of actions and objects at heritage sites often assume a meaning greater than what is obvious.⁷⁰ In fact, the reader may recall a similar request to clock-in, mentioned in the previous chapter, that was made of guests before they entered the main museum at Lowell National Historical Park. I suspect that the presence of time clocks at the entrances of both museums, and no doubt in others that focus on industrial history, constitute a portion of a deep narrative that is endemic to American industrial heritage sites. The value that is added to timeclocks by their use in a heritage site is an ability to help guests feel connected to a national heritage of industry via an object that resonates with a vernacular, industrial tableau. For guests, active participation with displays like the timeclock enable those displays to come to life, making NMIH’s industrial tableau more present and allowing them to assume a place within it as a typical worker.

With the tone set by the timeclock ritual as guests enter the main space of NMIH, a variety of other experiential displays allow them to continue to be positioned as workers. For example, in the 1876 exhibit, guests are provided the opportunity to spin a flywheel as quickly as they can to determine how much horsepower a human being can generate relative to industrial machinery. In addition to resonating with the sublime aspects of the 1876 exhibit, which imbue the displayed machinery with the connotations of power and progress, the experiential display of



Figure 24: Bobbins. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

the flywheel places guests into a workers' position by giving the guests a task that workers would have routinely performed. Participation in the task becomes the experiential labor for which guests clock in when they enter the museum. Other exhibits with NMIH provide similar experiences, again tying the polyphony of the site together through an orientation toward the worker. For example, in the exhibit on Bethlehem Steel a small piece of pig iron is displayed. Guests are encouraged to touch and attempt to pick up this piece of pig iron so that they may determine if they would have been able to carry the same amount of weight as the average worker. Similarly, another experiential display in NMIH's exhibit about the silk industry asks guests to lift a heavy tray of bobbins in or to see if they can carry the same amount of weight as one of the bobbin boys that once worked in the factory. In the exhibit about the origin of propane, guests must open and close metal spigots to reveal information about the history and

uses of propane. In each of these cases, guests are provided an opportunity to merge with the site's industrial tableau. Moreover, these instances of experiential display allow guests to perform the actions that are deemed suitable by the visual, textual, spatial components of that tableau.

Experiential displays at NMIH are not only tactile and oriented toward demonstrations of strength. In addition to these types of experiences, guests are also aurally positioned as workers through the sounds of recorded machinery. Throughout the site, motion sensors that are located next to noteworthy machinery trigger these recordings as guests pass by, thus giving an aspect of life to those machines. The most impactful aspect of these recordings, however, emerges when they are viewed as transcending the objects that they are intended to describe. The effect of this transcendent sound is most obvious when first entering the museum, as the recorded sounds echo together throughout the main space of the museum in a way that mimics the cacophony of a functioning factory floor. The combined nature of these recorded sounds quite literally gives NMIH a timbre that is distinct from most other places of public memory, helping it take on the characteristics of a living industrial tableau as opposed to what Pierre Nora would refer to as a *lieu de memoire*. Because “sounds may cue arguments” and “we can extract propositions from sounds and auditory communication,” it is reasonable to suspect that there is argumentative force latent in the combined effect of this recorded machinery.⁷¹ The intent of this argumentative force is pointed toward by several of NMIH's volunteers, who expressed their joy in how the sound of the recordings “make the place sound like a real factory.” That is, recordings of sounds were added to the machines to make the experience of using the machines more present to the average guest. By making the space of NMIH aurally like a working factory—a display characteristic that layers over the site's spatial and visual similarities to a factory setting—depth is added to

NMIH's industrial tableau, and thus the site's ability to orient guests toward the experiences of workers.

Lastly, various demonstrations that are provided by the museum also provide guests with tangible experiences that draw their attention toward the worker. While these demonstrative exhibits are not permanent and only provided sporadically throughout the year, the fact that NMIH offers them suggests the museum's overall commitment to thoroughly introducing guests to the machines that are displayed at the site. For example, when discussing the site's most recent temporary exhibit about printing presses, those in charge of designing the exhibit and education programs based around it professed their excitement about the chance not only to teach guests through demonstration how the machines worked, but also to give guests their own chance to operate those machines. In either instance, guests are expected to orient themselves toward the machines in a manner that positions them as users—either they are being trained to use the machine or using it themselves. Discussion of other aspects of the machines are subordinated to this positionality. In addition to demonstrative displays that are led by the guides and volunteers



Figure 25: A Welder's Point of View. Bethlehem, Pennsylvania. Photo Credit: Christopher Lee Adamczyk (2019).

at NMIH, the museum also plans to incorporate demonstrative elements that would allow displayed machinery to speak for itself by putting it into motion. Poignantly, the Corliss engine—centerpiece of the 1876 exhibit—is the focus of these plans. Currently, NMIH is working to restore this engine so that it may be activated for guests to see, further creating the allusion of an active factory through displayed objects taking on a life of their own. While there is no exact date set for the completion of the Corliss engine’s restoration, NMIH’s staff was enthusiastic about the fanfare they were sure it would bring.

Here, to emphasize how drastically NMIH’s experiential displays position guests as workers, it is worth considering experiences that the site elides that would help guests to position themselves as agents other than a worker. Nowhere, for example, are guests asked to try their

hand at managing workers' efficiency. Nowhere are they asked to attempt to solve a scientific mystery that may lead to an innovation. Nowhere are they asked to attempt to manage the finances of an industrial corporation. Similarly, nowhere are guests given the opportunity to enter the opulent buildings within which higher-ups lived and worked. In all cases of experience, guests are placed in the position of workers. Ultimately, by placing guests into experiences that are drawn from and resonate with NMIH's industrial tableau, guests are quite literally encourage to perform actions deemed symmetrical with that tableau. This, coupled with the textual, visual, and spatial proclivities of the site, ultimately encourage guests to accept that idealized behaviors and beliefs recollected as part of workers experiences are part of a national heritage of industry and worth of emulation.

Conclusion

In this chapter I have used NMIH as an example to show how industrial heritage sites orient guests toward workers' experiences. As I have argued, this orientation is a product of how industrial heritage sites elide the experiences of higher-ups and textually, visually, spatially, and experientially make present the lives of workers. In focusing closely upon the lives of workers, industrial heritage sites recollect values, lessons, and practices from the past experiences of workers, claiming them as a part of a national, industrial heritage and subtly persuading guests to bring their lives in line with the recollected beliefs of workers. Often, as I have argued, the positioning of guests as workers encourages them to adopt beliefs and practices that are based upon a rhetorically idealized version of the industrial worker—one which works within an industrial system that are administrated in accordance with the demands of the technological sublime. Assuming that workers work in a system in which higher-ups administrate technology

in accordance with its sublimity creates a situation in which the *autonomous* nature of technology thrives.

The importance of identifying industrial heritage sites' proclivity to orient guests toward workers' experiences lies in how it encourages guests to imagine themselves in relation to industrial technology and industrialism. Because workers' attitudes toward the industrial systems in which they worked are relatively little documented and often misrepresented, idealized recollections of workers' experiences can greatly influence how they are perceived by consumers of industrial heritage.⁷² Frequently idealized as a symbiotic relationship between human agents and the technological sublime maintained by an industrial system designed to lead humanity into the future, worker's positions are recollected as ones of "courage, skill, daring, and imagination"—qualities which enabled "real men" to "direct" machines—completing projects dreamed up by societal leaders to improve the nation's quality of life.⁷³ What is often left out of these accounts, and thus excluded from how workers' positions are recollected, are workers' capacity to critique "the dinosaurs of the old industrial regime" in search of an industrial milieu that does not require them to "cede basic decisions about how to organize production to management."⁷⁴ As a result, the typical recollection of a workers' experience is one that praises their ability to carry out an assigned task within a larger industrial system. In other words, for their ability to embody *la technique*.

The way NMIH orients its guests toward worker's draws upon recollections of workers as part of a larger industrial system. As I have shown, information and experiences that NMIH's guests encounter center primarily on the experience of being in close proximity to industrial machinery, what that machinery could accomplish when used properly, the experience of using that machinery, and what the lives of people who used that machinery were like. By providing

this information, NMIH makes values and beliefs associated with the caretaking of machines and compliance with higher-ups praiseworthy, suggesting to guests that they are values worth adopting in their own lives. Ultimately, by solidifying workers' relationship with technology and suggesting that a well-run industrial system uses its machinery to its full potential, industrial heritage amplifies beliefs about the sublime power of industrial technology and the scapegoating of higher-ups for interfering with that sublimity.

As I have suggested throughout this chapter, the proclivity of NMIH to orient its guests toward the experiences of workers and to elide the experiences of higher-ups does not necessarily indict higher-ups of wrongdoing. Instead, by eliding thick description of higher-ups and providing straight forward descriptions of what higher-ups accomplished, NMIH creates an idealized image of owners, managers, and technologist. Idealized, this version of higher-ups stands in contrast to those that are alluded to in displays like those found an LNHP, where they are depicted as being the cause of deindustrialization. The presence of an idealized higher-up in the displays a NMIH is suggestive of principles at work across most sites of industrial heritage in the United States: that the success of industry leaders is measured by their abilities to not interfere with the sublime, *autonomous* potentials of industrial technology. At NMIH, managers are praised with examples accomplishments that are demonstrative of their ability to harness the sublime potential of industrial technology, thus pushing forward the standard of living. On the contrary, in Lowell, higher-ups are bemoaned for their inability to accomplish a similar task—an inability that is ultimately suggested as a main cause for the deindustrialization of the city.

Both instances rest upon two assumptions. First, in both cases the ability of industrial technology to progress humanity in the direction of a desirable future is accepted wholesale—an outgrowth of recollected beliefs that root industrial technology in the technological sublime. As I

have demonstrated in the previous chapter, these beliefs require that the cause of industrial failures, like deindustrialization, be attributed to human agents. Second, both instances assume that the role of higher-ups is to create a system within which industrial technology can flourish, thus benefiting all involved. When industrial technology fails to live up to its sublime characterization, it is higher-ups who are perceived to have built inadequate systems that are scapegoated. Together, these two assumptions lead to a rhetorical proclivity at industrial heritage sites to situate guests as workers. Placed in a position of subservience to the industrial system, guests-as-workers are shielded from blame for the failures of industry—a rhetorical move that protects the vernacular recollections which comprise industrial heritage from fault. Significantly, however, when positioned as workers, guests are allowed to levy judgement upon higher-ups’ ability to maintain the benefits that arise from industrial machinery. By not placing guests in a position to make decisions about the course of industry and instead placing them in a position to judge how *higher-ups*’ decisions effect workers, industrial heritage sites teach that it is not the workers’ place to make industry altering decisions. Guests who are positioned as workers are not encouraged to critically inquire into the impacts of the design, implementation, and uses of industrial machinery. Rather, they are encouraged to trust in the *autonomy* of such systems when those systems are administrated well.

But what does a well-run industrial system look like? In the following chapter, I use Thomas Edison National Historical Park to explore how such systems are characterized at industrial heritage sites. Through analyzing these characterizations, I show how the way that guests are positioned in relation to sublime technology is itself positioned within a larger system of industry. It is this system of industry, and those who run it, who are ultimately labeled as responsible for shepherding technology forward as it evolves into more useful and more efficient

forms. By recollecting the onus of responsibility for this system as apart from workers, I argue industrial heritage sites ultimately foreclose upon an important opportunity to teach their guests how to critically engage with technological systems. By forgoing this opportunity, guests are ultimately taught that technocracy is part and parcel of American industrial heritage and that technocratic beliefs are of value. However, because the ability of technocrats to control technological systems is debatable, ultimately, the claiming of technocracy as heritage is one manner in which the *autonomous* nature of technology becomes normalized.

Notes

¹ Delta Rae, vocalist, “Bethlehem Steel,” by Eric Hölljes and Ian Hölljes, released April 7th, 2015, track #7 on *After It All*, Sire, compact disc.

² M. Elizabeth Weiser, *Museum Rhetoric: Building Civic Identity in National Spaces* (University Park: The Pennsylvania State University Press, 2017), 31.

³ I have chosen to describe this group as “higher-ups” in response to guests’ and locals’ tendency to use the same terminology.

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⁵ Boyer, *The City of Collective Memory*, 206.

⁶ Boyer, 206.

⁷ Boyer, 206.

⁸ Boyer, 417-418.

⁹ Tony Bennett, *Birth of the Museum: History, Theory, Politics* (New York: Routledge, 1995), 98, 100.

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¹¹ Weiser, 90.

¹² Iain Stuart, “Identifying Industrial Landscapes,” in *Industrial Heritage Retooled: The TICCIIH Guide to Preserving Industrial Heritage*, ed. James Douet (New York: Kaplan, 2012), 48.

¹³ “Mission Statement,” *National Museum of Industrial History*, accessed on November 10, 2018, <http://nmih.org/about-us/mission/>

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- ²³ David W. Lowenthal, *Lies Across America: What our Historic Sites Get Wrong* (New York: Touchstone, 2007), 36-40.
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- ²⁵ Kathryn Lafrenz Samuels, “Heritage as Persuasion,” in *Heritage Keywords: Rhetoric and Redescription in Cultural Heritage*, eds. Kathryn Lafrenz Samuels and Trinidad Rico (Boulder: University Press of Colorado, 2015), 7.
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- ³¹ Bennett, *Birth of the Museum*.
- ³² Hill, "The Psychology of Rhetorical Images," 31.
- ³³ Weiser, *Museum Rhetoric*, 108-111.
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- ³⁵ Perleman and Olbrechts-Tyteca, *The New Rhetoric*, 48-49.
- ³⁶ Prelli, "Rhetorics of Display," 16.
- ³⁷ Prelli, 12.
- ³⁸ Prelli, 13.
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⁵⁴ Brummett, 36.

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Chapter Five: Recollected Technocrats, Guests-as-Workers, and the Industrial Scene—Thomas Edison National Historical Park

“He will have no need of monuments or cenotaphs to sound his praises or record his benefactions; for, on the great highway of waters, to the utmost limits of America's rock-bound coast, and Albion's chalky cliffs, his Phonograph will speak to generations yet unborn, and tell of thousands rescued from shipwreck, and of nationalities made wealthy and powerful by the miraculous emanations from his fertile brain; and we shall be enabled literally to assert of Mr. Edison that, ‘He, being *dead*, yet *speakeeth*,’ through his inventions.”

Frederick J. Garbit, from *The Phonograph and its Inventor*.¹

Introduction

In the preceding two chapters, I have demonstrated how industrial heritage sites invoke the technological sublime and position guests as workers in relation to industrial technology. This chapter considers how industrial heritage sites characterize the system within which sublime technology and workers act as one rooted in technocratic ideals. Using Thomas Edison National Historical Park (TENHP) as an example, I show that this system is assumed to be one in which savvy owners-cum-technocrats harness the sublime potential of industrial technology in a manner that allows that technology to advance humanity toward a bountiful future and does not interfere with workers’ relationship with it. In other words, how they harness its *autonomous* nature. Whereas in the previous two chapters about Lowell National Historical Park and the National Museum of Industrial History I show that higher-ups who are unable to divine the needs of industrial technology are scapegoated and that guests-positioned-as-workers are not invited to critically evaluate industrial technology, in this chapter I show how skilled technocrats are depicted as necessary to the invention of new machines, the creation of new products, and to efficient industrial production. Ultimately, this depiction reinforces the legitimacy of the *autonomous* aspects of the industrial system and implicitly divorces consumers of industrial heritage from the process of innovation.

Edison the Technocrat: Master Agent of the Industrial Scene

In examining how skilled higher-ups are recollected as integral to the industrial heritage of the United States, I focus closely on how TENHP's rhetoric hearkens notions of technocrats and technocracy. Traditionally, technocrats are understood to be technical elites who exercise great control over society and technical systems using their business, organizational, commercial, and especially technical savvy.² The origin of technocratic thought lies in the early twentieth century, when "American business underwent a transformation in terms of size, technology and organizational complexity" that resulted in engineers being "thrust into important positions as experts in the new technology the firms were employing."³ While many engineers and others with technical knowhow were initially uncomfortable with the prospect of administrating the economic system entire, ultimately, a system was created within which scientific principles were wed with the organizational principles of social and corporate domains.⁴ Making these outside domains complementary with technics, engineers in their new positions of authority designed a system that was organized around what they understood best—the needs of technics. The degree to which a system oriented toward technical principles resonated with national sentiment is evident in the work of thinkers like Thorstein Veblen, who bemoaned the presence of non-technical values in society.⁵ As the leaders of such systems, technocrats embody the various capacities I have earlier attributed to industrial higher-ups, such as responsibility for finance, efficient operation, development of machinery, and marketing of products. Most fundamentally, however, technocrats are believed to be able to divine progress from their understanding of how technical systems function. Because of the assumption that technocrats intuitively understand how technology works, their opinions about how to effectively organize industrial systems are afforded great credibility in the public's eyes.⁶

In the pantheon of American technocratic leaders, Thomas Edison is recollected as the technocratic innovator *par excellence*. Reflecting upon Edison's status in American history, Charles Bazerman paints Edison as "an American myth, an exemplary life encapsulating cultural beliefs: the achievement of the self-made man; the creativity of technological America, the rewards of hard work wedded to imagination, daring and technological entrepreneurship . . . the quintessential individual of capitalist society."⁷ Such characterizations of Edison are familiar to anyone who grew up in the United States, as school children are bombarded with information about Edison ranging from the story of the invention of the lightbulb to his commitment to the scientific method. Without a doubt, Edison is simultaneously recollected as a benevolent innovator whose goal was to improve the lives of the public, a master businessman who used technology to create and distribute wealth, and a savvy engineer who understood the complexities of technological systems. Even if not explicitly referenced, it is Edison and figures like him against whom contemporary higher-ups in industry have been and are judged, regardless of whether the ideal is attainable or not.⁸ Recollections of Thomas Edison at an industrial heritage site allow us to examine how those sites portray the ideal system within which workers and higher-ups work. Because Edison's life is so often depicted as a model for how technocrats should approach industry, examining recollections of Edison's relationship with historical industries sheds light upon how those industries are assumed to function under "proper" leadership. Importantly, such recollections have implications for how industrial heritage argues that industry should operate and how individuals—workers and higher-ups—are understood to best contribute to industry.

Through their textual, visual, and experiential displays, industrial heritage sites suggest an ideal industrial system and a role for guests within that system. Through doing so, they



Figure 26: Edison Statue. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

ultimately reproduce the cultural politics that surround industry. This reproduction takes on added importance because this rhetoric “mobilizes and motivates” in a manner that impacts “a wide range of social, political and economic struggles in our contemporary world.”⁹ Although historical sites that deal with science and technology are “reflexive and entangled” spaces within which “powerful cultural myths about science, technology, and the nation-state are promoted, negotiated, and contested via the rhetorical configuration” of history, memory, and heritage, most sites in the genre accommodate “the preferred narratives of . . . institutional patrons” and organizations in positions of industrial power.¹⁰ Despite their potential to provide a critical, democratic space of engagement with the history of industry and technology, these sites valorize as heritage systems of thought and practices of production that are intrinsically linked to the rise of industrial capitalism. The claiming of industrial capitalism as heritage points toward the overall success of the narrative of early capitalism created by proponents of Taylorism and other technocrats “who wanted more productivity at less cost for the sake of greater profits” and exploited “workers caught up in management’s experiments with quality control, which shaped both the making of products and laborers’ lives.”¹¹ Industrial heritage sites’ proclivity to impart rhetoric steeped in the technological sublime and to invite guests to imagine themselves as workers shows how claiming such practices as heritage impacts how the nation recollects its industrial past.

During the previous two chapters, I have alluded to the rhetorical ability of an industrial heritage site to reproduce the cultural politics of industry. By reproducing these politics, industrial heritage sites pass down technocratic beliefs through time. Ultimately, their ability to enable technocratic beliefs to be passed down is a function of their tendency to invite guests to *identify* in particular ways with regard to industry. To fully flesh out this assertion and its impact

on how industrial heritage sites situate the relationship between worker and machine within a larger system of industry, I turn to Kenneth Burke. For Burke, identity is intimately linked to the notion of *consubstantiality*, which demonstrates how an individual comes to identify with others as a single group while simultaneously remaining a “unique . . . individual locus of motives.”¹² Burke argues that “to identify A with B is to make A consubstantial with B”—a reality that calls for an “acting-together” and the sharing of “common sensations, concepts, images, ideas,” and “attitudes.”¹³ In the previous chapter about the National Museum of Industrial History, I argue that tourists are invited to identify as workers during their visits to industrial heritage sites. In other words, NMIH demonstrates that industrial heritage sites direct their guests to see themselves as *consubstantial* with workers. Giving depth to our understanding of this consubstantial identification, Lowell National Historical Park shows how workers’ ability to operate industrial machinery allows them to benefit from its sublime potential, so long as the relationship between worker and machine is not interfered with by incompetent higher-ups. Ultimately, by coming to understand themselves as part of an industrial heritage that makes them consubstantial with workers, guests are invited to accept that industrial technology fundamentally improves their lives and that the system within which such technology operates necessitates individuals who can administrate it well. Thus, the capitalist *mythos* is reproduced.

Burke’s dramatisitic pentad is helpful for understanding guests’ positionality at industrial heritage sites and its relationship with industrial technology. The dramatisitic pentad allows us to parse any rhetorical situation in terms of five interrelated elements: an act, a scene, an agent, agency, and purpose.¹⁴ Effectively using these elements to interpret a given rhetorical situation, however, requires an understanding of how each element impacts the others—what Burke terms the ratios.¹⁵ For Burke, the ratios are “principles of determination” that illuminate how one

dramatic element intersects with and augments another element.¹⁶ For example, an agent-act ratio, in which the character of a given agent exercises influence upon an act, can be illustrated by a situation in which an individual's status or title influences their actions.

In this chapter, I argue that industrial heritage sites place guests into a scene-agent ratio by suggesting that they imagine themselves as consubstantial with workers. In the previous chapters I have argued that site's displays, industrial tableaux, and guests' experiential habitat work together to create deep narratives that suggest patterns of behavior to guests. They thus illustrate how encounters with the verbal and non-verbal elements of a scene invite guests to imagine being part of a community associated with those patterns of behavior. As Gregory Clark argues, national tourist sites offer those who experience them an individual encounter with a "community through symbols that prompt identification" with that community.¹⁷ Using Burke's dramatisitic pentad, I now argue that by suggesting to guests that they view themselves as consubstantial with workers, industrial heritage sites rhetorically foreground and grant power to the industrial scene they recollect.

In this chapter, I use Thomas Edison National Historical Park (TENHP) to explore the industrial scene that informs workers' identity. Doing so, I show how industrial heritage sites further characterize the scene using textual, spatial and experiential displays, arguing that these sites situate the consubstantial relationship they suggest their guests adopt with workers—and thus with sublime, industrial machinery—within a larger, historical, national scene. At its core, this scene is one that is strongly accented by the presence of industrial capitalism and the organizational quirks of that system. Noteworthy is how this recollected scene paints the tendencies of industrial capitalism—when well run—in a manner that both glorifies technocrats and removes the public from the process of innovation, thus ensuring that the sanctity and

progressive nature of the relationship between worker and machine is maintained. As such, the way that TENHP recollects the national scene maintains the scene-act ratio between guests-as-workers and industrialism while simultaneously allowing higher-ups to assume an agent-scene ratio. In other words, the scene is recollected as informing guests-as-workers how they should behave in an industrial society while granting technocrats control over the disposition of that scene. Ultimately, by recollecting an ideal version of an industrial capitalist system that is closely aligned with mythic recollections of Thomas Edison, TENHP suggest that the decisions made by technocrats like Edison are necessary to the utopian promises of new and developing technologies.

Thomas Edison National Historical Park: A Background

Located in West Orange, New Jersey, at the site of Edison's second major laboratory complex, Thomas Edison National Historical Park is billed as the location where "modern America was invented," where guests can "step back in time" to when "machines were run by belts and pulleys and music was played on phonographs."¹⁸ Constructed later in Edison's life, the laboratory complex at West Orange, New Jersey "represents one of Edison's greatest contributions to science—the group project approach to problem solving."¹⁹ It was here that Edison refined a think tank approach to technological innovation and produced some of his most impactful and well-regarded technologies. With the legacy of group research as its centerpiece, the site was originally named Edison Laboratory National Monument in 1956. However, the addition of Edison's residence, Glenmont, to the site expanded its purview and prompted the site's renaming as Edison National Historic Site. It was only in October of 2009 that the site was renamed again as Thomas Edison National Historical Park—an act that both signaled the

growing importance of the figure of Edison himself and labeled the site as distinct from others in the region.

Like Lowell National Historical Park, TENHP is administrated by the National Park Service, which connects it to a larger network of cultural and heritage sites that collectively paint a picture of “official” Americana. As a part of this network, TENHP contributes the “largest single body of Edison-related material extant”—a “product of Thomas Alva Edison's sixty-year career as an inventor, manufacturer, businessman, and private citizen.”²⁰ This collection is spread across TENHP’s two main facilities—the main laboratory complex at West Orange and Glenmont, Edison’s residence. These two facilities focus on Edison’s work life and personal life, respectively. Located in Llewelyn Park about one mile from the laboratory complex, Glenmont is a “23-room, red brick and wood mansion . . . located on a 15-acre estate.”²¹ Here, guests learn about Edison’s family life and social interactions with his peers. Visitation of Glenmont is restricted, requiring that guests obtain one of a limited number of daily passes available only during Spring, Summer, and Fall. In contrast, Edison’s laboratory complex is open year-round with access to all its amenities granted with basic admission to TENHP. Here, guests can tour the three-story main laboratory building that houses Edison’s workshops, machine shops, general offices, and his personal library. As well, guests can access smaller outbuildings—such as the chemistry shop—during ranger-led interpretation. Displayed throughout the laboratory complex are a variety of items drawn from TENHP’s extensive archive of Edison related objects, including prototypes of phonographs, early motion picture cameras, a talking doll, and early lightbulbs. However, perhaps the most impressive collection of items is located on the third floor of the main laboratory building, where guests are afforded a glimpse into the site’s archives.

The most remarkable feature of TENHP is the near pristine condition of the laboratory complex. Aside from an underground vault that was added to the site in 1942 to aid the preservation of Edison's papers, little on the site has changed since it was acquired by the National Park Service.²² This is especially evident in the main laboratory building's first two floors, where machining tools and other industrial equipment are recreated using photographs of the laboratory when it was still in use. Similarly, Edison's library, which is located on the first floor of the laboratory complex, remains in much the state it was at the time of Edison's death. Most indicative of the library's timeless state is Edison's personal desk, which was locked by his son after his death and today remains as Edison last left it. Unlike Lowell National Historical Park and the National Museum of Industrial History, however, the region surrounding TENHP shows little in the way of the detritus of industry. A suburb of New York City, West Orange has benefited from an influx of tourists and tax revenue that has allowed it to avoid the rusted-out fate of other industrial towns. As an experiential habitat for guests, the city of West Orange is more modern suburban than deindustrial sublime, though at the site itself there still exists a distinct industrial tableau.

Edison's Laboratory and the Industrial Scene

In the following sections, I describe two ways in which Edison's depiction as a technocrat presents the industrial scene within which workers were employed. First, the site's visual, textual, and oral interpretative components situate Edison as the central, necessary agent at the site as they simultaneously reinforce guests' consubstantiality with the sites' workers. TENHP thus provides guests a picture of what it is like to live and work within Edison's ideal industrial system. Second, I argue that TENHP further links Edison and the industrial scene as a result of how guests typically proceed through original portions of the laboratory complex. In

this chapter, I focus solely on Edison's laboratory complex in West Orange, New Jersey, because of its status as the centerpiece of TENHP and its relevance to industrial heritage.

Edison and the Industrial Scene through Visual, Textual, and Oral Interpretation

To draw out how TENHP suggests Edison's control over the industrial scene, I turn my attention to how the site interprets its displays visually, textually, and orally. While the experiential nature of TENHP is still present—and, like the other sites I have discussed, ensures that guests are oriented toward the experiences of workers through aesthetic and ambient qualities—I believe that the more explicit components of TENHP ensure that guests are able to place their experiential orientation in context within a larger, national scene. Because experiential aspects of heritage sites function passively, they are fundamentally organized and anchored by visual, textual, and oral displays, as these provide “templates for prioritizing and interpreting data” and serve as a “means of understanding experience.”²³ As such, the recreation of the workers' experience is given structure and meaning by the site's visual, textual, and oral interpretive components.

I argue that these visual, textual, and interpretive components enable the site to recollect Thomas Edison as the scene's creator and central agent. Because TENHP's interpretive elements enable the site to recollect choice narratives about its past, these narratives “deflect attention from scenic matters by situating the motives of an act in an agent.”²⁴ In other words, the scene is recollected in a manner that situates it as the production of an agent. The way the selection of interpretive narratives can privilege one dramatic component over another within a display resonates with Lawrence Prelli's assertion that “whatever is revealed through display simultaneously conceals alternative possibilities,” highlighting the fact that interpretative choices are necessarily rhetorical.²⁵ What is revealed through displays at an industrial heritage site is

unavoidably based upon “necessarily partial abstracted memory” that highlights “particular aspects of . . . history” in an effort to make sense of the site and the objects it displays.²⁶

Considering this, I believe that TENHP’s interpretive materials afford a more direct rhetorical path down which the national scene, and Edison’s impact on that scene, can be conveyed to guests. To demonstrate how TENHP rhetorically recollects the national scene through visual, textual, and oral interpretive displays in a manner that places Edison into an agent-scene ratio, I turn to three examples from the site: 1) TENHP’s introductory video; 2) Textual displays in and around Edison’s library; and 3) Oral interpretation given by park rangers during tours of the laboratory complex’s chemistry lab and music room. At TENHP, the agent of choice is Thomas Edison.

Interpretation in “The Wizard of Invention, Innovation, and Ideas”

After guests pay the park’s entrance fee, they are directed to a small presentation room astride TENHP’s gift shop where they watch an introductory video about Thomas Edison. Giving information about the West Orange laboratory complex and Edison’s estate at Glenmont, this video serves as the first formal interpretation guests encounter. Before the introductory video begins, its tone is set strongly by how the screen on which it is played is framed. Bordering the screen are a large Edison quote and a large reproduction of Edison’s distinctive signature. The quote, “To invent, you need a good imagination and a pile of junk,” immediately foregrounds the purpose of the laboratory complex as a place of invention wherein objects that others deem useless are transformed into cutting edge technological products. The attribution this quote to Edison through an almost comically large reproduction of his signature—as opposed to a more traditional statement of his name in the same font as the quote—draws attention to Edison’s control over the idea that the quote espouses and, more generally, to his centrality at TENHP in

general. While this centrality may seem natural given that Edison founded the West Orange laboratory complex, it is worth recalling that the other industrial heritage sites I have discussed do not spotlight singular, historical figures, despite the centrality of such figures to the histories of those sites. Instead, these sites focus on the heritage of industrial systems, workers, machine technology, and other themes that intersect with the idea of industrialism. Thus, for example, instead of centering interpretation on Francis Cabot Lowell's achievements, Lowell National Historical Park uses its exhibits to interpret the industrial revolution in general, using Francis Cabot Lowell as the beginning of the story. By placing Edison at center stage the moment that guests arrive, TENHP subtly suggests Edison's relationship with all aspects of the site—particularly, as I will show, with the success of the industrial system pioneered at the West Orange laboratory complex.



Figure 27: To Invent. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

The framing of the screen on which the introductory film is shown foreshadows and emphasizes the film's casting of Edison as the central agent at TENHP who exercises great control over the laboratory scene. The introductory film, titled "Thomas Edison: The Wizard of Invention, Innovation, and Ideas," begins by informing the audience that "It was Edison's inventions that made the modern world possible" and changed the way that people live for the better. Boldly claiming that the West Orange laboratory complex was where "invention was invented," the film suggests Edison's mastery over the industrial scene beyond West Orange early in the site. In the film, Edison is ubiquitously represented as the sole inventor at the West Orange laboratory complex who made use of a staff of workers and scientists to help bring *his* visions to fruition. Edison's success at the West Orange laboratory complex, according to the film, did not come without "hard work, dedication, and ingenuity" that was fueled by his "curious," "inquisitive," and "adventurous" nature. After characterizing Edison with this encomiastic language, the film connects these traits with Edison's creation of the "modern research laboratory," or, as Edison himself referred to it, the "invention factory." By imparting an overall message that Edison did "not dream of a new world, but invented one," the film teaches guests about the importance of his knowledge, tenacity, ingenuity, business acumen, and managerial skill to the world we live in today—a world that, as the film tells it, is made better by the countless descendants of Edison's inventions and his legacy of an industrial system guided by scientific research.

Interpreted by the introductory film as the central agent of the recollected West Orange laboratory scene, Edison is imbued with responsibility for that scene's creation and its impact on the nation's heritage of industry. Here, it is important to remember that, in Burke's dramatic understanding of rhetoric, the act is of central importance.²⁷ Principally, any rhetorical act might

be influenced by its intersection with any of the other components of the pentad. However, at TENHP—and especially in the introductory film—how Edison’s *actions* intersect with his characterization as an *agent* and with the *scene* in which his actions take place is especially noteworthy. While the historical scene no doubt influenced Edison’s actions, the introductory video elides any connection between the historical scene and Edison’s later actions—actions that are recollected as necessary to the modern American industrial system. Instead, the film privileges Edison’s traits as a rational and determining agent as the primary influence upon his actions. Thus, it is Edison’s ingenuity, curiosity, adventurousness, and so on, that are ultimately depicted as determining the actions he performs during his life. Because scenic details as wide ranging as the modern American industrial system and the high American standard of living are causally attributed to Edison’s actions, and because those actions are presumed to be a function of Edison’s uniqueness as an agent, it follows that Edison’s traits as an actor—ultimately, as a technocrat—are necessary for the nation to reap the benefits of industrialism. Thus, by recollecting Edison’s life in a manner that narrates his actions in an actor-scene ratio, TENHP introduces guests to the site in a manner that paints industrial reality as “constructed of and caused by . . . choices” made by those who possess the proper traits to divine progress from technology.²⁸

Interpretation in and Around Edison’s Library

Edison’s depiction as the creator of the industrial scene is reinforced by textual displays elsewhere at the site. Textual displays near Edison’s library lucidly exemplify how Edison is portrayed as integral to the industrial scene. Edison’s library itself is awe inspiring. Containing three floors of original books and journals, countless pieces of Edison memorabilia, and myriad paintings and photographs, the library is billed by many of the park’s rangers as the “must-see

attraction.” Because Edison’s library is where most guests journey after viewing the introductory video, its grandeur and association with Edison himself resonate with and reinforce the depiction of Edison as the central actor at the West Orange laboratory complex. Interpretive displays frame the library’s vast number of artifacts and emphasize its status as TENHP’s centerpiece attraction. As a rule, these displays recollect Edison’s mastery over the site’s historical scene and further suggest his impact on American industrialism in general.

Examples of this abound. The main display in the library reads, “This library, which also served as Edison’s office, was a constant resource for experimenters working on a new project. Edison understood that research was essential to innovation, so he filled the shelves with books and journals from around the world on scientific and technical topics.” This textual introduction to the library, which is always referred to by rangers who interpret the location, clearly identifies the library as Edison’s gift to the researchers employed in his lab. Experimenters, machinists, and other workers within the laboratory complex are depicted as using resources curated and provided by Edison. The implication is that without this library Edison’s subordinates would not have made scientific breakthroughs. Not only does the text of this display echo the rhetoric found in the site’s introductory video, it also reinforces Edison’s actions as essential for making the laboratory scene, and thus the benefits of that scene—possible.

The benefits of Edison’s mentorship are underscored in the library by textual information about Reginald Fessenden. Fessenden, the man responsible for the first transmission of voice by radio and the first transatlantic radiotelegraphic communication, is a well-known figure in the history of science and technology. Fessenden’s success, as depicted by TEHNP, is intimately tied to Edison’s technocratic abilities. Another display in Edison’s library tells the story of Edison’s decision to transform Fessenden from an electrician into a chemist, claiming that, “Once Edison

decided to make the young Electrician into a chemist, Fessenden had to refresh his knowledge of chemistry,” with Edison’s library being a critical tool for the task. Edison’s decision to transform Fessenden from electrician into chemist resulted in the 24-year old’s promotion to a position of authority “over other trained professionals.” Importantly, this display finishes its description of Fessenden by telling guests about his latter successes as an inventor in his own right. By juxtaposing Fessenden’s later success as an inventor with Edison’s decision to train him and put him into a position of authority, TENHP links Edison’s judgement as a technocrat both to Fessenden’s opportunity to succeed and to the way his inventions improved the world for the better.

Linking Edison explicitly to the industrial scene beyond the West Orange laboratory complex is another textual display in the library, titled “Edison the Business.” Zeroing in on Edison’s direct impact on industry, the display states:

Edison surrounded the West Orange laboratory with factories that produced a steady stream of products based on his inventions; profits provided funds for more inventing. By 1915, the factories employed about 10,000 people and the lab and 150 under the organizational name of Thomas A. Edison, Incorporated. The laboratory and its surrounding factories evolved into a corporation run by professional managers who presided over an international business with specialized departments governing advertising, accounting, purchasing, and legal matters.

These few sentences perhaps best sum up the way TENHP links Edison to the national industrial scene. Importantly, this display credits Edison himself with the inventions produced by the laboratory complex in West Orange. Even though the laboratory employed over 100 researchers and workers, its products are labeled as “his [Edison’s] inventions.” By eliding the contributions of the laboratory’s employees, this display suggests to guests that the positive benefits of the innovations produced at the laboratory—such as thousands of jobs and international distribution of products—are attributable to Edison. Moreover, this display also links Edison to the American

industrial system, within which scientific discoveries are commodified as products that can be distributed to the public, thus improving the national standard of living.

The impact of textual interpretations that situate Edison in an agent-scene ratio in an around the library is well-evidenced by the reactions of guests. During my several visits to TENHP it was common to hear guests express admiration for what the site proclaimed to be Edison's achievements. Comments such as "I never knew how much he did for us," "We really need more people like this today," and any number of variations on these themes were freely expressed by those around me. In one instance, I overheard many children in a group of students on a field trip declare that they wanted to work for Edison when they grew up. Such sentiment not only highlights how Edison is depicted as the central figure of the site, but also how the depiction of Edison's mastery over the scene can influence how guests come to imagine themselves acting within that scene—namely, as employees of Edison working within his industrial system.

Oral Interpretation in the Chemistry Lab and Music Room

In addition to TENHP's textual and visual interpretive materials, Edison is also characterized as the site's central agent through oral interpretation provided by the park's rangers. The most striking encounter I had with such oral interpretation was during a tour of the laboratory complex's chemistry lab, which houses original objects used by the site's scientists to create new materials needed for the development of new technologies. During one tour, the park ranger's interpretation was replete with information about Edison's connection to the world we live in today. "If you were to go home and walk around your house," the ranger informed us, "nearly 90% of the technologies you find can be traced to innovations that took place in this very laboratory." Pushing this idea even further, the ranger went on to inform the guests who had

gathered in the chemistry lab that Edison’s innovations are today responsible for “nearly 75% of the global economy.” To support this, he provided a laundry list of inventions attributed to Edison, including the electric light, the phonograph, motion pictures, modern cement, and synthetic rubber. More to the point, the ranger ultimately claimed that Edison’s biggest contribution to “the country and the world” was not found in his inventions (though, these were obviously generously depicted), but in the “industrial system he pioneered.”



Figure 28: Music Room. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

Curious for an explanation, I asked the ranger to talk more about Edison’s industrial system. Excited for the opportunity to talk yet more about Edison’s accomplishments, the ranger described Edison’s industrial system as one in which scientists and other researchers discovered ways to apply scientific principles in “inventions that benefited everybody.” Once these

inventions were created, they were passed along to nearby factories, thus ensuring jobs for those who lived in the area and the public's access to the "benefits of science." "Holding this system together," the ranger informed us, "Was Edison." Describing Edison as the central actor whose actions were rooted in expertise and good character, the ranger told of Edison's supposedly uncanny ability to choose the right avenues of scientific research and to sense how the research was best transformed into inventions that benefited the common good. "He was like an early Steve Jobs or Bill Gates. Elon Musk may be the most similar person to Edison alive today," he concluded. Despite the ranger's bold claims about how the industrial system should operate and the average citizen's place within the system, the guests present seemed to accept the ranger's conclusion as a matter of fact by nodding in agreement and pressing for more information about Edison.

A guided tour provided by a different park ranger in the laboratory complex's music room sounded a similar theme. Once the location in which prominent musicians came to have their performances recorded, today the music room houses a variety of early recording equipment, including early phonographs. During the "Phonograph Demonstration" tour, guests are provided the opportunity to hear original phonographs play recordings that were produced within the music room itself. These recordings are accompanied by interpretation by a park ranger. While much of this interpretation orients toward the technical details of phonograph technology's evolution (a feature which itself is rooted in utopian assumptions about technological progress), Edison remains the central agent of the story—regardless of which ranger provides the interpretation. Thus, rangers' interpretations of the music room tell a story of technological progress that ultimately resulted in the birth of the commercial music industry, and Edison is depicted as the guiding agent that made such progress possible. In this story, technical

problems with early phonographs are said to have been identified by Edison, who worked closely with the laboratory's staff to correct these problems. Edison is said to have identified the phonographs' commercial potential. Edison is said to have attracted famous musicians to record music at the West Orange laboratory complex. Edison is depicted as the individual who will not accept mediocrity in an invention produced by the laboratory. Repeatedly, with each visit I made to the music room, rangers consistently interpreted Edison as the agent in control of the scene, calling the shots and spawning inventions that benefited all.

Together, TENHP's introductory film, textual interpretation near and around Edison's library, and oral interpretation from around the site narrate a story about the laboratory complex's past that places Edison into an actor-scene ratio. Through this narration, the site begins to reproduce the politics of the industrial system—politics that necessitate technocratic control over the industrial scene within which we all live.²⁹ By claiming these politics of industry as national heritage using the mythic figure of Thomas Edison, TENHP affords the persuasive power of heritage the opportunity to normalize and perpetuate basic facts of contemporary life under industrial capitalism—namely, the need for technocrats to make vital decisions that both guide the progress of technology and build an industrial system that guarantees the success of those decisions. In doing so, TENHP also suggest that guests' proper place is working under Edison and others like him, as their decisions are those that ultimately enable the relationship between worker and machine to remain unimpeded

Edison and the Industrial Scene through TENHP's Layout

In addition to TENHP's visual, textual, and oral interpretive components, the industrial scene—and Edison's mastery over it—is also suggested by the design of the laboratory complex and guests' pathways through it. Like Lowell National Historical Park and the National Museum

of Industrial History, TENHP's laboratory complex is located on the original site of industrial activity. Aside from a storage vault in which invaluable documents from Edison's archive are stored, the site remains much in the state that it was when it closed its doors during the 1940s. TENHP presents an industrial tableau that can bear upon guests' actions and the beliefs they adopt as they tour the site. The *in situ* nature of TENHP is well-evidenced by a variety of photographs displayed around the site that show what work areas looked like when the laboratory complex was still open. According to one ranger, the purpose of these photographs is to emphasize how little the park has changed over time. Like both Lowell National Historical Park and the National Museum of Industrial History, TENHP's adherence to the site's original design means that the aesthetic, ambient, and procedural qualities still possess suasive capacities that were originally intended for an industrial context. In the previous chapter, I argued that the placement of an industrial heritage site within a building originally built for industrial purposes contributes to guests' orientation toward the experiences of workers. Expanding on this, in this section I demonstrate that original details in an *in situ* industrial heritage site can also convey details about the industrial system within which that site once operated. Coupled with interpretive materials that depict that industrial system as worthwhile and necessary to national progress, I argue that guests' procedure through the layout of an industrial heritage site suggests the way industrial systems should operate.

The West Orange laboratory complex is a three-floor structure. Designed as a type of assembly line for inventions, each floor was assigned a given purpose and contains machinery dedicated to that purpose. On the first floor of the complex are found Edison's library, a stock room containing assorted raw materials and discarded parts, and a heavy machine shop in which workers used "large machines to make and repair machine parts." The second floor of the

laboratory complex houses a precision machine shop, a drafting room, and several small laboratory spaces. Finally, the third floor—which was primarily used for the refining of inventions before they were declared to be finished products—contains the music room, photo department, and a large amount of rebuildable space.³⁰ Today, the third floor houses a significant portion of TENHP’s archives and numerous displays of objects from those archives. Configured by Edison to ensure that he could produce “a minor invention every 10 days and a big thing every six months or so,” the organization of the laboratory complex ensured that technologies and ideas moved to different areas of the site as they developed over time, thus enabling several projects to be worked on at once.³¹

In the coming sections, I use the first and second floors of the laboratory complex to show how the site’s original design as an “invention factory,” when coupled with modern interpretive materials, suggests an idealized industrial system and a place for workers within that system. Ultimately, I contend that this affordance of TENHP places guests—who are positioned as workers—into a scene-actor ratio while assigning control over the scene to Edison and other higher-ups. More specifically, I show how original features and interpretive materials found on the first floor suggest workers’ position within the laboratory complex itself and how features on the second-floor position workers both within the laboratory complex and within a national system of industrial production.

The First Floor: Edison’s Library and the Machine Shop

As with the other industrial heritage sites I have discussed, guests are quickly oriented toward workers’ experiences by locations and objects that they encounter as they enter the laboratory complex. Entering the laboratory complex, guests immediately encounter two notable things: a time clock and Edison’s library. Edison’s library, as I have discussed, is a grandiose,



Figure 29: Edison Library. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

three story room containing myriad objects that are associated with Edison. Featuring Edison’s preserved desk and a large oil painting that depicts Edison thinking while seated at this desk, the library is easily associated with Edison and not to be confused with the rest of the complex. An overheard conversation between a father and his daughter put this poignantly; “This is where he called the shots,” he whispered to her about Edison as they gazed upon the library. As I have argued in the previous two chapters, the presence of timeclocks at industrial heritage sites both



Figure 30: Timeclock Marked by Workers. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

orients guests toward workers’ experiences and experientially places guests into the position of a worker. While the timeclock at TENHP is not interactive, its ability to orient toward the experiences of workers is still emphasized by a nearby textual display, titled “Time Clock,” that explains how the timeclock was used to “track the lab’s health” by tabulating the number of

hours employees spent working on various projects. While the display associates the timeclock with Edison by claiming that “even Edison’s hours were tracked,” markings drawn onto the clockface that commemorate the precise time of Edison’s death demonstrate that the clock was used primarily by workers by showing that workers continued to use the clock even in Edison’s absence. The continued use of the timeclock contrasts with objects and areas that were used primarily by Edison—such as the library and his desk—which were mothballed after his death. As such, the way guests encounter both Edison’s library and the timeclock as they enter the laboratory complex immediately foregrounds a division between workers and the higher-ups to whom those workers reported.

Importantly, the juxtaposition of the timeclock with Edison’s library often prompts guests to identify with one or the other. Likely, these locations’ ability to prompt identification is related to the suasive potential of artifacts in certain locations to gather together individuals and objects that have become associated with one another.³² Some statements I overheard demonstrate this potential well. Many guests react to the timeclock with exclamations like, “Hey! I’ve seen one of these before,” “I remember using these,” and “This is sure nicer than the one I use at work.” Moreover, one guest was heard telling his companions that “I wish *my* boss would die. I’d mark it on a clock too!” In all cases, these guests’ statements indicated a familiarity with and attraction to the object that prompted them to recollect their own workplace roles. In contrast, guests’ comments about the library—while nearly always expressing a sense of awe—typically indicate a lack of concord with the room. Thus, in the library, comments like “I’ve never seen anywhere like this,” “Who could read all these books,” and “Yeah, this was definitely Edison’s place alright” are common. One guest, who was adamant about how he was “more excited to see tools than books” while talking with a park ranger drives home the ease

with which guests come to associate with workers, even at an industrial heritage site explicitly dedicated to the memory of a technocrat. As these comments show, the placement of the timeclock near Edison’s library implicitly prompts guest to identify with one or the other. As most guests identify with the timeclock, and thus with the experience of workers, I argue that the nature of TENHP affords depth to this assumed identity by situating it within a recollected industrial system. Because TENHP is located *in situ* on the site of former industry, this identification carries implications for guests’ experiences as they move throughout the site. Most importantly, TENHP’s recollection of the laboratory’s industrial system allows guests-as-workers to imagine themselves as working within certain areas in TENHP, perhaps even performing certain tasks. Ultimately, these positionalities suggest to guests their place within the industrial system.

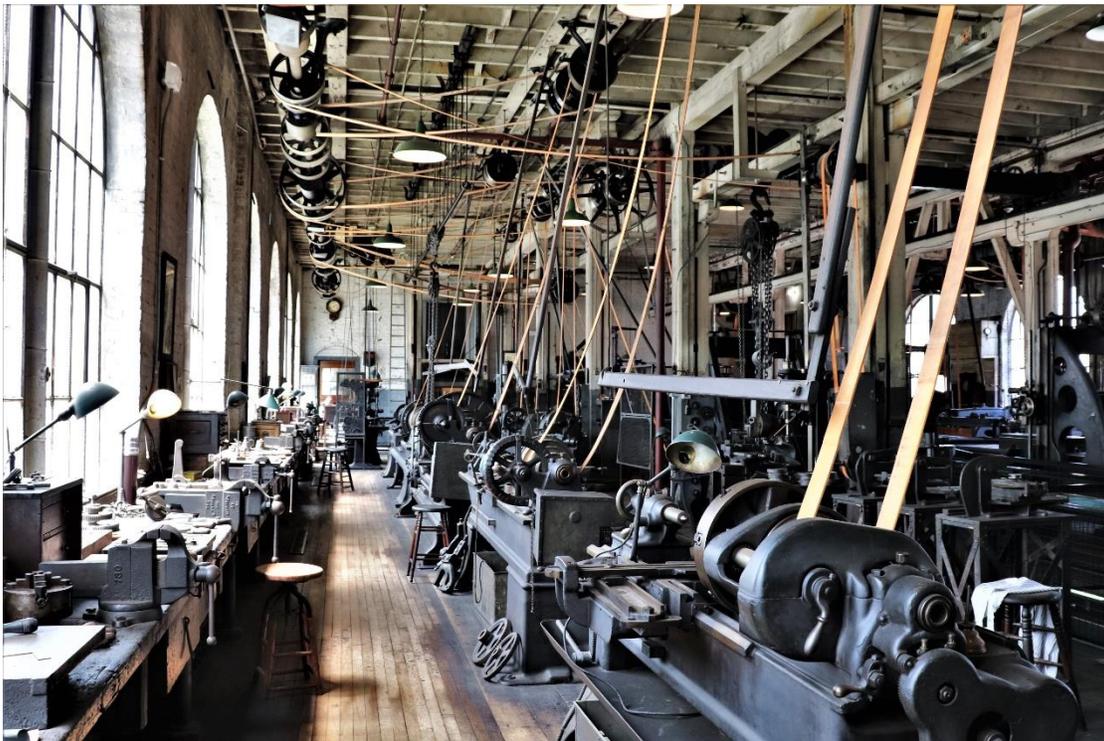


Figure 31: Heavy Machine Shop. West Orange, New Jersey. Photo Credit: Christopher Lee Adameczyk (2019).

The heavy machine shop, also located on the first floor, demonstrates how the design of the laboratory complex, coupled with TENHP's interpretive features, suggests a place for workers within the industrial system. Like the loom room at Lowell National Historical Park, the heavy machine shop is filled with a plethora of belt driven machinery that is both sublime and fundamentally linked to the worker, inviting visitors to imagine the machinery's motions and *telos*.³³ The room itself is a large open space where many of Edison's employees would have worked at once. A textual display, titled "Heavy Machine Shop," placed in the machine shop by TENHP interpret it as a place where "skilled machinist . . . made parts for inventions and lab experiments." Akin to how machines are displayed at the National Museum of Industrial History, the heavy machine shop at TENHP contains textual displays that name machines and describe their functions. Visual displays are also used in the machine shop to convey how its machines were used. For example, the flatbed planer—a tool used to shave down large pieces of metal—is depicted in an interpretive video that shows a former employee of Edison's demonstrating how to work the machine. As at the other sites I have discussed, interpretive materials like these enable guests to imagine themselves as workers using those machines. At TENHP, however, original extant features of the laboratory complex deepen the experience of being part of a larger industrial scene.

In the heavy machine shop, the most explicit example of an original feature that prompts guests-as-workers to imagine themselves within a larger industrial scene is an elevator leading to the second floor that is labeled with an original sign that states, "For the use of Mr. Edison only." This elevator, which was installed to allow the effective movement of parts and other materials between different areas of the laboratory complex, underscores the division between employees who were merely expected to craft parts and those who were expected to refine those parts or to

conceive of how they would contribute to inventions. The movement of workers and ideas between various areas in the laboratory complex was strictly controlled by higher-ups and, particularly, by Edison himself.³⁴



Figure 32: Mr. Edison Only. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

The continued presence of barriers—real or imagined—between areas of the laboratory complex allows for guests who identify closely with workers to situate themselves within the industrial system of the laboratory complex itself. In this instance, guests who imagine themselves as workers within the machine shop are prompted to understand that positionality in relation to the rest of the laboratory complex. This is exemplified by at least one guest who, upon seeing the sign on the elevator, turned to his partner and said, “Well, I guess I wouldn’t have been going upstairs.” Not only does this guest’s statement demonstrate the power of such signage over those

who see it, but it also shows how such signage continues to place Edison into an agent-scene ratio while simultaneously suggesting to guests that they imagine themselves in a scene-agent ratio.

The presence of a foreman's desk at the entrance of the heavy machine shop functions similarly to the text displayed on the elevator. When the laboratory complex was still in production, it was at this desk that the machine shop's foreman sat as he "tracked incoming orders" and "assigned tasks to machinist." In this role, the foreman was the supervisor of the heavy machine shop and oversaw communication between the shop and other parts of the laboratory complex. Displayed on the foreman's desk by TENHP is a period clipboard on which rest a chart of data about tasks to be performed and the productivity of employees in the shop—a document that alludes to the hierarchical features of the laboratory complex during its heyday. Entering the heavy machine shop and passing by the foreman's desk, guests are both brought closer to workers' experiences and given a glimpse of the overall system within which those workers toiled.

The Second Floor: The Precision Machine Shop and Laboratory Spaces

Ascending to the second floor of the West Orange laboratory complex via stairwells located on the north or south sides of the building, guests enter a space containing a precision machine shop, drafting room and general laboratory space. While aesthetically similar to the first floor, the second floor exhibits more indicators of the overall industrial system and that system's relation to the national scene. Importantly, these indicators more firmly assert the exclusion of those at the bottom of the lab's hierarchy from major decisions about research and production, thus reinforcing workers' placement into a scene-agent ratio. As with the first floor, these indicators

manifest in both original features of the laboratory complex and in the site's interpretive materials.



Figure 33: Precision Machine Shop. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

Most guests begin their tour of the second floor by entering the precision machine shop. According to a textual display, titled “Precision Machine Shop,” near the entrance to this room, this is where Edison’s experimental machinists “created prototypes . . . built working models . . . and explored ways to improve existing Edison products.” Contrasting the precision machine shop with the heavy machine shop that is located directly beneath it, the same display informs guests that the precision machine shop was intended for work primarily on prototypes of inventions and improvements to extant products. Because their work was focused on a later stage of the invention process, workers in the precision machine shop were afforded more say in the

process of invention. Notably, the employees of the precision machine shop are referred to as “experimental machinists”—a title distinct from the more simply named “machinists” who worked on the first floor of the laboratory complex. Intentionally or not, through this subtle distinction in title, TENHP also suggests to guests a larger hierarchical system within which workers worked according to their assigned roles.



Figure 34: NOTICE. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

The division between these two sets of employees and their place within the overall industrial system is evidenced by two original signs. The first, posted near the entrance to the precision machine shop, states: “NOTICE: NO PERSONS OTHER THAN SECOND FLOOR EMPLOYEES ARE ALLOWED ADMITTANCE TO THIS DEPARTMENT EXCEPT ON BUISNESS.” Like the original sign on the elevator on the first floor, this sign highlights the stark

realities of working in a compartmentalized “invention factory.” Encountering this sign, employees from the first floor and from elsewhere in Edison’s industrial network would have understood that they were to remain outside of the process of invention unless deemed worthy to join by those already involved. Today, guests who encounter this sign are still subject to its rhetorical force. A conversation with one park ranger revealed that, on more than one occasion, guests have encountered this sign and turned around, believing that they had wandered beyond where they were allowed to venture within TENHP.

The second original sign is located at the north end of the precision machine shop on the door that separates it from the drafting room and general laboratory space. This sign is simple, and states only “NO ADMITTANCE.” Its placement on the door between the precision machine shop and general laboratory space suggests another divide—this time between machinists and experimenters. This division is best drawn out by describing the aesthetic differences between the two spaces. The precision machine shop, as I have stated, is similar to the heavy machine shop. Comprised of multiple large machines connected to a belt drive system, it is a location that invokes the technological sublime and is easily associated with workers—albeit workers with more say in the process of invention. By contrast, the laboratory space beyond the precision machine shop is more akin to an office building, containing several rooms that are connected by a main corridor. Within these rooms are all the accoutrements that are typically associated with experimentation such as glass beakers, Bunsen burners, lab tables, and apothecary jars. The draft room stands out in particular. Here, guests encounter a room that contains a large number of drafting tables upon which are displayed technical schematics for various machines. If the precision machine shop and the heavy machine shop are places that are easily associated with workers who build machines according to instructions that are given to them, the general

laboratory space and drafting room is easily associated with higher-ups who decide what to build and how to build it.



Figure 35: Drafting Room. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

At this location in the laboratory complex, the division between higher-ups and workers is not only suggested by the display of technical diagrams, but also highlighted by a textual display that delineates the process of invention. According to a display titled “Drafting Room,” the process has six steps.

1. Draftsmen work from sketches and notes to create large-scale measure drawings.
2. The foreman orders materials and assigns the project to a team of experimenters and/or machinists.
3. The team builds and tests a prototype, making sketches and notes about any changes needed.
4. The process is repeated until everyone is satisfied, including Thomas Edison.
5. The foreman has blueprints made from the final drawings to use for production.

This display demonstrates to guests that the process of innovation took place within a regimented system where each individual served a specific purpose. Importantly, it also establishes a hierarchy wherein higher-ups—especially Edison and technocrats like him—are expected to give final approval to the design and proposed use of inventions. Elsewhere on the second floor, concrete examples of the invention-to-production process are given using the lab’s involvement with both the phonograph and motion picture camera.

The textual display titled “Drafting Room” and other displays that refer to Edison’s inventions being brought to production, importantly, also provide clues for guests as to the laboratory complex’s place—and thus the common worker’s place—within the national industrial scene. This scene is evoked in step five, which teaches guests that the end goal of invention is to send out inventions for mass production. Because sending an invention out for production necessitates the existence of a network of factories and ability to distribute products, alluding to it at a place of invention situates workers *beyond* the laboratory complex. Not only does this rhetorical move situate the place of invention and those who operate it as a center of the entire industrial system, but it also affords guests who have difficulty identifying their place within the laboratory complex a network with which to identify that is *still connected* to the laboratory complex. A casual conversation with another guest who was also touring TENHP alone prompted this realization for me. In this conversation, he revealed to me that his father once worked in a factory that produced radios. Though this guest knew that his father never worked in a place quite like the West Orange laboratory complex, he was still excited to be there because he believed that it was “places like this that made sure my pa had a job.” Although he did not identify with workers immediately in the laboratory complex, TENHP’s recollection of the complex’s place within a national scene allowed this guest—and likely many others—to

situate himself in relation to the complex regardless. Thus, we can understand the scene created by Edison at the laboratory complex as impacting those who identify with locations outside of that scene.



Figure 36: Edison Cutout. West Orange, New Jersey. Photo Credit: Christopher Lee Adamczyk (2019).

TENHP’s depiction of Edison’s control over the laboratory complex’s scene—and, thus, the national scene—looms large on the second floor. As the “Drafting Room” display suggests, the division between the precision machine shop and the laboratory also marks a location where references to Edison’s role in the industrial system used within the laboratory complex become more frequent. Importantly, the increasing number of references to Edison’s involvement in the innovation process coincide with areas of the site associated with decision making and research—a correlation that ultimately separates from those decisions common workers and

others at the bottom of the industrial system's hierarchy. Purposeful or not, a cardboard cutout of Edison holding a lightbulb that is located near the boundary between the precision machine shop and general laboratory space symbolically suggests the inventor's presence in a manner more direct than photographs and textual displays elsewhere in the laboratory complex. Here, guests—including myself—often take photographs with Edison's cutout, as if they had encountered a celebrity. Beyond the cutout, however, Edison's growing presence in the process of innovation is emphasized by a textual display within the general laboratory space titled "Room 12." This display informs guests that "Edison preferred this cluttered but plain experimental space over his more ornate library office" and that "At one time a smaller room was partitioned off within, probably for secret experiments." A large quote from Frank Dyer and T.C. Martin's *Edison, His Life and His Inventions* is displayed above this interpretive text: "Often Edison may be seen here in animated conference with a group of his assistants; but its [Room 12] chief distinction lies in it being one of his favorite haunts . . . within its walls have been settled many of the perplexing problems and momentous questions that have brought about great changes in electrical engineering and arts."³⁵ As a whole, this display dramatically inserts Edison as a controlling agent into the process of innovation, highlighting not only his ability to solve difficult problems, but also the need to separate his genius from those lower than him in the hierarchy through the use of cordoned off areas and temporary rooms.

Conclusion

In this chapter, I have analyzed the rhetorics of display at Thomas Edison National Historical Park to demonstrate how industrial heritage sites situate practices and beliefs that are claimed as heritage within a larger industrial system. Layered on top of industrial heritage sites' propensity to recollect industrial technology as sublime and to orient guests toward the

experiences of workers, the way that industrial heritage sites situate sublime technology and workers within a larger industrial system ultimately allows guests who claim that industrial heritage to imagine themselves assuming a role within the industrial system. In arguing this, I have shown that when this phenomenon is interpreted using Burke's dramatic pentad, we find that guests are typically situated in a scene-agent ratio within which details about the industrial scene impact the type of agent they imagine themselves as. Conversely, higher-ups and technocrats—like Thomas Edison—are recollected using an actor-scene ratio within which they are given control over the industrial scene.

The implications of my assertion that higher-ups are recollected as controlling the industrial scene while guests-as-workers are depicted as being influenced by that scene are twofold. First, heritage sites' propensity to recollect guests as workers within a scene controlled by higher-ups echoes Lafrenz-Samuels' assertion that heritage tends to reproduce cultural politics.³⁶ By suggesting a larger scene for the history that they curate, industrial heritage sites must also suggest details about politics and other power dynamics within that scene. Because the politics of the industrial scene—both past and present—favor centralized control by a few individuals over a network of production staffed by workers, that scene necessarily reflects upon industrial heritage sites and impacts the public in meaningful ways. This impact includes the perception of employment opportunities, how products come to be available for consumption, and the transmission of beliefs about industry that are deemed worthwhile—all topics that I have shown to be highlighted by industrial heritage sites. Recollecting the politics of industry as the nation's industrial heritage produces a system of beliefs that encourages the public to proudly assume their place as workers at the bottom of the industrial hierarchy. In other words, it calls for them to embody *la technique*. Recollection of the nation's industrial past in this manner, of

course, persists despite the fact that automation, globalization, and other factors related to the modern economy have steadily eroded jobs in industry over the past several decades.³⁷ As a result, guests might be left wondering how they too can come to participate in the nation's industrial heritage and what actions they might take publicly to stimulate the longevity of the industrial system.

This reality fits the second implication of how industrial heritage sites invite guests to imagine themselves working within a larger industrial scene—namely, that by virtue of this positioning guests are divorced from the process of technological decision making. While in the previous chapters I demonstrate that guests are divorced from technological decision making as a function of their orientation toward the experiences of workers and a focus on the sublimity of technology, TENHP shows how they are further divorced when the responsibility for technological decision making is placed into the hands of technocrats. Because such figures are also imbued with mastery over the industrial scene, workers' positions within and understanding of the industrial scene ultimately hinges upon their willing subordination to technocrats and other higher-ups. Technocrats' perceived ability to efficiently and rationally divine what decisions need to be made about the future direction of technological development is one that depicts them as both embodying a "progressive sensibility" and "productive expertise."³⁸ The belief that industrial heritage sites lay claim to is that when the higher-ups make the right calls, everyone benefits, and when they don't, it's the workers' job to demand more qualified higher-ups. At no time—as TENHP recollects—are average workers encouraged to exercise their influence over the industrial scene without guidance or prior approval from a higher-up. Guests are thus encouraged to adopt beliefs that extol the virtues of working as a cog within the industrial system.

In the following, concluding chapter, I synthesize my analysis of Lowell National Historical Park, the National Museum of Industrial History, and Thomas Edison National Historical Park and discuss my conclusions in relationship to the theory of autonomous technology. In particular, I suggest that public memory in the form of industrial heritage can be understood as a manifestation of *la technique* that calls us to reproduce ways of being associated with the maintenance and operation of large, technological systems. I conclude by addressing the implications of this argument on our understanding of the rhetoric of technology.

Notes

¹ Frederick J. Garbit, *The Phonograph and its Inventor, Thomas Alva Edison: Being a Description of the Invention and a Memoir of its Inventor* (Boston: Gunn, 1878), 3.

² Langdon Winner, *Autonomous Technology: Technics-out-of-Control as a Theme in Political Thought* (Cambridge, MA: The MIT Press, 1977), 135-146.

³ Don R. Stabile, "Veblen and the Political Economy of Technocracy: The Herald of Technological Revolution Developed and Ideology of 'Scientific' Collectivism," *American Journal of Economics and Sociology* 46, no. 1 (1987): 35

⁴ David F. Noble, *America By Design: Science, Technology, and the Rise of Corporate Capitalism* (Oxford: Oxford University Press, 1977), 262-266.

⁵ This belief is apparent throughout Veblen's corpus, and especially in Thorstein Veblen, *The Theory of the Leisure Class* (New York: Prometheus Books, 1998).

⁶ Sylvia Doughty Fries, "Expertise Against Politics: Technology as Ideology on Capitol Hill, 1966-1972," *Science, Technology, and Human Values* 8, no. 2, (1983): 6-15.

⁷ Charles Bazerman, *The Languages of Edison's Light* (Cambridge, MA: The MIT Press, 1999), 1.

⁸ William E. Akin, *Technocracy and the American Dream: The Technocrat Movement, 1900-1941* (Berkeley: University of California Press, 1977), 60.

⁹ Kathryn Lafrenz Samuels, "Heritage as Persuasion," in *Heritage Keywords: Rhetoric and Redescription in Cultural Heritage*, eds. Kathryn Lafrenz Samuels and Trinidad Rico (Boulder: University Press of Colorado, 2015), 7.

¹⁰ Bryan C. Taylor, "Radioactive History: Rhetoric Memory and Place in the Post-Cold War Nuclear Museum," in *Places of Public Memory: The Rhetoric of Museums and Memorials*, eds. Greg Dickinson, Carole Blair, and Brian L. Ott (Tuscaloosa: University of Alabama Press, 2010), 66.

¹¹ Martha Banta, *Taylored Lives: Narrative Productions in the Age of Taylor, Veblen, and Ford* (Chicago: The University of Chicago Press, 1993), 14.

¹² Kenneth Burke, *A Rhetoric of Motives* (Berkeley: University of California Press, 1950), 21.

¹³ Burke, *A Rhetoric of Motives*, 21.

¹⁴ Kenneth Burke, *A Grammar of Motives* (Berkeley: University of California Press, 1945), xv-xxiii.

- ¹⁵ Kenneth Burke, *A Grammar of Motives*, 15.
- ¹⁶ Burke, *A Grammar of Motives*, 15.
- ¹⁷ Gregory Clark, *Rhetorical Landscapes in America: Variations on a Theme from Kenneth Burke* (Columbia: University of South Carolina Press, 2004), 17.
- ¹⁸ “Where Modern America Was Invented,” *Thomas Edison National Historical Park*, accessed on February 5th, 2019, <https://www.nps.gov/edis/index.htm>
- ¹⁹ Paul S. Cohen and Brenda H. Cohen, “Edison National Historic Site,” *Journal of College Science Teaching* 17, no. 2 (1987): 164.
- ²⁰ “History and Culture,” *Thomas Edison National Historical Park*, accessed on February 5th, 2019, <https://www.nps.gov/edis/learn/historyculture/index.htm>
- ²¹ Cohen and Cohen, “Edison National Historic Site,” 164.
- ²² Cohen and Cohen, 164.
- ²³ James A. Herrick, *Visions of Technological Transcendence: Human Enhancement and the Rhetoric of the Future* (Anderson: Parlor Press, 2017), 19.
- ²⁴ Burke, *A Grammar of Motives*, 15.
- ²⁵ Lawrence J. Prelli, “Rhetorics of Display: An Introduction,” in *Rhetorics of Display*, ed. Lawrence J. Prelli (Columbia: University of South Carolina Press, 2006), 2.
- ²⁶ M. Elizabeth Weiser, *Museum Rhetoric: Building Civic Identity in National Spaces* (University Park: The Pennsylvania State University Press, 2017), 38.
- ²⁷ Mari Boor Tonn, Valeria A Endress, and John N. Diamond, “Hunting and Heritage on Trial: A Dramatistic Debate of Tragedy,” *Quarterly Journal of Speech* 79, no. 2, (1993): 166.
- ²⁸ Tonn, Endress, and Diamond, “Hunting and Heritage on Trial,” 166.
- ²⁹ John M. Jordan, *Machine-Age Ideology: Social Engineering and American Liberalism, 1911-1939* (Chapel Hill: The University of North Carolina Press, 1994), 110-154.
- ³⁰ Edward Wirth, *Thomas Edison in West Orange* (Charleston: Arcadia Publishing, 2008), Kindle Edition, 38-39.
- ³¹ Wirth, *Thomas Edison in West Orange*, Kindle Edition 38-42.

³² Scot Barnett and Casey Boyle, “Rhetorical Ontology, or, How to do Things with Things,” in *Rhetoric Through Everyday Things*, eds. Scot Barnett and Casey Boyle (Tuscaloosa: University of Alabama Press, 2016), 3-6.

³³ Barry Brummett, *Rhetoric of Machine Aesthetics* (Westport, CT: Praeger, 1999), 35-36.

³⁴ Horace Townsend, “Edison and his Work-Shop,” *The Cosmopolitan: A Monthly Illustrated Magazine* 6 (New York: John Brisben Walker, 1889): 600.

³⁵ Frank Dyer and T.C. Martin, *Edison: His Life and His Inventions* (New York: Harper, 1910).

³⁶ Samuels, “Heritage as Persuasion,” 7.

³⁷ Ruth Milkman, *Farewell to the Factory: Auto Workers in the Late Twentieth Century* (Berkeley: University of California Press, 1997), 156-157.

³⁸ Jordan, *Machine-Age Ideology*, 33.

Chapter Six: Industrial Heritage, the Rhetoric of Technology, and the Reproduction of the Technological Past in the Present

“Like those birds that lay their eggs only in other species nests, memory produces in the place that does not belong to it. It receives its form and its implantations from external circumstances, even if it furnishes the content. Its mobilization is inseparable from an alteration . . . Far from being the reliquary or trash can of the past, it sustains itself by believing in the existence of possibilities and by vigilantly awaiting them, constantly on the watch for their appearance.”

Michel De Certeau, from *The Practice of Everyday Life*.¹

Introduction

De Certeau's striking metaphor for memory is a fitting point from which to begin the final chapter of this dissertation. Over the previous three chapters, I have identified several of industrial heritage sites' common, rhetorical features to sketch how public recollections of past technologies impact attitudes toward technology in the present, especially attitudes that connect with technological systems' *autonomous* nature. The reader might recall this dissertation's opening reflection on John Elfrith Watkins' speech to the American Society of Civil Engineers. I repeat it here.

The most remarkable trend of modern thought . . . is an appreciation of the work done by those who have gone before. During this busy age of specialties in every profession, the active thinking men that can spare the time from bread-winning are engaged more or less in looking backward. Retrospection is surely the watchword of the modern philosopher. . . . In the world of applied science, no less than the domain of ideas, we must reverse our mental telescopes, if we would measure the glory of human achievement.²

During this speech, Watkins confidently declares that “the most remarkable trend of modern thought . . . is an appreciation of the work done by those who have gone before,” and that “we must reverse our mental telescopes if we would measure the glory of human achievement.”³ De Certeau's observation that memory is “like those birds that lay their eggs in other species nests,” producing in a place that does not belong to it, draws attention to indirect consequences of

Watkins' attitude and others like it. Namely, reversing "our mental telescopes" in search of inspiration about how to act in the present allows the past to make a new home in the present. It has been my contention throughout this dissertation that public recollections of technology—especially industrial technology—play a part in the *autonomous* nature of technology, influencing how we live our lives by bringing our actions and beliefs in line with *la technique*. To borrow De Certeau's metaphor, if recollected technology is an imposter bird in our nest, then the eggs it lays in the present are the human practices that *la technique* prescribes.

In this concluding chapter, I work to further flesh out how industrial heritage sites' common, rhetorical features described in the previous three chapters are connected with the *autonomous* nature of technological systems, and thus how they can be fruitfully understood in relation to the theory of autonomous technology. Moreover, I argue that understanding these rhetorical features as related to *la technique* also suggests that we can better understand the rhetoric of technology itself using the theory of autonomous technology. To do so, I first demonstrate that the rhetorical features I identify at industrial heritage sites are not site specific, but instead are present across all sites. Once these rhetorical traits' ubiquitous presence is established, I then discuss those traits in relation to *la technique*. Doing so, I argue that the rhetorical features of industrial heritage sites that I identify can be understood as manifestations of *la technique* in public memory. Lastly, I discuss the implications of industrial heritage's connection to the *autonomous* nature of technological systems on the rhetoric of technology.

The Ubiquity of Industrial Heritage Sites' Rhetorical Features

The rhetorical features I identify at each industrial heritage site I examine are by no means exclusive to the sites I use to demonstrate them. Rather, all the sites I examine possess these rhetorical traits, uniquely embodying them to different degrees. The sites I use to

demonstrate how specific features work are paired with those features because they exemplify them more explicitly than other sites. Thus, for example, I use the National Museum of Industrial history to show how industrial heritage sites invite guests to orient toward workers' experiences because that site best exemplifies this rhetorical trait. However, the fact that all three of the rhetorical features I identify are present at all the sites I examine is vital to my overall argument in this dissertation. As I will show, this is because these rhetorical features function cooperatively, instead of merely being a feature of the disposition of a single site's displays.

Before discussing their ubiquitous presence at all sites, I would like to review the rhetorical features I identify while examining industrial heritage sites. In chapter three, which focuses on Lowell National Historical Park, I demonstrate that the rhetoric of industrial heritage typically presents industrial technology as sublime. As well, I suggest that recollecting industrial technology in this manner stresses its utopian potential as well as assigns responsibility to human agents (in the form of incompetent higher-ups) for the problems of industrialism. In chapter four, which reviews the National Museum of Industrial History, I show how industrial heritage sites tend to invite guests to orient toward workers' experiences—a rhetorical tendency that elides the experiences of higher-ups and constrains the latitude within which guests can imagine themselves as part of the industrial enterprise. Finally, in chapter five, I use the case study of Thomas Edison National Historical Park to demonstrate how industrial heritage sites privilege the decision-making abilities of enlightened technocrats, suggesting that the rest of the public lives in a world of their creation. Moreover, I suggest that depicting technocratic higher-ups in control of the industrial scene divorces guests from imagining themselves as part of the process of innovation.

The Ubiquity of the Technological Sublime

Recollections, displays, and other rhetorical depictions rooted in the technological sublime are perhaps the most pervasive rhetorical feature at the industrial heritage sites I examine. While I show the presence of the technological sublime at industrial heritage sites principally using Lowell National Historical Park, its presence also is detectable in the National Museum of Industrial History's tendency to describe machines as a function of what they provide, and in Thomas Edison National Historical Park's assumption that new technologies are invented primarily as a means to better the rest of society. In all cases, central to the depiction of industrial technology as sublime is the displaying of that technology, as gazing upon machines allows guests to reflect upon their scale, complexity, and the narrative context within which they are embedded. Because the act of displaying an object is fundamentally *epideictic*—and thus invites guests to adopt behaviors based on what ideas, actions, and beliefs an object “shows forth”⁴—hearkening the technological sublime when displaying technology invites guests to not only reflect upon the grandeur of said technology but also to give thought to their relationship with it.⁵ Claiming industrial technologies and the practices they inspire as national heritage only increases the allure of this invitation.

The Ubiquity of Workers' Experiences

In addition to their celebration of the technological sublime, the industrial heritage sites that I examine also universally invite guests to orient toward worker's experiences. Again, while I demonstrate this rhetorical feature at length using the National Museum of Industrial History, it is present in both Lowell National Historical Park's nearly exclusive focus on common Lowellians' lives when the textile industry was in its heyday, and in Thomas Edison National Historical Park's use of worker's spaces to recollect Thomas Edison's legacy. In all instances,

especially relevant is the display of technologies closely associated with workers—a practice encouraged by all sites’ use of historic spaces and their omnipresent claims to telling local history.

While textual information, visual information, and the recollection of historical narratives about workers imbue workers with *presence*, the display of machine technology in built environments designed for its use also invites guests to imagine themselves as workers. Writing about the rhetorical force of *machine aesthetics*, Barry Brummett argues that being in the presence of machine technology places an individual in the subjectivity of “the factory worker, the handy person, the home repair buff, [and] the gun shooter.”⁶ For Brummett, the desire to imagine oneself using machine technology is a function of how such machinery is fundamentally an extension of the human body, meaning that it is difficult to comprehend a machine’s utility without envisioning its use. When in the presence of machine technology—like guests are at industrial heritage sites—it becomes difficult not to imagine oneself “in productive motion.”⁷ Thus, displays of machine technology at an industrial heritage site can be understood to have two functions. First, this machinery, when coupled with displays that describe its potential, draws attention to the technological sublime, and thus to the supposed ways that it can improve humanity. However, growing from such displayed assumptions about the technological sublime is a rhetorical feature that invites those who gaze upon displays of machine technology to imagine themselves as workers using it. Ultimately, then, at industrial heritage sites, guests are invited to participate in the technological sublime through the display of machine technologies *in context*—a move that suggests to guests the importance and sacredness of the relationship between worker and machine to the nation’s heritage.

The Ubiquity of a National, Technocratic Scene

The final rhetorical feature I identify at industrial heritage sites situates workers' relationship with sublime technology into a national, technocratic scene. Through analyzing Thomas Edison National Historical Park, I demonstrate how industrial heritage rhetoric recollects technocrats as masters of the industrial scene. This rhetorical feature also is present at both Lowell National Historical Park and the National Museum of Industrial history, primarily in displays about technocratic higher-ups that depict those individuals as solely responsible for industrial and economic growth. As such, the displays that comprise this rhetorical feature depict higher-ups as setting the scene and creating the context within which workers toil.

The most vital, yet easily overlooked component of this scene is how it necessitates the existence of technocratic higher-ups who are expected to make far-reaching decisions for the entire industrial system. While we might expect that industrial heritage sites' recollection of the industrial past would center on scenic features related to how mass production came to be, how an assembly line worked, or on any number of other organizational features, instead the most dominant feature of the industrial scene that they recollect is its hierarchical, technocratic structure. Because they place guests as workers into a close relationship with the productive capacities of machine technology, and because places where machine technology is assembled for productive purposes "can easily become a model for social organization," industrial heritage sites rhetorically create a need for guests as workers to collectively be directed toward some productive goal.⁸ By recollecting the industrial past as technocratic and claiming it as national heritage, industrial heritage sites ultimately proclaim the worth of hierarchical systems run by powerful, technocratic individuals. As Brummett writes, "The need for both human and machine to fit into the smooth operation of the factory is paramount."⁹ Any act of rebellion would surely

throw the entire system into chaos.¹⁰ Perhaps the most important implication of this rhetorical feature is how it divorces workers—and, thus, guests who imagine themselves as workers—from the decision making process about technological systems. Because industrial heritage sites depict higher-ups as vital to making decisions that maintain the relationship between workers and sublime technology, they also suggest that workers' wellbeing is dependent upon their decision making.

Working Together, Ubiquitously

When we understand these three rhetorical features as cooperating with one another, it is difficult to overlook how industrial heritage sites, as places of public memory, work to emphasize technology's positive contributions to society while foregoing its critique. This is because the depiction of the industrial past that grows from these rhetorical features principally is rooted in the technological sublime and assumes that large technical systems hold the potential to greatly improve humanity's condition when they are operated "correctly." Layered on top of rhetoric that hearkens the technological sublime are two rhetorical features that inform guests how the full potential of the technological sublime can be achieved. The first invites guests to imagine themselves in the position of workers, a didactic move that teaches about how stability and prosperity are attached to this position. The second situates workers' positionality within a national, technocratic scene, a move that teaches guests about how workers' ability to extract prosperity from their relationship with technology is tied to the existence of a technocratic system—especially one operated by competent technocrats and other higher-ups.

Intersecting and resonating with one another, these three features cooperatively highlight and claim as national heritage the positive potentials of industrial technology. When considering industrial heritage sites positive recollection of past technological systems, however, we must

remember that public memory, and heritage especially, spawn rhetorics that call those who encounter them to particular ways of identifying, ways of living, and belief systems. In the next section, I explore these implications. In particular, I argue that they resemble—and perhaps can be considered as extensions of—*la technique*.

Industrial Heritage as *La Technique*

When understood as overlapping and existing simultaneously within the displays and experiential components of the industrial heritage sites I examine, the three rhetorical features I identify are strikingly similar to features of the theory of autonomous technology—namely, *la technique*. In this section, I contend that these rhetorical features can be understood as manifestations of *la technique*. As such, they suggest that public memory and the rhetoric of technology can be influenced by the *autonomous* nature of technological systems, as well as demonstrate how the theory of autonomous technology provides insight into how and why rhetorics of technology come into being. To show this, I first demonstrate how *la technique* can come to co-opt collective memory. Then, I show how the three rhetorical features of industrial heritage sites I identify can be interpreted as products of *la technique*'s co-option of collective, public memory.

La Technique as Recollection, Recollection as *La Technique*

La technique, as I articulate in chapter one, is a term used in the theory of autonomous technology to describe how human choice becomes constrained and guided by the logic of technological systems.¹¹ Ellul argues that

La technique integrates the machine into society. It constructs the kind of world the machine needs and introduces order where the incoherent banging heaped up ruins. It clarifies, arranges, and rationalizes; it does in the domain of the abstract what the machine did in the domain of labor. It is efficient and brings efficiency to everything.¹²

Perhaps the most crucial aspect of Ellul's brief, yet powerful statement is the claim that *la technique* is responsible for creating conditions within which technological systems can thrive. Elaborating on this, Ellul tells us that "*la technique* is organized as a closed world. It utilizes what the mass of men do not understand. It is even based on human ignorance."¹³ Drawing our attention to the subtle-yet-all-encompassing nature of *la technique*, Ellul shows how the perpetuation of its logic is predicated upon individuals' inability to completely comprehend how technological systems function (recall Pacey's conception of technology as technology-practice and its immense proportions). Ellul's argument that the *autonomy* of technological systems stems from our inability to comprehend them is especially important with regard to how public memories of the technological past can be understood manifestations of *la technique*.

Here, we must recall Halbwachs' assertion that collective memory is responsible for both collective identity and various aspects of technical organization—especially when those aspects concern fluid characteristics of professional life. In making this argument, Halbwach's makes a crucial distinction. The crux of this distinction is how he differentiates rote technical activity in response to contextual demands from that handed down over time and associated with group identity. Concerning the former, Halbwach's writes that "technical activity consists in knowing and in applying the rules and precepts that in every period prescribe for the functionary the general terms of the actions, linguistic forms, and gestures of his function . . . it specifies what has to be done, the lack of which will leave the function unaccomplished."¹⁴ As this form of rote technical knowledge is used without an understanding of its history, he argues, we cannot correctly declare it as rooted in memory in its own right. However, when groups contemplate the same activities with an eye toward their history and become "fully infiltrated with the principles and the spirit of a technology inasmuch as they teach it," then they take the first steps toward

creating a group identity that roots itself in historical situatedness and draws upon collective memory.¹⁵ As such, these individuals “judge . . . persons and their acts according to the modes of evaluation commonly held in their world; these are modes of traditional evaluation that one comes to know only if one is part of the social groups, classes or fashionable circles in which they are transmitted.”¹⁶ Ultimately, allowing evaluations of technical information to become rooted in tradition expands technical information into “the fully social milieu.”¹⁷ Thus, our memories of technical practices become entangled with the mechanisms that determine social rules and norms. To put it bluntly, because we cannot fully comprehend the machinations of large technical systems, we alleviate our ignorance with memory, letting it teach us about those technical systems and what our roles within them are supposed to be.

If humanity’s inability to completely comprehend technological systems results in the growth of *la technique*, and if collective memory plays a role in prescribing technical practices when those practices grow beyond what rote activity requires, then *la technique* itself can be understood as what calls upon collective memory to ensure that we understand what role we are expected to play within a technological society. Putting the previous sentence more simply, we might understand collective memory as a tool with which the public learns about their identity and role in a high technological society. Halbwachs himself—writing well before Ellul but a product of a similar social milieu—alludes to this possibility. When summing up his discussion of technical activity, he argues that no matter how technical a behavior may appear at face value, it “always possesses qualities that can emerge and develop only in the heart of society,” and that when preserved in memory these aspects of technical behavior allow those who recollect them to “retrieve a notion of the position that this activity occupies and that is occupied by those who are qualified to perform it.”¹⁸ Although Ellul does not explicitly mention memory in relation to *la*

technique, given his supposition that the traditional social forces that once restrained *la technique* have now become co-opted by it, it is reasonable to suppose that memory practices themselves have become part and parcel of *la technique*.¹⁹

La Technique at Industrial Heritage Sites

In this section, I use the industrial heritage sites I have examined in the case studies of this dissertation as examples through which to explore how *la technique* co-opts collective memories of the industrial past found in industrial heritage sites' rhetoric. Because the industrial heritage movement recollects the era when *la technique* was freed from the traditional social forces that minimized its growth, it presents a prime example of how recollecting *la technique* in the past encourages the growth of *la technique* in the present. Because of this, I believe it demonstrates well how recollections of the industrial past can themselves become part and parcel of *la technique*.

Released into an industrial world that is increasingly obsessed with its own past, industrial heritage discourse zeros in on values and beliefs that are nearly universal in societies pervaded by *la technique*.²⁰ Like De Certeau's imposter birds, industrial heritage calls forth the industrial past, reproducing identities, practices, politics, and ways of being associated with the birth of industrialism—a phenomenon that persuades those who encounter the rhetoric industrial heritage creates of its connectedness to both local and national identity. Industrial heritage trumpets the message that to identify and be accepted as a member of industrial society, one must understand that society's history and their "proper" place within it. More often than not, this place is one thick with *la technique*. Thus, collective memory practices can be understood as instrumental in reproducing practices and beliefs born of the industrial past and instrumental in the maintenance of *la technique*. Propping up industrial heritage's ability to effectively draw

upon and reproduce these aspects of the industrial past is laudatory rhetoric that depicts the legacy of industrialism as “prolific and overwhelming,” responsible for the modern standard of living.²¹ To abandon it, this logic goes, is not only to abandon modern life, but also to abandon national identity.

With how industrial identity and national identity are entangled in mind, I contend that by making these industrial ways of being easy for guests to inhabit, industrial heritage sites ultimately promote the normalization and acceptance of *la technique* for those who visit them. Importantly, as places of public memory, industrial heritage sites reinforce identities and practices associated with industrialism—and the prosperity that industrialism created—in ways that are intimate, tactile, and experiential. Doing so, industrial heritage sites not only impart messages about *la technique*, but also provide guests with experiential details that enable them to understand how to embody *la technique*. Together, these two display strategies augment and amplify the beliefs and ways of being associated with *la technique*. The rhetorical features exemplified by the three industrial heritage sites I examine in this dissertation demonstrate this well.

La Technique in Recollections of Workers’ Experiences

Perhaps the best example of how industrial heritage sites’ rhetorical features can be understood as stemming from *la technique* are their tendency to invite guests to orient toward workers’ experiences. Because workers traditionally have little input into how the industrial system functions—instead working in nuanced positions toward nuanced ends—they reflect vividly Ellul’s assertion that *la technique* is an outgrowth of human ignorance about technological systems entire. That is, workers must conform their lives to technical systems’ logic without completely understanding the reasons for their actions and beliefs. Thus, by

claiming workers' positionality as national heritage, industrial heritage sites divorce guests from critical, administrative aspects of technology-practice—such as making decisions about innovation, deep comprehension of technical components, making financial decisions, deciding business practices, and so on.

Regardless of whether or not a comprehensive understanding of these aspects of technological systems is possible or not, positioning guests as workers significantly forecloses upon industrial heritage sites' ability to encourage their guests to pursue these ventures. Notably, foreclosing on this possibility closes off a fruitful avenue through which the public might discover, critique, and resist *la technique*. However, more than eroding an opportunity to discover and critique *la technique*, inviting guests to imagine themselves in workers' positions enables *la technique*'s normalization and growth by suggesting that we embody its ideals. Because industrial heritage sites typically recollect a period of time that was the first to be defined by the growth of *la technique*, their proclivity to invite guests to adopt and embody *la technique*'s ideals while imagining themselves as workers can be understood—at least to some degree—as stemming from *la technique* itself.

Augmenting and amplifying how inviting guests to orient toward workers' experiences can be understood as stemming from *la technique* is how this rhetorical feature elides information about and sanctifies technocratic higher-ups. To draw this out fully, I again turn to Burke. In chapter five, using the example of Thomas Edison National Historical Park, I argue that industrial heritage sites portray technocratic higher-ups as masters of the industrial scene, while suggesting workers' lives are fundamentally determined by that scene. Widening the gap between higher-ups and guests as workers is the difficulty that this type of recollection creates for guests who try to imagine the positionality of higher-ups. Fundamentally, eliding information that

allows guests to do this creates an aura of *mystery* around higher-ups. Of this, Burke writes that “the conditions for ‘mystery’ are set by *any* pronounced social distinctions, between nobility and commoners, courtiers and king, leader and people, rich and poor, judge and prisoner at the bar,” and perhaps in this case, industrial workers and technocratic higher-ups.²² Such social distinctions make actors from both sides of the divide “subtly mysterious” to one another.²³ The hierarchical arrangement between higher-up and worker is here important, as “‘hierarchy’ . . . has connotations of celestial mystery,” and as such allows those who embrace it to assume their role within the hierarchy while also recognizing the “principle of order” that gives the hierarchy meaning.²⁴ Depicting higher-ups in a manner that makes them mysterious to guests as workers invokes a hierarchy that, ultimately, reinforces *la technique* as the principle of order. Importantly, eliding detailed information about higher-ups—which intimately connects with guests-as-workers positionality—further stymies desire to comprehend technological systems by suggesting the existence of individuals who already comprehend those systems. Again, Thomas Edison National Historical Park best exemplifies this implication, showing how inviting guests to imagine themselves as workers and hero worship of a technocrat implies that the public rightfully lives within a scene controlled by an individual who masterfully understands technological systems.

Unfortunately, recollection that calls forth belief in technocratic ideals is in all likelihood little more than hope in smoke and mirrors. Of it, Ellul argues that there are only two economic pathways, one that entails the exploitation of *la technique* and one that “ascribes the chief place to nature.”²⁵ That is, we can choose to live by the demands of nature, or live by the logic of the tools we use to circumvent nature’s demands. Therefore, even those who we believe can understand and have control of *la technique* typically have “difficulty . . . preventing *la*

technique from going to the full limit of its potentialities.”²⁶ The logic of *la technique*, once freed from its constraints, reproduces itself at a rate more rapid than the invention of ideas to contain it once again. Thus, the mastery of technocrats over the technical details of machinery might be better understood as an intuitive understanding of the *autonomous* aspects of technological systems. Ultimately, however, perpetuating belief in the existence of technocratic individuals who can control *la technique* frees the public from worry, allowing *la technique* to continue growing, uncritiqued.

La Technique in Recollections of the Technological Sublime

Further demonstrating how industrial heritage sites’ rhetorical features stem from *la technique* is the pervasive presence of rhetoric rooted in the technological sublime. All three sites present their guests depictions and descriptions of industrial machinery and other technologies that paint them as both beautiful and responsible for the modern standard of living. Without them, according to this rhetoric, humanity would be unable to progress toward an increasingly utopian future. Writing about the worth of industrial heritage, Louis Bergeron argues “the long-term progress of engineering appears to be an exceptional illustration of an individual’s or a national capacity for innovation,” and that “it goes without saying that the heritage of industrial societies should be considered and used, in the present times more than ever, as a heritage for the future.”²⁷ Given belief, even in the heritage industry, in technology’s necessity for modern life, finding rhetoric rooted in the technological sublime at industrial heritage sites is unsurprising. As Ellul argues, “*la technique*, in its action on the economy, awakened vast hopes in human hearts,” spawning a belief in a limitless, fruitful future brought on by the growth of modern technology.²⁸

However, the technological sublime’s relentless peddling of the beauty and benefits of modern technology can be understood as mechanism through which *la technique* is normalized

and grown. “All myths indirectly go back to the myth of paradise,” Ellul writes, “and the technical productivity man is witnessing seems to have spurred a proliferation of myths.”²⁹ It is through these myths of paradise through technological progress that humanity learns to embrace *la technique*, and through the recollection of technological progress in the past that it finds a reason to give *la technique* the reins.

As I have argued, the use of allusions to the technological sublime to describe displayed technological objects enables the redirection of the blame for the unwanted side effects of industrialism to human agents. Industrial heritage sites’ tendencies to position their guests as workers abet this redirection by suggesting a special relationship between guests and machinery. The importance of this redirection is not easy to overstate. Because *la technique* maintains itself via its ability to reproduce, expand, and make commonsensical its logic, suspension of critique of these characteristics ensures it a greater latitude within which to grow and evolve. By centering the blame for technological systems’ shortcomings on higher-ups, industrial heritage sites recollect the past in a manner that encourages the public’s adoption of *la technique* in two ways. First, by focussing attention on higher-ups, industrial heritage sites suggest that technology can always provide the good life so long as no one interferes with its ability to do so. By suggesting this through their displays, industrial heritage sites are able to tell stories not of *la technique* interfering in humans’ lives, but of humans interfering with the life of *la technique*, as any shortcomings of *la technique* must not be ascribed to the nature of *la technique* itself. Yet again, because this rhetorical feature too stymies inquiry into the implications of *la technique* and large technical systems, industrial heritage sites leave yet another tool of critical evaluation by the wayside—a reality that itself further enables the normalization and growth of *la technique*.

The lack of critical evaluation encouraged by industrial heritage sites redirection of blame directly leads to the second implication of rooting recollection in the technological sublime—the creation of a belief in the perfect, technocratic higher-up. As I have argued previously, the sanctifying of higher-ups connects to industrial heritage site’s invitation of guests to orient toward workers’ experiences. Because sites orient their guests in this manner, they also subtly encourage them to disassociate with administrative decision making. As such, positioning guests as workers grants administrative rights to higher-ups. Redirecting blame for the shortcomings of *la technique* to higher-ups—rightly or wrongly—must then create differentiation between qualified higher-ups (for example, Thomas Edison) and unqualified higher-ups (for example, those depicted as causing Lowell’s deindustrialization). The more qualified higher-ups are, the more desirable they become, as their ability to divine progress from industrial systems increases. Unfortunately for higher-ups, the combination of the sheer complexity of technological systems, coupled with the lofty demands placed upon higher-ups by expectations of excellence, means that there is little escape from blame. Thus, *la technique* escapes criticism yet again, while those who ostensibly control it must live up to impossible standards that live only in partial memory of the technological past.

La Technique in Recollections of a Technocratic, National Scene

Ellul argues that one “consequence of the penetration of the state by *la technique* is that the state as a whole becomes an enormous technical organism.”³⁰ I have demonstrated that this argument resonates well with the final rhetorical feature of industrial heritage sites that I identify—the depiction of a national, technocratic, industrial system within which the relationship between workers and technology exists. As I argue in this and previous chapters, the primary characteristic of this system is its strict hierarchy and dependence upon technocrats for

decision making about innovation (those implied by the existence of a perfect higher-up).

Industrial heritage sites depict this system as one in which smart decisions about how to develop new technologies result in useful commercial products that are then distributed to the public.

From such depictions, we can view a system that requires multiple agents across multiple scenes to work in relative harmony. Workers must respond to the demands of their managers, inventors to the needs of a market, technicians to the affordances of machinery. All instances require a *unitary* system to function smoothly. For example, depictions of the distribution of products at Thomas Edison National Historical Park portray the industrial system as a national—even international—enterprise in which countless individuals across a myriad of regions toil to the steady pounding of the same drum. Together, Edison, his technicians, and factory workers appear able to distribute products from the “invention factory” to the public who, in return, expect regular, quality inventions to augment existing products. Accepting this vision as national heritage, one might come to understand the nation itself as an enormous technical organism, working together with industrial technology toward a future that is perceived as more desirable than the present. By implication, when such a system arises in a democratic nation, politicians and other national leaders are obliged to choose between courses of action of their choosing and those suggested by technicians. “The politician will then find himself obliged,” Ellul argues, “to choose . . . the technician's solution, which is the only reasonable one” in a system punctuated by the presence of *la technique*.³¹ Recollecting the industrial past in a manner that suggests a national, industrial system as heritage, then, ultimately places further pressure on the political system to adopt measures proposed by powerful technicians who are assumed to be in control of the industrial—and thus national—scene. As such, this rhetorical feature of industrial heritage sites too can be understood as stemming from *la technique*.

The Rhetoric of Technology and the Theory of Autonomous Technology

In the opening pages of this dissertation, I contend that Halbwach's realization that public memory plays a role in how we understand and use technological systems suggests that the rhetoric of technology, through which recollections of the technological past manifest, can be better understood when we consider it in relation to the *autonomous* nature of technological systems. Undergirding my supposition is my contention that the rhetoric of technology is a broad discipline concerned with how deliberation about technology occurs, how it is justified, how the public is taught to use it, and how it becomes an accepted and commonsense part of daily life. I believe that the way the rhetorical features of industrial heritage sites resonate with *la technique* lends credence to both this characterization of the rhetoric of technology and its potential relationship to the theory of autonomous technology. In this section, I draw out this assumption in light of this dissertation's examination of the rhetoric of technology at industrial heritage sites, arguing that the rhetoric of technology is not only related to the theory of autonomous technology, but more so *an extension of la technique*.

Let us return to Ellul's characterization of *la technique* to justify this argument. Ellul broadly conceives of *la technique* as comprised of three forms: economic *technique*, organizational *technique*, and human *technique*. Of these, about memory and rhetoric, human *technique* is most relevant. For Ellul, human *technique* is that which makes its subject the organization of humanity, its beliefs, and its practices. "*La technique* has penetrated the deepest recesses of the human being," he argues, "not only to create a new human environment but to modify man's essence."³² Importantly, much of this modification happens psychologically, meaning that "psychological conditions must be created to enable the individual to give his utmost" for *la technique*.³³ Here, we must remember that rhetoric too has a psychological

component. Burke reminds us that we are linguistic products of the “particular vocabulary of the cultural group into which we are born,” and that the relationships and identities that grow from these vocabularies are based on “interpretations of reality.”³⁴ Ultimately, rhetoric is responsible for “shifts of interpretation” that augment this reality and thus impact our motives, desires, and identity.³⁵ Therefore, we must understand rhetoric as a phenomenon that impacts us psychologically. Thus, it stands to reason, if *la technique* co-opts rhetoric, then the way rhetoric impacts how we understand the world will ultimately err toward bringing us more in line with *la technique* itself.

Miller’s three-pronged conception of the rhetoric of technology appears to support this conclusion. Describing the rhetoric of technology as comprised of rhetoric *about* technology, rhetoric *within* technology, and rhetoric *from* technology, Miller suggests that the rhetoric of technology encompasses a wide range of phenomena. Of these, rhetoric *from* technology, which concerns how the logic of technical systems come to impact human thought, resonates particularly loudly with *la technique*. Interestingly, Miller argues quite strongly for rhetoricians’ need to understand technology as autonomous, writing that “the rhetoric of technology . . . may be a rhetoric of systems . . . in that social actors are not so much the creators of texts as the agencies through which the beliefs and practices are reproduced.”³⁶ That is, human rhetorical practices become the tools through which technology—and, as such, *la technique*—reproduces. Expanding upon this, Miller writes that “not only do ‘artifacts have politics,’ as Langdon Winner has claimed, they also have rhetorics,” and that “technology pushes or manipulates us by requiring us to do certain things and in certain ways.”³⁷ From this viewpoint, and in light of memory’s role in both rhetoric and the *autonomous* nature of technological systems, we can situate the rhetoric of technology as related to *la technique*.

Outside of his writing that focuses on technological systems, Ellul's work on propaganda appears to support the connection between the rhetoric of technology and *la technique*. In *Propaganda: The Formation of Men's Attitudes*, Ellul contends that propaganda can be understood as a manifestation of *la technique*, "one whose aim is to control human behavior so that we are integrated into the technological system."³⁸ While Ellul identifies several types of propaganda, most relevant to my discussion of the relationship of *la technique* to the rhetoric of technology is what he terms *propaganda of integration*. "Propaganda of integration" he writes, "aims at making the individual participate in society in every way . . . rationalizing an existing situation . . . [and] transforming unconscious actions of members of a society into consciously desired activity that is visible, laudable, and justified."³⁹ In short, propaganda of integration aims at bringing individuals' actions and beliefs in line with *la technique* gradually over time, insidiously and imperceptibly convincing them that it is the only way of being. If one role of the rhetoric of technology is to bring humans' actions in line with the logic of technological systems, then surely in this capacity it can be considered a propaganda of integration.

An example drawn from this dissertation's case studies of industrial heritage sites demonstrates well how the rhetoric of technology can function as a propaganda of integration. Consider industrial heritage sites' propensity to orient guests toward the experiences of workers. Guests are thus encouraged to adopt beliefs and practices associated with workers. As I argue, among these beliefs and practices are the assumptions that decisions about innovation are best left to technocratic higher-ups, and that technological systems, when used "correctly," improve life. This orientation divorces guests from the process of innovation and promotes a belief that technological systems are best critiqued by those who understand them, and that the public's understanding of technological systems fundamentally should echo the beliefs of higher-ups.

Because *la technique* stems from how difficult it is to overcome ignorance about technological systems, the normalization of such ignorance using rhetoric that recollects the industrial past further entrenches *la technique* into society. More importantly, however, because *la technique* is “a method of operation” that requires “consciousness and judgment” about some problem, the restriction of collective judgment through rhetorical means ensures that the logic of *la technique* reigns supreme.⁴⁰ In this case, the constraining rhetoric appears in the form of public memory, but it is not unreasonable to suspect that it may appear in a variety of other forms. As Miller suggests, the intersection of rhetoric and technology is one where people are adapted to the material world and the material world is adapted to people.⁴¹

Lastly, it is important to note that rhetorical terminology that others adapt to the rhetoric of technology takes on greater meaning when considered in light of this relationship. For example, *kairos*, which both Miller and Scott argue invokes new technologies by making their development rhetorically feasible, becomes not just a tool for technological justification, but more specifically a tool for the justification of technologies that resonate with *la technique*. Thus, the public might desire new technologies that appear large enough in scope to require higher-ups and workers to operate because of their symmetry with existing systems already influenced by *la technique*. Anyway, why would the public desire a smaller system that requires more involvement from them if other systems offer unfettered convenience? Ultimately, understanding rhetorical terminology of the rhetoric of technology in relation to *la technique* not only gives depth to the terms themselves but also illuminates the rhetorical situation within which we all live.

Notes

¹ Michel De Certeau, *The Practice of Everyday Life* (Berkeley, University of California Press, 1984), 86.

² John Elfrith Watkins, "The Beginnings of Engineering," *Transactions of the American Society of Engineers* 24, (1891): 2.

³ Watkins, "The Beginnings of Engineering," 2.

⁴ Lawrence J. Prelli, "Rhetorics of Display: An Introduction," in *Rhetorics of Display*, eds. Lawrence J. Prelli (Columbia: University of South Carolina Press, 2006), 43.

⁵ David E. Nye, *Technology Matters* (Cambridge, MA: The MIT Press, 2006), 11.

⁶ Barry Brummett, *Rhetoric of Machine Aesthetics* (Westport, CT: Praeger, 1999), 35.

⁷ Brummett, *Rhetoric of Machine Aesthetics*, 35.

⁸ Brummett, 48.

⁹ Brummett, 48.

¹⁰ Samuel C. Florman, *The Existential Pleasures of Engineering* (New York: St. Martin's, 1994), 180.

¹¹ Lance Strate, "A Media Ecology Review," *Communication Research Trends* 23, no. 2 (2004): 28.

¹² Ellul, *The Technological Society* (New York: Vintage, 1964), 5.

¹³ Ellul, *The Technological Society*, 5.

¹⁴ Maurice Halbwachs, *On Collective Memory*, ed. Lewis A. Crozer (Chicago: University of Chicago Press, 1992), 160.

¹⁵ Halbwachs, *On Collective Memory*, 161.

¹⁶ Halbwachs, 162.

¹⁷ Halbwachs, 163.

¹⁸ Halbwachs, 166.

¹⁹ Berta Sichel, “New Hope for the Technological Society: An Interview with Jacques Ellul,” *Et Cetera* 40, no. 2, (1993): 194.

²⁰ James Douet, “Introduction,” in *Industrial Heritage Re-tooled: The TICCIH Guide for Industrial Heritage Conservation*, ed. James Douet (New York: Kaplan, 2012), 1.

²¹ Neil Cossons, “Why Preserve the Industrial Heritage,” in *Industrial Heritage Re-tooled: The TICCIH Guide for Industrial Heritage Conservation*, ed. James Douet (New York: Kaplan, 2012), 6-7.

²² Kenneth Burke, *A Rhetoric of Motives* (Berkeley: The University of California Press), 115.

²³ Burke, *A Rhetoric of Motives*, 115.

²⁴ Burke, 306-307.

²⁵ Ellul, *The Technological Society*, 178.

²⁶ Ellul, 188.

²⁷ Louis Bergeron, “The Heritage of Industrial Society,” in *Industrial Heritage Re-tooled: The TICCIH Guide for Industrial Heritage Conservation*, ed. James Douet (New York: Kaplan, 2012), 32-37.

²⁸ Ellul, *The Technological Society*, 190.

²⁹ Ellul, 191.

³⁰ Ellul, 252.

³¹ Ellul, 259.

³² Ellul, 325.

³³ Ellul, 321-322.

³⁴ Kenneth Burke, “Motives as Action,” in *On Symbols and Society*, ed. Joseph R. Gusfield (Chicago: University of Chicago Press, 1989), 130.

³⁵ Burke, “Motives as Action,” 130.

³⁶ Carolyn R. Miller, “Learning from History: World War II and the Culture of High Technology,” *Journal of Business and Technical Communication* 12, no. 3 (1998): 309.

³⁷ Carolyn R. Miller, "Rhetoric, Technology, and the Pushmi-Pullyu," in *Rhetorics and Technologies: New Directions in Writing and Communication*, ed. Stuart A. Selber (Columbia: University of South Carolina Press, 2010), ix.

³⁸ Strate, "A Media Ecology Review," 28.

³⁹ Jacques Ellul, *Propaganda: The Formation of Men's Attitudes* (New York: Vintage Books, 1965), 75.

⁴⁰ Ellul, *The Technological Society*, 20-21.

⁴¹ Miller, "Rhetoric, Technology, and the Pushmi-Pullyu," x.

Epilogue: Toward a Virtuous Recollection of Technology: Or, Resiting *La Technique* with Memory

For many, my conclusion that industrial heritage sites and the rhetoric of technology are in the service of *la technique* may seem dismal. Work that concerns the theory of autonomous technology is often characterized in this manner. Rather than conclude on a pessimistic note, however, I would like to leave the reader with a possible way forward—a way to reclaim our memories of technology and use them as a tool with which to remove ourselves from *la technique*'s quagmire. Langdon Winner calls for us to begin imagining “forms of citizenship appropriate to this [technological] way of being.”¹ He suggests that a crucial step toward doing this resides in the cultivation of virtues that help citizens participate in technological design and innovation.² Echoing this, I turn to virtue ethics, arguing that recollecting the technological past with an eye toward virtue opens a path toward encouraging the public to view themselves as part of the process of technological change, and not merely as individuals along for the ride. Because memory is the wellspring of knowledge, I believe that reclaiming our recollections of the technological past may open a path toward what Richard Sclove terms a strong democratic approach to technology and beckon forth Winner's desired virtues of citizen oriented technological deliberation.³

While virtue ethics merits a dissertation in its own right, I here must provide a cursory background on the topic. Virtue ethics, like rhetoric, grow from the ancient Greek cultural milieu. Most fully articulated by Aristotle in *Nicomachean Ethics*, virtue ethics are less about codified, dogmatic ways of being and more about acting in a manner that positively impacts those around them. Central to virtue ethics is what Aristotle terms *phronesis*. We can understand *phronesis* best as practical wisdom that we learn from experience and that bolsters our ability to

make sound judgments on any subject. In this light, phronesis is the human ability to turn lessons of experience into practice. At the core of virtue ethics is the belief that living well requires situational awareness and the ability to identify and follow courses of action unique to each situation—an ability that inevitably betters not only virtuous individuals but also those around them. More precisely, “a virtuous person is not merely conceived *as* good; they are understood to be moving toward the accomplishment of a good *life*; that is, they are *living well*.”⁴ This view of ethics that virtue ethics presents, of course, is entirely different from more modern understandings of virtue, which see it as tied to universal morality and universal principles of action. Because of their reliance on phronesis and their focus on process rather than dogma, virtue ethics are fluid, manifesting in different individuals and different ways—recognizable primarily through their impact.

How might virtue ethics be relevant in today’s highly technological world? Shannon Vallor provides a convincing picture. In *Technology and the Virtues*, Vallor argues for us to foster what she terms *technomoral virtue*—“virtues explicitly designed to foster human capacities for flourishing with new technologies.”⁵ More specifically, technomoral virtues are “new alignments of our existing moral capacities, adapting to a rapidly changing environment that increasingly calls for collective moral wisdom on a global scale.”⁶ Primarily, cultivating technomoral virtue is intended to resist what Vallor identifies as *acute technosocial opacity*, or the reality that the future impacts of complex, large-scale, technological systems grow more difficult to discern by the day—a reality closely related to how quickly and how freely such systems grow. Because of acute technosocial opacity, it is “increasingly difficult to identify, seek, and secure the ultimate goal of ethics—a life worth choosing, a life lived *well*.”⁷

How acute technosocial opacity interferes with the cultivation of technomoral virtue, for Vallor, requires a turn to virtue ethics, which, by virtue of their fluid nature, allow judgment on a case-by-case basis without resorting to dogma that quickly becomes obsolete. Through arguing this, Vallor contends that worthwhile twenty first century virtues for confronting the technological world are *honesty, self-control, humility, justice, courage, empathy, care, civility, flexibility, perspective, and magnanimity*. Vallor provides examples of how the adoption of these virtues might affect multiple situations, ultimately showing that the cultivation of virtue ethics in contemporary society might allow us to more effectively address the moral dilemmas brought on by rapidly expanding technological systems. These examples derive from a variety of contexts, including, but not limited to, social media, surveillance, robotics, artificial intelligence, and medicine. Take, for instance, robotics. In this context, Vallor shows how the cultivation of care and courage addresses moral issues that arise when robotics finds use in healthcare and the military. In doing so, Vallor defines care as “a skillful, attentive, responsible, and emotionally responsive disposition to personally meet the needs of those with whom we share our technosocial environment,” and courage as “a reliable disposition toward intelligent fear and hope with respect to the moral and material dangers and opportunities presented by emerging technologies.”⁸ As such, she demonstrates that cultivating care might produce better caregiving in the medical field through the use of automated machines by ensuring that the machines we develop to administer care respect reciprocity and teaching us to be empathetic with patients’ needs.⁹ Similarly, she also demonstrates that cultivating courage might encourage military and political authorities to take responsibility for lethal decision making, instead of passing it off to autonomous machines to be made by algorithms.

I believe that Vallor's underlying argument about how the cultivation of virtue ethics presents an opportunity to improve the process of technological innovation also opens the door for virtue ethics to make an impact on the recollection of technology. As I show, encountering recollections of technology can influence how individuals might understand their relationship to technological systems and their perception of their role in decision making about emerging technologies. In particular, I argue over the last several chapters that how industrial heritage sites recollect the nation's technological past encourages the growth of *la technique*—a phenomenon that directly impacts how and which type of new technologies come into being. In this sense, I believe that we can consider memory itself, at least to some degree, an essential component of innovation, and thus impactable by the cultivation of virtue ethics.

How might ethical recollection look? Because memory is fundamentally a rhetorical phenomenon, we must consider how virtue ethics intersect with rhetoric. About this, Jared Colton and Steve Holmes write although rhetoricians' tendency to turn to critical and post-modern rhetoric for moral guidance is ubiquitous, virtue ethics "retheorize normative or affirmative ethical values" without resort to pure relativism.¹⁰ Virtue ethics allow for rhetoric that *both* critiques and builds, rather than merely critiques and deconstructs. We can imagine virtue ethics laden recollection as one that recollects the past in a manner that opens new possibilities, rather than only affirming traditional dogma or merely attacking it. To put it another way, we might use the rhetorical dimensions of recollection to create new discursive habits that we can then use to transform how the past comes to impact the present. Colton and Holmes argue that, ultimately, because of their emphasis on reading situations for what is fitting, "virtue ethics can help provide a better language for many of the values we in the field of rhetoric . . . already

endorse.”¹¹ Because rhetorical memory practices also recognize the fluidity of memory as it encounters an unpredictable present, the resonance between the two is easy to hear.

Returning to industrial heritage sites and their propensity to recollect the past in a manner that enables *la technique*, here I provide an example of how industrial heritage sites might recollect that past through the lens of virtue ethics in a way that resists *la technique*. Take, for example, Lowell National Historical Park. In chapter three, I argue that this site recollects the industrial past and displays industrial objects in a manner that paints industrial technology as sublime. Integral to the site’s rhetorical bent toward the technological sublime, I show, are its location in a former industrial town and the experiences guests have as they navigate their experiential habitat. When coupled with displayed narratives that tell a story of industrial loss, these experiences encourage visitors to believe that technology always brings the good life. Recollection of the industrial past in this manner encourages the logic of *la technique* by subtly declaring its necessity. As such, Lowell National Historical Park encourages what Svetlana Boym calls *restorative nostalgia*—or, recollection of the past that calls for “rebuilding” the past to address “longing and loss.”¹² It depicts the past as more desirable than the present and thus suggests that adopting ways of being that enabled the past to come to pass will allow it also to come to pass in the present. This, of course, is a boon for *la technique*.

What if we add virtue into the mix? This can be done in two ways. First, industrial heritage sites could recollect the industrial past with an eye toward technomoral virtue. Thus, to return to Lowell, the staff might contextualize displayed machinery in a manner that highlights its design and its designer’s *flexibility*—or, its possession of “a reliable and skillful disposition to modulate action, belief, and feeling, as called for by novel, unpredictable, frustrating, or unstable technosocial conditions.”¹³ Instead of praising industrial machinery as a *carte blanche* solution to

humanity's problems, Lowell National Historical Park might highlight technologies for their ability to function in a variety of contexts without a need for redesign. Similarly, higher-ups might be recollected for the degree to which they balanced industrial needs with workers' needs, giving a less mythologized characterization of higher-ups to guests. In both cases, restorative nostalgia that reproduces *la technique* might be resisted in favor of reflective nostalgia—that which does not seek to restore the past but looks to it for moments that reveal the presence of multiple possibilities.¹⁴ Through reflecting upon moments of possibility, guests might be encouraged to engage in collective deliberation about the possibilities and perils of technology while simultaneously using the past as a source of identity and heritage.

Second, industrial heritage sites might use virtue ethics to think through their display practices. Instead of searching for examples of virtuous behavior in the past, they would adopt virtuous behavior themselves. For example, through adopting *honesty*, industrial heritage sites would ensure that respect for expertise and truth pervades displays.¹⁵ This might mean an added focus on how industrial technology impacted workers in all aspects of their lives, rather than only telling of how the products of technological systems improved aspects of workers' lives. Alternatively, industrial heritage sites could adopt *magnanimity*—or, a recognition of their position as wise and moral leaders.¹⁶ In doing so, they might come to understand how their role as keepers of the nation's official memory empowers them to influence common beliefs about industrialism and technology. Knowing their power to resist *la technique*, they might search for ways to do so.

Importantly, the use of recollection that is oriented toward virtue ethics might also allow industrial heritage sites to portray more effectively aspects of the industrial past that are left out of or unemphasized in current displays. Often, such information is related to minority groups,

unionization, workers rights, the unglamorous realities of factory life, or even the environmental impact of industry. While all of the sites I have interpreted in the present dissertation provide powerful portrayals of the nation's industrial heritage, these portrayals are bound and organized by deeply held, guiding beliefs about technology and the nation's past. As I have argued throughout this dissertation, perhaps the strongest of these beliefs originate from *la technique's* hold over the modern conscious, making interpretations of the past that emphasize a unified story of progress and improvement. The tendency of industrial heritage sites to present the past in a manner that resonates with *la technique* often stymies their ability adequately interpret topics that may seriously cast industrial technology in a negative light. Thus, when topics such as minority groups' role in the industrial system or unionization are covered, they are done so in a manner that decenters them from the narrative at hand.

Additionally, recollection rooted in virtue ethics can provide an opportunity for information and aspects of the industrial past that industrial heritage sites overlook to be recollected without the need to contextualize them into a story of the past that is rooted in *la technique*. An example of this potential can be found in Lowell National Historical Park's depiction of the industrial system within which the city's textile mills once operated. Here, we find the site's depiction oriented toward what happened in Lowell's mills specifically, overlooking the societal conditions necessary to those mills' success. Perhaps the most glaring oversight is the fact that nearly all of the cotton that Lowell's mills processed into cloth originated in the American south, a product of slavery in the early nineteenth century and racist labor practices after abolition. While LNHP does mention the role of slavery in the development of the industrial system, it does so in an exhibit that is easy to overlook and that is located away from the exhibits that guests usually frequent. Further removing the experience of African

American slaves and the slave economy from the birth of industrialism in the United States, the textual information displayed in this exhibit states that the emergence of textile mills in the north “provided many southerners with a new source of income” that they did not receive from traditional agriculture. Interpreting the emergence of a textile factory system in this manner not only assumes that the construction of textile mills was not predicated on the existence of a cheap supply of cotton, but also interprets the arrangement as a net gain for all those involved—a claim likely to be disputed by the descendants of slaves. In essence, this history is interpreted through *la technique*’s lens of technological virtue within which technical systems are understood to bring prosperity.

Virtue ethics provide a solution to this conundrum by drawing upon technomoral virtue in a manner that promotes a technologically based good life for all. With regard to the American slave system that drove the early industrial revolution, recollection guided by *empathy* and *justice* would require that recollection of the slave system not be overlooked in favor of powerful, utopian myths about the potential of industrial technology. Instead, by using technomoral virtue as the principle that guides what aspects of the past are recollected and how, historical circumstances—such as the production of raw material for factories by slaves—would be an integral part of recollecting the industrial past in ways that invite guests to critically engage with how its legacy impacts the present. By centering recollection on how virtuous or unvirtuous particular technologies were, this type of remembrance has the potential both to resist *la technique*’s call for us to see all technologies as good and to invite the public to consider how they might contribute to a more virtuous, technologically based world.

Another example can be found in the National Museum of Industrial History’s tendency to overlook the recollection of unionization and workers’ rights. Again, and like LNHP, NMIH

does not completely overlook the topic. At least one small display does cover the subject at hand. However, this display is confined to a corner and does not clearly connect with the major exhibits at the site. It provides some information about the safety standards of early twentieth century steel mills and contends that they were improved through workers' demands. Elsewhere, another display also provides similar information about child labor practices, arguing that "activists and others helped bring about labor reform." In both cases, the information that is imparted to guests clearly assumes the need for industrial technology, overlooks what specifically about the industrial system caused workers to unionize (usually in favor of blaming human agents), and subordinates workers beneath an assumed need for the industrial system. In other words, the story of unionization and the struggle for workers' rights is made to fit into recollections of the past guided by assumptions associated with *la technique*. Again, recollection guided by technomoral virtue could help to address the ellision of these important aspects of the industrial past by resisting the tendency to place these assumptions at center stage. Instead, recollection guided by a virtue like *courage* would enable a story that highlights workers' fearlessness in standing against the industrial system to be told. Similarly, recollection guided by a virtue like *civility* would enable industrial heritage sites to bring the struggle for workers' rights to the forefront in a manner that teaches the public to look for solutions to technological issues that benefit all parties involved.

Cursory though they may be, I believe that these examples of how virtue ethics can be used at industrial heritage sites provide hope for how we remember our technological past. Richard Sclove calls for a strong democratic approach to the development of new technologies in which citizens collectively "seek technological outcomes that are substantively democratic" and "ensure that technologies structurally support popular aspirations, whatever they may be."¹⁷ To

do this citizens must first be allowed to learn about technology freely and to choose the relationship they wish to have with it. I believe that recollections of the technological past that orient toward technological virtue offer a first step toward enabling this. If public memory and the rhetoric of technology it espouses have become tools for *la technique*, then it seems the only option is to reclaim those tools for human use—once again tinkering with the machine to ensure that it does our bidding.

A Final Thought

To end, I believe it is fitting to return to John Elfrith Watkins' words yet once more.

The most remarkable trend of modern thought . . . is an appreciation of the work done by those who have gone before. During this busy age of specialties in every profession, the active thinking men that can spare the time from bread-winning are engaged more or less in looking backward. Retrospection is surely the watchword of the modern philosopher. . . . In the world of applied science, no less than the domain of ideas, we must reverse our mental telescopes, if we would measure the glory of human achievement.

Watkins was convinced of the value of drawing inspiration from the past. To him, gazing upon the mammoth machinery and breathtaking accomplishments of engineers who came before us was to listen to a siren call beckoning us to improve ourselves through technical innovation. Assembling the best of these accomplishments in one place, he reasoned, would benefit the nation in ways unknowable but irresistible.

My argument in this dissertation is not intended to tarnish Watkins' dream. Rather, I too believe in the power of recollection and reflection to inspire us to deeds as great or greater than those of our ancestors. Unfortunately, as I have shown, *la technique* has stolen the show—using our memory to its ends. This does not have to be the case. While we have always lived in contexts marked by technology, we have until recently been the arbiters of our future. The growth of *la technique* may have stymied the degree of our freedom, but it has not destroyed it.

Collectively recollecting our technological past in a manner that foregrounds our potential to master *la technique*, rather than how *la technique* masters us, inevitably calls us to look toward the endless possibilities of technology. Ultimately, I believe that is what Watkins desired.

Notes

- ¹ Langdon Winner, "Citizen Virtues in a Technological Order," *Inquiry* 35, no. 3 (1992): 355.
- ² Winner, "Citizen Virtues in a Technological Order," 358-359.
- ³ Richard E. Sclove, *Democracy and Technology* (New York: Guildford, 1995), 25-29.
- ⁴ Shannon Vallor, *Technology and the Virtues* (Oxford: Oxford University Press, 2016), 19.
- ⁵ Vallor, *Technology and the Virtues*, 10.
- ⁶ Vallor, 10.
- ⁷ Vallor, 6.
- ⁸ Vallor, 131-138.
- ⁹ Vallor, 218-229.
- ¹⁰ Jared S. Colton and Steve Holmes, *Rhetoric, Technology, and the Virtues* (Logan: Utah State University Press, 2018), 9.
- ¹¹ Colton and Holmes, *Rhetoric, Technology, and the Virtues*, 22.
- ¹² Sventlana Boym, *The Future of Nostalgia* (New York: Basic Books, 2001), 41.
- ¹³ Vallor, *Technology and the Virtues*, 131, 138.
- ¹⁴ Boym, *The Future of Nostalgia*, 49-50.
- ¹⁵ Vallor, *Technology and the Virtues*, 122.
- ¹⁶ Vallor, 151-154.
- ¹⁷ Sclove, *Democracy and Technology*, 30.

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