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Nineteenth-Century Sound Reading: Auditory Epistemologies in the Margins of Literature and Science

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

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by

Miranda J. Butler

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during the numerous occasions throughout my Ph.D. where I physically and emotionally fell apart. Hannah edited my work for the better numerous times, generously providing exceptional feedback on grant applications which I later received—in part due to her insightful suggestions. It is likely that I would have dropped out of my program long before finishing if not for Hannah and Chelsea's freely given hugs, endless kindness, and many homemade dinners.

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I never knew if I would have someone to thank last. It is a tall order, and its magnitude is not lost on me. So, thank you from the depths of my heart to my partner, Jeshua Enriquez, for his unconditional love and care. We are a team, and together with my little cat Bella, the three of us have become a family. Te quiero.

Dedication

To my best friend Jillian Nusbaum. You are the Leslie to my Ann—and the reason I have persevered through it all.

ABSTRACT OF THE DISSERTATION

Nineteenth-Century Sound Reading: Auditory Epistemologies in the Margins of Literature and Science

by

Miranda J. Butler

Doctor of Philosophy, Graduate Program in English
University of California, Riverside, December 2020
Dr. Susan Zieger, Chairperson

This dissertation, which was inspired by information theory, analyzes three nineteenth-century reading and writing systems that relied on dots and dashes to send and receive messages: Braille, Morse code, and phonetic shorthand. Although each was originally developed for a limited group of people, the frequent representation of these systems in literature made them more culturally widespread. In my first chapter, I analyze how schoolchildren at the Massachusetts Institute of the Blind—whose stories were publicly shared by many nineteenth-century authors, including Charles Dickens—learned reading and writing in the early nineteenth century. Particularly, the education of 13-year-old deafblind student Laura Bridgman emphasizes how the labor of lower-middle-class women and female teachers reframed what it meant to learn "reading" and "writing" in the mid-nineteenth century. In my second chapter, I explain how British and American telegraph operators, who were increasingly female in the late nineteenth century,

developed the ability to automatically interpret auditory Morse code through the skill of "sound-reading," as if it was a spoken language unto itself. I use the author and activist Ella Cheever Thayer to draw a historical connection between the female technological workforce and suffragette movement. In chapter 3, I discuss two influential shorthand writing methods—Gurney's Brachygraphy and Pitman's Phonography—both of which used dot-and-dash symbols in an attempt to transcribe language phonetically. I then argue that depiction of shorthand in Wilkie Collins's novel *The Moonstone* serves as an example of the high hopes nineteenth-century thinkers had for phonographic writing systems, as well as the inevitable failures that they encountered when expecting that any mediated form of communication could be purely objective. Finally, in chapter 4, I draw direct parallels between phonographic shorthand and the groundbreaking theories of Charles Darwin via his grandfather Erasmus Darwin. Ultimately, my dissertation demonstrates that a literary and cultural studies methodology derived from information theory can productively highlight the reading and writing skills of communities who are historically marginalized due to gender, disability, socioeconomic status, and/or nationality, among other identity categories.

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Introduction.

"Life Itself" as dots and dashes

This dissertation project began in January of 2015, when I was reading *The Politics of Life Itself* by Nikolas Rose for a graduate seminar on biopolitics. I encountered the following paragraph: "In 1966, reflecting on the implications of Watson and Crick's famous article of 1964 on the double helical structure of DNA, [Georges] Canguilhem suggested that one of the many revolutionary consequences would be a redefinition of life: life as meaning."[1] In Canguilhem's view, Rose explains, biology in the 1960s was actively "changing the scale at which it studies the phenomena of life." Rose then quotes a translation of Canguilhem's 1966 work, which explains how at that time, biology:

> dropped the vocabulary of classical mechanics, physics and chemistry […] in favor of the vocabulary of linguistics and communication theory. The science of life no longer resembles a portrait of life […] and it no longer resembles architecture or mechanics. […] But it does resemble grammar, semantics and the theory of syntax. If we are to understand life, its message must be decoded before it can be read.[2]

This reference to ways of conceptualizing language and its structures took me back to a time just a year and a half prior, when I had been sitting in a fluorescent-lit basement classroom at the University of Arizona, struggling through theories of generative and transformational grammar in my last semester of an undergraduate linguistics minor. Rose's brief invocation of an early 20th century French philosopher had suddenly

[1] Nikolas Rose, *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century: Biomedicine, Power, and Subjectivity in the Twenty-First Century* (Princeton: Princeton University Press, 2007), 44.
[2] Georges Canguilhem, *A Vital Rationalist: Selected Writings from Georges Canguilhem,* ed. François Delaporte, trans. Arthur Goldhammer (New York: Zone Books, 1994), 316-317.

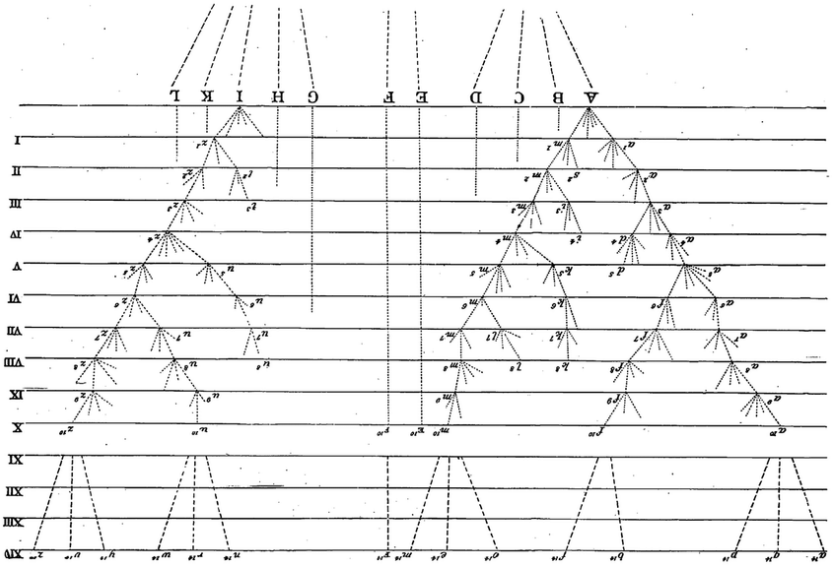

Fig. i. Darwin's "Tree of Life" (1859) from *On the Origin of Species.* I have rotated it upside-down in order to demonstrate why I thought figures i and ii looked similar.[3]

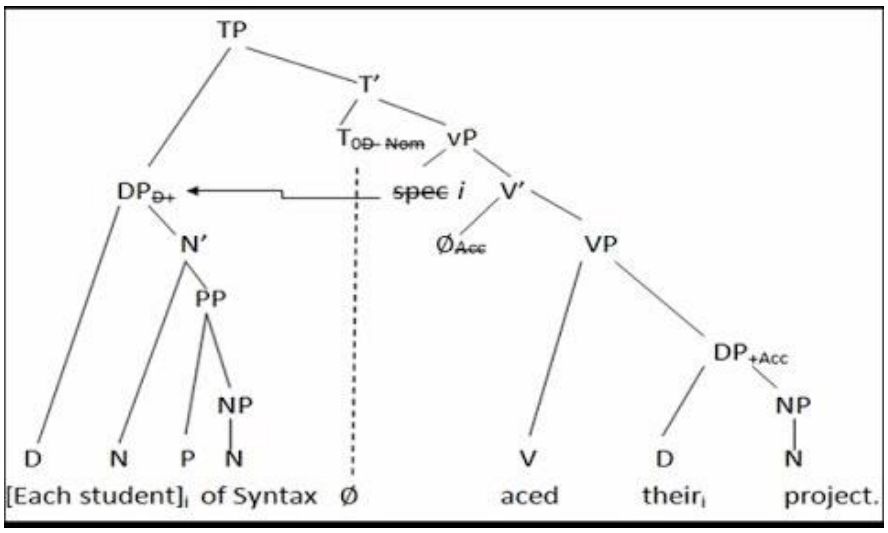

Fig. ii. A syntactic tree demonstrating generative syntax and Universal Grammar.[4]

[3] Charles Darwin. *On the Origin of Species*. *Darwin,* ed. Philip Appleman (New York: W.W. Norton, 2001), 128.
[4] Jürgen Handke, "Syntax: Generative Grammar (Overview)." The Virtual Linguistics Campus. Accessed 2 November 2020. www.linguisticsonline.com

challenged me to examine the scale at which I considered two of my favorite research interests: long-term models of biological and ecological change, and syntactic models of universal grammar.

Of course, Universal Grammar is contested within the academic field of linguistics. This is precisely why I find it so provocative, and often return to it when considering both literature and science. Prior to 1957, many linguists accepted a behavioralist model of language learning, which proposes that human beings learn language just as they do any other skill—through trial and error, combined with reinforcement from other speakers of the language.[5] However, Noam Chomsky's 1957 book *Syntactic Structures* offered a persuasive refutation of behavioralism, as well as an alternative theory of language acquisition. Though he was not the first scholar to suggest a "generative" or "transformational" model of language, he widely popularized the idea that language is at least partially innate rather than learned—hence the term "Universal Grammar." Christian Hejlesen Christiansen summarizes Chomsky's Universal Grammar succinctly: the theory "concludes that 'grammar is autonomous and independent of meaning,' which points to a structural system underlying language."[6] As an example of an utterance that is entirely grammatical but semantically meaningless, Chomsky coined the now often-referenced sentence: "colorless green ideas sleep furiously."[7]

[5] Christian Hejlesen Christensen, "Arguments for and against the Idea of Universal Grammar." *Leviathan: Interdisciplinary Journal in English*, no. 4 (March 2019), 13.
[6] Christiansen, "Arguments," 15.
[7] Noam Chomsky, *Syntactic Structures* (Paris: Mouton, 1957), 15.

There is a lot to unpack in the passage I have cited from Rose, not to mention the monograph it is excerpted from. Canguilhem, too, made numerous contributions not only to philosophy of the life sciences, but also to studies of the nineteenth century and its literature. Canguilhem's 20th century publications articulate the complexity and importance of vitalism—which figured so prominently in Mary Shelley's *Frankenstein*, many novels by H.G. Wells, and others. Furthermore, his work went on to influence critical theorist Michel Foucault (whose writings on madness, sexuality, medical history, and more, are also referenced regularly within the field of Victorian studies). My inspiration began in this interdisciplinary vein; even though my original source material intended to show the similarities between literature and science in the 1950s and 1960s, *The Politics of Life Itself* inspired me to trace those ideas further backwards into my own nineteenth-century studies.

Phase One: The Tree as an Epistemological Metaphor

At first, I was fixated on exploring possible similarities between figures i and ii, as shown on page 2. Experts in both the science of evolutionary biology and the science of grammar have used a strikingly similar tree metaphor and accompanying diagram to depict the organizing structures for their respective fields. I considered embarking on a deep dive into the analogy of "trees" as an organizational hierarchy in nineteenth century literature and science; however, Matthew Lima's exhaustive *Book of Trees: Visualizing Branches of Knowledge* (2014) has already traced "the provenance of the epistemological

model of the tree" more effectively than I would be able to do within the limitations of a literary dissertation.

Lima's full-color book, stunningly designed with hundreds of images originating from all around the world, and ranging from more than 2000 years B.C.E. through the date of its publication, argues that the "primordial, symbiotic" relationship between humankind and trees "can elucidate why its branched schema has provided not only an important iconographic motif for art and religion, but also an important metaphor for knowledge-classification systems."[8] He commits the latter half of a chapter to tracing the "tree of science" and "tree of life" through the Middle Ages, the Renaissance, Enlightenment biology, and ultimately the eighteenth century, where it became seminal to Carl Linnaeus's taxonomy. Lima explains that although Darwin is still frequently named for his contributions to science, including modern molecular biology, "his legacy of information mapping has not been highlighted frequently enough, even though the tree diagram was an "essential demonstration of his […] theory of universal common descent."[9]

My observation that Darwin's "tree of life" looks similar to a syntax tree—and in fact, is *directly* parallel to a language family tree (see figure iii)—is provocative, but not surprising. Darwin was invested in the question of language descent throughout his entire career, and he interrogated the origin and development of language alongside his analyses of species evolution. In fact, Darwin's cousin, Hensleigh Wedgwood (who was also his

[8] Manuel Lima, *The Book of Trees: Visualizing Branches of Knowledge* (New York: Princeton Architectural Press, 2014), 27, 26.
[9] Ibid., 28-47.

brother-in-law, as Darwin was married to Hensleigh's sister, Emma) was a well-known Victorian theorist of language, and the two exchanged correspondence about their respective research and ideas throughout their research and writing processes.

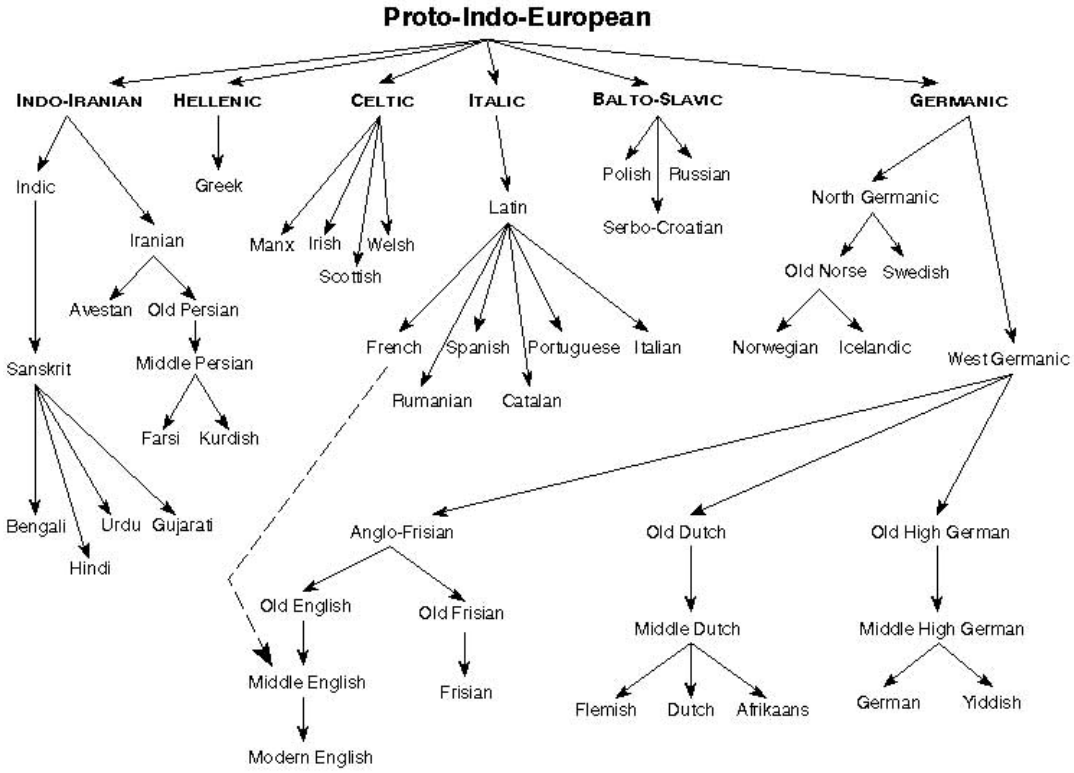

Fig. iii. The "language family" tree for Proto-Indo-European—the "common ancestor" shared by Modern English and a variety of other languages, past and present.[10]

Wedgwood published *On the Origin of Language* in 1866, a text that, based on its title alone, shows clear parallels to Darwin's 1859 *On the Origin of Species*. Wedgwood introduces the purpose of his research by asking readers: is it possible to "indicate a

[10] Jack Lynch. "Proto-Indo-European," 2014. Digital Image. *Indo Europica*. http://mnabievart.com/oldwebsite/old/info_mn/article_7.html

sufficient cause for the entire origination of language"?[11] To answer this question, he explains that "the same step will be gained in the science of language which was made in geology," that is, the consideration of deep time that made evolutionary thinking possible. Humankind, Wedgwood believes, has the biological capacity to produce and understand speech, but needed to be acted upon by outside forces over a long period of time—in the same way that the land is acted upon by "rains and tides, tempests, frosts, earthquakes, and subterranean fires,"[12] in order to gradually develop language in its present state. The Darwin Correspondence Project illustrates how Darwin and Wedgwood developed these ideas together in the 1850s,[13] prior to either one of them publishing their completed theories. The cousins "compared the development of language to the process of geological change, involving evolution, extinction, and transitional forms."[14]

Darwin recognized that "the derivation of languages and that of Species or forms stand on the same foundation," and in 1861 wrote to his friend, the geologist Charles Lyell, that in order to convince the opponents to his theory of Natural Selection that one of these derivations was true, he must also convince them of the other.[15] For this reason, he connects the two explicitly in the *Origin*, writing that "The natural system is

[11] Hensleigh Wedgwood, *On the Origin of Language* (London: N. Trübner, 1866), 3.
[12] Ibid., 4.
[13] Charles Darwin, MS DAR 48. *Scraps & notes for "Transitions of Organs" i.e. Chapter 8 Natural Selection [Chapter 6 in Origin 1859]*. Page 80, Image 99. http://darwin-online.org.uk/manuscripts.html
[14] Darwin Correspondence Project. "Language: Key Letters." University of Cambridge. Accessed 2 November 2020. https://www.darwinproject.ac.uk/commentary/human-nature/origin-language/language-key-letters
[15] Charles Darwin. Letter to Charles Lyell, 2 February 1861. DCP-LETT-3054. Darwin Correspondence Project, Cambridge University Library.

genealogical in its arrangement" in the same way that genealogy is evident when "taking the case of languages." Namely, "…it might be that some very ancient language had altered little, and had given rise to a few new languages, whilst others […] had altered much, and had given rise to many new languages and dialects."[16]

Furthermore, Darwin explored possible origins of language in *The Descent of Man* (1871) as well as *The Expression of Emotions in Man and Animals* (1872), further consulting Wedgwood as he put both works together.[17] As the Darwin Correspondence Project explains, he "drew an extended analogy between the evolution of languages and species, noting in each domain the presence of rudiments, of crossing and blending, and of variation, and remarking on how each developed gradually through a process of struggle."[18] That same year, Wedgwood published the second, revised and expanded edition of his *Dictionary of English Etymology*, which begins by explaining that, as anyone familiar with the languages of Europe can attest, Europe's principal languages are clearly divided into four or five main groups, each containing subordinate dialects, "which have so much in common in their stock words and in their grammatical structure [...] to impress us with the conviction" that the people who speak similar languages undoubtedly share a "common ancestry."[19]

Devin Griffiths's *The Age of Analogy: Science and Literature between the Darwins* (2016) builds its argument around the shared methodology between scientists

[16] Charles Darwin, *On the Origin of Species: A Facsimile* (Cambridge, MA: Harvard University Press, 2003), 422.
[17] Darwin Correspondence Project, "Language: Key Letters."
[18] Darwin Correspondence Project, "The Origin of Language." University of Cambridge. Accessed 2 November 2020. https://www.darwinproject.ac.uk/commentary/human-nature/origin-language
[19] Hensleigh Wedgwood, *A Dictionary of English Etymology* (London: Trübner & Co, 1872), v.

and literary authors in the nineteenth century: Griffiths coins the term "comparative historicism" to name a "broadly shared habit of thinking comparatively about previous ages and customs."[20] Literature and science both, he argues, "honed analogy" in order to build imagined—but plausible—histories, whether those were for their characters, for the theorized past lives of the species they studied, or the most likely history of the languages they traced.[21] Examples from eighteenth and nineteenth century comparative philology are crucial to Griffiths's argument, which provides a "fresh look at interdisciplinarity, excavating a historical epistemology (as Lorraine Daston has put it)."[22] I was fortunate enough to meet Devin when we presented on the same Darwin panel at the North American Victorian Studies Association annual conference in 2017. Since that time, I have been influenced by his methodology; I aspire to produce work that is similarly interdisciplinary, while managing to be both deeply theoretical and practically applicable to histories of thought in the nineteenth century.

Phase Two: Phonemes and Information Theory

Moving forward from this point, I returned to considerations of "scale" and communication theory in my linguistic and biological subject matter. What if I were to consider the structure of language—not for its broad, universalizing patterns, but for its smallest elements that contribute to semantic meaning? Similarly, what if I were to

[20] Devin Griffiths, The Age of Analogy: Science and Literature between the Darwins (Baltimore: Johns Hopkins University Press, 2016), Kindle Edition. Loc. 202.
[21] Ibid., loc. 344.
[22] Ibid., loc. 204.

consider Darwin's tree of life in the same way—not as an overarching analogy or metaphor, but as something that only becomes meaningful when used to compare the unique qualities of each individual (barely represented by small variables on the "tree of life")? The latter question proved to be deeply productive, and I will continue to discuss the idea of "re-thinking scale" within the history of evolutionary theory throughout this dissertation. Answers to my first question, however, pushed me away from syntax (the structure and organization of language on a sentence level) and towards phonetics (the studies of individual speech sounds) instead. Linguists generally agree that the smallest meaningful unit of language is a morpheme, for example, a root word, prefix, or suffix, and the smallest "contrastive" unit of language (that is, a unit differentiable to the human ear) is a phoneme,[23] suggesting that this was the most suitable avenue to explore.

Rose and Canguilhem suggest that information theory—and more specifically, communication theory, a sub-discipline of that field—is the unifying perspective that brings together present-day linguistics and the science of "life itself." With this, I developed my first working research question: What insights could I offer to *nineteenth-century* literature and science if I interrogated small-scale units of meaning—both in language, and in biology—using the methodological tools of information theory? In essence, information theory is the analysis of a communications system; it follows the fundamental theorem that "it is possible to transmit information through a noisy channel at any rate less than channel capacity with an arbitrarily small probability of error."[24]

[23] J.C. Catford, *A Practical Introduction to Phonetics*, 2nd ed. (Oxford: Clarendon Press, 2001), 11.
[24] Robert B. Ash, *Information Theory* (New York: Dover Publications, 1990), 1.

Textbooks and articles explaining information theory routinely begin by using examples of binary code (with which messages are sent using a code of 0's and 1's), and Morse code telegraphy (with which messages are sent using a code of dots and dashes). Plainly put, these simple codes ensure that an accurate message is received.

With this in mind, I began to recognize communication via dots and dashes everywhere in my field—not in the present day as Rose suggested, nor in the mid-20th century as Canguilhem had observed, but throughout the Victorian period. Prior to reading *The Politics of Life Itself,* a footnote in the Norton Critical *Dracula* had piqued my interest. This note by editors Nina Auerbach and David J. Skal identified Pitman's phonographic shorthand as the most likely technique to be used by protagonists Jonathan and Mina Harker when writing in their journals throughout the 1897 epistolary novel.

I had already begun leafing through nineteenth-century shorthand manuals and archival lesson-books, but now I realized that Pitman's method used symbols that were visually similar to zeros and ones. Though sometimes its "dashes" are curved, Pitman's shorthand inarguably creates meaning by combining small lines and circles. In fact, when the system's creator, Isaac Pitman, explained his method of shorthand writing, he was immensely (perhaps hyperbolically) confident that his stenography was both the most "natural" and the easiest communications system to learn[25]—because its components were just "simple dots and strokes." When thinking of shorthand in this way, I began to consider potential parallels between Pitman's method and Morse code, the most

[25] Isaac Pitman, *A Manual of Phonography; or, Writing by Sound*, 7th edition (London: Samuel Bagster and Sons, 1845), 8.

popularly known communication method which relies on dots and dashes. Additionally, the idea that Pitman called his writing "phonographic," and described the transcription of individual sounds using categories that presaged the terminology of modern phonetics, made Pitman's shorthand an interesting communication method to study with my research question in mind.

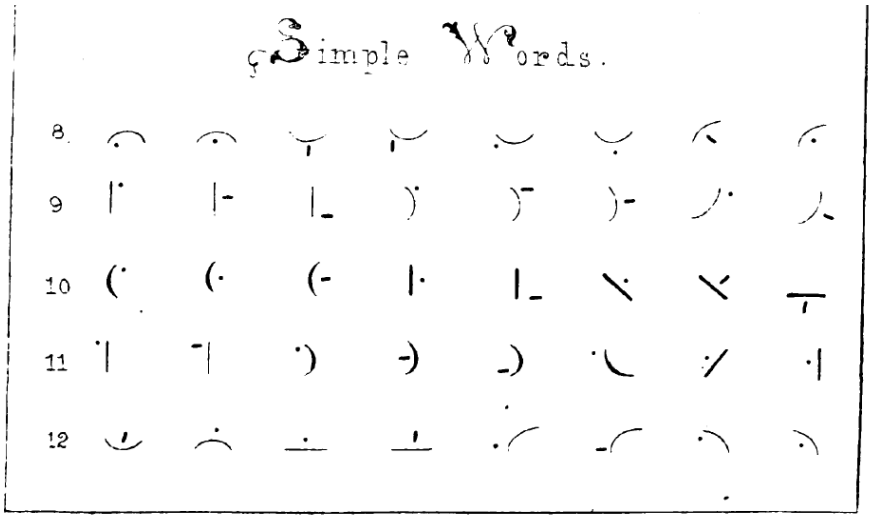

Fig. iv. A depiction of simple words in Pitman's shorthand.[26]

I began to narrow my scope, deciding that in order to pursue my interdisciplinary research question, I would select specific communication codes to explore alongside similar topics in the biological sciences. I had now selected Morse code and Pitman's shorthand as my first two writing systems. I began sharing my research and ideas with fellow scholars, including one of my earliest mentors in graduate school, Heidi Brayman, whose work as an Early Modernist overlaps with the history of reading, writing, and the

[26] Isaac Pitman, *Manual of Phonography*, ed. Benn Pitman (Cincinnati: Phonographic Institute, 1855), 33.

book, as well as historical disability studies. When I discussed "dot-and-dash communication models" with her, she suggested that disability studies could add a much-needed dimension to my research. Although present-day Braille is composed solely of dots, the first alphabet that Louis Braille developed in 1829 contained both dots and dashes. For example:

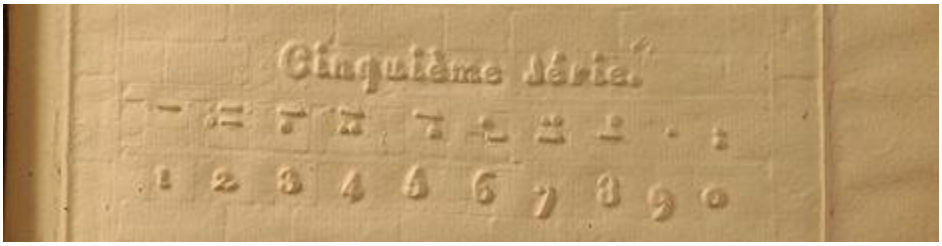

Fig. v. The first edition of Louis Braille's writing method (1829). In the above image, engraved *série* ("series") containing both dots and dashes are used to denote the numbers one through ten.[27]

As I began reading Braille's early manuals, I learned that from the time of its inception, Braille's original system also offered its users a shorthand (or "stenographic") version, which—like Pitman's shorthand—relied on a surprisingly modern understanding of phonetics. Braille explained that, "The vowels and consonants that form words in the French language may be represented by [only] twenty signs," in contrast to the 40 signs required in the complete system, "provided one uses the same character to indicate sounds that are almost the same, such as 'u' and 'ou'; and the consonants that are little different, such as 'b' and 'p.'"[28] Here, present-day scholars of language may notice that

[27] Louis Braille, *Procédé pour écrire les Paroles, la Musique et le Plain-chant au Moyen de Points à l'Usage des Aveugles et Disposé pour Eux* (Paris: L'institution Royale des Jeunes Aveugles, 1829). Digitized by the National Foundation for the Blind, nfb.org. 15.
[28] Ibid., 31.

Braille, who at the time of his writing was only a teenager, identified that the only phonetic difference between "b" and "p" is its voicing; /b/ is the voiced bilabial stop, /p/ the voiceless.

Since the ultimate goal of my research was to write a well-organized dissertation project, I established early on that phonetic shorthand, Morse code, and Braille would each serve as a research topic for three distinct chapters. At one point, I was so immersed in the history of shorthand that I felt an entire dissertation on stenography could be interesting, but I recognized the arguments against such a project. It is important for a dissertation to explore a variety of topics, demonstrating research breadth; and I found that at least two prominent scholars in my field had come to similar conclusions as my stenographic research likely would have. First, my advisor referred me to Leah Price, an expert on nineteenth century reading and writing practices who has been incorporating the history of shorthand into her work for over a decade.[29]

Second, I read Ivan Krielkamp's *Voice and the Victorian Storyteller*, which cautions against leaping to the precise hypothesis that I had wanted to propose. It is tempting (Krielkamp appeals to my earliest instincts), to characterize the Victorian period as "fundamentally phonographic," since Pitman's phonography was first published in 1837—the very year that Queen Victoria took the throne. However, Krielkamp's monograph offers a more nuanced account of "Victorian culture's ongoing romance with voice as a cure for print culture's ills," thoroughly presenting phonographic shorthand

[29] See, for example, *How to Do Things with Books in Victorian Britain*, Chapter 3 "David Copperfield and the Absorbent Book" (Princeton: Princeton University Press, 2012), 72-106.

and its relationship with nineteenth-century literature, within the complex history of mechanical reproduction and mimetic recognition of speech.[30]

Although "language," generally and universally speaking, and the unifying feature of "dots and dashes" in differing communication methods were my first two sources of inspiration, these elements of the project shifted and transformed during the years I spent researching them. As both linguistics and communications theory agree, neither Braille, Morse code, nor Pitman's shorthand are "languages" in their own rights; rather, they are methods for encoding information from an existing language: French, American English, and British English, respectively. Furthermore, each of these "coded" languages was designed to enable communication or transcription for a specialized group of speakers within that language: the Blind, the telegraph operator, and the reporter or journalist. The ultimate goal of these reading and writing methods is to enable one writer (in communication theory, a sender) to record something, and a second reader (in communication theory, a receiver) to decode it back into its original language. In this sense, both information theory and codes comprised of "dots and dashes" remain in the foundation of my project. However, as I developed my argument, sound—especially phonetics—became increasingly more important.

[30] Ivan Krielkamp, *Voice and the Victorian* Storyteller (Cambridge: Cambridge University Press, 2005), Kindle edition. Loc. 1049-1061.

Phase Three: Dissertation Methodology and Argument

When I explored my dot-and-dash writing practices, I found that each of them relied upon sound to communicate their respective messages in ways that challenged me to rethink nineteenth-century histories of scientific observation. Pursuing small-scale, meaningful units of sound resulted in my final research question, which this dissertation now pursues: How can an analysis of Braille, Morse code, and shorthand—each of which was originally developed for, and used by, a limited group of people—build new frameworks for understanding literary representations of scientific observation in the nineteenth century?

As Lisa Gitelman argues, "Shorthand alphabets, phonographs, typewriters, and other nineteenth-century innovations in the area of inscriptive practice are so many theories of language and textuality. […] They are modest, local, and often competitive embodiments of the way people wrote, read, and interacted over the perceived characteristics of writing and reading."[31] Although Braille, Morse code, and shorthand may have only been practiced by small subsets of the population, the sound-based information that they "sent" and "received" offered new possibilities to both literary writers and scientific thinkers who attempted to observe, and take notes upon, the natural world around them.

My methodology was also influenced by Jonathan Crary's *Techniques of the Observer* (1990), especially since I had been studying nineteenth-century visual media before transitioning to dot-and-dash writing systems. Crary describes the way that

[31] Lisa Gitelman, *Scripts, Grooves, and Writing Machines* (Stanford, Stanford University Press, 1999), 4.

changes in nineteenth-century vision coincided with photographic technologies in order to posit a new understanding of what made cultural works of literature and art seem "realistic." In a similar way, my project examines nineteenth century literature, science, and historical media studies, in order to argue that my three communication methods (which I also call "writing practices," and "media technologies") captured a deeper dimension of their original languages than even their inventors may have anticipated. Nineteenth-century writers were masters of describing the visual, but they actively sought to capture the auditory, even decades before the mechanical gramophone was invented.

In Chapter 1, "Tactile Epistemologies: Gendered Deafblindness in *American Notes* and 'The Cricket on the Hearth'" I begin by discussing the way that schoolchildren at the Massachusetts Institute of the Blind learned reading and writing in the early nineteenth century, even before the invention of Braille. I discuss early methods of engraving books for the blind, including Boston Line Print, as well as devices that allowed blind writers to keep their own writings and journals. Although some of the nineteenth century's most famous teachers and innovators for the blind were men (including Louis Braille and Samuel Gridley Howe), I emphasize the labor of lower-middle-class women, and female teachers who were themselves blind. I use the education of young deafblind student Laura Bridgman—whom Charles Dickens made famous when he wrote about her in *American Notes*—as an example of the way that a writing method developed for blind children in the United States ultimately influenced some of the most famous literary and scientific authors in the English language. For example, both Charles

Dickens and Charles Darwin write about Laura Bridgman by name, and furthermore, both famous thinkers engage in attempts to transcribe language more phonetically.

Chapter 2, "Sound Reading: Women's Suffrage, Ella Thayer, and the Female Telegraph Operator" presents research about the understudied American telegraph operator, author, and Suffragette, Ella Cheever Thayer. Although Morse code may seem like an exact replica of the alphabet, offering a one-to-one correlation between letters and dot-and-dash symbols, I explain how British and American telegraph operators—who were generally unmarried, middle-class, and increasingly female—developed the skill of "sound-reading," through which they no longer underwent the process of translating dots and dashes back into the English alphabet, but immediately understood Morse code as if it was a spoken language unto itself. Unlike standard English writing, the sound of Morse code in the air "was in fact a language spoken in accents,"[32] as telegraphers reported that they could identify their fellow operators based solely on the style of the sender's Morse code. Ultimately, I compare Thayer's early-feminist "telegraphic romance" novel, *Wired Love: A Romance of Dots and Dashes* to Henry James's *In the Cage*, in order to demonstrate that the telegraph brought together literature and technology in a way that interrogated the very nature of empirical observation and knowledge.

My third chapter, "Verbatim Reporting: Phonographic Shorthand and the 'Subjective-Objective' in *The Moonstone*" provides a brief history of both Pitman's phonographic shorthand, and its predecessor, Gurney's brachygraphy. Since my work aims to explore the scientific method and knowledge production, I analyze these

[32] Edwin Gabler, *The American Telegrapher* (New Brunswick, NJ: Rutgers University Press, 1988), 79.

communication methods in Wilkie Collins's detective novel, *The Moonstone*. I use this canonical Victorian text as an example of the high hopes nineteenth-century thinkers had for phonographic writing systems, as well as the inevitable failures that they encountered when expecting that any mediated form of communication could be purely objective. Building on the work presented throughout the dissertation, my fourth and final chapter, "Darwin among Phonologists: The Crossroads of Sound-Writing and Evolutionary Biology" combines my literary analyses from the previous chapters with archival explorations of the original scientific ideas that inspired me.

My work in Chapters 1-3 is broader and more theoretical in its engagement with scientific thinking, examining epistemology and offering new ways of thinking about what each method of communication makes known and/or knowable. Chapter 4 draws direct parallels between phonographic shorthand and the ecological breakthroughs of Charles Darwin, via his grandfather Erasmus Darwin. By examining archival materials including notes, letters, and early manuscript drafts, I build upon the fact that Charles Darwin was exploring the origin of language at the same time that he interrogated the origin of species. Although this is most noticeably evident in his theories of language development and change, I bring my "small-scale" considerations of phonetics into this argument by considering both Darwins' relationships with stenography. Erasmus Darwin learned shorthand; Charles Darwin knew of its existence, but could not use it himself. This becomes evident in the way that Charles Darwin attempts (and fails) to transcribe sound in his notes and early drafts of *The Voyage of the Beagle.*

The final coda of my project brings together additional topics of inquiry during the nineteenth century which blurred objective information with subjective sensory experiences and ideas. These include music, as well as the neurological phenomenon of synesthesia. I provide these explorations in order to demonstrate how my methodology can be applied to other topics of study in nineteenth century literature and science, as well as beyond.

Chapter 1.

Tactile Epistemologies: Gendered Deafblindness in *American Notes* and "The Cricket on the Hearth"

Laura Bridgman is a largely unknown historical figure today, though she was one of the most famous living women in America and Britain during the 1840s. Narratives of her accomplishments were widely circulated when, by the age of 12, the young woman born in Hanover, New Hampshire and educated in Boston, Massachusetts[1] became the first European or American[2] deafblind student to learn reading and writing. For decades, however, Bridgman was largely unaware of her fame, and for most of her life, she had little to no control over her own public image. Instead, the teacher who oversaw her education—physician, abolitionist, and well-known political reformer Samuel Gridley Howe—constructed his account of Bridgman's story, in order to share it with admiring audiences both in print and in person.

One of the few descriptions of Laura Bridgman that is still widely circulated in nineteenth-century literary studies was published in Charles Dickens's 1842 travelogue *American Notes*. However, Bridgman's story neither begins nor ends with the spotlight that famous male figures like Howe and Dickens shined on her accomplishments. This chapter works towards two aims: first, I present archival evidence from Laura

[1] Mary Swift Lamson. *The Life and Education of Laura Dewey Bridgman: The Deaf, Dumb, and Blind Girl.* Boston: Houghton, Mifflin and Company, 1881. Reprinted in *Classics in Child Development*. Eds. Judith Krieger Gardner and Howard Gardner (New York: Arno Press, 1975), 1.
[2] For a wider account of historical reading and writing practices, which include Non-Western manual alphabets, see *The World's Writing Systems.* A thorough account of global communication methods is beyond the scope of this project, but forerunners to the alphabets described in this chapter include versions of the Ethiopian Ge'ez alphabet of the 9th century, the Korean Hangul script of the 15th century, and others. Additionally, many Indigenous nations in North America and elsewhere have rich histories of developing tactile and/or sign-based languages.

Bridgman's alma mater in order to recenter her own lived experiences, and the labor performed by Bridgman and her female teachers, in the narrative of her life. Second, I analyze Bridgman's rise to fame—including the patriarchal mediation of her story and the ways in which she actively rebelled against her male teacher's wishes—in order to reorient prominent literary depictions of Laura Bridgeman. These include Dickens's "nonfiction" description of her in *American Notes,* and the parallels between Bridgman and the blind girl Bertha Plummer in his short story, "A Cricket on the Hearth." In doing so, my goal is to begin my dissertation project—which explores sound and observation—by highlighting, rather than universalizing, the subjective and socially-situated nature of sound and its absence. In the final section of this chapter, I transition into the topics explored in Chapters 2, 3, and 4 by showing how Laura Bridgman's story of tactile learning reached far beyond the niche community of people with disabilities and their advocates. Despite the shortcomings in the way she was represented, Bridgman's education nonetheless called into question the primacy of sight and sound alike within existing methods of reading and knowing, as well as the metaphors used to describe these processes.

Lived Experience: Re-centering Laura Bridgman within her own Narrative

According to Laura Bridgman's parents, Bridgman was able to both see and hear during her first two years of life. They felt she was the brightest of their five children, whom they were raising on a small farm, and reported that she "even experimented with words, and could put short sentences together by the time she was two years old."

Ironically, the last word Bridgman's mother remembers her daughter learning before she became ill was 'book.'[3] Bridgman did demonstrate some undiagnosed physical ailments as a child, though her family reported that these issues improved by the time she started learning to walk. However, in 1831, when Bridgman was two, several members of the family became ill with scarlet fever, which led to the deaths of her two older sisters. The fever almost claimed Bridgman's life as well; she ultimately survived, but became both blind and deaf. It took Bridgman nearly two more years after her illness to fully regain her strength, and when she did, Howe's reports claim that Bridgman's senses of smell and taste were also permanently affected by her near-death experience. Much academic scholarship,[4] which has been built upon Howe's accounts as well as early secondary sources that rely primarily on his writings, echoes this misconception.

In the first annual report that Howe published after Bridgman arrived at his school, he said that Bridgman was "entirely blind, deaf, dumb, and almost entirely deprived of smell, and has been so since her infancy," and referred to her as "a human soul shut up in a dark and silent cell." Howe introduced Bridgman's story this way in order to argue that, "all the avenues to [her soul] are closed, except that of touch."[5] The educator demonstrates a period-specific understanding of Bridgman's soul: that it is fully dependent upon and linked to her body. Vitalist versus materialist debates were still polarizing and in nineteenth century Britain, and although Howe's American school was

[3] Sally Hobart Alexander and Robert Alexander, *She Touched the World*: *Laura Bridgman, Deaf-Blind Pioneer* (New York: Clarion Books, 2008), 3.
[4] With the exception of works by Elisabeth Gitter, whose many books and essays on the life of Laura Bridgman have been foundational to this chapter.
[5] Samuel Gridley Howe, *Sixth Annual Report of the Trustees of the New-England Institution for the Education of the Blind, to the Corporation* (Boston: Henry P. Lewis, 1834), 9.

located mere miles from the cabin where Henry David Thoreau would eventually write *Walden,* it would still be three decades before the American Transcendentalists "propounded a philosophy that proclaimed the inherent and inevitable dominance of soul over matter."[6]

Howe suggested that Bridgman's intellectual capacity was "struggling continually not only to put itself in communication with things without, but to manifest what is going on within itself."[7] Yet, Bridgman's own account of her life contradicts these claims. Howe argued repeatedly that Bridgman had no conception of sight, but in her own unpublished autobiography, she wrote that, "I remember of seeing a little. It was an imagination concerning the smiling of the sun, that the sunshine [sic] upward from a floor."[8] She similarly remembered instances where the bright sun hurt her eyes. She recalled: "The light was so keen that my tears rolled down."[9] Though it is impossible to ever fully conceptualize someone else's sensory experiences, it seems that Bridgman retained some sense of taste as well. Even after her bout of illness, Bridgman wrote that as a child she was "extremely fond of new boiled maple syrup,"[10] as well as "so fond of baked apples & bread in a tin basin filled with delicious milk."[11] Her journals from the 1840s, which she kept at Howe's instruction and under his guidance, similarly catalog what she ate for each meal almost every day, including "sweet green grapes," and "good

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[6]. Cynthia J. Davis, "Margaret Fuller, Body and Soul," *American Literature* 71, no. 1 (1999): 32. Accessed November 8, 2020. http://www.jstor.org/stable/2902588
[7] Samuel Gridley Howe, *Sixth Annual Report* (1838), Page 2.
[8] Laura Dewey Bridgman, "Laura Bridgman Autobiography," 1886. Handwritten Manuscript, Samuel P. Hayes Research Library, Perkins School for the Blind, Watertown, MA, 14.
[9] Ibid., 13.
[10] Ibid., 15.
[11] Ibid., 17.

maceroni [sic]."[12] Such personal accounts strongly suggest that Howe was painting Bridgman's lived experiences in his own light, rather than according to her own descriptions.

Furthermore, Bridgman did begin learning years before she ever met Howe. Her earliest teacher was an older handyman for the Bridgman family, Asa Tenney, who was able to read and write at a basic level.[13] Tenney had a noticeable speech impediment, as well as what scholars speculate was most likely a mild learning or mental disability, so he was able to connect with Bridgman's unique relationship to both language and knowledge in a way that others in her early life were not. Tenney "guided her around the farm for hours at a time," teaching her to identify objects like stones, nuts, berries, eggs, and small animals, all through her sense of touch.[14] He also went out of his way to investigate alternative forms of language for Bridgman, which he was likely aware of due to his own disabilities. In a letter to Bridgman's parents, he wrote: "The indain [sic] chief that I have seen in this village, when the younger indian [sic] spoke of talking by signs, said the chief held the opinnon [sic] there was one language that was universal, and he could talk that language."[15] In fact, Tenney had begun teaching Bridgman this Indigenous sign language before she left for Massachusetts, and although Howe did acknowledge

[12] Laura Dewey Bridgman, journal entry dated January 30, 1842. *The Journals of Laura Bridgman*. 1842-1856. Archive materials: Handwritten Manuscripts. Samuel P. Hayes Research Library, Perkins School for the Blind, Watertown, MA.
[13] Elisabeth Gitter, *The Imprisoned Guest* (New York: Farrar, Straus and Giroux, 2001), 52.
[14] Ibid., 12.
[15] Asa Tenney to Samuel Gridley Howe, and Daniel and John Bridgman. Letter from 17 September, 1839. Quoted in Gitter, *The Imprisoned Guest*, 54.

Tenney as Bridgman's dearest friend, most of his writings at best romanticize the "quaint eccentric," and at worst, diminished him as a noble fool.

Clearly, Howe felt that Tenney was too ignorant to appreciate the modern education Bridgman would receive at the Massachusetts Institute.[16] Howe's view of Tenney patronized his own disabilities, and underestimated the intellectual influence that he had on Bridgman's future learning. However, it is also crucial to note that in devaluing Tenney's methods, Howe also rejected the opportunity to learn Indigenous sign languages and dismissed the possibility of analyzing a "universal" language that was non-European in origin. Finger-signing had been practiced in the New England region—by the Akenabi tribe among others—for countless generations, but Howe did not accept that a deafblind student could benefit from any approach other than that of the English language. Nonetheless, Bridgman remained in contact with Tenney until his death in 1852. Towards the end of her own life, she reminisced that she "loved him as a father" and enjoyed the time he devoted to her.[17]

Likewise, it may be true that Bridgman struggled with communication in conventional, able-bodied terms, but she was able to reach her parents through an informal sign language that they created. For example, putting her hand up to her lips, as if tipping a cup, meant that Bridgman wanted a drink.[18] Although Bridgman did acknowledge that without a more comprehensive language, "My dear Mama could not dream of how to encourage or comfort me much,"[19] she proved very capable of learning,

[16] Gitter, *The Imprisoned Guest*, 51.
[17] Bridgman, "Autobiography," 11.
[18] Sally Hobart Alexander and Robert Alexander, *She Touched the World*, 13.
[19] Bridgman, "Autobiography," 15.

and even understanding the household in which she lived. She recognized both of her parents and many familiar objects by touch, and visitors to the Bridgman home were impressed to see that the young girl could complete several household tasks, such as knitting, sewing, and correctly setting the table.[20] In this way, Bridgman was less physically isolated from the world around her, as well as less socially isolated from other people, than Howe continually asserted when he spoke of her later education. She even enjoyed at least one lasting and meaningful friendship outside of her family circle—with Asa Tenney—before she ever met her famous teacher.

Howe's accounts differ so widely from Bridgman's own, however, because Howe had been actively looking for a deafblind pupil with whom he could test his theories before he ever met Laura Bridgman. This explains why many of the accounts he wrote of her life err, as the fictional Sherlock Holmes explains, by "twist[ing] facts to suit theories, instead of theories to suit facts."[21] Howe's research interests were rooted in an ongoing philosophical debate: what a child with multiple disabilities was capable of learning. Thus, the doctor's motivations were twofold: he wanted to test his own theoretical method of how to educate people with disabilities, and in doing so, he intended to directly challenge existing notions of language, and how humans gain knowledge.

His interlocuters included the French scholar Joseph-Marie Degerando, whose extensive two volumes *On the Education of Deaf-Mutes* (1827) evaluated various

[20] Gitter, *The Imprisoned Guest*, 66.
[21] Arthur Conan Doyle, "A Scandal in Bohemia," *The Adventures of Sherlock Holmes* (New York: A&W Publishers, 1995), 4.

European countries' methods of teaching with disabilities throughout history,[22] and Denis Diderot, whose *Letter on the Blind* (1749) argued that a deafblind student who was taught language as a young child would in turn be capable of gaining a complete education. As Elisabeth Gitter explains, "Since the deafblind appeared to live entirely outside of language—and thus outside of culture—Howe speculated that their behavior might also establish the origins of our moral and spiritual capacities; […] he wanted to prove that 'all the higher and nobler attributes of the soul, all that part of man which is truly in the likeness of God, is independent of sensation.'"[23]

Howe and the writers that inspired him were, of course, working in conversation with philosophies of the mind by well-known philosophers; he was just as interested in epistemology and moral philosophy as he was in education and social reform. Since thinkers like Locke and Kant relied heavily on an able-bodied experience of all five senses, their ideas stood to be uniquely challenged by the education of a person with disabilities. As David Paxman explains, Locke's "epoch-making" *Essay Concerning Human Understanding* asserts that humans use sensory experience in order to gain knowledge.[24] Likewise, Kant "trac[ed] the recognizable world of appearances to operations of the subject."[25]

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[22] "Degerando, Joseph-Marie," Gallaudet University Library Guide to Deaf Biographies and Index to Deaf Periodicals, 22 March 2017. https://liblists.wrlc.org/biographies/52994
[23] Gitter, *The Imprisoned Guest*, 55.
[24] David B. Paxman, "'Adam in a Strange Country' Locke's Language Theory and Travel Literature." *Modern Philology* 92, no. 4 (1995): 462.
[25] Ingeborg Maus, "Kant," in *the Habermas Handbook,* eds. Hauke Brunkhorst, Regina Kreide, and Cristina Lafont (New York: Columbia University Press, 2018), 89.

Such ideas of were also inextricably linked with the budding field of study that would ultimately become linguistics. As Rousseau suggested regarding the origins of language: "we did not begin by reasoning but by feeling […] The first stories, the first harangues, and the first laws were in verse; poetry was discovered before prose; this had to be so, since the passions spoke before reason."[26] At this point in the nineteenth-century, linguistic ideas were becoming more recognizably modern, but nonetheless, sight and sound remained front and center in many epistemological theories and debates.

For this reason, the pioneering British journalist Harriet Martineau—who was herself hard of hearing—criticized scholars in the 1830s for "laboring at a system of mental philosophy on any but the experimental method, while the materials for experiment lie all around and within them." She accused them of "abusing" figures like Locke and Kant, as well as less-remembered theorists like Johann Gottlieb Fichte, who focused on the role that writing plays in the emergence of language.[27] Martineau suggested that sensory experience and the "Philosophy of the Mind" could be tied together more conclusively through scientific experimentation than they ever had been through mere speculation. She proposed that if someone was willing to oversee, "a close and unwearied study of the phenomena of the minds of persons deficient in a sense, and especially of those precluded from the full use of language, the world might fairly look for an advance in the science of Mind equal to that which medical science owes to

[26] Rousseau, Jean-Jacques. *Essay on the Origin of Languages and Writings Related to Music. The Collected Writings of Rousseau*, vol. 7, trans. John T. Scott (Hanover: University Press of New England, 2009), 293; 318.
[27] Wayne M. Martin. Review of Language and German Idealism: Fichte's Linguistic Philosophy. *Journal of the History of Philosophy* 35, no. 4 (1997): 635.

pathology."[28] In 1835, the year prior to Laura Bridgman's arrival, Martineau did visit Boston, and even met Howe at the Massachusetts Institute for the Blind. However, she wrote that during her visit to America, she preferred the Asylum for the Blind at Philadelphia over the one in Massachusetts, because she found the students in at the Philadelphia school to be more cheerful.[29]

Martineau and Howe shared similar ideas, since both saw the opportunity to educate a child with multiple disabilities from a very early age as an "unprecedented chance to conduct a profound psychological 'experiment.'"[30] Bridgman was not the first deafblind pupil that Howe had approached. He had previously paid a visit to another deafblind young woman, Julia Brace, who achieved minor fame in the 1820s and 30s when she learned to communicate using a limited number of signs adapted from those that were common in many blind schools at the time. She was not a suitable subject for Howe's experiment, though, as she was already 27 years old when two met. Not only had she already established her own method of communication, but in Howe's view, "her value to the scientific observer depended on her ability to learn."[31]

It is in this context that, a few years into his search, a series of mutual friends in the medical profession[32] shared their accounts of Bridgman's life with Howe. He invited

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[28] Harriet Martineau, "Chapter 4: Sufferers" from *Society in America*, 1837. Reprinted in *Encyclopedia of Disability*, Volume V, *A History in Primary Source Documents*. Eds. Sharon L. Snyder and David T. Mitchell (Thousand Oaks: Sage Publications, 2006), 229.
[29] Martineau, "Sufferers," 228.
[30] Ernest Freeberg, *The Education of Laura Bridgman: First Deaf and Blind Person to Learn Language*, (Cambridge, MA: Harvard University Press, 2001) 3.
[31] Elisabeth Gitter, *The Imprisoned Guest*, 70.
[32] These friends were James Barrett, a Dartmouth college student, followed by Reuben Mussey, a professor at Harvard Medical School. See Gitter, *The Imprisoned Guest*, 66.

Bridgman to study at his newly established school, and although her good friend Asa Tenney felt she would be happiest at home with her family, her parents agreed to let her move to Watertown, just outside of Boston, Massachusetts. There, Bridgman was invited to share the apartments of Howe and his sister, Jeannette, who served as his housekeeper until he married Julia Ward Howe. They treated her as an adopted daughter, and her formal education began. Though their "adoption" of Bridgman may have been genuinely kind, it was likely also influenced by prevailing biases about educating young girls at the time: that "the true end of the education of women is making good wives and mothers."[33] Despite his advocacy for educational reform, Howe was still influenced by the cultural expectations of the time, including a gendered division of knowledge which separated the feminine, domestic sphere from the masculine, public one. In *Fictions of Affliction*, Martha Stoddard Holmes proposes that "the distinction between abled and disabled bodies in Victorian culture (and our own) was produced partly in terms of the distinction between men and women and beliefs about what 'naturally' characterized each gender." For example, Holmes argues, "the disabled woman's difference is often imaginatively marked [...] by the difficulty of her having her own home, and by the 'impossibility' of her marrying and having children—"[34] though in reality, being blind has no physical effect on a woman's ability to have children.[35] Howe's representation of Laura Bridgman

[33] Thomas Markby, *The Education of Women* (1866), qtd in Ellen Jordan, "Making Good Wives and Mothers: The Transformation of Middle Class Girls' Education in Nineteenth-Century Britain," *History of Education Quarterly* 31.4 (Winter 1991), 439.
[34] Martha Stoddard Holmes, *Fictions of Affliction: Physical Disability in Victorian Culture* (Ann Arbor: The University of Michigan Press, 2004), 94.
[35] The Blind Parents Interest Group of the National Federation for the Blind, "Parenting without Sight: What Attorneys, Social Workers, and Parents Should Know about Blindness" *NFB.org.* https://nfb.org/images/nfb/publications/brochures/blindparents/parentingwithoutsight.html

would eventually influence audiences to perceive people with physical disabilities as more intellectually capable, but it did so in a way that reinforced gendered narratives, and at considerable cost to Bridgman's agency over her own life and narrative.

Women's Labor: Bridgman's Learning and Her Female Teachers

As a liberal reformer, Howe was well-connected:[36] he befriended celebrity figures that included Lord Byron, Florence Nightingale, Samuel Morse, Abraham Lincoln, and many others. This proved especially useful as he set out to test his theories. In the words of Ernest Freeberg, "Howe was particularly eager to use [Bridgman's] story as a way to combat orthodox Calvinism," that is, the notion that the fate of each individual was predetermined, and their life's path could not be altered, "and to help overturn the traditional classroom practices of rigid order and rote learning which he felt were a natural outgrowth of Calvin's pessimistic view on human nature. Howe turned [her] education into a showcase of 'moral discipline.'"[37]

When Bridgman first came to the Massachusetts Institute in 1837, students who were blind but able to hear had some methods of reading in Britain and America. Several techniques for raised-letter printing were in practice at that time, but the Massachusetts Institute developed its own original method, as well as the technologies to make these embossed-style books. The school used Boston Line Print, a special format of somewhat triangular, lower-case raised letters which were intended to be easy to read. The

[36] In the words of Kevin Hartigan, Director of Volunteers at the Perkins Institute (formerly, the Massachusetts Institute for the Blind), Howe was "neither shy nor humble."
[37] Freeberg, *The Education of Laura Bridgman,* 5.

Institution meticulously crafted metal plates to print large, custom textbooks on topics ranging from history and geography to arithmetic and grammar, with the idea that they would be legible to sighted people as well as to the blind. This history holds fascinating implications for book and print history, though little to no scholarship on Boston Line Print is widely available.[38] A list sketched in the back of a teacher's notebook records that in 1842, the school generally only had two copies of each book, likely because each one was expensive to make, and unwieldy to move, carry, display, or even store.

Howe and the many teachers under his supervision used manual spelling, also called finger spelling or dactylology, to begin teaching Bridgman to build a vocabulary of words. In this method, the teacher uses one sign for each of the 26 letters of the alphabet, and makes those finger signs directly into a student's hand so that she can learn each letter's sign through touch. Similar methods had been used by people who were either blind or deaf in the past, but the way Bridgman learned such an alphabet was critically different from that of her known predecessors, with the single known exception of Julia Brace. In an early analysis of Bridgman's learning, Howe acknowledged that the audible words of any spoken language are "purely arbitrary," and for this reason, the main difficulty that he and his assistants encountered was "to make [Bridgman] understand the arbitrary analogy which we would establish between three, four, or more letters, and the

[38] Though this is in no way exhaustive, a search for "Boston Line Print" on JSTOR yields zero results.

thing of which it is the name."[39] In other words, "that the letters s-h-o-e, for example, stood for the thing itself, shoe.'"[40]

Though Bridgman quickly learned to recognize the four or more letters, working as one unit, that represented an actual object or concept, it took her many weeks to understand that these whole words were actually made up of smaller, individual parts that could be endlessly reassembled. Even after becoming quick and proficient in spelling, Bridgman used letters and word pieces in ways that her teachers, or any sighted or hearing person, might not. For example, when she signed to her teacher that she would rather go for a walk with a friend than by herself, she spelled out: "Laura go al-two," as an alternative to "Laura go alone."[41]

Once Bridgman learned to communicate through finger spelling, Howe wrote that she was able to "distingui[sh] that the crooked lines 's-p-o-o-n' differed as much from the crooked lines 'k-e-y' as the spoon differed from the key in form."[42] In this way, she began by differentiating an entire word, and the object it represented, from another entire word, and the object it represented, before breaking the word down into the phonetic elements traditionally understood by hearing children as they learned to spell.

To write a permanent message, Bridgman employed a different technique. In Howe's reports, he stated that, "...The most gratifying acquirement which [Bridgman] has

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[39] Samuel Gridley Howe, "Laura Bridgman" in *The American Journal of Education,* vol. 4., Ed. Henry Barnard, (Hartford: F.C. Brownell, 1857), 391-392.
[40] Harry Burke, *Language Development of Laura Bridgman.* Watertown: Perkins School for the Blind, 1940. Unpublished Paper. 4.
[41] Samuel Gridley Howe, *Eighth Annual Report of the Trustees of the New-England Institution for the Education of the Blind, to the Corporation* (Boston: J.T. Buckingham, 1840), Appendix B, Page 15.
[42] Samuel Gridley Howe, *Ninth Annual Report of the Trustees of the New-England Institution for the Education of the Blind, to the Corporation* (Boston: J.T. Buckingham, 1841), Appendix A, Page 25.

made, and the one which has given her the most delight, is the power of writing a legible hand, and expressing her thoughts upon paper: she writes with a pencil in a grooved line [i.e., a stencil], and makes her letters clear and distinct."[43] Though Bridgman did not illuminate, in her own words, whether or not this was the acquirement which she felt was the most gratifying to her, it was something that she worked tirelessly to achieve, and that Howe could not have taught her on his own—two facts which emphasize the importance of women teachers in Bridgman's learning, and the way that additional voices are necessary to fully tell her story.

Since Howe had numerous other students and duties to attend to, some of the many female instructors who helped Bridgman write in her distinctive "squarehand" included Mary Swift (later known by her married name, Mary Swift Lamson), Sarah Wight, and Elizabeth ("Eliza") Rogers. These women spent countless hours working with Bridgman, assisting her as she wrote in her daily journal. Many of the educators at the school were sighted, but others, including Bridgman's teacher Sophia B. Carter, were also blind, having been former students at the school who continued on to work there.[44] These teachers were especially adept at teaching counting techniques such as "cyphering," and writing legibly with the challenging squarehand stencil, and their labor also contributed to some of Bridgman's most impressive accomplishments.

Using a metal guide, Bridgman learned to carefully write out each letter, following lines and pre-shaped letters to create the words that she had originally learned

[43] Howe, *Eighth Annual Report* (1840), 6.
[44] Perkins School for the Blind. "The 1800s." Accessed 7 November 2020. https://www.perkins.org/history/timeline/1800s

as cohesive wholes. Bridgman's journal entries mainly describe the activities of her everyday life, including what she learned in school, what she ate for her meals, who came to visit, and who she played with. She signed each journal entry at the bottom with her complete name. These stencil letters were all lower-case, though capitalization of proper names has been regularized for ease of reading below. For example, Bridgman's journal from Tuesday, February 8, 1842, reads:

> Rogers taught me to cypher Tuesday
> She taught Oliver to talk about word
> Sophia taught the girls to cypher
> She taught them to read in books
> Rogers read in books to girls much
> Rogers went to Boston before dinner
> To buy many things and saw Jane
> She taught Oliver to talk new word
> I wrote with large words on board
> Rogers taught me to say little animals
> Laura Bridgman[45]

This description shows Bridgman learning from her female teachers, spending time with the other girls in her school, and working alongside a much younger boy, Oliver Caswell, who was also both deaf and blind. In this way, Howe may have been the supervisor of Bridgman's education, but in her lived reality, she spent the majority of her time with other women and children at the school, and her way of reasoning through and envisioning the world, and explaining it in her own terms, was just as compelling to the influential readers and visitors that were interested in her story.

[45] Journal of Laura Bridgman, 8 February 1842. Bridgman's raised-letter writing was done completely in lower case; names will continue to be capitalized throughout this chapter for ease of reading.

In Howe's accounts, Bridgman was "sadly puzzled at first to know the meaning of the process to which she was subjected; but when the idea dawned upon her mind that by means of it she could convey intelligence to her mother, her delight was unbounded…"[46] Again, these are Howe's words rather than Bridgman's own, but in practice, they seem to hold true. Bridgman maintained an enthusiastic letter correspondence with her mother, as well as her childhood friend Asa Tenney, and continued to be a prolific letter writer throughout her life. In this way, her motivation to be such a groundbreaking pupil was rooted in her personal relationships. Although Bridgman formed an emotional, familial connection with Howe himself, as well as his sister and his wife, Howe and Tenney were the only close male friends she ever had: "In later years, she would not allow most men to touch her."[47] Unfortunately, archival material written by Bridgman herself does not explore or explain her romantic feelings (or lack thereof) about men. However, these details emphasize the disproportionate amount of time Bridgman spent working with women in the institute. This labor, paired with Bridgman's desire to communicate with the women in her life who lived outside of the institution's walls, was what motivated her to learn how to communicate with sighted and hearing people.

Self-Expression: Bridgman's Rebellion and Rise to Fame

[46] Howe, *Eighth Annual Report* (1840), 6.
[47] Gitter, *The Imprisoned Guest, 51*.

Despite his many more liberal views, Howe discouraged Laura Bridgman—as he did all of his students—from embracing the tactile epistemologies that came naturally to them, and instead, urged them to communicate in ways that were intelligible to able-bodied people. He felt that the non-verbal sounds made by the deaf were both unnecessary and discomfiting. Similarly, when visitors came to watch Bridgman demonstrate her learning, her caretakers routinely covered her eyes with a green ribbon in order to comfort able-bodied audiences who were (ironically) unaccustomed to seeing the eye movements of people who are blind.[48] Despite these imposed limitations, Bridgman was not an impassive test subject, but rather, a real young woman with the will to express herself even when her teacher told her not to.

Fig. 1.1 (left): Daguerreotype of Laura Bridgman, c. 1845.[49]
Fig. 1.2 (right): Laura Bridgman's green fillet eye band.[50]

[48] Kevin Hartigan, Personal Interview. March 15, 2018. Perkins School for the Blind, Watertown, MA.
[49] "Daguerreotype of Laura Bridgman c. 1845," Perkins School for the Blind Archives. https://www.perkins.org/history/people/laura-bridgman
[50] "Laura Bridgman's Green Fillet Eye Band." Perkins School for the Blind Archives. https://www.flickr.com/photos/perkinsarchive/sets/72157632111877519/

Bridgman worked tirelessly to write in the English language alphabet because Howe believed in teaching his students the English language only. His reasons were many, but centered around his conviction that it was crucial for a blind person and a sighted person to be able to communicate with one another. Howe wrote: "The chief end of the course of instruction for blind children is to impart such knowledge of the ordinary branches of an English education as are taught in the common schools in the state [...] this is done by teaching them to read books in raised letters by the fingers, and then to practice in reading lessons in embossed books."[51] His intention was to emphasize learning methods that were accessible to students who were blind, as well as people outside of the blind community.

Howe did recognize that many other branches of learning required blind students to learn through touch. Even with the knowledge of the English language, a blind student learning geography could only understand borders and landmarks "based on having them feel carefully of tangible models, such as geographical maps and globes."[52] Yet, when it came to language, Howe held fast. He discouraged Bridgman from developing her own instinctive approaches to expression or communication.

Nonetheless, on her own terms, Bridgman was able to communicate in idiosyncratic, lively conversations with other children using her own creative instincts. Although her method of speaking was not based on hearing because she was deaf, she nonetheless uttered vocal sounds in a way that her teachers, as well as observers and

[51] Samuel Gridley Howe, *43rd Annual Report of the Trustees of the Perkins Institution and Massachusetts Asylum for the Blind* (Boston: Wright & Potter, 1875), 49.
[52] Ibid.

visiting scholars, found thought-provoking. Howe's annual report from the year 1842 describes Laura's communication this way:

> So strong seems the tendency to utter vocal sounds, that Laura uses them for different persons of her acquaintance whom she meets, having a distinct sound for each one. When, after a short absence, she goes into the sitting-room, where there are a dozen blind girls, she embraces them by turns, uttering rapidly, and in a high key, the peculiar sound which designates each one; and so different are they, that any of the blind girls can tell whom she is with. Now, if she were talking about these very girls to a third person, she would make the sign for them on her fingers without hesitation; yet I am inclined to believe that the thought of their vocal sign occurs first, and is translated, as it were, into the finger language, because, when she is alone, she sometimes utters these sounds or names of persons. She said to me, in answer to a question, why she uttered a certain sound rather than spelled the name, "I think of Jennette's noise, — many times, when I think how she give me good things; I do not think to spell her name." At another time, hearing her, in the next room, make the peculiar sound for Jennette, I hastened to her, and asked her why she made it; she said, "Because I think how she do[53] love me much, and I love her very much."[54]

Bridgman says that she "thinks of" her friend's "noise," but if she cannot hear in the way that hearing people can conceive, it is provocative to try to understand her imagined perception of sound. One possibility is that, like some members of the Deaf community today, Bridgman may have felt vibrations, or other physical sensations which reinforced ideas by nineteenth-century sound scientists such as Hermann von Helmholtz and John Tyndall, who increasingly understood sound as a tangible, physical force that acts on bodies and things.[55] Another possibility is that, like a professional singer, Bridgman

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[53] Note that, as is similar for present-day speakers of American Sign Language, the grammatical structures employed by deaf and deafblind students at many schools in the nineteenth century showed some slight, consistent modifications when compared to the verbal conjugations of auditory, spoken English.

[54] Samuel Gridley Howe, *Tenth Annual Report of The Trustees of The Perkins Institution And Massachusetts Asylum For The Blind*, (Watertown: Perkins Institution, 1842), 32. I would like to note here that, similar to contemporary American Sign Language (ASL), finger spelling uses slightly different grammatical constructions than spoken English. In particular, manual spellers create the present tense by adding "do + infinitive" rather than traditionally conjugating the English verb.

[55] Thanks to Shannon Draucker for sharing this observation with me during the North American Victorian Studies Association (NAVSA) annual conference in October 2018.

could feel where each unique sound occurred in her mouth or throat, and recall it later via muscle memory.

In this way, deeper analysis of Bridgman's lived experiences shows how deeply engaged the narrative of her life was in the questions that enthralled many nineteenth-century philosophers who met her. One biographer suggests that Howe believed he could have taught Bridgman to actually speak regular English words, as some deaf students are able to do: "She was never taught articulation, though she herself made definite sounds to designate certain friends. Dr. Howe himself in later years regretted that he had not taught her to speak, knowing well that she could have done so but simply not finding twenty-four hours in the day long enough for the accomplishment of all his enterprises."[56] This suggestion serves as a reminder that Howe was not Bridgman's only caregiver or sole instructor, although he is the one most credited for Laura Bridgman's accomplishments.

Howe published regular progress reports about Bridgman's learning for his influential Board of Trustees, and these reports were frequently reproduced—sometimes simply copied verbatim—in numerous newspapers and magazines. It was through this mass audience that a variety of mid-nineteenth-century readers, from middle-class women who subscribed to the New-York-based *Mother's Magazine*,[57] to British literary figures like Charles Dickens, and scientists including Charles Lyell and Charles Darwin, learned about, and came to admire, Laura Bridgman. By 1851, Bridgman's "transformative" story was so well-known that an editor of the *Boston Evening*

[56] Anna Gardner Fish, *Perkins Institution and its Deaf-Blind Pupils: 1837-1933* (No. 11: June 1934), 11.
[57] *Mother's Magazine*. Nov. 1842. v. 10, no. 11, pp. 259-270. Archival Material. Samuel P. Hayes Research Library, Perkins School for the Blind.

Transcript suggested that her education was the "great[est] accomplishment of American culture" and she should be invited to demonstrate her talents at the Great Exhibition in London.[58]

A fascination with asylums, institutions, and people with physical and psychological differences from the perceived norm was nothing new in nineteenth century British and American culture. Academically, the education of Laura Bridgman piqued the interest of philosophers and scientists who suggested that Bridgman's disabilities made her a "prototype, an example of the innate potential of all children."[59] But in the popular sphere, her story also had great appeal. As Mary Chapman explains, the "upper-middle class vogue for institutional tourism" was common in both Britain and America during this period: "the asylum was one stop on the rota of interesting sites to see in the city, but one which nevertheless was to be taken with moralizing gravitas."[60] Though institutions for the mentally ill are more commonly invoked within this complex history of so-called "asylum tourism," guidebooks for visitors to cities in Britain,[61] Wales,[62] and the United States[63] from the 1840s through the 1880s frequently recommended that tourists stop by schools or "asylums" for the blind. Furthermore, Ernest Freeberg suggests that these tours became more popular than ever in the mid-

[58] "Our Country and the London Fair," *Evening Transcript,* 14 June 1851. In *The Great Exhibitions,* ed. John Alwood (London, 1977), 22. Thanks to the introduction of Ernest Freeberg's *The Education of Laura Bridgman* for invoking this primary source.
[59] Freeberg, *The Education of Laura Bridgman,* 3.
[60] Mary Chapman, "Asylum Tourism: The House of Horrors?" *Constructing Scientific Communities.* 29 February 2016. https://conscicom.org/2016/02/29/asylum-tourism-the-house-of-horrors/
[61] *Bradshaw's Handbook for Tourists in Great Britain and Ireland* (London: WJ Adams, 1880), sec I.
[62] Charles Frederick Cliffe. *The Book of South Wales, The Bristol Channel, Monmouthshire, and the Wye* (London: Hamilton, Adams, & Co., 1847).
[63] *The Englishman's Illustrated Guide Book to the United States and Canada* (London: Longmans, Green, Reader, and Dyer, 1880).

nineteenth century United States, after entrepreneurs like P.T. Barnum increased the public's "demand for novelty" at the same time that more middle class Americans "enjoyed the financial means and leisure time to read popular scientific magazines, attend lectures, visit museums, and buy tickets to public exhibitions."[64]

Bridgman reached the height of her fame during the early 1840s, when every Saturday, Howe placed his students on display to raise money for, and awareness of, his work at the Massachusetts Institute. Each week in front of a captivated audience, Bridgman demonstrated her ability to add and subtract numbers, write with pencil and paper, and find geographic formations on a tactile globe of the world. Audiences could purchase souvenirs, including needles Bridgman had threaded, scraps of knitting she had made, and pieces of paper she had "autographed" by writing her name carefully in squarehand.[65] According to archivists at the Massachusetts Institute (now called the Perkins Institute) for the Blind, which is still a thriving school for blind children today, Bridgman was so well-known that girls in Boston began dressing their dolls with scraps of green ribbon across their eyes just like "Laura."

Literary Life: Bridgman and the Fiction of Charles Dickens

In addition to Laura Bridgman's lived experiences of performance and celebrity, there is another layer to the circulation of her story that depicts her using the language and idioms of literature. In an unpublished manuscript, Maud Howe Elliott, Pulitzer-

[64] Freeberg, *The Education of Laura Bridgman,* 3.
[65] Ibid., 2.

prize-winning biographer and daughter of Howe, wrote that her father's reports about Bridgman "were awaited as eagerly as though they had been novels [... or,] like installments of novels (and they did contain new Truths stranger than fiction) and were translated into foreign languages."[66] Considering that the second vocal and well-connected author to champion Bridgman's story was Charles Dickens, the comparison to a serialized novel is particularly apt. The second section of this chapter will provide an analysis of Bridgman's celebrity, which Howe painted as he saw fit, and which Charles Dickens further concretized in the minds of nineteenth-century readers, ranging from everyday American mothers to the influential natural scientists Charles Lyell and Charles Darwin.

Many of the educational experts who visited Bridgman were interested in what her acquisition of language could reveal; she sparked debates about the "boundaries of language itself, speculating on its origins and the kinds of activities [...] it might include."[67] Like many educators and members of the public alike, Howe was a proponent of oralism,[68] believing that spoken language was inherently more intellectually advanced than sign language. He set the uncomfortably racist and ableist precedent for his school by arguing that, "All people, as they rise out of savagedom, and pass through barbarism, follow the instinct or disposition, to express themselves by audible sound, and begin to use arbitrary and more or less perfectly organized language, […] and acquisition of

[66] Maud Howe Elliott, Unpublished Manuscript. From the Laura Bridgman Collection, Perkins School for the Blind. 157.
[67] Christine Ferguson, *Language, Science and Popular Fiction in the Victorian Fin-de- Siècle: The Brutal Tongue* (Burlington, VT: Ashgate, 2005), 21.
[68] Karen Bourrier, "Reading Laura Bridgman: Literacy and Disability in Dickens's 'American Notes'" *Dickens Studies Annual* (Vol. 40, 2009), 44.

speech is the crowning acquisition in human development."[69] With this context in mind, Karen Bourrier argues that by demonstrating her ability to use recognizable written English, "Bridgman performed her literacy, and thus her humanity, to rapt audiences."[70]

Bourrier concludes that unlike a philologist or anthropologist, Dickens accepts Bridgman's innate humanity before he has even seen her read or write. [71] As she observes, Dickens's first description of Bridgman explains that, "I sat down […] before a fair young creature with every human faculty, and hope, and power of goodness and affection, inclosed [sic] within her delicate frame…" In this way, Bourrier proposes that Dickens accepted Bridgman as human before she demonstrated her talents. She claims that Dickens is more taken by Bridgman's smiling face than anything she writes or fingerspells, especially since he never shares "any of the actual words that Bridgman writes or uses during his visit"[72] with the readers of his travelogue. This is almost true; however, Dickens does report that, "On my saying I should like to see her write again, the teacher who sat beside her, bade her, in their language, sign her name upon a slip of paper, twice or thrice."[73] In other words, Dickens does report two of the words Bridgman writes and uses during his visit—that is, her own name. Though Bridgman may not realize that her name is known around the world, she writes her name to Dickens almost like an autograph.

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[69] Samuel Gridley Howe, *39th Annual Report of the Trustees of the Perkins Institution and Massachusetts Asylum for the Blind,* vol. 27 (Boston: Wright & Potter, October 1874), 91.
[70] Bourrier, "Reading Laura Bridgman," 45.
[71] Ibid., 40.
[72] Bourrier, "Reading Laura Bridgman," 39-40.
[73] Dickens, *American Notes*, 50.

Similarly, in the following paragraph, Dickens acknowledges that he was aware of Bridgman's reading and writing abilities before he ever met her in person, and he is thinking of their encounter in retrospect as he reflects back on the meeting to describe it to his readers. "Long before I looked upon her," Dickens begins, "[her] help had come." Because Bridgman learned to communicate years before Dickens met her, he explains that, "from the mournful ruin of such bereavement, there had slowly risen up this gentle, tender, guileless, grateful hearted being."[74] Because she is blind, Dickens views Bridgman as both modest and chaste, the epitome of nineteenth-century girlhood. The author reiterates Howe's perspective that educating Bridgman will raise her into a respectable young woman, who performs her prescribed gender role—but in a way that comforts the able-bodied public. As I will describe in this section, Bridgman not only remains "unconscious of the presence of visitors," during their visits, thus showing no signs of vanity or awareness of her fame, but she also is cast as a non-sexual being whose education and intelligence do not encroach upon the social roles of able-bodied wives and mothers.

The idea that Bridgman is uninterested in being visited by someone as famous as Charles Dickens is supported by her own account of his visit, but for ulterior reasons. The entirety of Bridgman's journal entry for Saturday, January 29, 1842, reads:

> Rogers taught me to cypher Saturday
> she taught Oliver to talk about words
> Sophia taught the girls to cypher
> she taught them to read in the books
> Rogers taught me and them to write
> in journals I ate some bread and butter

[74] Ibid., 40.

> Ladies and gentle men came to see girls
> Swift and Rogers went to Roxbury
> This after noon miss j went to ride
> Osborne went to ship boat much
> Laura Bridgman[75]

In Bridgman's account of the visit, Dickens is not even named; he simply blends in with the other "ladies and gentle men" who come "to see girls" at the Massachusetts Institute every Saturday. This was Howe's intention, however, as he sought to "protect" his star pupil's humility by controlling both the attention that Bridgman herself experienced, and the narrative about her that others were told. Mary Klages puts it this way: "Howe worried that it might not be possible, given the difficulties created by her disabilities, to keep Bridgman herself from becoming vain and self-centered, but he did his part to insist, in his written representations of her, that she remained unaware of the attention she attracted."[76] As Bourrier agrees, Howe kept Bridgman distant from the outside world "because her deafness and blindness have supposedly preserved her purity from more dangerous forms of knowledge."[77]

In practice, the task of manipulating a young person with multiple disabilities into believing that her actual environment was different than her imagined one did not prove as difficult as Howe had worried. Bridgman's teacher, Mary Swift Lamson, describes how the young woman's teachers rewrote the narrative of what was happening around her:

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[75] Laura Dewey Bridgman. Journal AG 59 Box 18: January 1842. *The Perkins School for the Blind.*
[76] Klages, *Woeful Afflictions, 139*.
[77] Bourrier, "Reading Laura Bridgman," 38.

> When taken to the school-room for exhibition, [Bridgman] was told that the blind girls were sitting in their desks all around the room, and that ladies and gentlemen came to see how the blind could be taught. She never had an idea that her share of attention was greater than theirs […] if the hundredth part of the comments which were intended to reach her had been repeated, all our efforts to preserve her a modest, simple-hearted child would have been of no avail."[78]

As a result, Bridgman thought that she was being treated like every other blind girl, while her teachers were the ones who actually felt "the honor of a call from Charles Dickens," as Mary Swift Lamson wrote in her own journal from the same day. "His great interest in her caused him to remain for several hours," Lamson added. "[Bridgman] was animated in conversation, and I think he received a very correct impression of her."[79] Another of Bridgman's teachers, Eliza Rogers, set the scene this way: "At ten we had no regular schools; most of the girls were preparing to receive Mr. Dickens, who was expected … [I] repaired to the girls' schoolroom to entertain Mr. Dickens, but he did not deign to notice anything or anybody except [Bridgman]."[80] These descriptions distinguish Laura Bridgman, who rose to fame in the 1840s, from a modern celebrity. In the words of Sharon Marcus, "Publics, members of the media, and celebrities themselves all actively shape what it means to be a celebrity..."[81] but as a young, disabled woman Bridgman had little to no opportunity to shape her own representation, especially since her prominent, wealthy white male teacher kept her in the dark about her fame.

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[78] Lamson, *Life*, 99-100.
[79] Ibid., 99.
[80] Maud Howe Elliot and Florence Howe Hall, *Laura Bridgman: Dr. Howe's Famous Pupil and what he Taught Her* (Boston: Little, Brown, and Company, 1903), 106.
[81] Sharon Marcus, *The Drama of Celebrity* (Princeton, Princeton University Press, 2019), Kindle Edition, Loc. 173.

She was so unaware of her fame that when visitors became so eager to see her in person that they crowded in too closely, Howe erected benches between the audience and his student to keep them at a distance.[82] As his self-described rescuer and defender, Howe seems to have done this based on his own ideas of what would make Bridgman safe, and protect her from the prying eyes or possible dangers of the able-bodied public. In reality, however, Bridgman was confused when she noticed the changes; she asked her teacher if he had built the barrier to protect the visitors, worrying that perhaps they were afraid of her.[83] It is impossible to know exactly how Bridgman felt on a deep emotional level, since her diaries and brief autobiography generally describe her everyday activities without much reflection. However, it does seem apparent that Howe was more concerned about distancing Bridgman from the sighted world, rather than introducing her to interact with them.

When Bridgman's teachers finally introduced her to Dickens, the author wrote that "My hand she rejected at once, as she does that of any man who is a stranger to her. But she retained my wife's with evident pleasure, kissed her, and examined her dress with a girl's curiosity and interest."[84] Here, as with discussions of Asa Tenney and Bridgman's general disinterest in men, it is tempting to begin speculating about Bridgman's experiences with gender and sexuality. Once again, however, such conversations must be placed in perspective with Howe's extreme protection of Bridgman, and a both ableist and gendered point of view about her possible future

[82] Sally Hobart Alexander and Robert Alexander, *She Touched the World*, 61.
[83] Ibid.
[84] Dickens, *American Notes*, 50.

contributions to society. Since Howe was intent on preserving her purity from the possible evil knowledges of the world, it makes sense that especially as she reached young womanhood, she was distanced from men in a way that eventually led her to be unfamiliar with their touch, and possibly even fear that they disliked her rather than that she was supposed to dislike them.

Dickens idealized both Laura Bridgman and Howe, her "great benefactor and friend." By teaching her to read, Howe was the literal hero of her story,[85] and by finding a way to "awaken her Immortal soul,"[86] Howe was her spiritual savior as well. By the end of his narrative, Dickens concludes that "There are not many persons, I hope and believe, who can ever hear th[e] name [Samuel Gridley Howe] with indifference.[87] And in fact, he spoils the ending from the beginning, by describing her at the very start as a "marble cell, impervious to any ray of light, or particle of sound," whose "poor white hand" had been "peeping through a chink in the wall, beckoning to some good man for help."[88] This was achieved, in Dickens's mind, when Howe broke through to her.

Bridgman's literacy was evidently important to Dickens, since his own accounts of Bridgman's life followed the literal and metaphorical rescue narrative that Howe had constructed. Dickens both begins and ends his chapter about Bridgman by giving away her happy ending—that she was once lost in her own "darkness," but has now been reached. However, Dickens does more than just reiterate Howe's version of Bridgman's story—he literally repeats large portions of it verbatim. In "*American Notes* and English

[85] This has been suggested by most modern biographers of Bridgman's life, including Gitter and Freeberg.
[86] Charles Dickens, *American Notes*, ed. Patricia Ingham (New York: Penguin, 2000), 40.
[87] Ibid., 49.
[88] Ibid., 40.

Guidebooks," Annika Bautz goes so far as to accuse Dickens of plagiarism for copying over ten pages of descriptions of Bridgman directly from Samuel Howe's Annual Reports.[89] For this reason, Dickens's portrayal of Bridgman reinscribes her as a passive victim awaiting rescue, by a great hero whose efforts deserve to be applauded more than the labor of the aspiring reader herself.

As many scholars have indicated, "Bridgman's body was certainly staged and managed in order to elicit an affective response,"[90] and this sort of writing calls to mind the sentimental novel. Dickens's writing certainly contains sentimental elements, though the question of whether or not he was writing in the sentimental genre, and if so, how those tropes can be productively applied to his work, is a complicated one that has been more fully explored by scholars such as Mary Klages and Valerie Purton. In *Dickens and the Sentimental Tradition,* Purton identifies the many different, complex and often conflicting ways in with the rhetoric of sentimentalism operates in Dickens's oeuvre.[91] She describes the long history of the "romantic child" that led to Dickens's characters like Little Nell: "The Romantic child in Wordsworth and his contemporaries emerged from the eighteenth-century philosophy of Rousseau and its development in the early nineteenth century by Friedrich Schiller. Rousseau views the child as endowed from birth with natural tendencies to virtue which can be nourished slowly towards the needs of social existence."[92]

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[89] Annika Bautz. "American Notes and English Guidebooks," *Transatlantic Literature and Transitivity, 1780-1850.* Eds. Annika Bautz and Kathryn Gray (New York: Routledge, 2017), 228. Footnote 5.
[90] Bourrier, "Reading Laura Bridgman," 39.
[91] Valerie Purton, *Dickens and the Sentimental Tradition: Fielding, Richardson, Sterne, Goldsmith, Sheridan, Lamb* (New York: Anthem Press, 2012), xxvii.
[92] Ibid., xxii.

Comparisons between Bridgman and the fictional Little Nell have been performed by both Klages and Purton in their respective monographs. In *Woeful Afflictions: Disability and Sentimentality in Victorian America,* Klages argues that, "Dickens's attraction to Bridgman came in large part from his ability to describe her as a sentimental heroine, the equivalent of his own Little Nell in his recently published novel." After visiting the Massachusetts Institute, Klages continues, "Dickens's desire to create a sentimental portrayal of Bridgman came, in turn, from Howe's use of sentimental assumptions and conventions in his voluminous accounts of [her] education."[93] Additionally, the author felt that Bridgman reminded him so much of his own Little Nell, that he paid for a three-volume, raised-letter edition of *The Old Curiosity Shop* to be donated to the school. The first volume is still on display at the school today.

Because Dickens wrote *The Old Curiosity Shop* before he met Bridgman, the following section will focus on the Blind Girl he wrote after his visit: Bertha Plummer in his 1845 Christmas story, *A Cricket on the Hearth.* It is no surprise that the "Blind Girl" who Dickens created after meeting Laura Bridgman, should appear in the whimsical and moralizing novella *A Cricket on the Hearth: A Fairy Tale for the Home*. The story, which is told in three "chirps," meets at the intersection of two households. Caleb Plummer, an impoverished toymaker, is a single father raising his blind daughter, Bertha. Caleb's wife is inexplicably absent, and his oldest son, Edward, is presumed dead after disappearing in South America years ago. And so, Caleb's goal is to provide for, and brighten the life of,

[93] Mary Klages, "Chapter 6: Laura Bridgman," *Woeful Afflictions: Disability and Sentimentality in Victorian America* (Philadelphia: University of Pennsylvania Press, 1999), 121.

his daughter, by acting as the eyes she does not have. Caleb easily convinces Bertha that she lives in a beautiful cottage, rather than a poor, dilapidated house, and he adds the additional layer of fantasy that his employer, the selfish, old, and ugly Mr. Tackleton, is actually a kind and generous man. The Plummers's story is linked to that of their neighbors, John and Dot Peerybingle. Dot is significantly younger than her husband, and the two have just brought their newborn Baby into the family after a difficult initial adjustment to the difference in their ages. John loves his wife unconditionally, but suspects that she is having an affair after he sees her sneaking a "Stranger" into their home. Both the Plummers and Peerybingles also share the friendship of Mrs. Field, and her beautiful, angelic daughter May, a former schoolfellow of Dot.

The eponymous cricket serves as a guardian angel over the Peerybingle household. At the beginning of "Chirp the First," Dickens depicts the song of the cricket as if it is in a race with the boiling of a kettle: "Chirp, chirp, chirp! Cricket fresher than ever. Hum, hum, hum-m-m! Kettle slow and steady. Chirp, chirp, chirp! Cricket going in to finish him. Hum, hum, hum-m-m! Kettle not to be finished."[94] The two continue to compete, until ultimately, their sounds become one, and "whether the kettle chirped and the Cricket hummed, or the Cricket chirped and the kettle hummed, or they both chirped and both hummed, it would have taken a clearer head than yours or mine to have decided with anything like certainty."[95] In this moment of unity, the cricket on the hearth is as much a metaphor for domestic bliss as the hearth itself, and the wife's kettle that boils

[94] Charles Dickens, "A Cricket on the Hearth," *Dickens at Christmas* (New York: Vintage Classics, 2012). Kindle Edition, 199.
[95] Ibid.

upon it. John returns home to his doting wife just as the cacophony of household noises reach their end. As the story continues, both spouses agree that the chirping of the cricket has been a constant in their marriage, providing them hope in difficult times, and keeping them company when they are separated from each other.

At the climax of the Peerybingles' story, however, the cricket's intervention as a protector of the Victorian family unit becomes both more literal and more extreme. When John initially believes that his wife may have made him a cuckhold, he takes his gun off the wall and considers killing the "perfidious stranger" who is sleeping in a nearby guestroom. But just in time, the cricket's chirp interrupts John's thoughts, and "No sound he could have heard, no human voice, not even hers, could so have moved and softened him."[96] As the cricket soothes John's anger, the literal "fairy tale" emerges: "The Cricket on the Hearth came out into the room, and stood in Fairy shape before him."[97] In fairy form, the cricket uses a Fairy Voice to remind John of all the loving conversations he has had with Dot, and most importantly, of "The hearth she has – how often! – blessed and brightened,"[98] as Dot tirelessly completes her duties as a happy, compliant woman who keeps the household running.

The fairy tale spirals out of control when the cricket turns out to be only one of many "fairy" presences in the room. Whether through fairy magic, psychological crisis, or a combination of both, John envisions an "image" of his wife, Dot, standing before him, and then:

[96] Ibid., 255-256.
[97] Ibid., 256.
[98] Ibid.

> From the hearthstone, from the chimney, from the clock, the pipe, the kettle, and the cradle; from the floor, the walls, the ceiling, and the stairs; from the cart without, and the cupboard within, and the household implements; from every thing and every place with which she had ever been familiar, and with which she had ever entwined one recollection of herself in her unhappy husband's mind; Fairies came trooping forth. Not to stand beside him as the Cricket did, but to busy and bestir themselves. To do all honour to her image. To pull him by the skirts, and point to it when it appeared. To cluster round it, and embrace it, and strew flowers for it to tread on. To try to crown its fair head with their tiny hands. To show that they were fond of it and loved it; and that there was not one ugly, wicked or accusatory creature to claim knowledge of it – none but their playful and approving selves. […] His thoughts were constant to her image.[99]

Just as the first fairy emerged from the cricket—a symbol of the Peerybingles' ideal household—additional fairies begin to emerge from any object or space that is associated with Dot's gendered contributions to the domestic sphere. Then, in similar fashion to the familiar twentieth-century film version of the *Cinderella* fairytale, where small household creatures make the hard-working servant girl's first dress for the ball,[100] the fairies honor their mistress, and reveal her true identity as a faithful wife. The third and final "Chirp" of the story will later reveal that the stranger is not Dot's lover, but rather, Caleb's long-lost son (and Bertha's long-lost brother), who has miraculously returned from South America, hiding his identity from everyone but his old friend Dot, who is like an aunt or godmother to him.

This plotline may be the most obvious "fairy" one in the novella, but Bertha the "Blind Girl's" tale is just as fanciful as the cricket-and-fairy fête. Dickens begins the Plummers' story with a clear invocation of fairytale structure: "Caleb Plummer and his

[99] Ibid.
[100] The pink dress in the Disney movie, which Cinderella's stepsisters later destroy—not the blue one conjured afterwards by her fairy godmother. See *Cinderella*, dir. Clyde Geronimi, Hamilton Luske, and Wilfred Jackson (Walt Disney Productions, 1950), DVD.

Blind Daughter lived all alone by themselves, as the Story-books say." In reality, their home is "a little cracked nutshell of a wooden house, which was, in truth, no better than a pimple on the prominent red-brick nose of Gruff and Tackleton."[101] Yet, in the same way that Bridgman's male storyteller, Howe, deceived her, Caleb Plummer deceives his daughter Bertha:

> I have said that Caleb and his poor Blind Daughter lived here. I should have said that Caleb lived here, and his poor Blind Daughter somewhere else – in an enchanted home of Caleb's furnishing, where scarcity and shabbiness were not, and trouble never entered. Caleb was no sorcerer, but in the only magic art that still remains to us, the magic of devoted, deathless love, Nature had been the mistress of his study; and from her teaching, all the wonder came. The Blind Girl never knew that ceilings were discoloured, walls blotched and bare of plaster here and there, high crevices unstopped and widening every day, beams mouldering and tending downward.[102]

At first, it may seem that Caleb, just like Howe, is acting nobly by "protecting" the young woman in his care from the dangers of the "real" world, thus preserving her childlike innocence. However, in the same way that the tension of the Peerybingles' story can only be resolved by remembering how important Dot's contributions to the household are, as she dutifully carries out her "job" within the strictly gendered social structure, the rest of the plotlines can only be resolved by putting everybody else in their proper domestic places. These include both a job or occupation, paired with a gendered role within the family unit.

[101] Dickens, "Cricket," 222.
[102] Ibid., 223.

From the beginning of the story, John is introduced as "John the Carrier,"[103] since he delivers parcels for a living to support his wife and newborn baby. Similarly, Mr. Tackleton's business is introduced in the story before he ever is, since he is the partial namesake of the toy company "Gruff and Tackleton."[104] May enters the narrative when John and Dot learn that she is engaged to marry the rich old man, which will place them both neatly into a practical marriage. Mrs. Field is only necessary in the story at all in order to play the role of May's mother—who pressures her daughter to marry—and May, as a physically and morally attractive young woman, exists in the fairytale for her marriageable potential.

Edward Plummer is also defined by both his occupation and his duties to his family. Readers first learn of Edward's existence when Caleb regrets that he may have had more cash, "indeed, if my dear Boy in the Golden South Americas had lived."[105] Edward disappeared in an attempt to make his fortune, which would allow him, as the oldest son, to provide assistance to his father and sister. When Edward finally returns home, he is a "brown, fresh sailor-fellow,"[106] of age to become a husband and father himself; it is for this reason that Edward chooses to remain in disguise as "the stranger," and stay in the household of his family friend Dot Peerybingle, until he can establish whether his childhood love, May, is still waiting to marry him. Once Edward and May are secretly wed (creating yet another blissful family unit within the domestic fairytale), even the cantankerous Mr. Tackleton is able to take his proper place as a wealthy

[103] Ibid., 201.
[104] Ibid., 206.
[105] Ibid., 212.
[106] Ibid., 282.

benefactor. Tackleton ultimately behaves like the grandfather Bertha always imagined based upon her father's fantasy: "Our friend, father, our benefactor."[107] Because Tackleton accepts that Edward's engagement to May sincerely pre-dates his own, he is transformed into an honorable older gentleman who sends gifts and cake to the newlywed couple.[108]

Even the unnamed Baby of John and Dot is described via his relationship to his father's job as Carrier, and his (albeit limited) contribution to the household. The Baby is consistently described as if he is an inanimate package, who exists only to be assessed by others and passed between sets of hands: "Not that there was much of the Baby, speaking of it as a thing of weight and measure, but there was a vast deal to do about and about it, and it all had to be done by easy stages." Just like delivering a parcel, getting the baby to a new location proves to be a difficult task: "For instance, when the Baby was got, by hook and by crook, to a certain point of dressing, and you might […] turn him out a tip-top Baby challenging the world, he was unexpectedly extinguished in a flannel cap, and hustled off to bed; where he simmered (so to speak) between two blankets for the best part of an hour."[109] The Baby may seem like an object in many ways, but he is emotionally important to Dot. When the young mother is describing the difficulties that the cricket on the hearth has helped her face, she expresses gratitude that the Baby "[is] here to keep me company and make the house gay."[110]

[107] Ibid., 232.
[108] Ibid., 282.
[109] Ibid., 233.
[110] Ibid., 205.

Conversely, as a maker of handcrafted toys, Caleb's occupation is especially provocative. He is constantly surrounded by bits and pieces of the dolls and doll accessories he is building: "Caleb and his daughter were at work together in their usual working-room, which served them for their ordinary living-room as well; and a strange place it was. There were houses in it, finished and unfinished, for Dolls of all stations in life. Suburban tenements for Dolls of moderate means; single apartments for Dolls of the lower classes; capital town residences for Dolls of high estate."[111] Caleb's working room is the same as his living room, which draws a parallel between working and living, wherein one's work is equated to his life. Caleb is defined by the two jobs he has as a masculine head of house, one as a toymaker, and the other as Bertha's father. His employment as a maker of dollhouses—including beautiful ones for the wealthier buyers—makes him all the better equipped to "build" and maintain a fantasy for his daughter by recasting the objects in their own home as beautiful and luxurious.

There is more complexity however, in the fact that as a toymaker, Caleb regularly finds himself surrounding his daughter with disassembled pieces of toys. Previous scholars have identified that "the text is dotted with eyes," including the disembodied, unseeing eyes of dolls.[112] When receiving a box full of such dolls' eyes from the Carrier, Caleb tells his friend that, "I wish it was [Bertha's] own sight in a box, John."[113] On the one hand, as Bertha's father, Caleb feels that he has failed his daughter by being unable to "cure" her disability and grant her sight. In her essay "The Blind Daughter in Charles

[111] Ibid., 223-224.
[112] Gitter, "The Blind Daughter," 678.
[113] Dickens, "Cricket," 212.

Dickens's 'Cricket on the Hearth,'" Elisabeth Gitter situates Bertha's story within a historical moment where "blindness cured" and/or "the spectacle of sight surgically restored" were popular motifs.[114] Gitter argues that although Bertha never recovers her literal sight, her narrative follows a similar structure when her father ultimately repents for misleading her, and reveals the "truth" about their meagre abode and the reality of Tackleton's harshness.

While this is true, it once again connects how heavily each character relies on their occupation, as well as their role in the family, to define them. The reader is never told whether Bertha's blindness is congenital, or the result of a childhood illness (as Bridgman's was), but either way, Caleb seems to suggest that Bertha's shortcoming could be his fault as a father. Because he is unable to literally "fix" her ailment, and because he does not make enough money to provide for her beyond a paltry subsistence, Caleb attempts to "make up" for Bertha's disability by seeing *for* her. When his daughter asks for "my eyes, my patient willing eyes," Caleb replies: "'Here they are, […] Always ready. They are more yours than mine, Bertha, any hour in the four-and-twenty. What shall your eyes do for you, dear?"[115] Bertha relies on her father to describe the visible world to her, but as with Bridgman, she nonetheless proves herself to be capable of several things, and likely more if the people around her stopped romanticizing her. No matter how much the other people in her life idealize her naivete, or deliberately mislead her, Bertha is capable of understanding the world in her own way.

[114] Gitter, "The Blind Daughter," 676.
[115] Dickens, "Cricket," 231.

Bertha demonstrates that she can identify wheels coming down the road, recognizing how quickly they are moving and how far away they are.[116] Additionally, in the scene where the disguised "Stranger," who turns out to be her brother Edward, first enters her home with John Peerybingle, Bertha becomes interested right away.

> 'Whose step is that!' cried Bertha, starting up.
> 'Whose step?' returned the Carrier, standing in the portal, with his brown face ruddy as a winter berry from the keen night air. 'Why, mine.'
> 'The other step,' said Bertha. 'The man's tread behind you!'
> 'She is not to be deceived,' observed the Carrier, laughing. 'Come along, sir. You'll be welcome, never fear!'[117]

Although Bertha does not say outright that she recognizes her brother, she immediately differentiates one step from another, and can identify that the visitor is a male. Similarly, John himself does not know the Stranger's true identity, but the narrative acknowledges that Bertha's ear "is not to be deceived." It stands to reason that she "start[s] up" because she recognizes a similarity in the step to that of her brother, but presumes a visit from him would be impossible; Dot suggests this reading herself. When she is finally ready to reveal the "Stranger's" true identity, Dot remarks that Bertha has "a quick ear," and recalls the previous incident: "As I very well recollect you did say, Bertha, 'Whose step is that,' and why you should have taken any greater observation of it than of any other step, I don't know."[118] Though Bertha does not have an educational benefactor like Bridgman had in Howe, she does show the potential to use her other senses perfectly

[116] Ibid., 249.
[117] Ibid., 249.
[118] Dickens, "Cricket," 274.

well. At the end of the story, she even demonstrates that she has learned to play the harp, "and she had such a hand upon it as you seldom hear."[119]

However, whereas every other character has a job to do—and some characters' jobs are so important that their occupation can stand in for their name, or vice versa—Bertha is only ever permitted to be the "Blind Girl." Dickens's narrator refers to her as such throughout the majority of the narrative, as do many of the other characters. As a person who is blind, Bertha has no occupation, and thus, no potential to earn a living in the way that a head of household would. At the same time, because she is a blind person who is also described as a "girl," Bertha is also devoid of an adult woman's domestic future potential. Her body is other, which means she has no place in the ideal home.

In fiction, Gitter writes, "through the often melodramatic contrivance of medical recovery, lovers could be cured of blindness and made fit for marriage. Esther Summerson of Dickens's *Bleak House* or blind Margaret of Elizabeth Gaskell's *Mary Barton,* for example, are freed for domestic happiness when they recover their vision."[120] Gitter draws a productive parallel between being "fit for marriage" and being sighted, arguing that when Caleb finally decides to reveal Tackleton's true character, as well as the derelict nature of their own home, Bertha's story mirrors the "recovered sight" structure without providing her any of its domestic benefits. After all, when all the characters couple off at the end of the story, Gitter identifies Bertha's "punishing exclusion from the fairy-tale ending." She argues that "Sightless and partnerless, playing

[119] Ibid., 284.
[120] Gitter, "The Blind Daughter," 678.

her harp so that others can dance," Bertha "makes a Christmas ending possible."[121] Even in a story where long-dead brothers return to life, cruel employers' hearts are melted, and magic crickets divert a murder, the Blind Girl will never provide for herself financially, nor will she build her own family as a wife or mother.

Bertha misunderstands the world and people around her, not because she is blind but because she, like Laura Bridgman, was lied to. She shows few household skills throughout the novella not because she has a disability—she can hear well, speak intelligently, and play the harp—but because everyone in her life has predetermined what is and is not possible for her. The way that the mediator of Bertha's story, her father, precludes domestic labor and marriage from his daughter's life is similar to the way that the narrator of Bridgman's life, Howe, determined her possibilities on her behalf. Howe claimed to be preparing students to live as self-sufficient members of the middle-class workforce, and he certainly provided his students with a well-rounded education and practical skills. In 1833, he wrote: "The blind are there treated too much as mere objects of pity; they are not taught to rely with confidence upon their own resources, to believe themselves possessed of the means of filling useful and active spheres in society."[122] Nonetheless, Howe, like the majority of nineteenth-century society, assumed that marriage was off-limits for a young woman with disabilities.

When Bridgman's beloved teacher Sarah Wight was being courted by a male suitor, Bridgman assumed that the young man was actually coming to see her. When

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[121] Elisabeth Gitter, "The Blind Daughter in Charles Dickens's Cricket on the Hearth." *Studies in English Literature, 1500-1900* vol. 39, no. 4 (1999): 686.
[122] Samuel Gridley Howe, "Education of the Blind" from *The North American Review*, July 1833. Reprinted by the VCU Libraries Social Welfare History Project.

Wight explained the "truth" to her—that the man was not visiting Bridgman, but Wight herself—Bridgman's "whole face changed, and her trembling fingers spelt out the words, 'Am I not pretty?'"[123] It is interesting that in Wight's journal, where she records this conversation, she does not write down her response to Bridgman's insecure question. As Bridgman came of age, more and more of her teachers began to leave her in order to marry, and according to many of the women in her life, including Wight, Lamson, and Maud Howe Elliot, Bridgman always showed immense interest in the preparations for weddings, even going so far as to try on her friends' bridal clothes. And yet, the people in control of Bridgman's story had already determined that she, like Bertha, would remain "sightless and partnerless."

Bridgman's teachers told her outright that, regarding marriage, "in this thing too she was not as others are; that she could never hope to fill the high office of wife and mother,"[124] even despite the recognition that their star student was capable of most household tasks, as well as "great love and jealousy."[125] Bridgman herself seemed intent on contradicting their limitations, though to no avail; when she was fifteen, she asked Howe: "Do you think I shall ever be married with a gentleman whom I love best and most?" and he responded with a simple and unequivocal "no." This prompted her to immediately make the counterpoint that "I can sweep & fix things very nicely & do many things."[126] Unfortunately, however, by unequivocally informing Bridgman, and other

[123] Maud Howe Elliot and Florence Howe Hall, *Laura Bridgman*, 248-249.
[124] Ibid.
[125] Ibid.
[126] Sarah Wight, journal entry from 15 September 1845. Archives, the Perkins School for the Blind, Watertown, MA. Thanks to Elisabeth Gitter in "The Blind Daughter" for identifying this archival source in footnote 7, on page 687 of her article.

women like her, that marriage was outside the realm of possibility, educators ensured that Bridgman would remain unmarried her entire 60 years of life.

In wrapping up a comparison between Laura Bridgman and Dickens's Bertha Plummer, the famous Victorian author over-corrected when he cast his character as a sentimental heroine who was eternally youthful and naïve. The rationalization that physical deformity was an indicator of moral depravity had been prevalent for hundreds of years prior; for example, in "Of Deformity," Francis Bacon perpetuated the long-held misconception that "deformed persons" are "for the most part [...] void of natural affection." The famed philosopher concluded that "Certainly there is a consent between the body and the mind, and where nature erreth in one, she ventureth in the other."[127] Such ideas continued to remain popular throughout the eighteenth century, as Richard Lund has explored in "Laughing at Cripples: Ridicule, Deformity, and the Argument from Design."[128] Yet, in attempting to right historical wrongs, Dickens perpetuated his own century's strict gender roles, as well as myths about inability for for women with disabilities to fulfill such roles, limiting as they already were.

"Like the spectral beings who appear and disappear in Dickens's other Christmas books," Gitter writes, Bertha "exists on the margins of narrative convention, excluded from the Christmas transformations and reconciliations of the more worldly characters."[129] In a parallel fashion to her better-known and similarly nicknamed counterpart in Mary Shelley's *Frankenstein*—the blind "Old Man" De Lacey—Bertha

[127] Francis Bacon, "Of Deformity," *The Works of Francis Bacon*, vol. I (London: A. Millar, 1765), 506.
[128] Roger Lund, "Laughing at Cripples: Ridicule, Deformity, and the Argument from Design," *Eighteenth-Century Studies* (39.1: Fall 2005), 91-114.
[129] Gitter, "The Blind Daughter," 685-686.

exists to show kindness to characters that other people would not, expounding the potential virtues that accompany physical disability. Here, both the Old Man and the Blind Girl err similarly. The Old Man treats Frankenstein's Creature kindly not because he is kind, but because, as he tells the Creature, "[I] cannot judge of your countenance."[130] De Lacey's blindness renders him unable to see the Creature's true hideousness, and consequently, "the fatal effects of this miserable deformity."[131] Likewise, Bertha views Mr. Tackleton as "noble," "honest and true," and worthy of a "patient companion"[132] like May, because the "patient, willing eyes" of her father have failed hear. The Creature begins kind but becomes cruel; Mr Tackleton begins cruel but becomes kind.

Interdisciplinary Implications: Gestures towards Epistemology

Bridgman's use of language did not simply have an effect on nineteenth-century debates about who could learn language and how, but consequently, her ability to read and write impacted other theories for which language would serve as metaphors or analogies. Howe's promulgation of Bridgman's story made her a celebrity not only in Boston and America, but more broadly. Dickens's publication of her story in London brought Bridgman's narrative to English readers and scientific minds as well, including those who are the most critical to this dissertation's forthcoming argument about histories of scientific observation.

[130] Mary Shelley, *Frankenstein* (New York: Penguin, 2003), 136.
[131] Ibid., 117.
[132] Dickens, "Cricket," 232.

For example, Charles Lyell visited the Massachusetts Institute twice shortly after Dickens did, and made particular reference to Dickens's narrative in doing so. Of his own interview, Lyell wrote:

> Her mind has been so advanced by the method of instruction pursued by Dr. Howe, that she shows more intelligence and quickness of feeling than many girls of the same age who are in full possession of all their senses. The excellent reports of Dr. Howe, on the gradual development of her mind, have been long before the public, and have recently been cited by Mr. Dickens, together with some judicious observations of his own.[133]

In addition to his general notes about her learned abilities, Lyell also provides considerable analysis about Bridgman's language development: "Perhaps no one of the cases of a somewhat analogous nature […] has furnished so many new and valuable facts illustrating the extent to which all intellectual development is dependent on the instrumentality of the senses in discerning external objects." As a scientist who frequently employed language as an analogy for the structures of the natural world, Lyell was particularly interested in this topic, and also made connections between the body, the mind, and morality. In the same sentence, Lyell contemplates "in how small a degree the relative acuteness of the organs of sense determine the moral and intellectual superiority of the individual."[134] Lyell's observations about Bridgman would critically inform his understanding of how the bodily limitations of language acquisition affected the individual, a topic which would resonate with future biologists and philosophers alike.

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[133] Charles Lyell, *Travels in North America, in the years 1841-2; with Geological Observations on The United States, Canada, and Nova Scotia.* Vol. 1. (New York: Wiley and Putnam, 1845). 92-93.
[134] Lyell, *Travels,* 92-93.

For example, Charles Darwin worked closely with Lyell and also read many of Dickens's work throughout his life, so these previous writers' accounts of Bridgman made their way into his thinking as well. Darwin notably references the *Pickwick Papers* several times in his letters, and later quotes *Oliver Twist* in *The Expression of Emotions in Man and Animals.*[135] Moreover, in Darwin's most influential work—*On the Origin of Species*—Darwin invoked Lyell's metaphor; and although his analogy is often read purely in terms of reading the standard English language, his knowledge of alternative writing and printing forms, including Boston Line print as practiced by Bridgman, and Howe's other pupils, expands the full meaning of this analogy and invocation. The naturalist read Dickens's and Howes's works in the early 1840s, but thirty years later in 1871, was still thinking about Bridgman's story. He mentioned her novel methods of expression in relation to human language development when he wrote: "It appears, also, that even an ordinary train of thought almost requires, or is greatly facilitated by some form of language, for the dumb, deaf, and blind girl, Laura Bridgman, was observed to use her fingers whilst dreaming."[136] This consideration occurs in the same passage where Darwin presents his theory of language: that it "owes its origin to the imitation and modification, aided by signs and gestures, of carious natural sounds, the voices of other animals, and man's own instinctive cries."[137] These discussions will be further expanded,

[135] Darwin writes: "Dickens, in speaking of an atrocious murderer who had just been caught, and was surrounded by a furious mob, describes 'the people as jumping up one behind another, snarling with their teeth, and making at him like wild beasts.'" Qtd. In *The Expression of the Emotions in Man and Animals* in *From So Simple a Beginning: The Four Great Books of Charles Darwin.* Ed. Edward O. Wilson (New York: W.W. Norton & Company, 2006), 1402.
[136] Charles Darwin, *The Descent of Man and Selection in Relation to Sex* in *From So Simple a Beginning*, Ed. Edward O. Wilson (New York: W.W. Norton & Company, 2006), 810.
[137] Ibid.

and connected to other dot-and-dash writing systems used by niche communities, in Chapter 4.

Although Bridgman did complete her education and temporarily move back to her mother's home in the 1860s, all primary and secondary sources indicate that she became lonely, and experienced symptoms which present-day scholars may identify with depression, when abruptly removed from the company of her many likeminded blind friends. Howe had little left to teach Bridgman, and had since moved on to other students and political causes. When he heard of her social isolation, her former teacher offered Bridgman the opportunity to return to the school indefinitely, and work as a sewing instructor. Bridgman accepted the position.

Howe died in 1876, but in one of his last reports, he updated long-time supporters of the institute about Bridgman's accomplishments. He wrote that, as an adult in her 50s, Bridgman had "acquired a large vocabulary of words, and could converse readily and rapidly with all deaf-mutes and all persons who could use these signs." Howe added that Bridgman could read books, find any chapter and verse in scripture, and, "she could also read letters from her friends in pricked type, or by the Braille system of points."[138] This transition from Boston Line Print to Braille would have been yet another educational feat, though virtually no information about Bridgman's acquisition of the new system is recorded, since her fame had come and gone.

[138] Howe, *39th Annual Report* (1874), 88.

Laura Bridgman is both an inspiring figure, and a tragic one. Her life's story offers insights into the lived experiences of people with disabilities in the nineteenth century; it also amplifies the necessity of the phrase commonly used in disability advocacy today: "nothing about us without us." This slogan has its origin in European politics, but has been taken up by activists of the disabled community for more than 20 years.[139] By emphasizing Bridgman's labor and her subjectivity at the start of this project, I hope to celebrate the subjectivity of members of small, often minority communities, who used and innovated new methods of communication. Rather than presenting such experiences of learning as an exception or an afterthought, I seek to reorient nineteenth-century ways of knowing to more actively incorporate these analytical tools developed for specific, seemingly limited groups of people into the broader histories of their respective societies' scientific innovations.

[139] James I. Charlton, *Nothing About Us Without Us: Disability Oppression and Empowerment.* University of California Press, 1998.

Chapter 2.

Sound Reading: Women's Suffrage and the Female Telegraph Operator

"In a word there is no limit to the capability of the [telegraph] as a medium of inter-communication," declared the Philadelphia-based newspaper *The North American and Daily Advertiser* on June 5, 1844. Two weeks after Samuel Morse successfully sent the first electric telegraph message between Washington and Baltimore, this article, titled "The Great Discovery of the Age," celebrated the practical proof of concept for "instant overland communication between points however remote." In ordinary use, the writer asserts, "time as well as space would be annihilated by the Telegraph!"[1] However, at the same time that newspapers received telegraphy as a revolutionary means of seemingly instantaneous communication, they also recognized its embeddedness in the material world, and its physical apparatus—including the workers who operated it.

When describing how this "great discovery of the age" works, the journalist explains first that "a current of electricity will pass to any distance along a conductor connecting the two poles of a voltaic battery or generator of electricity, and produce visible effects at any desired points on that conductor."[2] Even more critically, though, the newspaper article acknowledges the necessity of human mediation: "This current of electricity is produced and destroyed by breaking and closing the galvanic circuit at the *pleasure of the operator* of the telegraph, who in this manner directs and controls the

[1] "The Great Discovery of the Age." *The North American and Daily Advertiser* (Philadelphia, PA), June 5, 1844. Page 2. Digitized by *19th Century U.S. Newspapers*.
[2] Ibid.

operation of a simple and compact piece of mechanism, styled the register, which at the will of the operator at the point of communication, is made to record."[3]

In its earlier forms, this "register" etched the incoming messages of Morse code into a paper tape, and operators then translated these physical messages back into letters. For this reason, some scholars have concluded that "with their desk jobs, obscure electrical apparatus, and complicated codes, telegraph operators seem to have more in common with modern-day technical workers than with most of their contemporaries."[4] Though this is certainly true, it wasn't long until a more simultaneous interaction with telegraphic technology emerged.

As their expertise grew, "operators listening to the clicking of the register mechanism hour after hour began to recognize the sound of individual letters and realized that they could read messages without looking at the tape," in a practice that they called "sound reading."[5] Soon, the machine was modified to replace the visual "register" with an auditory "sounder," which energized and released an electromagnet mounted on a lever. Thus, the sounder received slow and fast clicks corresponding to dots and dashes, as the sending operator used their "key" to close and open the circuit.[6]

As more and more women came to work, "key and sounder" telegraphy brought new meaning to the 1844 description that telegraphic messages were mediated through the "pleasure" of the operator. According to Lewis Coe, a twentieth-century telegrapher,

[3] Ibid. Emphasis added.
[4] Thomas C. Jepsen, *My Sisters Telegraphic* (Athens, Ohio: Ohio University Press, 2000), 194.
[5] Lewis Coe, *The Telegraph: A History* (Jefferson, NC: McFarland & Company, 1993), 66.
[6] Ibid., 71.

"the stream of dots and dashes rolled from the sounder with an almost musical cadence."[7] As the sending speed increased, Coe explains, many short words could be recognized instantly by their complete sound, rather than that of individual letters, and a new culture of telegraph operators with a very specific skillset was born: a group of people, connected by a physical web of wires, whose shared "language" transcended the boundaries between multiple sensory experiences—especially sight, sound, and touch.

Within the telegraphers' "on-line" community, offices that had slower traffic were often grouped together on the same wire, which meant that each station heard all of the traffic going to the others.[8] Similarly, since many operators worked the same line every day, they got to know their fellow operators—of all or any possible genders—quite well. Not only did they have polite conversations when traffic permitted,[9] but their multi-sensory interactions were uniquely intimate and personal. As Edwin Gabler describes in *The American Telegrapher: A Social History, 1860-1900:*

> Even so seemingly rigid and impersonal a form of communication as Morse code, in the hands of its practitioners, was in fact a language spoken in accents. Each telegrapher had a distinctive way of sending that set him or her off from another, and experienced receivers could detect the subtle variations in style as readily as they could the peculiarities of a human voice.[10]

The sounder mimicked the sending operator's physical movements on their key so well, that the receiving operator could, in turn, recognize the sound of a specific colleague's style. Many telegraphers claimed to be able to identify an unknown operator's

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[7] Ibid., 69.
[8] Ibid., 72.
[9] Edwin Gabler. *The American Telegrapher* (New Brunswick, NJ: Rutgers University Press, 1988), 80.
[10] Ibid., 79-80.

personality, or even gender, based on the way they tapped out their code. In 1891, the magazine *Western Electrician* asserted that: "Ordinarily a [male] operator can tell a woman [operator] the moment he hears her working on the wire […] He tells by her touch on the key. Women, as a rule, telegraphers say, do not touch the key of their instruments as firmly as men do."[11]

Consequently, the nineteenth-century practice of operating the electric telegraph was uniquely embodied in a way that formed tight-knit communities and relationships. This chapter will examine and compare the short novels *Wired Love: A Romance of Dots and Dashes* by Ella Cheever Thayer (1880) and *In the Cage* by Henry James (1893). In doing so, I argue that although male nineteenth-century writers theorized that women working as telegraph operators were tethered to the wire in a way that separated them from the "real" conversations of the outside world, accounts by women themselves suggest that female telegraphers were liberated by their bourgeoning place in the technological workforce. In fact, early feminists celebrated the non-traditional relationships, romances, and opportunities that became possible "over the wire." Ultimately, I will conclude that even though women who were either working-class, early feminists, or both, were the minority of nineteenth-century telegraphers, their work centralizes them within fin-de-siècle revolutions in technology and the corresponding integration of empirical thinking into everyday life.

[11] *Western Electrician*, 1891. Qtd. in Tom Standage, *The Victorian Internet* (New York: Walker and Company, 1998), 134.

According to Thomas Jepsen in *My Sisters Telegraphic*, the percentage of female telegraph operators in the United States increased from roughly 4% in 1870 to, at the very least, 21% in 1920. This made "telegrapher" the third most common source of employment for women, behind only "domestic servant" and "teacher," respectively.[12] Furthermore, Jepsen points out that the census in the late nineteenth century was notoriously incomplete,[13] and "anecdotal accounts from the late nineteenth century often show much higher percentages of women employed as telegraphers than the census figures indicate."[14] In European countries, too, these numbers were considerably higher than in the United States, and possibly even higher than official records indicate. The percentage of female telegraph operators (out of the full pool of men and women) in England was 30% in 1870 and increased to approximately half of the telegraphic workforce in the span of a few years.[15]

Gabler describes a variety of circumstances, beyond the simple presumption of "working class origins," that prompted women to pursue telegraphy as a trade. He mentions that "those without family, or who struck out on their own"[16] found telegraphy particularly appealing. Similarly, Jepsen agrees that "Many women who became telegraphers in the nineteenth century did not follow the standard pattern of being supported first by a father and later by a husband. They often came from a family with an

[12] Jepsen, *My Sisters Telegraphic*, 53.
[13] Jepsen cites Margo Anderson's "The History of Women and the History of Statistics." *Journal of Women's History* 4.1 (1992): 14-36.
[14] Jepsen, *My Sisters Telegraphic*, 53.
[15] Ibid., 59-60.
[16] Gabler, *The American Telegrapher*, 128.

absent or irregularly employed father."[17] I would suggest, additionally, that descriptions of women who "struck out" or went against the "standard path" of financial support has even more explicit meaning. Female telegraphers had other, clear and compelling motivations for going to work beyond necessity or misfortune; the rise of the female telegraph operator coincided with the rise of the New Woman, and more specifically the Suffrage movement, in the late nineteenth century.

This is apt when considering one of the nineteenth century's most well-known novels about telegraphy, *Wired Love* by Ella Cheever Thayer. This story, about a female telegrapher who fell in love "over the wires," has been analyzed in many academic works on telegraphy over the past 50 years, including Edwin Gabler's (1988) and Lewis Coe's (1993) studies; Tom Standage's popular nonfiction book *The Victorian Internet* (1998); Thomas Jepsen's *My Sisters Telegraphic* (2000); and Mark Goble's article "Pleasure at a Distance in Henry James and Others" in *English Literary History* (2007).

Although little information is available about Thayer's personal background, there are definitive records of two aspects of her life: she was a Boston-based telegrapher (listed in *The Boston Directory* of 1879 as a telegraph operator at the Hotel Brunswick in Boston[18]), and, she was an American Suffragette. As reported by Bettina Freidl in *On to Victory* (1987), a compilation of women's suffrage plays, Thayer's writing was arguably the first nineteenth-century fiction in Britain or America to portray "Marriage as an emancipated relationship between equal partners," an approach "that would need to rely

[17] Jepsen, *My Sisters Telegraphic*, 50.
[18] *The Boston Directory* (Boston: Sampson & Murdock Company, 1879), page 892. Digitized by HathiTrust.

on the willingness of husbands to support their wives' emancipatory efforts."[19] This is certainly true of Thayer's 1880 novella, *Wired Love,* which I will discuss later in this chapter. However, previous studies of Thayer's work have not fully put *Wired Love* in context with her other feminist writings; I will first contextualize Thayer's "telegraphic romance" novel among her groundbreaking "suffrage drama," *The Lords of Creation,* written and performed in 1883.

The Lords of Creation men we call / And they think they rule the whole

To analyze *The Lords of Creation,* it is first important to understand that the play takes its title from a long and argumentative history of dramatic works whose characters used the phrase "The Lords of Creation" to satirize moral hypocrisy among men in power. This phrase was commonly used in plays that critiqued the sense of entitlement not only tolerated, but encouraged, among upper- and middle-class white men (the "lords") throughout the history of the largely Christian countries in Europe and America ("of creation"). One of the earliest archival instances of this phrase is in the 1784 play *The Mausoleum*[20] by English biographer and poet William Hayley. In this short drama, a female character responds to a man who calls her "wanton" by saying:

[19] Bettina Friedl, "A Very New Woman," *On to Victory: Propaganda Plays of the Woman Suffrage Movement* (Boston: Northeastern University Press, 1987), 24.
[20] Thanks to Chris Pound for helping me find this citation. This may or may not be the earliest usage of the phrase, but it was the earliest one accessible to us in archival material.

> You judges of nature, and lords of creation,
> Howe'er you pretend to profound speculation,
> Are exceedingly apt your wise selves to deceive
> In the judgments you pass on the daughters of Eve.[21]

Hayley integrated the phrase into dialogue that, whether it reflected his own personal views or not, points out that perceived male superiority is only that—*perceived*—and furthermore, suggests that society has embraced a double standard of accepting men's sexual freedoms but rejecting the same behaviors in women. Such usages continued to appear, both in the theatre[22] and in popular print,[23] through the end of the eighteenth century.

By 1837, an anonymous writer in Scotland published the 37-page satirical poem[24] "Vir Sum; or, The Lords of The Creation," the title of which ("I am Man") clearly employs the same criticism of Creation's so-called superior "Lords." The poem critiques men's political incompetence and social hypocrisy in many ways, but excoriates the sexual double standard in particular:

> And, though we govern all the world, 'tis true,
> Ourselves we cannot always govern too
> But, whilst we boast ourselves the lords of all,
> We're most obedient at our passions' call[25]

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[21] William Hayley, *The Mausoleum*, 1784, Act I Scene I. Digitized by Eighteenth Century Collections Online. https://quod.lib.umich.edu/e/ecco/004856901.0001.000/1:23?rgn=div1;view=fulltext

[22] The 1795 musical "The Adopted Child," written by Samuel Birch with music by Thomas Attwood, used the phrase similarly.

[23] London's *The Ladies Magazine* reprinted the song, out of context, that same year, which referred to "the lords of creation" as "a fuss and a bother."[23]

[24] For this insight, I am indebted to Lydia E. Craig, who introduced me to the poem's "devastating lines about male entitlement. I repeat, devastating." https://twitter.com/lydiaecraig/status/1291220312265195520?s=20

[25] *Vir Sum; or, The Lords of Creation: A Satire* (Edinburgh: William Oliphant Jun & Co., 1837), 6.

Meanwhile, in America, the song "The Lords of Creation Men We Call" (1838) was widely circulated. Though it was shorter and significantly less incisive than "Vir Sum," it shared many of the same feminist ideas, and ended with a rallying cry that encouraged women to "manage it so that the very last man / Shall the very last woman obey."[26] Altogether, these numerous works set the stage for male satirists to retaliate, most notably in the 1850s.

In 1851, caricaturist John Leech began a recurring series of cartoons in *Punch*, called *The Ladies of Creation* or sometimes *The Ladies of the Creation.* Although the interplay between the conservative middle-class readers of *Punch* in London, England, and Suffragettes in Boston, Massachusetts three decades later may not at first be apparent, the historical resonance of the phrase Ella Thayer selected for her 1883 play's title establishes its deeper cultural embeddedness in nineteenth-century Britain and America.

The online archive of John Leech's cartoons provides one or two critiques of feminism prior to the 1850s, but as the Suffragettes themselves were aware, Leech and other artists for *Punch* began critiquing American Bloomerites[27] en masse in direct response to the Boston Bloomerites' infamous appearance in 1851. During the 1851 Fourth of July Procession in Lowell, Massachusetts, just outside of Boston, nearly 200 young women from the Lowell Cotton Mills made a public appearance wearing their bloomers. Unfortunately, this event did not raise the type of awareness that the women's

[26] Adaptation and Arrangement for Piano Forte by JSR. "The Lords of Creation Men We Call: A Song." Philadelphia: A. Fiot, 1838.
[27] As evidence that the Bloomerites being satirized were American, see Leech's cartoon titled "Bloomerism—An American Custom," in *Punch,* Vol. XX, (London: Broadway and Evans, 1851), 142.

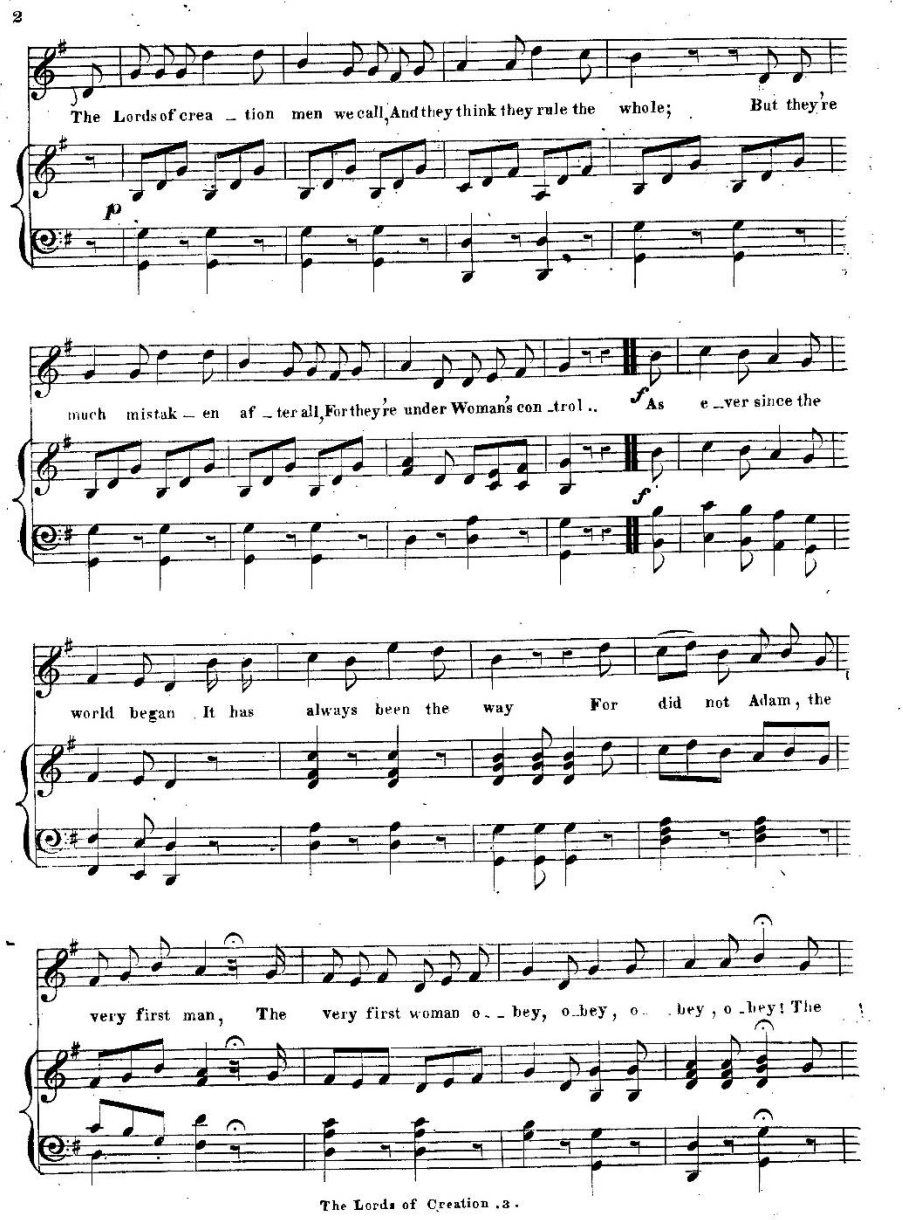

Fig. 2.1. Sheet music for "The Lords of Creation Men We Call: A Song" (1838).[28]

[28] Ibid.

rights movement had intended. In her *History of Massachusetts in the Woman Suffrage Movement* (1881), Harriet H. Robinson, vocal Suffragette and accomplished millworker's rights activist, lamented that "Even the London *Punch* thought the 'American Bloomerites' worthy the attention of its artist." Furthermore, she explained to younger Suffragists (like her colleague Ella Thayer, who was born in 1849) that during the 1850s, bloomers were "finally done to death like many a better fashion, by the ridicule of the newspapers and the boys in the streets."[29] Many male artists would critique the New Woman for decades to come, but John Leech drew over a dozen caricatures of bloomer-clad women fighting, laughably, for emancipation throughout 1851.

That year, Leech produced an entire sequence on "Bloomers" or "Bloomerites" (both words were used as a noun to describe women who wore trousers) and "Bloomerism" (the rise of the Bloomers' early feminist beliefs more broadly). These cartoons were published sporadically throughout various installments of *Punch* from July to December, and each new image satirically portrayed a woman or women participating in male-coded activities. For example, one cartoon depicts a woman in bloomers, down on one knee proposing to a man. The caption says: "Results of Bloomerism—the Ladies Pop the Question," with the explanation: "*Superior Creature.* 'Say! Oh, say, dearest! Will you be mine?' &c. &c."[30]

[29] Harriet H. Robinson, *Massachusetts in the Woman Suffrage Movement: A General, Political, Legal, and Legislative History from 1774 to 1881*, second ed (Boston: Roberts Brothers, 1883), 14. Digitized by the Library of Congress. http://www.loc.gov/resource/rbnawsa.n8049
[30] *Punch*, Vol. XXI, (London: Broadway and Evans, 1851), 192.

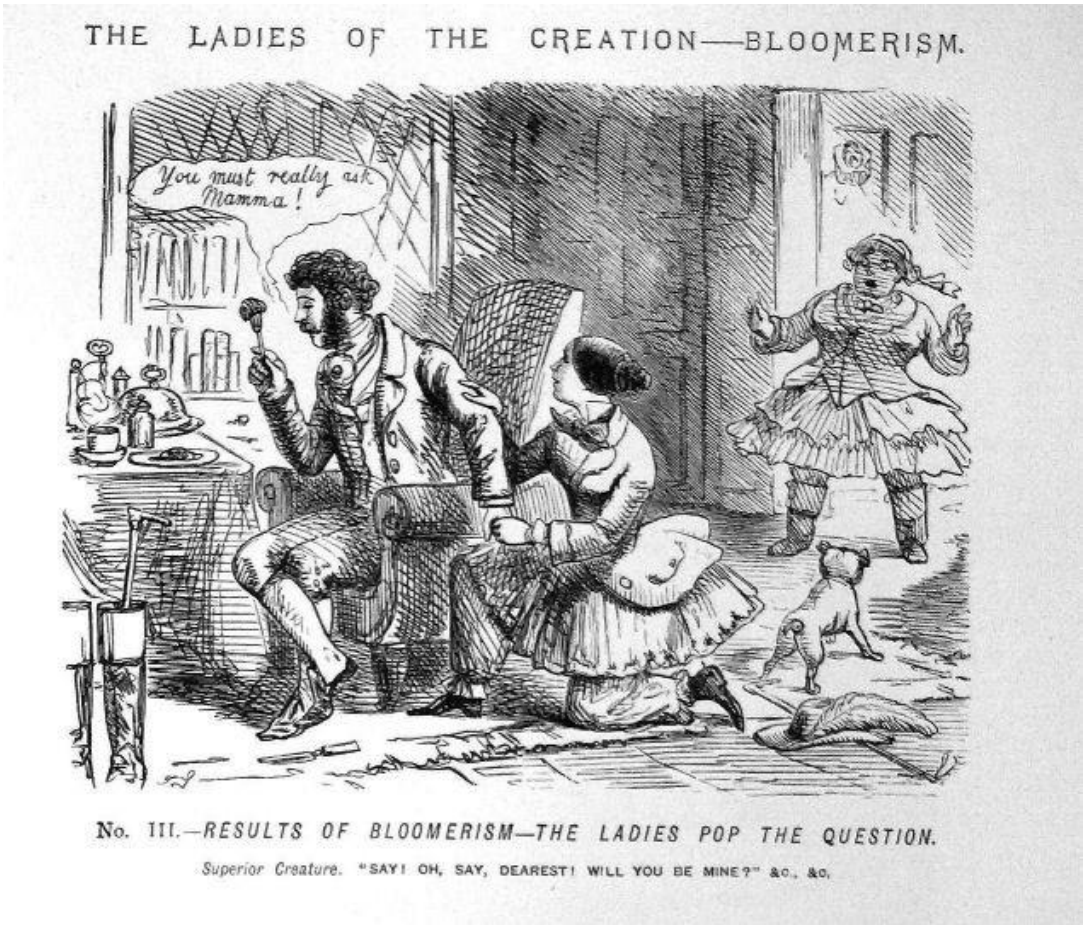

Fig. 2.2. One of John Leech's many "Ladies of Creation" cartoons about bloomerism. The caption reads: "Results of Bloomerism—The Ladies Pop The Question: Superior Creature. 'Say! Oh, say, Dearest! Will you be mine?'"[31]

In this way, Leech's cartoons epitomize the patriarchy's fear that the institution of heteropatriarchal marriage would be upended, if not completely destroyed, by women's rights. In response to the Bloomerite's marriage proposal, the man in the cartoon replies: "You must really ask Mamma!" and, in a parody of the scandalized father, an aghast

[31] The image included here is the artist's original rendering, which bears slight differences to the ones published in *Punch.* See John Leech, "Ladies of Creation—Bloomerism 3" (1851), *John Leech Archive,* http://www.john-leech-archive.org.uk/1851/ladies-of-creation-bloomerism-3.htm

older woman (also in bloomers) gawks at the couple from the doorway. In John Leech's original artwork, [32] the ironic all-caps title above the image proclaims: "The *Ladies* of the Creation!" Clearly, the message of the cartoon is that the family structure which many politicians, artists, and everyday people felt held the nineteenth-century household together, would become a laughingstock if women gained more agency, both emotionally and financially.

The mockery of the bloomer-clad *ladies* of creation did not end as the 1851 Procession faded from memory. *Punch's* first issue of 1853 opened with a 6-page, 13-cartoon series of illustrations that accompanied a short satirical article called: "The Ladies of the Creation; or, How I was Cured of Being a Strong-Minded Woman."[33] Thanks to the historical research published by nineteenth-century activists such as Harriet H. Robinson, this mid-century cartoon remained open to counter-critique by American feminists throughout the latter half of the 1800s, and kept the trenchant valence of "the lords of creation" in usage.

Leech's 1853 illustrations, which repeated the title "The Ladies of the Creation" in capital letters across the tops of all six pages, continued to harangue the idea that women could ever be "Superior" creatures to men by scoffing at the notion that women were even competent enough to accomplish the same tasks that men did. Leech depicted bloomer-wearing women performing poorly in a variety of masculine tasks, such as

[32] In John Leech's original artwork, shown in Fig. 2.2, the caption says: "The Results of Bloomerism—The Ladies Pop the Question." However, the editors of *Punch* added to his description: "One of the Delightful Results of Bloomerism.—The Ladies Will Pop the Question."
[33] *Punch,* Vol. XXIV (London: Broadway and Evans, January to June 1853), vi-xvi.

serving as a train's "conductress"[34] and captaining a ship.[35] Henry J. Miller's 2009 study of Leech's oeuvre argues that "Leech was a lover and depicter of beauty," which was "reflected by the young women and girls who littered his social sketches."[36] Perhaps this is why his drawings were so critical of women who strayed from gender norms of fragile femininity; after all, *Punch* literally promised, in its first issue, to serve a moral purpose and "repudiate" behavior that was ungentlemanly or disruptive to the domestic sphere.[37] Furthermore, the specific tasks which Leech, in *Punch*, portrayed as "unwomanly" were linked to scientific and technological developments of the early-to-mid nineteenth century, and his counter-argument against the feminists was that women could not keep up with the modern age in the same way that men could. For example, his inept train "conductress" and sickly lady ship captain were engaging with technology that relied on steam power to shrink distances between physical spaces. The ultimate result of such technologies—making travel faster and easier both for people and shipping mail[38]—was similar to the "annihilation of space and time!" provided by the telegraph. As the second half of this chapter will show, although Leech and *Punch* were British, popular magazines from London were widely circulated; Americans like Ella Thayer would have known the satirical magazine well.

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[34] Ibid., xiii.
[35] Ibid., xii.
[36] Henry J. Miller, "John Leech and the Shaping of the Victorian Cartoon: The Context of Respectability" *Victorian Periodicals Review* 42.3 (Fall 2009), 270.
[37] The "Moral of Punch" (Volume I: July 1841, page 1) explains that Punch (the character) is "somewhat of a domestic tyrant; for his conduct is at times harsh and ungentlemanly to Mrs. P. [...] We wish it to be understood that we repudiate such principles and conduct."
[38] See Bernhard Siegert, *Relays: Literature as an Epoch of the Postal System*, Trans. Kevin Repp (Stanford: Stanford University Press, 1999).

Fig. 2.2. One of Leech's many caricatures of "The Ladies of (the) Creation."[39] Her podium reads: "You are particularly requested not to speak to the Woman at the Wheel."

In this way, Thayer did not write her play in a vacuum or without prompting; Bettina Friedl has suggested[40] that Thayer's notable "suffrage drama" was not only informed by Harriet H. Robinson, but a direct response to Robinson's history of Massachusetts, and the challenge she posed to her fellow Suffragists. Though Robinson praised modern novels with strong heroines, which had recently "uplifted the sphere of woman's life," she was disappointed that "The drama speaks too feebly on the right side of the woman question. No modern successful dramatist has made this 'humour' of the

[39] *Punch* Vol. XXIV, xii.
[40] Bettina Friedl, "Ella Cheever Thayer: Lords of Creation," *On to Victory: Propaganda Plays of the Woman Suffrage Movement* (Boston: Northeastern University Press, 1987), 19.

times the subject of his play." Robinson felt that a suffrage drama would not only call fellow suffragists to action, but additionally, bring about real social and political change. "It is to be regretted that the stage still continues to ridicule the women's rights movement and its leaders," she wrote. "For, as Hamlet says: 'The play's the thing, Wherein I'll catch the conscience of the king.'"[41]

With all this clearly in her mind, Ella Thayer wrote *The Lords of Creation: Woman Suffrage Drama in Three Acts* in 1883. Although one of the few contemporary sources to publish Thayer's script is the 1986 collection *On to Victory: Propaganda Plays of the Woman Suffrage Movement*, even the editor of that collection, Bettina Friedl, suggests that the play "is not, strictly speaking, a suffrage *propaganda* play. It pleads for woman suffrage, to be sure, but […] In spite of the obvious didacticism of the dialogue, avoids the danger of being a mere tract by giving the arguments plausibility through plot."[42]

The play follows an upper-middle-class American family: Mr. and Mrs. Grovener, with their three young adult children, Eugene, Kate, and Alice. Eugene is an unmarried playboy "gentleman" who has failed in all his responsibilities and accrued mountains of debt; Kate is a clever, independent woman who believes in Women's Rights; and Alice is the more traditional sister who simply seeks a rich husband. Following Friedl's reasoning, I would suggest that rather than a propaganda play, Thayer's drama is a comedy, with all the "humour" of the matter that Robinson invoked.

[41] Robinson, "Massachusetts," 169.
[42] Friedl, "Ella Cheever Thayer," 20.

The Lords of Creation is filled with mistaken identities and clever one-liners, and, in true comedic form, the plot builds up to, and ends happily with, a quadruple marriage.

The play begins with a scene featuring two of the Grovener family's servants, Jennie and Jim. Jim, the coachman, is in love with Jennie, and she loves him in return. However, Jennie, like her mistress Kate, believes in Woman's Rights and seeks to convince Jim to treat her equally in a marriage before she agrees to be his wife. Similarly, a local physician named Dr. Endicott—listed in the playbill as "A true Man"—is in love with Kate and agrees with her views on Woman's Rights, but she mistakenly believes that he has professed his love to someone else. Alice, the traditional sister, is perfectly satisfied with her suitor Mr. Doughlass, who relies on his wealth to compensate for his awkward demeanor and phonetically transcribed speech impediment.[43] And lastly, in somewhat of a twist, the prodigal son Eugene has a secret: he found real love once in his past, but did not marry his lover, Lizzie, because she was only a seamstress.

Eugene's lifetime of shortcomings serves to critique the idea that men are inherently morally superior to women. In the very first scene of the play, Jennie is searching for Eugene when she exclaims: "…and now where is Mr. Eugene? Not here, of course, and I must be running all over the house to find him. All a body has to do is to wait on him, that is what he thinks! For he is a lord of creation, he is! […] Dear me, what a terrible thing it must be to think yourself so superior, all on account of your sex!"[44] In

[43] It is ableist and unacceptable to mock someone for having a speech impediment. Nonetheless, in Thayer's play, Doughlass's disability is clearly intended to make him laughable and unattractive to the audience.
[44] Ella Cheever Thayer, *The Lords of Creation*, in *On to Victory: Propaganda Plays of the Woman Suffrage Movement* (Boston: Northeastern University Press, 1987), 86.

this way, Jennie immediately assigns Eugene to the "lords of creation" category that so many early feminists were familiar with. It could be argued that he is a bit of a "type," the kind of capital-M "Man" that "Vir Sum" criticized. Yet, Friedl explains that "To theater audiences of the late nineteenth century […] who were used to the improbabilities of popular melodrama and the undisguised didacticism of temperance plays and other propaganda drama, *Lords of Creation* may well have appeared almost as stage realism"[45] Indeed, Eugene's character has depth and complexity; he could be compared to Fred Vincy in *Middlemarch.* Thayer realistically depicts how Eugene's continual gambling causes emotional pain and financial suffering to the people he loves most, and yet, he proves time and again that he is unable to change his behavior.

When Kate mourns that "my brother is sought only for the purpose of gracing champagne suppers and disgracing himself," their other sister, Alice, replies matter-of-factly that "A young man must sow his wild oats." This is the kind of setup that Thayer continually employs to give her arguments both logical plausibility, as Friedl explained, and practical application to scenarios that many theatregoers may experience in everyday life. The conversation surrounding her brother Eugene allows Kate to point out the flaws in patriarchal counterarguments to the feminist cause. When she replies that "A young lady is not allowed that privilege," of sowing wild oats, Alice's suitor, Mr. Doughlass, immediately responds that "a lady is of course above such things."[46] Since Thayer's play has already established Mr. Doughlass as the voice of tradition who has "more money

[45] Friedl, "Ella Cheever Thayer," 20.
[46] Thayer, *Creation,* 93.

than brains,"[47] he is immediately flustered and unable to reply intelligibly when Kate responds: "Then in that respect, at least, she must be superior to a man."[48]

Crucially, though, Kate's character adds nuance and moderation to the feminist cause. Friedl argues that Thayer used her work "to present the main anti-suffrage arguments that had become popular at the time of the first debate on woman suffrage in the Senate, namely, that the vote for women would destroy the home, that women were sufficiently represented by men, and, most important of all 'that women should not vote or hold office because they could not.'"[49] For this reason, the comedic genre which pushes all of its characters towards a return to domestic married bliss, is especially effective. Kate is in love with a man who is a good and respectable match for her, and her argument is not against marriage, but "against making marriage a trade, degrading it to a means of support."[50] Friedl goes so far as to argue that Kate views marriage as "socially sanctioned prostitution,"[51] though in the play, her views are considerably less explicit. Kate simply states that she is "not afraid to say to any one that I had rather earn my money than have it doled out to me as a favor grudgingly bestowed."[52]

In the middle of the play, Kate is in a room with Dr. Endicott and her brother Eugene, when her mother's seamstress, Lizzie, enters. For seemingly no reason Lizzie becomes horrified and almost faints, prompting Kate to come to her aid. In confidence,

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[47] Ibid., 84
[48] Ibid., 93
[49] Friedl, "Ella Cheever Thayer," 19.
[50] Thayer, *Creation,* 88.
[51] Friedl, "Ella Cheever Thayer," 20. Note that these are Friedl's words, not mine, which rely on an outdated and damaging opposition to sex work and sex workers.
[52] Thayer, *Creation,* 89.

Lizzie confesses that "the gentleman" she saw in the room once pledged to marry her, but then abandoned her completely. Kate assumes throughout the play that Lizzie was speaking of Dr. Endicott, and thus, rejects the Doctor when he proposes marriage. The audience, however, is soon made aware of Kate's mistake (even though she herself is not), and when the play reaches its final act, the characters quickly sort out their confusion. It easy to predict that Kate ends up accepting the doctor's marriage proposal; in his own words, he wants to marry her not only despite her strong-mindedness, but "*because* [she is] strong-minded."[53]

Lizzie, on the other hand, earns a happy ending as well, and in doing so also redeems Kate's brother Eugene. When he is reunited with the woman he so grievously wronged, Eugene becomes truly penitent for the first time. He is even moved to change his irresponsible ways when he experiences the unwavering love that a wife can, according to Thayer, provide. When Lizzie admits that Eugene still has her heart, he replies: "Do you mean to say that you love me now, ruined and disgraced as I am, soon perhaps to be driven from my father's door, and go forth into the world penniless and alone!" Lizzie herself reminds the audience that as a seamstress, she is no stranger to being poor, but she nonetheless retorts: "How little you know of woman's love! [...] in the time of darkness and sorrow a woman's love never fails."[54]

Despite Lizzie's humble working-class background, Thayer depicts her as a morally strong woman who epitomizes the domestic values that the opposition to

[53] Ibid., 113. Emphasis in original text.
[54] Ibid., 111-112.

Women's Rights were so afraid of losing. Eugene was allegedly born "superior," with the advantages of being a wealthy and educated man who is deemed fit to lead both the country and head a family; and yet, he clearly cannot do either of those things. Conversely, Lizzie is a poor seamstress with no family connections, but she is both responsible enough to care for herself, and reform a ruined man. By the end of the play, Lizzies' example proves to the entire Grovener family that not only were their ideas of the "superior sex" incorrect, but that they wrongly believed in "false ideas of caste" as well.[55] Mr. and Mrs. Grovener embrace Lizzie as a their son's fiancée, and even Eugene himself rescinds his false sense of superiority: "And to think that I once set myself up as so far above her, and plumed myself on being a lord of creation,— I, a poor, weak fool, not worthy to touch the hem of her garment."[56]

Although Lizzie's socioeconomic status as a seamstress is still below that of a middle-class telegrapher, *The Lords of Creation's* subplot about the rights and virtues of the working class is significant to Thayer, as both a telegrapher and a suffragette. Jepsen explains that despite its name, in the Brotherhood of Telegraphers, one of the earliest American labor unions for telegraph operators, "women served on committees and had an equal voice in determining policies." Since labor unions fundamentally believed in fair pay for workers, "Supporters of the women's suffrage movement began to take notice of the [Brotherhood's] support of equal rights."[57] Just as Harriet Robinson mobilized

[55] Ibid., 114.
[56] Ibid., 111.
[57] Jepsen, *My Sisters Telegraphic,* 160.

support for both female millworkers and mill laborers more broadly, telegraphy unions did the same, empowering telegraphers regardless of gender or background.

Lizzie is not the only working-class character to challenge outdated beliefs that equated poverty (or, as in Chapter 1, disability) with moral inferiority. Lizzie's character is a more conservative complement to that of Jennie the chambermaid. Thayer begins by presenting Jennie as an argumentative character who is resistant to men at every turn. Jim interprets her behavior to mean that she believes men are inferior to women—the patriarchy's worst fear. However, when he accuses her of this belief at the end of the play, Jennie clarifies that she "never said anything of the kind" but only "expressed her sentiments." Here, Jennie's "sentiments" refer partly to her belief in equality, but also, invoke two particular observations which she has made about the Grovener family during the past year of serving them. First, Jennie knows that Kate has made wiser life decisions than her brother Eugene; this is a point of fact by the end of the play. Second, she sees how Kate's resourcefulness could prove helpful to Mr. Grovener in managing the family's funds, especially since Eugene does nothing but harm the family's business affairs.

Kate's intelligence turns out to be crucial to the economic resolution of the play. In addition to the various plot points about relationships and marriage, the play reaches its climax when Mr. Grovener becomes so ill from suffering over Eugene that he is unable to attend to the family's finances. While he recovers, the family has no choice but

to allow Kate to take over on his behalf. As the family's representative, she repays all of Eugene's debts, and sets her family back on a path of virtue.[58]

In this way, it is clear by the end of the drama that Jennie is not irrational, (as Jim has accused her of "flying off the wall" repeatedly). Both she and Kate reiterate many times and in many ways that women's rights activists are not attempting to dissolve traditional marriage structures or reverse social norms so that men become the "inferior" sex. When assessing the way that Jim explained her views to Dr. Endicott, Jennie says: "You went and made the doctor think that I not only wanted my rights, which I do, but yours, too, which I don't. [...] I only want my share, that's all."[59] In this way, Thayer makes it so that even Jennie, the most subversive character of her play—a serving woman who dares to think herself intelligent, and in no hurry to marry a man for financial support—is palatable and reassuring to potential adversaries. Of course, from a twenty-first century perspective, there are many elements of the play that should be criticized, and there are even many elements that disenfranchised women with every right to be angry would have disagreed with. However, at the time, Thayer's play offered an important compromise between both sides of the Woman Question. Simultaneously, the show affirms women's frustration that "the lords of creation" are afforded freedoms that women are not, while it also offers the possibility that marrying a good woman can tame a bachelor's heart.

[58] Thayer, *Creation*, 114.
[59] Ibid., 109.

Literary Telegraphers: Wired Love versus *In the Cage*

Within the telegraph office itself, some scholars have suggested that romance between telegraphers may have been inevitable, since most telegraph operators, both male and female, were young and unmarried.[60] According to Edwin Gabler in *The American Telegrapher (1860-1900)*, most female operators were in their late teens or early twenties; the 1880 census put average age of an American telegrapher at 21.8 years.[61] Telegraphy was a learned skill that required special training, but there were multiple avenues that enabled women from a variety of backgrounds to enter the trade. As Gabler explains, aspiring telegraphers could learn Morse code at the village depot--though records do not indicate where and how Thayer learned telegraphy, her main character in Wired Love takes this route. Alternatively, they could enroll in business schools or telegraph colleges, or simply apprentice themselves into the craft.[62]

Though the late nineteenth-century lacked the terminology we would use today, Jepsen explains that telegraphers were part of the "upwardly mobile lower middle class." They were, he writes, "information workers and technicians well before these […] job classifications existed."[63] Though both young men and young women in telegraphy were usually unmarried, for women, the job of "telegrapher" was often a temporary one, since women who got married often returned to the domestic sphere. However, there were always exceptions to this rule, including a minority of women who viewed telegraphy as

[60] Gabler, *The American Telegrapher*, 108.
[61] Ibid., 108.
[62] Ibid., 112-113.
[63] Jepsen, *My Sisters Telegraphic*, 39.

a lifelong career, and/or, who moved up the ranks at the telegraph office into leadership and managerial positions.[64]

The romance of the telegraph was not limited to the people working there, however. Jepsen further explains that public awareness of the telegrapher's role created the literary genre of the "telegraphic romance."[65] These stories followed a young female telegrapher who found love and livelihood in her occupation, usually carrying on a relationship through the means of the telegraph lines. Jepsen characterizes the telegraphic romance genre as "a form of sentimental novel of the type that enjoyed great popularity throughout the nineteenth century as a result of increasing literacy and a predominantly female readership."[66] He hypothesizes that these stories which feature "love" over the wires were particularly appealing because they offered "the possibility of romantic involvement with an unseen stranger, carried out by means of […] the technological wonder of the age."[67]

However, considering Thayer's life and work more broadly reveals new avenues for analyzing *Wired Love: A Romance of Dots and Dashes,* which is not only her most often-studied work, but one of the most often-studied telegraphic romances. It is true that her novella is built around a romance plot, and that it celebrates modernity and telegraphy, but much like *The Lords of Creation, Wired Love* praises the skills and smarts of hard-working women and covertly presents an argument in favor of allowing women to work even if they do get married. In fact; it suggests that marriages formed around the

[64] Ibid., 50.
[65] Ibid., 118.
[66] Ibid.
[67] Ibid.

wire were even more powerful than those formed through traditional mean; the telegraph, as an apparatus that blurred the distinctions between sight, sound, and touch, placed the female telegrapher in the role of both a technological and emotional "medium," whose sending and receiving of Morse code required her to physically *feel* messages between multiple people and spaces, whether she inhabited those spaces or not. Furthermore, the auditory and tactile nature of these telegraphic conversations created a unique experience of embodiment which felt even more physically powerful than a real-life interaction.

Although the book is out of print today, *Wired Love* remained popular among telegraphers until the mid-1890s,[68] and it reinforced nineteenth-century anecdotes, like those found in *Western Electrician,*[69] and other personal accounts by nineteenth-century telegraphers,[70] of on-line romances that culminated in marriage.[71] More recently, it has seen a resurgence in popularity not only academically, but among everyday readers. After it was digitized by Google,[72] many online critics and journalists, from *The Huffington Post*[73] to the *Daily Mail,*[74] found the general plotline startlingly relatable. In the words of

[68] Jepsen, *My Sisters Telegraphic,* 136.
[69] "Romances of the Telegraph," in *Western Electrician,* 5 Sept. 1891. Ed. W. A. Kreidler. Vol 9. (Chicago: Electrician Publishing Company, 1891), 130-131.
[70] Tom Standage, *The Victorian Internet* (New York: Walker and Company, 2007), 130.
[71] However, for work that debunks many "anecdotes of the telegraph," see A. Nicholas Cobblah's forthcoming essay based on his 2018 NAVSA talk, "Race and the Transatlantic Circulation of Anecdotes of the Telegraph." Though some stories of "love over the wires" can be verified, virtually every story of a person of color "duping" (or as millennials might say, "Catfishing") a white spouse into marrying them cannot be backed by any evidence. Cobblah demonstrates that this sort of racialized anecdote was pure fiction, designed to support racist attitudes.
[72] Paula Findlen, "How Google Rediscovered the 19th Century," *The Chronicle of Higher Education,* July 22, 2013.
[73] "Wired Love: A Romance of Dots and Dashes," *The Huffington Post,* July 26, 2013.
[74] Lucy Waterlow, "Suppose that Mysterious Stranger is Not Who You Think," *Daily Mail Online,* July 26, 2013.

blogger Clive Thompson, *Wired Love* is "a tale of catfishing,[75] OK Cupid, and sexting … from 1880."[76]

However, the narrative thread about a virtual flirtation between two strangers is played out before the novel is even halfway through, and the second half of the book is filled with a series of additional comedic twists that paint the couple's historically and technologically specific relationship in a more complex and thought-provoking light. On the one hand, their on-line connection is so "real" that they ultimately form a real-life relationship, but on the other hand, the female protagonist's inability to maintain that relationship without Morse code or telegraphic mediation suggests that their love was stronger when it was "invisible." In the next section of this paper, I will analyze five major plot points in *Wired Love* that indicate the female telegrapher's online relationships could be even more powerful than in-person romantic interests, and provide her even further opportunities for both personal fulfillment and traditional domestic bliss. Later, I will contrast this depiction against the male fantasy of telegraphic mediumship that Henry James's *In the Cage* provides.

Wired Love follows 19-year-old Nathalie ("Nattie") Rogers, who takes a "more independent, but harder course" after the death of her father and subsequent financial struggles of her mother. Initially, she is a very modern woman indeed; she has no interest in love, "for she was not the kind of girl to sit down and wait for some one to come along

[75] Catfish: "a person who pretends to be someone they're not, using social media to create a false identity, particularly to pursue deceitful online romances." See: Nev Schulman, "Catfish," *NevSchulman.com,* March 15, 2016.
[76] Clive Thompson, "Wired Love," *Collision Detection,* July 24, 2013.

and marry her, and relieve her of the burden of self-support."[77] Thus, when the novel begins, she is completely unaffected by her relationship with her neighbor and potential suitor Quimby, even though she has met him in person. When Nattie's landlady, Miss Kling, insinuates that Quimby admires her and asks if the feeling is mutual, Nattie quickly retorts that, "I have only met him two or three times since that evening you introduced us in the hall, so there has hardly been an opportunity for anything of that kind."[78] Nattie emphasizes that just because they have encountered each other in person, does not mean that they have shared any special relationship or connection.

In fact, Quimby's awkward inability to carry himself through three-dimensional space makes his everyday presence more of a pitfall than anything else. Throughout the story, and to great comic effect, he constantly trips, slips, falls, and breaks or ruins things. In his first appearance, while Quimby is exiting one of the rooms in Miss Kling's apartments, "his foot caught in a rug, he fell, and went headlong down stairs, dragging with him a fire-bucket, at which he clutched in a vain effort to save himself, the two jointly making a noise that echoed through the silent halls, and brought out the inhabitants of the rooms in alarm."[79] His physical presence is a disruption to the world around him, and distracts Nattie from being willing to connect with him, even though she believes he is otherwise honest and clever.[80]

[77] Ella Cheever Thayer, *Wired Love* (New York: W. J. Johnston, 1880), 28.
[78] Ibid., 31.
[79] Thayer, *Wired Love*, 33.
[80] Ibid., 31.

Nattie claims to be immune to romance—until she begins conversing with a charming stranger operating the wire at a country office some fifty miles down the line.[81] When Nattie "meets" her on-line suitor, the mysterious "C at X n," his lack of physical presence is portrayed in stark contrast to Quimby's bumbling. Much to Quimby's chagrin, "C's" virtual interactions leave quite an impression on Nattie. Their correspondence begins with a flirtatious quarrel, in which "C" is sending messages so quickly that Nattie can't understand them: "Notwithstanding all her efforts, she was compelled to 'break'—that is, open her 'key,' thereby breaking the circuit, and interrupting 'X n' with the request, 'Please repeat.'" Nattie, reading into the speed and sound of his response, thinks that the stranger does not express any impatience, "But, alas! Nattie was even now unable to keep up with this too expert individual of uncertain sex, and was obliged again to 'break,' with the humiliating petition, 'Please send slower!'" Teasing her in response, "C" sends Nattie the rest of the message "in such a slow, funereal procession that she was driven half frantic with nervousness in the attempt to piece them together into words."[82] In this initial exchange, it is clear that even though Nattie has never met her on-line acquaintance, and at the time, does not even know his gender or name, for Nattie as a "sound reader," the tempo of the sounder provokes both physical and emotional responses. Unable to interpret a message that "sounds" too quickly, Nattie must physically break the circuit in order to ask "C" to change his pace, and when the sound then comes too slowly, she grows even more distraught. The on-line

[81] Ibid., 10.
[82] Ibid., 11.

interaction causes her "humiliation" and "nervousness," even though her embarrassing encounter with Quimby falling down the stairs yielded only a shrug of her shoulders.[83]

This first major plot point suggests that Nattie is more easily affected by her on-line relationship than she would be by someone whom she encountered in real life. As Nattie's relationship with "C" grows, Quimby becomes more and more disapproving of the rival whom he dubs "the invisible." Yet, even though her exchanges with "C" are still entirely over the wires, Nattie vehemently defends their connection as very real. Quimby asks:

> "But don't you—I beg pardon—but don't you find this sort of thing—'C,' I mean—ghostly, you know?"
>
> "Ghostly!" echoed the astonished Nattie.
>
> "Yes," he replied, with a gesture of his arm that produced an impression as if that member had leaped out of its socket. "Yes, talking with the unseen, you know; I—I beg pardon, but it strikes me as ghostly."
>
> Nattie stared. "What a strange fancy!" she exclaimed. "'C' is very real, and of the earth, earthy to me, I assure you!"[84]

In this moment, Quimby attempts to use the fact that talking with someone who is "unseen" makes that connection somehow non-corporeal and deceptive—that is, "ghostly." However, as Theresa Brennan has explained, "seeing" someone is not the only way to affect them. On the contrary, "sight is perceived as the sense that separates," drawing clear lines between where one individual ends and another individual begins, whereas "the other senses do not."[85] As telegraph operators, Nattie and "C" are, in a way, physically connected by the wire. As Jeffrey Sconce has explained, "The animating

[83] Thayer, *Wired Love*, 31.
[84] Ibid., 82.
[85] Teresa Brennan, *The Transmission of Affect* (Ithaca: Cornell University Press, 2004), 11.

powers of electricity […] gave the telegraph its distinctive property of simultaneity and its unique sense of disembodied presence…"[86] Nattie and "C" hear and feel the results of each other's physical engagement with the key and sounder, which allows them to impact each other's environments even if they are not present in body. Morse code allows them both to feel the physicality of their "spiritual" connection.

As their relationship grows, "C" goes so far as to suggest that, "I hope sometime we may clasp hands bodily as we do now spiritually, on the wire—for we do, don't we?" Nattie agrees: "Certainly—here is mine, spiritually!"[87] In this moment, although the couple do not touch in-person, their auditory conversation allows them to physically and, in their own words, spiritually connect. As Diane Ackerman explains in her 1991 book *A Natural History of the Senses,* "What we call 'sound' is really an onrushing, cresting, and withdrawing wave of air molecules that begins with the movement of any object, however large or small, and ripples out in all directions."[88] "C" moves his key, his movement is transmitted to Nattie's sounder, and when the telegraph clicks in Nattie's office, in Ackerman's terms, "The three bones press fluid in the inner ear against membranes, which brush tiny hairs that trigger nearby nerve cells, which telegraph messages to the brain: We *hear*."[89] Ackerman's description, written over 100 years after *Wired Love,* employs the imagery of the telegraph to illustrate the physical transmission of sound waves that takes place during the embodied process of hearing.

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[86] Jeffrey Sconce, *Haunted Media: Electronic Presence from Telegraphy to Television* (Durham: Duke University Press, 2000), 28.
[87] Thayer, *Wired Love,* 43-44.
[88] Diane Ackerman, *A Natural History of the Senses* (New York: Vintage Books, 1995), 177.
[89] Ibid.

After continuing their correspondence for several weeks, Nattie learns that "C's" first name is Clem, though the two do not exchange surnames. She and her best friend Cynthia Archer ("Cyn") imagine Clem quite romantically, until the second major plot point unfolds. One day, "C" claims to be substituting for another operator at a station on a different wire, but instead, suddenly presents himself at Nattie's telegraph office: "About an hour before the time for closing, […] she became conscious of some one waiting her attention outside, and went forward, scarcely looking at him, expecting, of course, a message. But instead, the individual, who filled the air with a suffocating odor of musk, asked, 'You are the regular operator here, I suppose?'"[90] In this moment, it is particularly interesting that Nattie's first impression of her visitor is not visual—she barely even bothers to look at him—but instead, olfactory. When it comes to smell, Ackerman argues that, "Smells are our dearest kin, but we cannot remember their names. Instead we tend to describe how they make us feel. Something smells 'disgusting' 'intoxicating,' 'sickening,' 'pleasurable,' 'delightful,' […] or 'revolting.'"[91] This is exactly what Nattie experiences at the end of her exchange; when she goes home to tell Cyn what has happened, she describes the man she met as "disgusting."[92]

When Nattie meets her mysterious stranger in person, he does not match her expectations. Although the man is also described as quite ugly, with "hair that insisted on being red" and "teeth all at variance with each other,"[93] Nattie is primarily put off by the scent of his musk; his bad looks are only secondary. "Could she reconcile "C," her

[90] Thayer, *Wired Love,* 94.
[91] Ackerman, *A Natural History of the Senses,* 7.
[92] Thayer, *Wired Love,* 106.
[93] Ibid., 94.

visionary, interesting, witty and gentlemanly "C" of the wire, with this musk-scented being of greasy red hair, cheap jewelry and vulgar manners? Impossible!"[94] As someone who has grown to read situations through the way they feel and sound, she struggles to reconcile her olfactory and visual experiences with what her other impressions have suggested to her.

This becomes even more apparent when the novel reaches its third major plot point, which reveals that not only is Nattie more affected by her other non-visual senses, but that in fact, she cannot trust her real-life experiences that depend on sight or physical proximity. After their in-person encounter, Nattie cuts ties with her on-line companion, until one night, at a dinner party with Cyn, Quimby, and Quimby's attractive visitor Mr. Stanwood, Nattie allows Cyn to rehash Nattie's story of being betrayed a fellow operator. When Cyn describes the disgusting visitor, Mr. Stanwood reacts by shouting "What!" and "staring at [Cyn] as if he thought she was bereft of her senses. 'What!' and he dropped his knife and fork, and pushed his chair back violently, to the alarm of the [cat], who was immediately behind." In response, "Cyn appeared astonished at his vehemence; but Nattie [did not] observe it."[95] Clearly, the so-called stranger is abnormally upset with the situation, but Nattie does not pick up on it. Her in-person obliviousness is depicted in plain contrast to her sensitivity in the telegraph office. In the time that Nattie spent ignoring "C" after his "betrayal," the novel explains that "he called persistently, savagely, and entreatingly—all of which phases can be expressed in dots and dashes."[96] On-line,

[94] Ibid., 97-98.
[95] Ibid., 145.
[96] Ibid., 111.

Nattie accurately interpreted that "C" was confused, and still pleading for her attention. But in person, she cannot do the same for Mr. Stanwood until later that night, when they are placed in a peculiar situation.

After dinner, Mr. Stanwood begins drumming on the tabletop with a pencil. Nattie observes that his eyes are "fixed upon her with a peculiar expression, and at the same moment her ear seemed to catch a familiar sound. With a slight start she listened more attentively to his seemingly idle drumming. Yes—whether knowingly, or by accident, he certainly was making dots and dashes, and what is more, was making N's!"[97] As soon as she engages him in a Morse code conversation about life as an operator, however, Nattie averts her gaze, and Mr. Stanwood likewise puts "his eyes on his book with the most innocent expression imaginable" as he responds to her messages in fluent Morse code.[98] Here, something very interesting begins to happen: on one hand, there is no physical wire or electrical connection between the two. They have no real "sounder," and only impromptu keys—Nattie uses a pair of scissors, and Mr. Stanwood a pencil. Yet, when they begin to simulate telegraphic communication, their unconventional "conversation" takes a dramatic turn. Nattie reads his words perfectly:

> "What office were you in?" the scissors asked.
> "X n," responded the pencil.
> "What! with 'C'?" asked the scissors, and if ever there was a pair of excited scissors, these were the ones.
> "Well—yes," replied the pencil with provoking slowness. "Don't you 'C' the point? Can't you 'C' that you did not 'C' the 'C' you thought you did 'C' that day?"

[97] Ibid., 148.
[98] Ibid., 149.

> Nattie's breath came fast, and her hand trembled so she could not hold the scissors. With a crash they dropped on the table, making one loud, long dash. But the imperturbable pencil went on calmly,
>
> "It was all a mistake. I am—'C'!"
>
> Disdaining scissors and pencil, Nattie started up.[99]

Two things are particularly striking about this interaction: First, Nattie was *right* to believe that when on-line, "C" was in fact honest and genuine, and that the "imposter" did not match the "C" she conversed with via telegraphy. Second, Nattie is simply better at conversations online than in person. When she and Mr. Clem Stanwood reveal what has occurred to their friends at the dinner table, Nattie's "gladness" sounds "cold" beside the excitement of "enthusiastic Cyn."[100]

About halfway through the book, Nattie and Clem begin a romantic relationship, but in this fourth movement of their story, the drama of their romance is far from over. Clem leaves his job and moves into Nattie's building to be closer to her, but Nattie finds that "a certain something that had been on the wire was lacking now." Although part of the problem stems from Nattie's shyness and insecurity,[101] she tells Clem outright that she found their relationship more intimate when it was on-line—when he was "invisible."[102] On one occasion, as the two are spending time together in Nattie's telegraph office, Nattie complains:

> "I had more of your company on the wire!"
>
> Clem looked pleased. "If that is the trouble—" he began, but Nattie interrupted, her face very red.
>
> "I did not mean that, either; I meant it was in such a different way, you know—and I—I could talk more easily, and—I do not believe I know what I do mean!" stopping short in embarrassment.

[99] Ibid., 150.
[100] Ibid., 157.
[101] Ibid., 170.
[102] Ibid., 253.

> Clem looked at her and smiled. "Let us see if it is any easier talking on the wire," he said; and taking the key, he wrote, "Good P m, will you please tell me truly, and relieve my mind, if you like me as well as you thought you would?"
>
> Taking the key he relinquished, and without looking at him, she replied, "Yes; and suppose I ask you the same question, what would you say, politeness aside?"
>
> "I should answer," wrote Clem, his eyes on the sounder, "that I have found the very little girl expected!" And then their eyes met, and Nattie hastily rose and walked to the window, for no ostensible purpose, and Clem said, going after her, "It is nicer talking on the wire, isn't it?"[103]

Nattie struggles to find the words to express why or how their relationship was different because it is not that she had *more* of his company, but that the medium through which they communicated mattered to her. Speaking in a different language and form that Nattie associates with her independence and freedom empowers Nattie to pursue a romantic relationship without the social limitations, and association of losing her job, that accompany a physical courtship.

To save their romance, Nattie and Clem install a clandestine telegraph line between their rooms.[104] They recommence their technologically-mediated conversations to some degree of success, but continue to struggle with their real-life romance. There is so little chemistry between them when they interact in real life, that even Miss Kling, their busybody gossip of a landlady, thinks that Clem is actually interested in Nattie's beautiful friend Cyn ("Miss Archer"). When Miss Kling makes such a suggestion, Nattie tells the landlady that she is mistaken. "'Mistaken! no indeed!' said Miss Kling, positively; 'I should think your own eyes might tell you that! Why, Mrs. Simonson says, Miss Archer has thought of nobody but him since he came into the house, and that

[103] Ibid., 171-172.
[104] Ibid., 178.

anybody can tell he is in love with her, from his actions and the attentions he pays her, and Celeste told me the same thing, long ago."[105] This exchange suggests that when a telegraphic romance is involved, appearances can be deceiving to onlookers as well as participants. Nattie's eyes do indeed often fail her.

The novel takes its fifth and final turn in its last three chapters, as Clem and Nattie's romance falls apart and Quimby gathers the courage to propose to her instead. Following Miss Kling's lead, Nattie begins to believe that Clem does, in fact, love Cyn. As a result, she pulls away from Clem, even ignoring the line between their rooms. Cyn is one of the only people to take notice. She declares that she is worried Nattie's secret telegraph wire will start to rust: "Why! I used to hear your clatter into the small hours, but now—" Nattie interrupts her: "Now we are more sensible."[106] Cyn recognizes that this is a potential problem, but since she herself is not a telegrapher, she only understands Nattie and Clem's conversations as meaningless auditory stimuli, or "clatter."

Eventually, Clem confronts Nattie about their failing relationship: "'It has never been my wish that any coldness should come between us; you know that, Nattie,' he [said] earnestly. 'From our first acquaintance, the old acquaintance over the wire, you have held the same place in my heart!'" Nattie, though, deeply deceived by the blind assumptions of everyone around her, has a response—but keeps it to herself: "'The place next to Cyn!' was Nattie's involuntary bitter thought, but she instantly stifled the feeling."[107] This creates a frustrating false conflict in the story; the reader knows that

[105] Ibid., 192.
[106] Ibid., 195.
[107] Ibid., 227.

Clem truly does love Nattie, and if Nattie would only talk to Clem about her fears, she would realize that they are unfounded. However, a conversation, for Nattie, is easier *done* than said. Since they are no longer connected over the wires, Nattie has no way of comfortably expressing her feelings. Her ability to carry on real-life conversations about emotional topics, as the novel has demonstrated, is very minimal. When she and Clem have no key and sounder mediating their relationship, Nattie gets trapped in an unfortunate misunderstanding.

Thinking that he will finally have his chance, Quimby he comes into her room to propose, but when Nattie realizes what he is doing, she sneaks away—and their neighbor, Celeste, happens to wander in and take Nattie's chair. "It was twilight. Celeste wore a black dress like [Nattie's], her hair was dressed in the same style, and was the same color, and Quimby had mistaken her for Nattie! And in his excitement and struggle with that 'flow of language,' he did not notice even that it was not Nattie's voice saying 'Oh, Quimby!' for he continued…"[108] Quimby does not recognize the woman he allegedly loves, and in fact, mistakes her for someone else entirely, simply because they are in partial darkness. To Quimby's dismay, he completes the proposal without noticing his error. In a move that reverses Nattie's receptivity, Quimby isn't carefully attentive to the sound of anyone's voice, virtually or in reality. Comedically, he gets trapped into a legally binding contract, and must commit to his proposal to avoid being sued for "breach of promise."[109] When Quimby shares his tremendous mistake with his friends, Cyn

[108] Ibid., 203.
[109] Ibid., 210.

announces the event's "Moral—never make love in the dark!" Clem agrees, telling Nattie, "There are worse mistakes made in the dark than on the wire, it seems." [110] According to this moral, couples are less likely to make mistakes on-line than they are in person.

At the end of the book, all of the plot twists come together. Nattie finally accuses Cyn of loving Clem (which she denies). Then, Miss Kling discovers the telegraph wire that Nattie and Clem installed earlier, and threatens to evict Nattie because she feels it is indecent for a young unmarried lady. It takes all of these ridiculous real-life mistakes for Clem and Nattie to finally reveal their true feelings—but even when they do, they do not truly speak "in person." When Clem steps in to defend Nattie against eviction, Miss Kling angrily questions his right to interfere. In response, "Clem bit his lip. Sure enough, what right had he? He glanced at Nattie where she sat, pale and disturbed, at the scene that threatened to end seriously for her, and then, obeying a sudden impulse, seized the key at his side, and called, 'N—N—N!'" When emotions and stakes get high, Clem knows that the only way to communicate with Nattie about such an important crisis is through Morse code. Clem continues, writing rapidly, "with his eyes on the sounder: 'She says I have no right to interfere. If you had not so changed towards me—if I could hope you loved me as I have ever loved you, I would ask you to give me the right!'"[111] Clem proposes marriage to Nattie not only indirectly (he does not use the words "marriage" or "wife"), but also in a coded language entirely. This move is crucial: feminists receive an

[110] Ibid., 214.
[111] Ibid., 250.

ending that feels egalitarian and aligned with Nattie's wishes, while other readers simply see a traditional comic ending.

In this moment of extreme passion and tension, Clem knows that he must propose "telegraphically" in order to get through to Nattie. Surely enough, his plan works:

> "As these words in dots and dashes came to her ears, Nattie, forgetting Miss Kling, forgetting everything, except that she loved Clem, and Clem declared—could it be possible—that he loved her, arose hastily, with a quick joy suffusing her face, and then their eyes met, and neither words or dots and dashes were needed. Love, more potent than electricity, required no interpreter, and that most powerful of all magnets drew them together."[112]

Nattie accepts Clem's proposal, and in the final pages of the book, Cyn declares that Clem and Nattie's "wired" love can now finally come to a close, which leaves them free to "mak[e] love like ordinary mortals." The couple claim that they are going to replace their telegraphic communications with the "pure, unalloyed article, genuine love,"[113] but as Nattie has just realized, even if "neither words or dots and dashes were needed" to realize that they are in love, they will certainly have to communicate in *some* way if they are to spend the rest of their lives together. Clem declares to Miss Kling shortly after his proposal, that Nattie "is to be my wife! [...] and if she and I choose to have twelve telegraph wires, we will!"[114] As their interactions have shown consistently throughout the story—from their first "meeting," to Clem's dinner-table reveal of his true identity, to his unconventional proposal, Nattie's work as a telegraph operator has not only allowed her

[112] Ibid., 250-251.
[113] Ibid., 255.
[114] Ibid., 251.

to support herself, but also to pursue and understand love in a modern way that suits her nontraditional lifestyle.

At the end of the novel, despite what the text suggests to a non-telegrapher, Nattie and Clem are far from interested in the same type of marriage as "ordinary mortals." Nattie's last quasi-telegraphic transmission is "O.K.," the standard call used to close out a telegraphic conversation between operators.[115] However, this is not the last line of the book. Instead, Thayer closes the novel with Clem's untranslated response to Nattie's acceptance (See Fig. 1). This seems like a particularly purposeful choice, since in the chronology of the plot, Clem tapped this message out several paragraphs previously, but it is not provided until the very last moment of the text, which suggests that their telegraphic correspondence is far from over. Rather than signing off with an "O.K.," Clem leaves the line of telegraphic communication open with his new fiancée. Both the first lines and the last lines of Thayer's book are written in un-translated Morse code, revealing that little has changed, and the couple faces a new, egalitarian style of married life exemplified by a career in telegraphy.

In *Telegraphic Realism*, Menke concludes that "electric information might seem bodiless," but "new media technologies hardly transcend the body and leave it behind." Instead, these media "modify bodies' capabilities and create different connections to what lies outside them. Media give bodies different ways of registering the world and of registering in it…"[116] As Roland Wenzlhuemer emphasizes, the particular technological

[115] Ibid., 19.
[116] Richard Menke, *Telegraphic Realism: Victorian Fiction and Other Information Systems* (Stanford: Stanford University Press, 2008), 98.

equipment that users employ to communicate with each other is extremely important to understanding those connections: "Much of the working logic of a particular technological system stems from the machinery and the techniques accordingly employed."[117] *Wired Love*, as a telegraphic romance based on the real-life knowledge of a nineteenth-century operator, demonstrates that as a historically specific medium, electric telegraphy, and the operators who used it—specifically through "sound reading," experienced truly unique connections. As the very earliest journalists writing about electric telegraphy so clearly understood, the "pleasure" of the operator was a critical element of both the telegraphic apparatus, and the physical and emotional connections that it forged between its sound-reading operators.

James's *In the Cage* (1898) shares many similarities with *Wired Love*. However, although James's novella is told from deep within the female telegrapher's point of view, she remains unnamed. Like Nattie, James's heroine, sometimes simply referred to as "our lady," became a telegrapher out of financial necessity, but unlike Nattie, that necessity was not always present. James describes "the worries of the early times of their great misery, her own, her mother's and her elder sisters […] as conscious and incredulous ladies, suddenly bereft, betrayed, overwhelmed…"[118] In other words, they used to be of a high economic status, but have since lost that luxury, possibly because of the inconspicuous absence of their father/husband figure. Of the family members listed,

[117] Roland Wenzlhuemer, "*Connecting the Nineteenth-Century World* (New York: Cambridge University Press, 2013), 7.
[118] Henry James, *In the Cage* (London: Hesperus Press Limited, 2002), 3.

James writes that "she [the telegrapher] alone had rebounded;"[119] her mother is now dependent on her after succumbing to whiskey.

Whereas Thayer's heroines crave the opportunity to work (Nattie literally brings the telegraph home with her for pleasure) James's telegrapher is insecure about her position as a lower-middle-class service worker and despises her day-to-day work in most regards. As she sends telegrams for her aristocratic customers, she laments how frivolously they spend money that she does not have: "the revelation of the golden shower flying about without a gleam of gold for herself" is something that "touched the sorest place in her consciousness."[120]

One of the crucial plot differences between *In the Cage* and *Wired Love* is that Thayer's work, told by a female telegraph operator at small telegraph office in the United States looks from the outside world of customers and laypeople in, revealing the intimate relations between telegraph operators Nattie and Clem. James's novella, on the other hand, looks from the "interior" world of a female telegraph operator out (in a literary sense, as interiority is something many scholars celebrate in *In the Cage*, as with much of James's work)—she gazes longingly upon the bustling city life of her fascinating customers, especially during the London season that she "like[s] to loathe."[121] The title of the book and the multiple references to that title throughout the text say it all: rather than feeling liberated, or open to no opportunities thanks to her position, James's telegrapher feels trapped, "in framed and wired confinement" like "a guinea pig or a magpie."[122]

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[119] Ibid.
[120] Ibid., 20.
[121] James, *In the Cage*, 39.
[122] Ibid., 1.

In fact, the telegrapher's workplace is defined by cages, within cages, within cages. She works in the literal cage of the telegraph office, but in a sense, the store, Cocker's, that her telegraph office is located inside, is also an inescapable cage:

> This transparent screen fenced out or fenced in, according to the side of the narrow counter on which the human lot was cast, the duskiest corner of a shop pervaded not a little, in winter, by the poison of perpetual gas, and at all times by the presence of hams, cheese, dried fish, soap, varnish, paraffin and other solids and fluids that she came to know perfectly by their smells without consenting to know them by their names.[123]

In this way, the heroine's senses are continually assaulted by undesirable stimuli. Unlike Nattie, who encounters an unsavory person one time and hates him for his musk, the unnamed telegrapher is trapped in a daily reality of disgusting scents, as well as monotonous sounds.

As someone who did not work in the telegraph office professionally, and likely had limited knowledge of what that work entailed, James's novel replaces the possibilities provided in *Wired Love* with tedium and monotony, *especially* at the sounder. Multiple times, James's narration complains about telegraphic work. In the opening of the novel, he describes the telegrapher's job: "to mind the 'sounder,' which was always going, to dole out stamps and postal-orders, weigh letters, answer stupid questions, give difficult change and, more than anything else, count words as numberless as the sands of the sea, the words of the telegrams thrust, from morning to night, through the gap left in the high lattice, across the encumbered shelf that her forearm ached with

[123] Ibid.

rubbing."[124] In this way, the sounder's clicking is equated with meaningless noise and redundancy, rather than a real, immediate, and intimate form of communication experienced by sound readers, or telegraphers like Nattie. Despite this, James writes that "she like[s] her torment."[125]

James's telegrapher finds enjoyment not in the messages she receives *from* the sounder, but only in those that that she transcribes from regular writing into Morse code for her clients. In *Telegraphic Realism,* Richard Menke concludes that "Although the postal branch in Cocker's only sends telegrams and does not receive them, the sounder dominates the scene of telegraphy,"[126] since the telegrapher needs to hear other stations' messages in order to know when the line is free for her to begin transmission. In fact, James's telegrapher says that her male co-worker attempts to keep her at the sounder as often as possible: "the sounder, which it was equally his business to mind, being the innermost cell of captivity, a cage within the cage, fenced off from the rest by a frame of ground glass."[127] Again, this indicates that to James, messages received at the office bound the telegrapher to their work rather than liberating them.

Alternatively, James's heroine gets engrossed in the real-life scandal of Lady Bradeen and Captain Everard, whose affair "beat[s] every novel in the shop."[128] First, the telegrapher encounters the Lady's beauty when she comes in to send a message. She is seized by "the living colour and splendour of the beautiful head, the light of eyes that

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[124] Ibid.
[125] Ibid., 28.
[126] Richard Menke: "Telegraphic Realism: Henry James's In the Cage," *PMLA* 115.5 (Oct., 2000), 983.
[127] James, *In the Cage,* 9.
[128] Ibid., 48

seemed to reflect such utterly other things than the mean things actually before them; and, above all, the high curt consideration of a manner that even at bad moments was a magnificent habit…"[129] Next, she meets the Captain, whom she believes is "the most magnificent of men. Nothing could equal the frequency and variety of his communications to her ladyship but their extraordinary, their abysmal propriety." The telegrapher imagines that as a couple, the Lady and the Captain are "the very happiest people."[130]

James's telegrapher does have a suitor of her own—in fact, she has already been engaged to Mr. Mudge, the grocer at the shop, for three months before the novel begins. This is where reading James's heroine becomes both extremely difficult and extremely productive. In her exploration of "Henry James and the Battle of the Sexes," Wendy Lesser has highlighted "the trickiness involved in the effort to figure out what James is saying about women: one can't pin him down to an absolutely unambiguous position, nor can one simply throw up one's hands and say, 'He's just being ambiguous.'"[131] Lesser uses *The Bostonians* as the central text that provides evidence of her point; she explains that James wrote the oppositional dynamic between the old-fashioned Southerner Basil Ransom and young, idealistic Suffragette Olive Chancellor as an opportunity to show both sides of the "woman question" that was so provocative, both to himself and his readers, at the time he was originally writing.[132]

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[129] Ibid., 10
[130] Ibid., 15
[131] Wendy Lesser, "Henry James and the Battle of the Sexes," *Southwest Review* 74.2 (Spring 1989), 177.
[132] Ibid., 177-179.

James's unnamed telegrapher struggles with her own ambiguity in numerous ways. Just as she "likes her torment" and "likes" to "loathe" the aristocracy,[133] she also "likes" to "deplore" her fiancé: "There were times when she wondered how in the world she could 'put up with' him, how she could put up with any man so smugly unconscious of the immensity of her difference." However, "It was because he was different that, in the oddest way, she liked as well as deplored him; which was after all a proof that the disparity, should they frankly recognise it, wouldn't necessarily be fatal."[134] This can make a feminist reading of the text challenging, since a reader who seeks to support the heroine's wishes is not always able to interpret what her wishes actually are. Her interior thoughts prove time and again that she *likes* what she dislikes, even when describing her physical preferences. At the beginning of the novella, she is relieved that Mudge has transferred jobs. When she no longer has to watch him work as a grocer right in front of her, "this left something a little fresh for [her eyes] to rest on."[135] Only a few chapters later, however, she reflects that "His very beauty was the beauty of a grocer."[136]

Many studies of James[137] have explored the way that the telegrapher in *In the Cage* participates in imaginative work, perhaps even to a fault. For example: **"**She found her ladies, in short, almost always in communication with her gentlemen, and her gentlemen with her ladies, and she read into the immensity of their intercourse stories and meanings without end."[138] These are pure fiction. In a brief *Notes & Queries* article, Ralf

[133] James, *In the Cage,* 39.
[134] Ibid., 35.
[135] Ibid., 2.
[136] Ibid., 36-37
[137] Including those by Richard Menke and Ralf Norrman.
[138] James, *In the Cage,* 21.

Norrman explains that "The knowledge she brags about so often […] is mostly in her imagination only and quite possibly at odds with the real facts."[139] James shows her making many mistakes, which Norrman explores. For example, upon first seeing Captain Everard, she is certain that she will "never never [sic] see him [again]," and yet, the Captain reappears in the very next paragraph.[140] Though Norrman's totalizing conclusion is extreme, he provides numerous textual instances to support his claim that: "she is wrong about everything."[141]

James's telegrapher shares her struggles to correctly interpret the "real world" with Thayer's heroine Nattie. However, the two women are attempting to interpret two very different types of data. Nattie accurately reads Clem's emotions and intentions over the wire, but does not always recognize them when she speaks to him in person. James's telegrapher, on the other hand, remembers all the intricate details of codes and addresses that Captain Everard and Lady Bradeen use to carry on their affair, however, her emotional interpretation of the situation is wrong in most regards—likely because the information she actually reads in their telegrams is so brief, and she actively allows her imagination to fill in the blanks.

James's characterization of his telegrapher in some ways supports one of the nineteenth-century arguments against women's rights in the workplace, which Thayer highlights in *The Lords of Creation*. Mr. Grovener tells Kate that "If a woman did her work as well as a man she would get the same wages; but she does not. She isn't thinking

[139] Ralf Norrman, "The Intercepted Telegram Plot in Henry James's In the Cage," *Notes & Queries* 24.5 (Oct. 1977), 425.
[140] James, *In the Cage,* 13
[141] Norrman, "The Intercepted Telegram," 425.

of her work. When she is young she is thinking of getting married, and when she is old she is mad because she can't."[142] This proves true of James's narrator in more than one way. In a small sense, she is often preoccupied in thinking about how she might convince Mudge to put off their wedding a bit longer. In a bigger one, though, she is so busy thinking of marriage that it interferes with her work—only the marriage is not her own. It is the theoretical marriage of Captain Everard that she cannot excise from her mind. Her interest in their relationship quickly becomes an obsession, built around complex imaginings. The telegrapher fancies that her two "connexions" are truly in love, despite her knowledge that they are engaged in an illicit affair. Though many scholars agree that she is likely in love with the Captain herself, this is not how the telegrapher views her own situation. Rather, she desires "the possibility of its somehow coming to him that her own interest in him could take a pure and noble account of such an infatuation and even of such an impropriety."[143] In other words, she has fully excused his illicit behavior because he acts solely out of pure and real love, the kind which ends in marriage.

The telegraphist's obsession with the Captain and the Lady reaches new heights when she finally reveals what she knows to him. However, this is not the first moment in the novel that shows her relentlessly pursuing (or, from a modern perspective, essentially stalking) her client. With both Lady Bradeen and the telegrapher pursuing the upper-class client, the story becomes particularly exciting from the male character—a telegraph user's—perspective. Once James's heroine has encountered the handsome couple,

[142] Thayer, *Creation*, 90.
[143] James, *In the Cage,* 44.

thoughts of them stay with her all day: "their presence continued and abode with her, was in everything she did till nightfall, in the thousands of other words she counted, she transmitted, in all the stamps she detached and the letters she weighed and the change she gave…"[144] Almost immediately, since she knows the Captain's address through his telegraphic correspondence, she begins going far out of her way to walk past his lodgings at Park Chambers, often at dark hours of the late night as if she is a character in a half-penny novel.[145]

Eventually, she walks past Captain Everard's residence at the same time that he stands outside, smoking, which allows her to finally reveal all her "knowledge" and emotions to him. In her ambiguous fashion, she imagines how he might "improperly" pursue her, while simultaneously rejecting even his polite invitation to dinner, or gentlemanly offer to walk her home. This encounter changes their relationship, however. Captain Everard assumes that the telegrapher intended to blackmail him, and even begins attempting to pay her extra sovereigns under the table. Seemingly unable to decipher this real-life clue, she rejects his payments and regrets that their intimacy has seemingly come to an end.

In the final climax of the novel, Captain Everard returns to Cocker's in an hour of immense need. The telegrapher has always interpreted that he and Lady Bradeen were in danger, and now the danger is upon them—the lovers may have been found out, but a "mistake" in a previous telegram may make it all right. In fact, Captain Everard sounds a

[144] James, *In the Cage,* 13.
[145] Ibid., 46.

bit like the ambiguous telegrapher when he asks the operator to find a copy of the old message, declaring: "if it's wrong, it's all right!"[146] After torturing her friend as much as she can, the telegrapher reveals that the does not have a paper copy of the message any longer, but in fact, she remembers it, and can easily provide the coded numbers from her memory. She recites the numbers, which are indeed "wrong," in Captain Everard's terms; however, they are "right" in that they correctly match what Lady Bradeen asked the telegraphist to send.

Norrman's article helps to explain that the telegrapher *did* make an alteration to Lady Bradeen's message that made it "right," but most likely, is the real mistake that made it wrong. When sending the message, the Lady stated the sending address, but then paused and said aloud that she has made a mistake. The telegrapher, wanting to demonstrate her cleverness and potential helpfulness to her elite "connexion" corrects the address. This mortifies the Lady so severely that she accepts the correction and rushes out of the office—here, the real mistake was made. Norrman asks his reader to imagine

> the possible complications […] resulting from the wrong word *being* changed […] presumably the change of an addressee, Cooper's for Burfield's, increased the danger that more of Captain Everard's and Lady Bradeen's secret system of communication would be discovered and the scandal made worse. The ironies are multiple here. The girl changed the wrong word, and thereby, through not changing the right word, she ironically did Everard a service, since 'it's all right if it's wrong.'[147]

At the same time, however, maybe this wasn't a service after all, since Lady Bradeen's ability to save the Captain indebted him to marry her, a marriage which, despite the

[146] Ibid., 94.
[147] Norrman, "The Intercepted Telegram Plot," 425.

Once the telegrapher sees the Captain through his "intercepted telegram" drama, the two immediately lose ties, resulting in the young woman finally agreeing to marry Mudge in one month's time. When she discusses her harrowing story with her friend, a flower-arranger named Mrs. Jordan, whose fiancé has recently been employed by Lady Bradeen. This is when she learns the truth about her "friend" the Captain: that he has severe debts, and that his romance may not have been as idealistic as she imagined it to be. At first, the young woman is "betrayed into helpless innocence,"[148] but only moments later, she concludes that her wedding must not be held next month, but rather, next week.[149] This suggests that her fantastical imaginings—of being the friend and savior to the aristocratic Lady or her lover the Captain, or even of being pursued by a man whom she views so highly—are quickly called into focus, and she realizes that she must pursue her "real" life possibilities rather than idealizations.

In this way, James's story, unlike Thayer's, chains the female telegrapher not only to her technological job, but also to her own socioeconomic class and gendered expectations. Working as a telegraph operator offers the woman a chance to fantasize about what life might be like for or with other people, but she quickly accepts such ideas as mere fantasies and returns to a predictable and static domestic life when she realizes that these are mere psychological speculations. Rather than seeing the telegraph's possibility to liberate women in the workforce and provide alternatives to the traditional

[148] James, *In the Cage,* 108.
[149] Ibid., 111.

marriage plot, *In the Cage* ultimately returns to an early nineteenth-century ideal that was already growing outdated by time the book was published at the fin de siècle.

Chapter 3.

Verbatim Reporting: Phonographic Shorthand and the 'Subjective-Objective' in The Moonstone

> "I could write pages of affectionate warning on this one theme, but (alas!) I am not permitted to improve — I am condemned to narrate."[1]
>
> — Miss Clack, *The Moonstone*

In the Western world,[2] shorthand writing has existed at least since the *Tironian notae* of the Roman orator Cicero and his biographer Tiro. Early British systems include Timothe Bright's 1588 *Characterie*, which some scholars have argued was the method used to record Shakespeare's plays, as well as numerous systems from the seventeenth century, which "became enmeshed in the Enlightenment search for a 'universal language.'"[3] According to Peter T. Daniels, editor of the multivolume anthology *The World's Writing Systems*, "shorthand may be characterized as a notation system for recording words as fast as they are spoken."[4] Instead of being a language on its own, Daniels explains, shorthand is a method used to record an existing language through special characters. After a message is recorded using shorthand, it is must be transcribed back into the standard orthography of its recorder.

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[1] Wilkie Collins, *The Moonstone*, (New York: Penguin Books, 1998), 208.
[2] For the sake of scope, this chapter—like this dissertation—focuses on Western languages in Britain and America. A broader study might consider: Chinese Nushu script, a form of shorthand written exclusively by women which dates back possibly as far as the thirteenth or fourteenth century; native Korean writing systems prior to the Hangul era of the fifteenth century, which were often phonetic in nature; and/or syllabic systems created by colonizers who attempted to transcribe certain Indigenous languages, such as Moose Cree in northeast Canada.
[3] *The World's Writing Systems,* eds. Peter T. Daniels and William Bright (New York: Oxford University Press, 1996), 810-811.
[4] *The World's Writing Systems*, 807.

The symbols used to represent pieces of language within these systems have varied greatly depending on place and time. In Classical "tachygraphy" (literally, "swift-writing") like the *Tironian notae*, one symbol could signify a syllable, a combination of words, or a grammatical inflection. Bright's *Characterie* contained 537 arbitrary signs, each of which represented a basic concept, and was loosely related to the first letter of that concept. The Shorthand Collection in the New York Public Library, compiled by the National Shorthand Reporter's Association, contains books, manuscripts, and ephemera belonging to at least 131 distinct shorthand writing systems created between 1569 and 1836—and this catalog is in no way comprehensive.[5] John Willis's 1602 *Art of Stenographie* is usually considered the first "phonetically grounded" shorthand system, as it used the sounds of individual consonants and vowels rather than an orthographical alphabet.[6]

However, Willis's word sounds were not yet linked to the scientific study of physical speech production, such as place and manner of articulation, which broadly characterize the modern approaches to phonetics still in use today. In his *Practical Introduction to Phonetics*, an Oxford University Press textbook often assigned to linguistics students, phonetician J.C. Catford explains that: "the first step in the study of phonetics is to discover […] the basic components that go into the production of any speech sound."[7] In Britain and America, this turn towards physiological, scientific study slowly took place throughout the late eighteenth and early nineteenth centuries, thanks, in

[5] Meredith Mann, "Despotic Characters: Researching Shorthand at the New York Public Library," New York Public Library (Blog), 27 May 2015. https://www.nypl.org/blog/2015/05/27/researching-shorthand
[6] *The World's Writing Systems,* 810-811.
[7] J.C. Catford, *A Practical Introduction to Phonetics*, 2nd ed. (Oxford: Clarendon Press, 2001), 11.

part, to innovations made by Thomas Gurney's "brachygraphy" (first published in 1750) and Isaac Pitman's "phonographic shorthand" (first published in 1837). The phonetic methodologies of each of these two systems provide a productive heuristic for analysis in depictions of shorthand in Victorian fiction. Particular, I will explore the promises and failures provided by shorthand in Wilkie Collins's detective novel, *The Moonstone*.

Of all the novels to draw the connection between "verbatim reporting" and nineteenth century scientific perspectives, the brief appearance of shorthand writing in *The Moonstone* (1868) — especially in the hands of the "ruined" and Othered physician's assistant, Ezra Jennings — offers uniquely provocative avenues for discussion. In a book was written nine years before Edison popularized the mechanical phonograph, and set nearly three decades farther in the past, the recording of sounds "exactly as they fell from his lips"[8] is not just a small plot convenience for the characters in the story. Rather, shorthand serves as the critical (and possibly the only) narrative tool that allows the mystery of the titular Moonstone to be solved at all. In this chapter, I will argue that the role of shorthand in the Victorian era's "first," "longest," and "best"[9] detective novel encompasses both the promises and the shortcomings of phonographic writing, while also connecting sound-based epistemology to explorations of objectivity and observation within the scientific method. Furthermore, what has been called the polyvocality of Collins's epistolary novel, as well as its inclusion of multiple characters with

[8] Collins, *The Moonstone,* 374.
[9] T.S. Eliot, "Introduction to the Moonstone" (Oxford: Oxford University Press, 1928), xii.

disfigurements and illnesses, provide additional links between this chapter, and my discussions of gendered disabilities and skilled technical workers in Chapters 1 and 2.

Histories of Shorthand

Gurney's Brachygraphy

During the second half of the eighteenth century, Thomas Gurney began developing a system which he called *Brachygraphy: or, Short-Writing.* He described his shorthand system, in each edition of his manual from the 1750s until at least 1772,[10] as: "short-writing, made easy to the Meanest Capacity; the Persons, Moods, & Tenses being comprised in such a Manner; that little more than the knowledge of the Alphabet is required, to the writing of hundreds of Sentences, in less time than Spoken."[11] As Gurney himself explains, his system is not entirely based on sounds, but rather, on a combination of alphabet-like orthography with some additional characters. His method recognizes that some letters, like "c" and "k," can be represented by the same sign for the hard "k" sound; though in other cases, like the example of "t" combined with "h" in the single sound "th," Gurney continues to use two separate symbols.

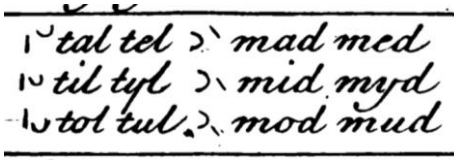
The transcription of vowels in Gurney's shorthand, however, is its most unique feature, and most specifically phonetic. Gurney's brachygraphy paid attention to the sounds of vowels, in particular, delineating them and even determining their place on the

[10] Julius Ensign Rockwell, "The Teaching, Practice, and Literature of Shorthand" in *Circulars of Information of the Bureau of Education,* No. 2 (Washington: Government Printing Office, 1884), 89; Compare also Thomas Gurney *Brachygraphy: or, Short-writing*, 2nd edition (London, 1752) versus 8th edition (London, 1772).
[11] Thomas Gurney, *Brachygraphy: or, Short-Writing*, 2nd edition (London: Thomas Gurney, 1752), title page.

page based on the place in the mouth where they are physically produced. This distinguishes Gurney's brachygraphy as a form of shorthand that engaged with modern phonetics, at least partially. Unlike consonants that received their own individual characters, vowels in Gurney's brachygraphy have no sign of their own, and rather, are indicated by adjusting the position of the second consonant in a syllable: either high, in the middle, or low in relation to the consonant before it. Despite not yet having the phonetic terms *front, central,* and *back* to describe the forward or backward placement of the tongue in the mouth when producing a vowel, Gurney's manual distinguishes between vowel sounds by differentiating each vowel's placement in the mouth.

For example, in figure 3.1,[12] Gurney uses variations of the word "m_d" to describe his method; the symbol that resembles a backwards "c" stands for the "m" sound, and the symbol that looks like a backwards slash stands for the "d" sound. In the manual, Gurney suggests that the front vowels /æ/ as in "mad" and /ɛ/ as in "med" should be indicated by putting the second consonant *above* the first consonant, the back vowels /ɑ/ as in "mod" and /ʌ/ as in "mud" should be indicated by putting the second consonant *below* the first vowel, and the mid vowel /i/ as in "mid" should be indicated by putting the second consonant in the middle of the line. Figure 3.2 compares the categorization of these vowels to their placement on a contemporary International Phonetic Alphabet chart.[13]

[12] Gurney, *Brachygraphy*, 1752, 9.
[13] This chart, belonging to the International Phonetic Association, can be found in Catford, *Practical Introduction,* 136; and elsewhere.



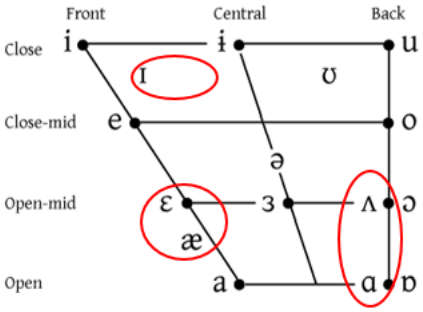


Fig. 3.1 (left): Gurney shows how to place consonants to indicate a vowel.
Fig. 3.2 (right): Gurney's method of using placement to indicate certain groups of vowels presages the front, central, and back categories used in contemporary phonetics.

In offering this illustration, I do not mean to argue that where the second consonant is drawn on the page was intended to represent a physical location in the human vocal tract; though that would be compelling, the two dimensions of the written page compared to the three dimensions of the mouth make such a correlation all but impossible to argue for or against. I simply mean to show that Gurney understood the subtle differences between vowels to be the result of the way they were produced physiologically—a perspective which aligns with the way that present-day phoneticians understand vowel sounds, even though the IPA would not invent its chart until 110 years after Gurney's death.

Although Gurney claimed that this system was "easy," both present-day historians of shorthand and its users in the eighteenth and nineteenth centuries suggest that the learning curve for individual users varied greatly. Shorthand Archivist Meredith Mann reports that "students can expect to dedicate years of study before achieving fluency in these systems,"[14] a sentiment that is echoed in *David Copperfield*. In his 1850 novel,

[14] Mann, "Despotic Characters."

Charles Dickens—who had taught himself Gurney's method in the 1830s—fictionalized his protagonist's experience in the following terms:

> I bought an approved scheme of the noble art and mystery of stenography (which cost me ten and sixpence); and plunged into a sea of perplexity that brought me, in a few weeks, to the confines of distraction. The changes that were rung upon dots, which in such a position meant such a thing, and in such another position something else, entirely different; the wonderful vagaries that were played by circles; the unaccountable consequences that resulted from marks like flies' legs; the tremendous effects of a curve in a wrong place; not only troubled my waking hours, but reappeared before me in my sleep. When I had groped my way, blindly, through these difficulties, and had mastered the alphabet, which was an Egyptian Temple in itself, there then appeared a procession of new horrors, called arbitrary characters; the most despotic characters I have ever known; who insisted, for instance, that a thing like the beginning of a cobweb, meant expectation, and that a pen-and-ink sky-rocket, stood for disadvantageous. When I had fixed these wretches in my mind, I found that they had driven everything else out of it; then, beginning again, I forgot them; while I was picking them up, I dropped the other fragments of the system; in short, it was almost heart-breaking.[15]

Scholars of Dickens have discussed this passage from a variety of perspectives. William J. Carlton's 1926 study, *Charles Dickens, Shorthand Writer,* values many scenes from *David Copperfield* as almost pure autobiography of Dickens, to the point where he assumes that Dickens struggled just as David did and must have been helped along by an unnamed expert, whom the novelist used as a model for David's teacher, Tommy Traddles.[16]

More recently, Leah Price has discussed this same passage of *David Copperfield*, concluding that "Shorthand enabled upward mobility, but it couldn't take the place of a classical education." She cites Dickens's fellow journalist, R.H. Hutton, who "asserted that 'in some important intellectual, if not mechanical respects, Mr. Dickens did not cease

[15] Charles Dickens, *David Copperfield* (New York: Penguin Classics, 2014), 551.
[16] William J. Carlton, *Charles Dickens, Shorthand Writer* (London: C. Palmer, 1926), 27; 37.

to be a reporter even after he became an author,'" and as a result, "the social connotations of 'mechanic' must have grated."[17] Chapter 3 of Price's monograph *How to Do Things with Books in Victorian Britain* discusses the role of shorthand and reporting in *David Copperfield* in greater depth, with attention to the gendering of labor in the novel. She draws parallels between Dickens and David as autodidacts, and traces the similarities between Dickens and his protagonist's "progression from David as stenographer to David as author whose works are copied, or 'copied,' by Dora."[18]

Likewise, Peter Ackroyd's oft-cited biography, *Dickens*, maintains the parallels between Dickens and David, suggesting that Dickens mastered in three months what the average person required three years to learn.[19] Citing Ackroyd, Ivan Krielkamp examines this passage through the perspective of the Victorian voice. Krielkamp argues that, rather than invoking his own experiences, Dickens described David drowning in stenography's sea of perplexity order to "playfully satirize" the creator's claims about his system, by "emphasizing the sheer, fiendish arbitrariness of a system that purported to eliminate the arbitrary from language." The arbitrary, Kreilkamp reminds readers, is "a necessary evil and a technical component of all shorthand systems themselves."[20] As both David Copperfield and Krielkamp point out, then, Gurney's method was self-aware of its "arbitrary characters." Nonetheless, the brachygraphy was so popular that between 1750

[17] Leah Price, "Diary: The Death of Stenography" in *the London Review of Books* (Blog), 4 December 2008. Accessed 20 November 2016.
[18] Leah Price, *How to Do Things with Books in Victorian Britain* (Princeton, NJ, Princeton University Press, 2012), 100.
[19] Peter Ackroyd, *Dickens* (New York: Harper, 1992), 124.
[20] Ivan Krielkamp, *Voice and the Victorian Storyteller* (Cambridge, Cambridge University Press, 2005), Kindle edition, loc. 1258.

to 1884, it underwent 18 new editions and dozens of printings.[21] It was widely well-received during the 80 years leading up to the 1830s, when Dickens trained himself to become a court reporter.

Though William Carlton's *Charles Dickens, Shorthand Reporter* is now nearly 100 years old, it provides valuable insight into the perception of various shorthand systems that a reader may have been familiar with in an era when stenography was still widely taught in schools and vocational programs.[22] He writes: "The fact that [Dickens's] father and uncle were both writers of this old system was doubtless the chief consideration which induced [him] to pay 10s. 6d. for Gurney's book when there were several newer and cheaper manuals on the market."[23] This included Samuel Taylor's stenography, first published in 1786, which supplied 19 simple-to-draw geometric shapes that replaced each of the English language's consonants, based partly on phonetics but also largely on simple abbreviations.[24] In Taylor's system, vowel sounds were not transcribed unless they were the first sound of a word. Otherwise, they were omitted, to be recalled after the fact by the stenographer.[25] In the first sentence of the rather curt essay that introduces his system, Taylor simply says: "I shall omit troubling the learner with an unnecessary harrangue [sic] upon the different sounds of our common alphabetical letters, but only observe, that we shall have no occasion for them all, as there

[21] Carlton, *Charles Dickens,* 38.
[22] Price, "Diary."
[23] Carlton, *Charles Dickens*, 38.
[24] Samuel Taylor, *An Essay intended to establish a standard for an universal system of stenography, or short-hand writing* (Hallowell: Calvin Spaulding, 1826), 12.
[25] Ibid., 13.

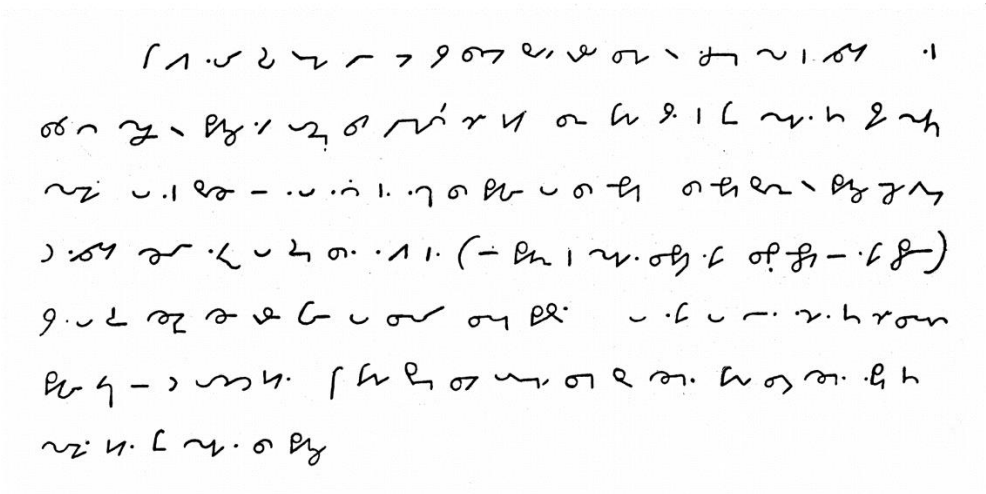


Fig. 3.3. A transcription in Taylor's shorthand.[26] The first line literally reads: *th rt Vnr jn fstr rs sd h wshd br-ing fr-ward mtr v Vtmst kn t rlnd*.

Translation: The Right Honourable John Foster rose, and said, he wished to bring forward a matter of the utmost consequence to Ireland.

are not more than twenty proper sounds required for the use of short-hand."[27] In Carlton's words, "Taylor's method presented fewer difficulties to the learner than Gurney's, but the reputation of the latter stood high on account of the excellent work accomplished by it in the hands of the Gurney family and other experts."[28]

Prefatory material to Gurney's manual, submitted by half a dozen enthusiasts of the system (including Charles Darwin's grandfather, Erasmus Darwin, who will be discussed in Chapter 4 of this project), praised Gurney's book. They claimed that his brachygraphy held the power to "for[m] the finger rival to the tongue,"[29] and enabled

[26] Samuel Taylor, "Plate 11," *An universal system of stenography or short-hand writing: intended to establish a standard for this ingenious and useful science* (London: J.F. Dove, 1814), 46-47.
[27] Ibid., 3.
[28] Carlton, *Charles Dickens*, 39.
[29] Gurney, *Brachygraphy* 2nd edition, 7.

pens to "exceed […] their fleeting fire in speed."[30] At the same time, though, Gurney's manuals provided users with a business address where users could write to Thomas (or later, his nephew Joseph) with "any difficulty" in order that they "shall be duly answered."[31] Similarly, in the section on arbitrary characters that was so widely received as challenging to learn, he added: "if any difficulty should be met with in writing after a very quick speaker, I would recommend that of writing some few words deficient rather than to perplex the memory with too many arbitrary characters."[32] Bolstering Krielkamp's analysis, Gurney suggests that the "despotic characters" that David Copperfield struggled with so much may not have been the best place for the fictional stenographer to focus his energies.

A 2017 article by Hugo Bowles resists many previous narratives of Dickens and Gurney's brachygraphy, and instead builds on the connection between stenography and authorship. Bowles argues that "the difficulties and internal contradictions of the Gurney system, described so graphically in *David Copperfield*, combined to produce a unique mechanism for the processing of language." This, he explains, prompted Dickens to develop a unique creativity— "a creativity that the architecture of the transparently phonographic Pitman system was not designed to produce.[33] By the end of the nineteenth century, Pitman's—a very modern invention which nonetheless failed to meet the modern need for objectivity—would take Britain and America by storm.

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[30] Ibid., 9.
[31] Ibid., 10.
[32] Ibid., 43
[33] Hugo Bowles, "Stenography and Orality in Dickens: Rethinking the Phonographic Myth," in *Dickens Studies Annual* 48 (2017): 21-44.

Pitman's Phonography

In the 1830s, British educator Isaac Pitman began devising his system of "phonographic shorthand." As both Ivan Kreilkamp and Lisa Gitelman emphasize, "prior to Pitman, shorthand was called stenography […] (narrow or close writing), tachygraphy (swift writing), or brachygraphy (short writing)." Pitman was the first to call his system phonography (sound writing) "because he claimed that his was the first shorthand based explicitly on the phonetics of English, rather than on its spelling."[34] Admittedly, Pitman was influenced by a variety of older shorthand methods that had come before his own, including Gurney's—but he was adamant that he had done away with the arbitrariness that had caused users of previous systems such grief. In one of the earliest editions of his *Manual of Phonography; or, Writing by Sound*, Pitman explains that since the signs used in his shorthand method are "of the briefest description (simple dots and strokes), the Phonography here presented is necessarily a system of Short Hand; but it must be seen, from what has been stated, that it is *radically* distinct from every other that has appeared."[35]

Pitman hints at concepts that are still recognizable to linguists today: that his system relies on an understanding of the smallest units of meaning in language (morphemes), and the smallest meaningful units of sound (phonemes). "In Phonography, it may almost be said that the *very sound of every word is made* visible," he writes in his introduction. "Whereas, in decyphering [sic] any other system of short hand [sic], the

[34] Gitelman, *Scripts, Grooves*, 24. Kreilkamp cites this same passage in *Voice*, loc. 1090.
[35] Isaac Pitman, *A Manual of Phonography; or, Writing by Sound*, 7th edition (London: Samuel Bagster and Sons, 1845), 8.

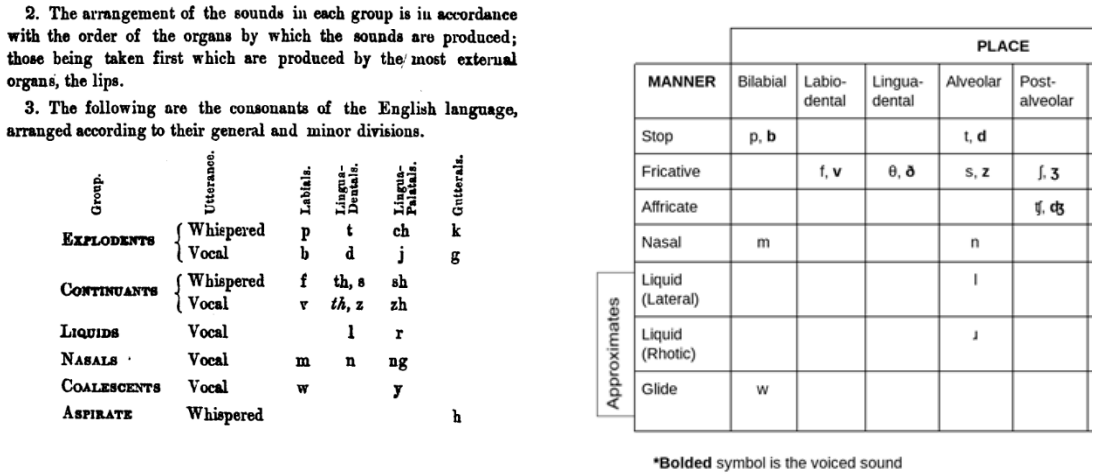
context, the memory, the judgment, all must be called in to assist the eye. This is the great obstacle which has prevented Short Hand from coming into general use."[36] Pitman explains that his system translates individual speech sounds into simple angled lines, specifically selected in a way that seemed natural and intuitive to him, the system's creator. For this reason, Lisa Gitelman has suggested that "…shorthand inventors and reporters sought to promote their own rules as the best or correct means of representing speech […] They promoted their technology as an objective medium; the term they used most frequently to vaunt its objectivity was "verbatim.'"[37]

Ivan Krielkamp has argued that "the historical accident of [Isaac] Pitman introducing his phonographic [shorthand] in 1837, the year of Queen Victoria's inauguration, makes irresistible the claim that the Victorian era was fundamentally phonographic."[38] Pitman went so far as to describe his method as, "a system, it may almost be said, of *exhibiting speech on paper*, by signs closely approximating to the simplicity of the sounds they represent."[39] Consequently, Kreilkamp argues that such an invention inaugurated the Victorian period "with a new mandate to use print to capture, transcribe, and simulate voice," and "As the major literary genre of the phonographic Victorian age, the novel […] served as a vocal technology and means of amplifying, preserving, silencing, and fantasizing speech." [40]In his view, phonographic shorthand's

[36] Isaac Pitman, *Manual of Phonography*, 1845, 8. Italics true to the original.
[37] Lisa Gitelman, *Scripts, Grooves, and Writing Machines*, (Stanford, Stanford University Press, 1999), 41.
[38] Krielkamp, *Voice*, loc. 1060
[39] Isaac Pitman, *Manual of Phonography*, 1845, 8.
[40] Krielkamp, *Voice*, loc. 526.

principles, especially those which emphasize verbatim transcription, "emblematiz[e] Victorian culture's ongoing romance with voice as a cure for print culture's ills."[41]

Some of Pitman's characters themselves may have been subjective, but the terminology that the shorthand inventor used to organize these characters ultimately morphed into the objective phonetic categories still used by linguists today.



2. The arrangement of the sounds in each group is in accordance with the order of the organs by which the sounds are produced; those being taken first which are produced by the most external organs, the lips.

3. The following are the consonants of the English language, arranged according to their general and minor divisions.

Group.	Utterance.	Labials.	Lingua-Dentals.	Lingua-Palatals.	Gutterals.
Explodents	Whispered	p	t	ch	k
	Vocal	b	d	j	g
Continuants	Whispered	f	th, s	sh	
	Vocal	v	*th*, z	zh	
Liquids	Vocal		l	r	
Nasals	Vocal	m	n	ng	
Coalescents	Vocal	w		y	
Aspirate	Whispered				h

	MANNER	Bilabial	Labio-dental	Lingua-dental	Alveolar	Post-alveolar
		PLACE				
	Stop	p, **b**			t, **d**	
	Fricative		f, **v**	θ, ð	s, z	ʃ, ʒ
	Affricate					ʧ, ʤ
	Nasal	m			n	
Approximates	Liquid (Lateral)				l	
	Liquid (Rhotic)				ɹ	
	Glide	w				

***Bolded** symbol is the voiced sound

Fig. 3.4 (left): Pitman describes the place, manner, and articulation of consonant sounds.
Fig. 3.5 (right): Pitman's delineation of sounds in comparison to their placement on a present-day International Phonetic Alphabet chart.

The International Phonetic Alphabet (IPA), established in 1888, was influenced by a wide variety of phoneticians, including Pitman and many others. The decision that Pitman made to describe the physiological difference between voiceless and voiced sounds as thin vs. thick lines, respectively, is still mirrored in the present-day IPA's use of regular typeface for voiceless sounds, and bold font for voiced ones. See Figure 3.4, as well as Pitman's own description of his method:

[41] Ibid., loc. 1060.

> It is a fact, not by any means so extensively known as it ought to be, that there are in the English language not more than seven essentially different simple *sounds*, usually called *vowels*, which are modified by not more than *twelve* simple *articulations* or *consonants*, and one *aspirate* or *breathing*. [...] The present system is founded upon a minute and careful examination of the organs of speech, and the result has been that we have deemed it expedient to arrange the vowels and articulations, not in the old, alphabetical style...[42]

As James Emmott describes in "Performing Phonographic Physiology," writing methods that invoked human physiology, especially the parts of the vocal tract, contributed to the "mechanical" method of linguistic study that physiologists would use in the 1860s-1880s to establish modern vocal science. One of the greatest contributors to the International Phonetic Alphabet was *Visible Speech* (1867), devised by Scottish elocutionist Alexander Melville Bell, father of the well-known inventor Alexander Graham Bell. The pervasiveness of phonography via Pitman's shorthand meant that "the human body was already being figured in phonographic terms: as an apparatus, increasingly understood mechanically, that records received stimuli and replays them as performed behaviors"[43] by the time Melville Bell created his method.

Similarly, Pitman's vision for the uses of his shorthand anticipated the summit that ultimately led to the establishment of the IPA. When describing the place, manner, and voicing of sounds, Pitman argues that, "This division of speech into sounds and articulations, is a natural one, and exists in all languages."[44] He foresaw the potential use for phonetics in the social sciences as early as 1845, when he touted, "the applicability of

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[42] Pitman, *Manual of Phonography* (1845), 9.
[43] James Emmott, "Performing Phonographic Physiology" in *Strange Science: Investigating the Limits of Knowledge in the Victorian Age*, eds. Laura Pauline Karpenko and Shalyn Rae Claggett (Ann Arbor: University of Michigan Press, 2016), 126.
[44] Isaac Pitman, *Manual of Phonography*, 1845, 9.

the present alphabet to 13 different languages" including Arabic, Dutch, Russian, German, and others. He even suggested that "if in other languages there should be found some vowels and consonants, for which proper signs have not been here proposed, we do not doubt that it would be easy to invent additional characters…"[45] Approximately 10 years later in 1854, a group of philologists and phoneticians headed by Chevalier Bunsen formally met, during London's first series of "Alphabetic Conferences," to concretize this exact practical application that Pitman had presaged. The Alphabetic Conferences' goal was to "move beyond conventional alphabets" by "identify[ing] and arrang[ing] human speech sounds in a new symbolic system that would be universally usable across all languages of the world."[46]

Thus, Pitman's shorthand played a critical role not only in the development of present-day sound science, but also in bridging the gaps between earlier attempts at vocal study and more modern approaches to the same topics. As demonstrated by figure 4.1 and figure 4.2,[47] Pitman's shorthand method drew from Gurney's for phonetic inspiration as well as improvements. Briefly put, Pitman's shorthand used phonetic categories to solve the problems posed by Gurney's; using the same symbol for sounds that share the same place and manner of articulation, such as /p/ and /b/ (both bilabial stops; the first voiceless, the second voiced), reduced the number of characters required by grouping sounds that are produced in a similar way together.

[45] Ibid., 36.
[46] James Emmott, "Performing Phonographic Physiology," 125.
[47] Ibid., 20 and 21.

As a result, Pitman felt that his shorthand system eschewed the arbitrariness of longhand writing since it relied almost entirely on phonemes, breaking words down into their smallest possible pieces to ensure accurate description. By critiquing the alphabet, he held his own method above that of his predecessors—for example, when Gurney's brachygraphy uses two symbols, "t" *and* "h," for the single phoneme /θ/. Similarly, he concluded that he had not omitted any necessary parts, like the vowels in Gurney's system which were not written, but yet, indicated by changing the place of the surrounding consonants, which could sometimes be mis-transcribed or accidentally forgotten. Rather, each part of the word has its role and is represented accordingly: in figure 3.7, an enlargement of figure 3.6. depicting the word "make," the symbol for the onset /m/ begins the word, the symbol for the coda /k/ completes it, and in the middle, the /ei/ (*long a*) vowel sound is transcribed quickly and cleanly with a single representative dot.[48] Although the placement of the dot (in the middle of the line), does contribute to the transcriber's understanding of what sound it represents, the vowel itself does not disappear in favor of being indicated by the consonants around it. On the contrary, orthographic features that are not pronounced—for example, the silent "e" used in alphabetical spelling—are the ones not included. Rather than choosing which parts of the word's spelling should be used to transcribe it, Pitman's system preserves individual speech sounds in order to communicate them once again, when the notes are read back.

[48] Isaac Pitman, *Exercises in Phonography* (London: Phonetic Depot, 1850), 25. Enlarged with phonemes added by me.

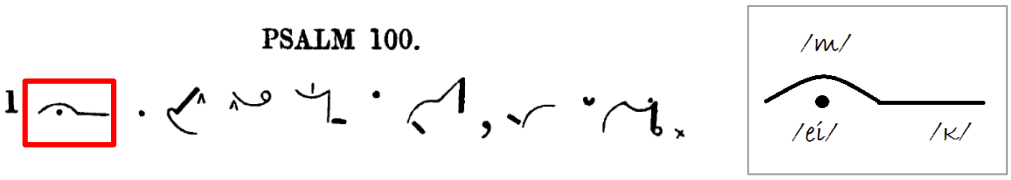

Fig. 3.6 (left): A transcription of Psalm 100 in Pitman's shorthand, which reads: *Make a joyful*
noise unto the Lord, all ye lands.
Fig. 3.7 (right) enlarges the phonetically transcribed word "make."

Pitman's system became immensely popular, especially in Great Britain. According to Lisa Gitelman, there were two groups of people who found Pitman's method particularly useful: first, the private affluent male who worked as a merchant, lawyer, author, or editor; and second, the less affluent technician who worked as a "verbatim reporter" for the court, parliament, police, or newspaper.[49] Like telegraph operators, most of these skilled technical workers were of lower-middle-class background, but frequently aspired to build a better life through a skilled career, as Charles Dickens ultimately did.

Though provocative, many of Pitman's claims are specious, especially his optimistic argument that the spoken word is somehow less arbitrary than written language. Yet, one possible avenue for discussion, both when exploring the nature of Pitman's shorthand, as well as other writing systems that are either based on the senses and/or cross boundaries between the senses, is synesthesia. Often, this term is used metaphorically in literary analysis, but it is worth considering whether perhaps Pitman was so insistent on his method subverting arbitrariness because, in his own embodied

[49] Gitelman, *Scripts, Grooves*, 42.

perception, he literally experienced synesthesia. In the medical field, synesthesia is defined as "a perceptual experience in which stimuli presented through one modality will spontaneously evoke sensations in an unrelated modality." The connections that a synesthete makes, for example, between a sound and a shape[50] ("sound-shape synesthesia") or a sound and a spatial location ("spatial sequence synesthesia")[51] are "involuntary, automatic, and stable over time."[52] This last qualification entails that when a synesthete perceives a certain cross-sensory stimulus, they will always experience that stimulus in the same way. For example, if the person feels that the /k/ sound is "sharp," their perception reproduces that same experience every time—the /k/ stimulus is always "sharp."

Similarly, Pitman writes that: "The explodents […] being stiff, unyielding sounds, are appropriately indicated by unyielding right lines." The modifier "appropriately" indicates that he expects his reader to agree with his characterization, as if it is only natural. On the other hand, "The continuants, a more flowing and yielding class of sounds, are represented by curved and flowing lines," and "the liquids *l* and *r*, having no whispered sounds in the English language, are represented by light segments."[53] It is thought-provoking to note that this description takes place in a chapter titled "The Alphabet of Nature," suggesting that it is, perhaps, "involuntary" or "automatic" to view sounds as Pitman does.

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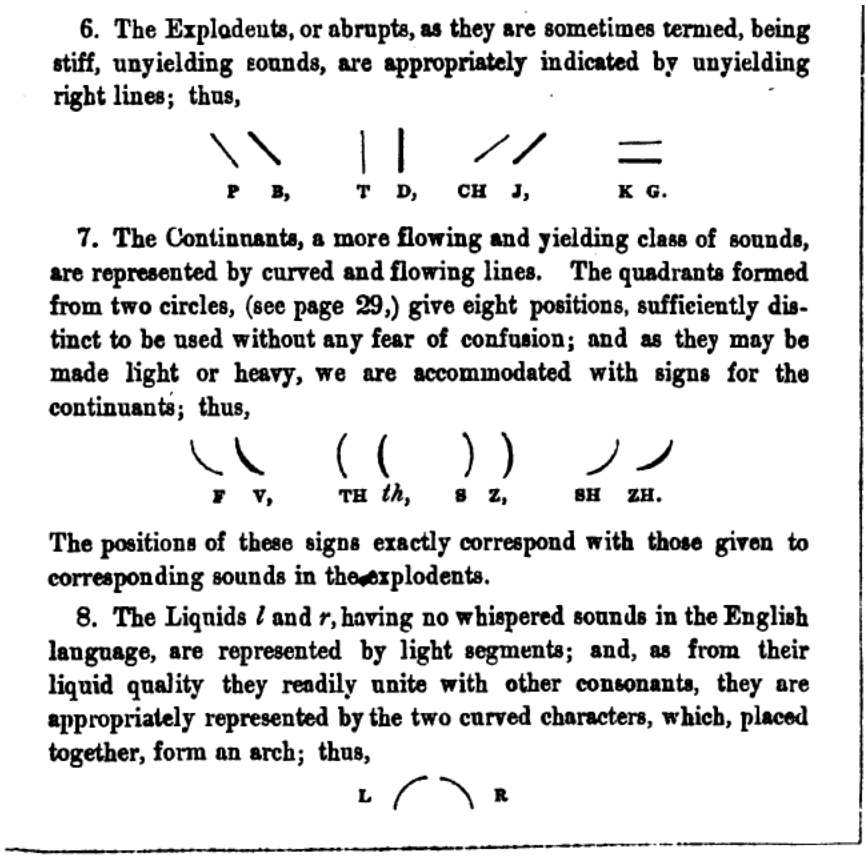
[50] Emory University Contributors. "Sensory Connections Between sounds and Shapes Spill Over in Synesthesia." *Psypost,* 17 September 2016.
[51] Nicola Kirkpatrick, "The Many Types of Synesthesia Explained," Better Help, ed. Aaron Horn, 17 July 2020.
[52] David Brang and V.S. Ramachandran, "Survival of the Synesthesia Gene," *PLoS Biology* vol. 9 (2011).
[53] Ibid.



6. The Explodents, or abrupts, as they are sometimes termed, being stiff, unyielding sounds, are appropriately indicated by unyielding right lines; thus,

P B, T D, CH J, K G.

7. The Continuants, a more flowing and yielding class of sounds, are represented by curved and flowing lines. The quadrants formed from two circles, (see page 29,) give eight positions, sufficiently distinct to be used without any fear of confusion; and as they may be made light or heavy, we are accommodated with signs for the continuants; thus,

F V, TH *th*, S Z, SH ZH.

The positions of these signs exactly correspond with those given to corresponding sounds in the explodents.

8. The Liquids *l* and *r*, having no whispered sounds in the English language, are represented by light segments; and, as from their liquid quality they readily unite with other consonants, they are appropriately represented by the two curved characters, which, placed together, form an arch; thus,

L R

Fig. 3.8. Pitman's phonography assigns shapes to sounds.[54]

In this way, Pitman's characters themselves may have been idiosyncratic, but whether he was aware of that fact is unknown and likely unknowable. According to the American Psychological Association, people who experience synesthesia often talk about their perceptions without realizing they are atypical.[55] Pitman may have expected that everyone perceived the world the same exact way he did; he may have been only doing his job as a salesperson; or his motivation may have fallen someplace in between. Although I will discuss synesthesia as a topic of scientific inquiry in further depth during

[54] Isaac and Benn Pitman, *Manual of Phonography* (Cincinnati: Phonographic Institute, 1855), 21.
[55] Siri Carpenter, "Everyday Fantasia: The World of Synesthesia," The American Psychological Association. *Monitor on Psychology:* 32.3 (March 2001). https://www.apa.org/monitor/mar01/synesthesia.

the coda of this dissertation, what is most important to this chapter is how Pitman's method blurs the lines between subjectivity and objectivity. This is characteristic of phonographic shorthand, as well as the methods of thinking it cultivated in the mid-nineteenth century.

Literary Depictions of Stenography

As with any new "technological wonder of the age,"[56] shorthand reporting made many appearances in Victorian fiction. Nikki Hessell's monograph, *Literary Authors, Parliamentary Reporters* examines the role that parliamentary reporting played in the lives of Samuel Johnson, Samuel Taylor Coleridge, William Hazlitt, and Charles Dickens. Although Dickens was the only one of these writers to use Gurney's brachygraphy, all four of them began their careers as court reporters, whose first jobs were simply to transcribe the speeches of others rather than create literary works of their own. Hessell argues that historically, scholars have concluded that shorthand reports taken by these four authors "were special, memorable, transcendent."[57] Such a reception may have been an echo of claims made by the shorthand inventors themselves; Pitman adamantly suggested that "the pursuit of [phonographic shorthand writing] materially contributes to improve the student in the principles of grammar and composition."[58]

[56] See Chapter 2 of this dissertation.
[57] Nikki Hessell, *Literary Authors, Parliamentary Reporters:* (Cambridge, Cambridge University Press, 2012), 1.
[58] Pitman, *Manual* (1855), 17.

However, Hessell reframes analyses of literary writers who began their careers in reporting through virtually the opposite light. She reminds readers, as Miss Clack does in *The Moonstone*, that these authors were not permitted (at least by their supervisors within the profession) to augment their gallery notes with literary "improvements." Hessell's book offers an alternative approach to those provided by past biographers of Dickens and the other authors mentioned in her study—one that involves "direct engagement with […] normal gallery procedure, the expectations of editors, journalists and readers, and the style of reporting in each of the relevant eras."[59] In this way, she emphasizes the lived reality of skilled workers, who, in many cases, became reporters in order to overcome economic strife and move upward in the social sphere. Such workers needed to maintain an intense focus on conforming their work to their superiors' expectations. Hessell concludes that in their early reporting careers, these four literary figures—who are so famous for their distinctiveness—in fact served in a "collaborative state" that was "essentially about the submersion of individual style."[60]

Similarly to Hessell's book, Chapter 3 of Ivan Krielkamp's *Voice and the Victorian Storyteller* concludes that Dickens's representation of David's struggle to learn Gurney's shorthand both "attempt[s] to bring into the form of the novel the phonographic innovations in 'voice writing'" while also "parodying and challenging the claims made by phonography and shorthand advocates."[61] He explains:

> [Steven] Marcus argues convincingly that the enormous success and cultural impact of *The Pickwick Papers* derived in part from Dickens's having hit upon a

[59] Hessell, *Literary Authors*, 2.
[60] Hessell, *Literary Authors*, 15-16.
[61] Krielkamp, loc. 1160-1170.

> way to bring his experience as a shorthand reporter to bear on fiction writing. In the language of the character jingle, Dickens represents a character's rapid-fire, fragmentary, abbreviated speech as something very much like shorthand notes: "Pooh, pooh! - nothing more easy - blackguard boy - lovely woman - fat boy horsewhipped - you believed - end of the matter - all comfortable." Marcus suggests that Dickens's shorthand-influenced writing, more thoroughly than ever before in English fiction, does something to speech other than simply transform it […] into standard written English. […] Orality seems to pour into the novel in such a voice, heralding a new power for fiction, in the Victorian era, as a putative "verbatim" transcription of living speech.[62]

Johnson and Coleridge worked as reporters in the eighteenth century during the early days of Gurney's brachygraphy; Hazlitt and Dickens did so in the early nineteenth century, as Gurney's method was slowly replaced by its successor, Pitman's phonography. By the 1890s, both the style of shorthand writing and the technicians who used it had changed dramatically. Lisa Gitelman points out that by the 1870s and 1880s, the "less affluent" group of technicians using shorthand writing methods was increasingly female.[63] This is why, by the time of Bram Stoker's 1897 *Dracula*, Mina Harker suggests that, in learning shorthand alongside her solicitor fiancé Jonathan, she might "try to do what I see lady journalists do: interviewing and writing descriptions and trying to remember conversations."[64]

This line suggesting that Mina "flirts with modern professionalism" (as Nina Auerbach and David J. Skal put it),[65] is notable for discussions about the connection between female mediums, media/mediation, and the rise of feminism and the New

[62] Krielkamp, loc. 1160-1170.
[63] Ibid.
[64] Bram Stoker, *Dracula*, eds. Nina Auerbach and David J. Skal (New York: W.W. Norton, 1997), 56.
[65] Ibid., see Auerbach and Skal's Footnote 4.

Woman, as Jeffrey Sconce has shown.[66] The rest of Mina's sentiment is aligned with the broader promises made to potential students of phonographic shorthand: "I am told," she continues, describing her motives for learning the method, "that with a little practice one can remember all that goes on or that one hears said during a day."[67] Mina's sentiment echoes the claims that Pitman made when outlining "The Advantages of Shorthand" in an 1855 edition of his manual:

> The memory is also improved by the practice of stenography. The obligation the writer is under to retain in his mind the last sentence of the speaker, at the same time that he is carefully attending to the following one, must be highly beneficial […] So much are the powers of retention strengthened […] that a practical stenographer will frequently recollect more without writing, than a person unacquainted with the art could copy in the time by the use of the common-hand.[68]

This argument seems plausible enough, though as usual, Pitman provided no evidence for his claims. On the contrary, he continues by listing many other potential benefits which a twenty-first century reader may receive with increasing levels of incredulity. For instance, he claims that shorthand will improve moral qualities such as "patience, perseverance, and watchfulness," that it will strengthen judgment, and refine "taste."[69]

Whether or not memory is factually improved by shorthand is less important than the fact that memory is certainly required in order to effectively transcribe shorthand reports. When defining shorthand, Peter T. Daniels concludes, "The process is not complete until the [shorthand] report is transcribed into ordinary orthography, and even

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[66] Sconce, *Haunted Media*, 44-45.
[67] Stoker, *Dracula*, 56.
[68] Pitman, *Shorthand* (1855), 16.
[69] Ibid. Of course, Arnoldian claims about morality and taste are deeply unsetting from a postcolonial point of view.

the best reporter needs to do the transcription before the material reported has totally vanished from recall…"[70] Gitelman's book connects this definition to the era of Gurney's and Pitman's in particular, adding that the essentials of shorthand reporting were speed and legibility, which could cause great anxiety to the reporter at work. "In the conversion of shorthand reports to full transcripts […] the unique person of the reporter and the necessary uniqueness of transcript stand in for the lacking uniqueness of phonographic signs. Though in theory any reporter can transcribe any report, practice suggested that every reporter be responsible for [their] own transcriptions."[71] This lived reality is one of the large differences between "verbatim reporting" and the actual mechanical phonograph. In order for shorthand writing to function optimally, the individual human mediator who witnessed the original speech was a required element of the transcription process, imperfectly playing the role that would later be fulfilled by wax cylinders that received sound inscriptions. As both Laura Otis[72] and James Emmott have explored in greater depth, during the latter half of the nineteenth century, philosophers and physiologists alike viewed these engraved cylinders, "as an apt metaphor for the working of human memory."[73]

Once again, the actual phonograph figures into Stoker's novel, when combining the multiple voices and investigations of all the characters in order to intervene in the Count's deadly, vampiric scheme. Bram Stoker wrote about both Mina and Jonathan

[70] Daniels, *World's Writing Systems*, 807.
[71] Gitelman, *Scripts, Grooves*, 31.
[72] Laura Otis, *Organic Memory: History and the Body in the Late Nineteenth and Early Twentieth Centuries* (Lincoln: University of Nebraska Press, 1994).
[73] James Emmott, *Performing Phonographic Physiology*, 133.

Harker, who collaboratively mastered, and masterfully deployed, Pitman's system[74] to baffle Dracula. As literary depictions followed the real-life "feminization of the clerical work force" and "standardization of mass business writing,"[75] many critics, including Carol A. Senf, have pointed out the potential for "anachronism" and/or "reverse imperialism" in Stoker's novel. Jonathan, Mina, and the Crew of Light represent modernity (all of them are youthful with the exception of Van Helsing) and the aged Count Dracula represents "the threat of the primitive trying to colonize the civilized world."[76] As Jennifer Wicke has added, stenography in Stoker's novel serves as a "fortuitous code for Jonathan, since Dracula, who seems to know everything else, does not take shorthand."[77]

In this way, shorthand in *David Copperfield* and *Dracula* has been thoroughly studied in previous academic scholarship, but less research has been done on shorthand in the works of Dickens's friend and colleague, Wilkie Collins. Though Dickens—not Collins—was the shorthand writer, scholars like Catherine Peters, Ross C. Murfin, and Peter Ackroyd, among others, have provocatively discussed the friendship between the two writers, as well as their mutual influences upon each other—both in their personal lives, and in their fictional works. In 1856, Dickens wrote Collins, complaining that he had yet to read any biographies of himself that were accurate. Knowing that Collins had

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[74] Technically, the text of *Dracula* never clarifies which shorthand method is being deployed. It seems that most scholars have either followed David J. Skal and Nina Auerbach's lead, or come to the same conclusion as these editors did. See the *Norton Critical Dracula* (New York: W.W. Norton, 1997), page 9, footnote 1. Skal and Auerbach cite the "general use" of Pitman's system in Britain at that time.
[75] Jennifer Wicke. "Vampiric Typewriting: Dracula and Its Media." *ELH* 59, no. 2 (1992): 471.
[76] Carol A. Senf, "Dracula: The Unseen Face in the Mirror," in *Dracula*, eds. Nina Auerbach and David J. Skal (New York: W.W. Norton, 1997), 423; 426.
[77] Wicke, "Vampiric Typewriting," 471.

recently been recruited to assist Emile Durand Forgues in writing a new introductory "profile" of Dickens for the French translation of his works,[78] Dickens wrote a few paragraphs about his early life in order that his friend might "prime" the new translator:

> I was put in the office of a solicitor, a friend of my father's, and didn't much like it; and after a couple of years (as well as I can remember) applied myself with a celestial or diabolical energy to the study of such things as would qualify me to be a first-rate parliamentary reporter […] I made my debut in the gallery (at about eighteen, I suppose) [… and] I remained there until I had begun to publish "Pickwick," when I found myself in a condition to relinquish that part of my labours; […] I left the reputation behind me of being the best and most rapid reporter ever known, […] I could do anything in that way under any sort of circumstances, and often did. (I daresay I am at this present writing the best shorthand writer in the world).[79]

As evidenced above, Dickens's title of "the best shorthand writer in the world," was self-given—and notably coined in a letter to his fellow novelist. Dickens's contemporaries, including fellow shorthand reporter Thomas Beard and fellow journalist James Grant, both supported his claims of shorthand-writing prowess, leading the majority of biographers to do the same.[80] Nikki Hessell's book suggests that while "there is no reason to doubt […] Dickens's superior shorthand skills," it is difficult to test any claims of Dickens's abilities given the evidence available in the present day. Of all the speeches Dickens undoubtedly recorded, only one transcript linked to him is still extant, and Dickens only transcribed part of it—supporting Hessell's assertion that shorthand writing was anonymizing and collaborative.[81]

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[78] Declan Kiely, "A Wild Beast in a Caravan," The Morgan Library & Museum (Blog). 16 November 2011. https://www.themorgan.org/blog/wild-beast-caravan
[79] Charles Dickens. Letter to Wilkie Collins, 6 June 1856. *The Letters of Charles Dickens* (London: Chapman & Hall, 1880), vol. 1, 438.
[80] Hessell, *Literary Authors,* 10.
[81] Ibid., 10-14.

The *Moonstone's* Writing Process: Structure and Mediation

A wide range of nineteenth-century novels that fall in the general category of "mysteries" rely on epistolary, and/or frame structures to build suspense and blur the lines between "unbelievable" and "almost believable" stories. Such mysteries include the sensational, like Anne Brontë's *The Tenant of Wildfell Hall* and Collins's earlier book, *The Woman in White;* the supernatural, as in *Dracula, Frankenstein,* and *The Island of Doctor Moreau*; as well as the detective stories that built upon *The Moonstone's* legacy, including Arthur Conan Doyle's *Sherlock Holmes* series. Conan Doyle often incorporated fictional newspaper clippings, telegrams, or letters into the pages of *Sherlock Holmes*—and virtually all his detective stories relied on layered mediation,[82] as they were compiled "from the reminiscences of John H. Watson, M.D."[83] The recording practices imitated in all the polyvocal novels listed above rely on collaboration, just as courtroom reporting did.

Beyond the fictional plot within its pages, *The Moonstone* is also embedded in the intrigue of Victorian celebrity authors, their writing processes, and personal lives. At the time of its first publication in 1868, Wilkie Collins was almost as famous as his friend Charles Dickens, and the serial installments of *The Moonstone* in Dickens's magazine "bump[ed] up the circulation of *All the Year Round* probably more than any other novel […] even beating the success of *Great Expectations*."[84] When he first published the story

[82] All of the novels are narrated by Watson, though two of the 56 short stories are narrated by Holmes directly: "The Adventure of the Blanched Soldier" and "The Adventure of the Lion's Mane."
[83] Arthur Conan Doyle, *A Study in Scarlet,* in *The Complete Sherlock Holmes* (New York: Race Point Publishing, 2013), 4.
[84] Catherine Peters, *The King of Inventors* (London: Secker & Warburg, 1991), 311.

in novel form, Collins added a second preface to the book. In this "preface to the current edition," he states that "the circumstances under which *The Moonstone* was originally written, have invested the book—in the author's mind—with an interest peculiarly its own."[85] The entire run of copies sold out almost immediately, as both the story and the writing of the story were infused with mystery. The following section will provide a brief summary of Collins's novel, while also paying attention to the history of its compilation and the narrative framing structure Collins used. Ultimately, this discussion will contribute to a comprehensive analysis of phonography and auditory observation within *The Moonstone's* pages.

The fiction of *The Moonstone* begins with a prologue, "extracted from a family paper" dating back to 1799. In the prologue, readers learn that the titular Moonstone of Collins's novel is a large yellow diamond that an English soldier, Colonel John Herncastle, stole from Indian Brahmins in 1799. Just before Herncastle murdered the diamond's last steward (who is described in Othering and colonial terms), the Indian man swore to Herncastle that the Moonstone would have its vengeance on "you and yours," implying a curse upon his family.[86] This small prologue is then followed by eight separate "narratives" and an epilogue, written by a variety of speakers involved in the mystery that ensues.

[85] Wilkie Collins, "Preface to the Present Edition," *The Moonstone* (New York: Penguin Books, 1998), 5.
[86] Collins, *Moonstone,* 14.

The largest section is the first narrative, related by Gabriel Betteredge, the head servant at Lady Verinder's house.[87] Throughout Betteredge's narration, readers learn that due to an undisclosed family rift, Herncastle has not spoken with his sister, the wealthy widow Lady Verinder, for many years. However, in the beginning of the novel, Lady Verinder and the rest of her family learn that Herncastle has left the Moonstone—his most valuable and controversial possession—to his niece, the Lady's daughter Rachel Verinder, on her eighteenth birthday. Oblivious to the sordid history of the gem, Rachel accepts her uncle's gift on the eve of her birthday dinner, only to have it inexplicably stolen from her room in the middle of the night.

Complicating things is the fact that three "Indian Jugglers" have followed the diamond from its safe storage place in a London bank, all the way to the Verinder home in Yorkshire. They lurk around the Verinder estate (presumably waiting to steal the diamond back from the Verinder family). The morning after the theft, the family members call upon the police as well as the famous detective Sergeant Cuff to find the jewel. Betteredge, Rachel, and Lady Verinder are all deeply defensive of the family's staff, but they do have one maid with a tarnished past whom the police suspect—Rosanna Spearman. Rosanna is repeatedly described as ugly due to a deformity in her back, and furthermore lives with the stigma of being morally corrupt, since she was imprisoned for theft in the past. Although Lady Verinder views Rosanna as reformed, she has to actively combat assumptions that Rosanna stole the diamond, especially as Rosanna's behavior

[87] Though Betteredge doesn't seem to know it, Daniel Defoe, author of *Robinson Crusoe,* was well-known for having devised and practiced his own system of shorthand writing. See Kiely, "A Wild Beast in a Caravan."

becomes increasingly more erratic in the wake of the theft. Before the family can find concrete answers, Rosanna dies by suicide, throwing herself and valuable evidence in the nearby "Shivering Sands," a beachside quicksand deposit near the family's home, which the characters view with almost supernatural anxiety. At this point, Sergeant Cuff concludes that Rachel herself colluded with the late servant Rosanna in order to steal her own diamond.

The rest of the story is picked up by a variety of narrators with smaller contributions to the book: Miss Clack, Rachel Verinder's cousin; Matthew Bruff, a lawyer; Franklin Blake, Rachel's fiancé; Ezra Jennings, assistant to the doctor Mr. Candy; Sergeant Cuff, the renowned detective; several letters by deceased characters; and a few additional pages written by unnamed men in the police force. As Lewis Roberts explains, "Collins has constructed his novel as a series of first-person accounts in which the narrators are both part of the narrative action and observers of the narrative structure."[88] This is especially true in the lengthy narratives of Gabriel Betteredge and Miss Clack, the first two narrators—both of whom repeatedly comment on their own writing processes. Betteredge, on one hand, tends to get distracted, and writes frequently about his own embodied experience in the moment of writing his section. After completing his first chapter, the fictional Betteredge consults his real-life reader: "…this don't look much like starting the story of the Diamond—does it? I seem to be wandering off in search of Lord knows what, Lord knows where. We will take a new sheet of paper,

[88] Lewis Roberts, "The Shivering Sands of Reality: Narration and Knowledge in Wilkie Collins' The Moonstone," *Victorian Review* 23.2 (Winter 1997), 168.

if you please, and begin over again…"[89] It is particularly noteworthy (and entertaining to readers) here, that though Betteredge claims to be starting over, everything he says he has done a poor job of writing is still included in the narrative.

Rachel's cousin Miss Clack, conversely, brags about the precision of her writing, especially relative to the stories relayed by her distant family members—compared to whom she, a vocally Christian woman, feels morally superior. Clack explains that she is reporting events so accurately after the fact thanks to the diary she kept at the original time of the mystery: "Nothing escaped me at the time I was visiting dear Aunt Verinder. Everything was entered (thanks to my early training) day by day as it happened; and everything down to the smallest particular, shall be told here. My sacred regard for truth is (thank God) far above my respect for persons."[90] Once again, however, her description of her story and the story itself stand in contradiction to one another. Though Clack claims she will not add any "improvements" to the events, she does provide constant commentary, critiquing the "heathen old man named Betteredge," and constantly invoking Christian judgments and her "Sunday-school" values.[91] Similarly, on at least one occasion, Clack limits her description of a crucial clue due to her personal ideological beliefs. She writes that shortly after Rachel's party, the young woman's wealthy cousin Godfrey Abelwhite was attacked by the three Indian men; however, Clack keeps her account of the crime extremely limited, stating that the "odious search of [Abelwhite's] person" is "hardly within the proper limits of female discussion."[92]

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[89] Collins, *Moonstone*, 23.
[90] Ibid., 202.
[91] Ibid., 203.
[92] Ibid., 206; 205.

As the narratives of *The Moonstone* continue to cohere, it is revealed that prior to the theft, Rachel was pursued by two separate gentleman cousins—Franklin Blake, whose affections she returned, and the aforementioned Godfrey Abelwhite—whose proposal she rejected, choosing Blake as a fiancé instead. However, after Rosanna Spearman's dramatic death, Rachel began to shun Blake, and even attempted to call off their marriage. Blake is bewildered, until Rachel finally reveals that on the night of her birthday, she awoke when none other than Blake himself entered her room. She watched, with her own eyes, as he took the diamond. This assertion only baffles Blake further—until he has a chance encounter with doctor's assistant Ezra Jennings, who attended Rachel's birthday with his employer, Mr. Candy.

On the night of the party, Mr. Candy took cold from the rain, and almost died as the result of the severe illness. Jennings was able to save the doctor's life using large doses of opium, but Candy has since lost his conscious memory of the entire time he was ill, including the birthday dinner. Likewise, Jennings is living on borrowed time: a chronic illness of his own has left the assistant withered and sickly, and highly dependent on large doses of laudanum, a drug which both he and Mr. Candy find highly effective in treating pain and irritability. Jennings reveals to Blake that as the old doctor was delirious, he muttered disjointed strings of words in his sleep, which the assistant wrote down quickly using shorthand.

Though the doctor's individual words made little sense, Jennings claims to have reconstructed them into a cohesive whole, which provides the characters' biggest clue in unraveling the mystery. Jennings's reassembled notes suggest that after Blake got into an

argument with Mr. Candy about the effectiveness of laudanum, Mr. Candy slipped the opiate into Blake's drink without his knowledge. The doctor's intention was to give Blake a great night's sleep, and then reveal the trick the morning afterwards to prove his point. Jennings and Blake suspect that, influenced by the opium dose, Blake sleepwalked into Rachel's room with the good intention of returning the diamond to safekeeping at the bank. Before his task was complete, however, Blake unconsciously went back to bed, losing the Moonstone in the process. The Moonstone remains lost because the opium wiped Blake's memory of his own actions, just as it wiped the doctor's knowledge of what he had done.

In "The Moonstone, Narrative Failure, and the Pathology of the Stare" Sean C. Grass notes why Collins's experience of writing this novel was so peculiarly linked to the story he told in its pages. In an 1868 letter, Collins reports that he struggled immensely in the writing of certain installments, due to the severe pain caused by his rheumatic gout. In fact, Collins explains, he needed to dictate one of *The Moonstone's* weekly serializations to his amanuensis and romantic partner, Elizabeth Hartley ("Caroline"). Indeed, part of the original manuscript of Collins's fifteenth installment appears in Hartley's personal handwriting.[93] Although she was a widow throughout her relationship with Collins,[94] Hartley's past reminds twenty-first century readers just how commonplace shorthand was in everyday life during the mid-nineteenth century; her late husband George Robert Graves had been a professional office clerk and shorthand writer.[95] Moreover, like many

[93] Sean C. Grass, "The Moonstone, Narrative Failure, and the Pathology of the Stare," *Dickens Studies Annual* Vol. 37 (2006), 114, Footnote 7.
[94] For more on Collins's romantic life, which was nontraditional, see Peters, *The King of Inventors*.
[95] Peters, *The King of Inventors,* 192

biographers of Collins, Catherine Peters has pointed out the irony that, just like his character Ezra Jennings, Collins was fully dependent on dangerously large doses of laudanum to treat his pain throughout the writing of this novel—and, just like his character Franklin Blake, Collins claimed to have lost his entire memory of planning *The Moonstone*, joking that the book's finale was a surprise to everyone including himself. Nonetheless, Peters concludes, scholars generally agree that Collins was successful in following through with his own designs.[96]

In *the Moonstone,* Jennings is confident that he and Blake can prove the accuracy of his laudanum hypothesis (and possibly even recover the gem) by recreating the events of Rachel's dinner party at the Verinder home. The skilled medical assistant calls this a scientific "experiment," and the characters are not only willing, but enthusiastic, to participate in order to clear Blake's good name. Attempting to recreate the original circumstances of the party, Jennings doses Blake with laudanum again in the way he suspects Candy did. Several witnesses look on as Blake goes to sleep in the same room as before, and, hours later, begins sleepwalking, just as Jennings theorized. Blake makes his way into Rachel's room, (where he had seen his cousin tuck the jewel safely into a drawer), and where he once again recovers a mock jewel. However, during this recreation, Blake's sleepwalking fit does not last long, and he falls back asleep on the couch—dropping the imitation Moonstone to the ground in the middle of the hallway. Generally speaking, the characters view the experiment as a success; but, believing that

[96] Ibid., 303.

Blake must have hidden the real jewel somewhere in his room for safekeeping, they are disappointed that he did not take them directly to its hidden location in the house.

Blake's lawyer, Mr. Bruff, has a different theory of the crime. Although he acknowledges that the experiment shows Blake as an unwilling contributor to the theft, Bruff insists that he has tracked the Moonstone to a bank in London. The characters do not know how it got there, but Bruff believes that the heirloom is now in the care of a man named Mr. Luker. Without delay, Bruff and Blake travel to London to investigate this lead. Though they have not heard from Sergeant Cuff recently—as he retired in the year that has passed since the Moonstone was stolen—they have been writing him letters, and by the time they arrive in London, the detective meets them there. Once Sergeant Cuff becomes aware of all the events that have since come to light, he believes he has solved the case. He even dramatically writes the name of his suspect in an envelope, telling Blake that they can open it and see if he is correct once they apprehend the perpetrator.

And thus, the men, accompanied by Bruff's errand-boy (who goes by the nickname "Gooseberry"), hide in plain sight at the bank, watching for Mr. Luker to interact with their potential thief. Bruff and Blake are both convinced that they have seen one man subtly exchange a parcel with Mr. Luker, and so they follow that suspect to a chemist's shop. Yet, they were mistaken, revealing only an innocent servant on an errand for the banker. Gooseberry alone caught sight of the right man, and although the boy gets separated from his employers, he later leads the gentlemen to an inn where their real criminal, a bearded sailor, took the gem.

The group is too late, though—by the time Bruff, Blake, Sergeant Cuff, and Gooseberry arrive, their suspect has been killed by the three Indian travelers, who have taken the Moonstone with them. However, as they inspect the thief's body, Sergeant Cuff recognizes that their dead sailor is disguised. He wears a black wig and has used powder to give himself a "swarthy" complexion. When the detective removes this disguise, they discover that the real perpetrator is none other than Godfrey Abelwhite, the cousin who was entrusted to bring the Moonstone from the London bank to Rachel's Yorkshire home in the first place. Though friends and family had previously believed that Abelwhite was an honorable, philanthropic gentleman, in reality, he had secretly squandered a trust fund that did not belong to him. The characters conclude that Abelwhite was in danger of being discovered and ruined when he had the chance encounter of discovering Franklin Blake sleepwalking in the hallway, Moonstone in hand. Blake unwittingly entrusted the diamond to Abelwhite, believing that Rachel's wealthy kinsman would return the diamond safely to the bank, and so went back to bed none the wiser. In reality, Abelwhite set to work on a plan to embezzle the diamond in an attempt to save his own social and financial reputation.

After the exciting events of the final few sections, Gabriel Betteredge picks up his story in the book's "eighth narrative," which briefly informs readers that Franklin Blake and Rachel Verinder have since been happily married. With that said, Betteredge concludes: "Ladies and gentlemen, I make my bow, and shut up the story."[97] Yet, there is still an epilogue, told by three separate writers, before the story truly draws to a close.

[97] Collins, *Moonstone*, 463.

First, two separate police representatives make brief reports on attempts to track down the Indian men who stole the diamond; second, Collins includes a letter to the lawyer Mr. Bruff, written by Mr. Murthwaite—a friend of the Verinder family and known adventurer, who spoke of his own travels to India two years earlier at Rachel's eighteenth birthday. Recalling the dramatic events surrounding the party, Murthwaite tells Bruff that he has recently seen the Moonstone once again, as well as the three Indian men who stole it. He reports that these men, though still alive, sacrificed their caste in service to restoring the jewel to its rightful place: "And there, in the forehead of [the deity of the Moon], gleamed the yellow Diamond, whose splendour had last shown on me in England, from the bosom of a woman's dress!"[98]

In this way, the commentaries provided by Gabriel Betteredge and Miss Clack are not the exception to the novel's awareness of its own structure and mediation, but the rule. As Ross C. Murfin has concluded, there is not merely one chapter or scene where "writing is of interest" to the characters in *The Moonstone.* Instead, Murfin explains, the novel is "a compilation of the written narratives of seven characters," which ultimately means that "the 'action' of the novel, in a sense, is writing; the events of the story are all recalled by writers."[99]

[98] Ibid., 472.
[99] Ross C. Murfin, "The Art of Representation: Collins' The Moonstone and Dickens' Example," *ELH* 49.3 (Autumn, 1982), 654.

The "Subjective-Objective": Shorthand's Promises and Failures

The accuracy of shorthand, both as depicted in fictional texts and as it was situated in nineteenth-century culture, engages with the simultaneous optimism and anxiety that results when readers realize that even the most allegedly "verbatim" transcription is still being filtered through the subjective personhood of the shorthand writer. In "The 'Shivering Sands' of Reality: Narration and Knowledge in Wilkie Collins's the Moonstone," Lewis Roberts concludes that:

> *The Moonstone,* a novel which presents the accurate re-telling of the diamond's history as a means toward the revelation and understanding of the mystery behind its disappearance, often works by calling the possibility of such objective knowledge, and such objective narration, into question. *The Moonstone's* critique of rationality and absolute knowledge rests not on a refutation of reality, but rather on an insistence that the alien, the unknowable, the mysterious are necessary components in any realistic narrative.[100]

Although Roberts uses the language of the "alien" and the "mysterious" to make his point, one important intervention of his article is to underscore that the lack of objectivity in *the Moonstone* is not a mistake, but rather, a purposeful exploration of the very impossibility of taking a purely objective viewpoint. Leah Price's brief analysis of the rise and fall of shorthand likewise hinges on the understanding that several of the biggest industries which reliably employed stenographers—namely, journalism and court reporting—were impacted by cultural beliefs and expectations that varied greatly among different employers and in different eras.

In the eighteenth century, for example, Hessell argues that objectivity increasingly demanded by parliamentary reporting came to contradict the subjectivity that was so

[100] Roberts, "The Shivering Sands," 168.

valued in literature at the time: "The new potential for texts that captured the authentic spoken word led to an emerging disdain of the eighteenth-century notions […] that guided Johnson, […] Coleridge, and Hazlitt." By the mid-nineteenth century, she notes, Victorian standards of accuracy "were thus seen as a vast improvement."[101] As mechanical recording became increasingly prevalent in the early twentieth century, though, Price explains that a distinction emerged in specific legal situations—which attempted to reconcile reporters' rights with the rights of those being reported upon—by permitting reporters to take shorthand notes, but forbidding mechanical devices from certain courtrooms and situations.[102] This line between human and machine was drawn, Price adds, only to soon be blurred again, as new devices were invented that further integrated the human into the mechanical.

In a similar way, the "subjective-objective" is one of the recurring themes in *The Moonstone*, which is both directly discussed by the characters and explored more subtly through the narrative's events. Franklin Blake first discusses "subjective" versus "objective" methods of analysis when he and Gabriel Betteredge are trying to determine why Rachel's uncle Herncastle left her the Moonstone in the first place—was Herncastle's Will was a kind apology, or a cruel vengeance? Betteredge narrates this conversation:

> "This question has two sides," [Franklin Blake] said. "An Objective side, and a Subjective side. Which are we to take?"
>
> He had had a German education as well as a French. One of the two had been in undisturbed possession of him (as I supposed) up to this time. And now (as well as I could make out) the other was taking its place. It is one of my rules in

[101] Hessell, *Literary Authors,* 132.
[102] Price, "Diary."

> life, never to notice what I don't understand. I steered a middle course between the Objective side and the Subjective side. In plain English I stared hard, and said nothing.[103]

Here, Betteredge ends with a sense of humor, since he, a servant with many conservative ideological views, does not think that he is qualified to discuss philosophical methods with the well-educated gentleman.

Scholarship about *the Moonstone* generally accepts a connection between the book's discussion of the "subjective" versus "objective" and Collins's first preface to the book. When explaining his own inspiration, Collins writes: "In some of my former novels, the object proposed has been to trace the influence of circumstances upon character." In other words, he suggests, his aim has been to trace how objective facts impact individual people. However, "In the present story I have reversed the process. The attempt made, here, is to trace the influence of character on circumstances."[104] That is, in *The Moonstone,* Collins examines the effect that subjective perspectives can have upon the seemingly indisputable facts that make up a story. This is clear even from a basic structural level, as the novel's many perspectives vary greatly in age, education, socioeconomic class, gender, physical appearance, and overall worldview. With only one voice or narrator, the mystery might not have been solved. But with many, the pieces of the puzzle—a metaphor which Collins repeats in several of the book's narrations—come together.

[103] Collins, *The Moonstone,* 54.
[104] Ibid., 3.

As Betteredge and Blake continue their discussion, Betteredge suggests a potential motivation for Herncastle's decision to bequeath the diamond to his niece: that if he intended to upset Lady Verinder with a cursed diamond, bequeathing the Moonstone to a young girl who was unlikely to reject it was sure to guarantee her vexation. If Herncastle left the diamond to his sister directly, Betteredge believes, Lady Verinder may not have accepted the gift into her home. Blake exclaims that by answering in this way, Betteredge has just taken the "subjective" view.[105] It seems that here, Blake means this theory is colored by Betteredge's own opinion of Herncastle and his wrongdoings abroad. Alternatively, Blake proposes a theory that he claims combines the subjective with the objective: that Herncastle merely intended "to prove to his sister that he had died forgiving her, and to prove it very prettily by means of a present made to her child."[106] Calling this view more "objective" does not sound like a description of unbiased scientific methodology, so much as an attempt to view the facts of the situation (that an expensive jewel is a generous gift) without coloring them through a personal feeling or opinion (that the Moonstone is cursed, and/or that Herncastle is cruel).

Although Betteredge's narrative attempts to make sense of Blake's philosophical terms by linking the gentleman's moments of disbelief with his French education, and his faith in evidence with his German one,[107] Blake himself attributes these alleged parallels to a misunderstanding on Betteredge's part. When he tells the story through his own perspective—the third "narrative" in the novel—Blake writes: "If the excellent

[105] Ibid., 54.
[106] Ibid., 55.
[107] Ibid., 181.

Betteredge […] had been let into the secret of my thoughts, he would, no doubt, have declared that the German side of me was, on this occasion, my uppermost side…"[108] By choosing the word "declared" to characterize the old man's confidence, Blake suggests that Betteredge was making profound connections where there may or may not have been connections to make.

As he assembles more and more clues to the mystery of the stolen Moonstone, Blake continues to mention the "objective" and "subjective" views. Towards the middle of the novel, he struggles to understand how Rachel could have witnessed him stealing the Moonstone, when he himself has no recollection of such an event. Blake states that he even considered the possibilities that he was sleepwalking or intoxicated, but has concluded that those factors were unlikely, since Rachel saw his face fully by candlelight, and she claims that he appeared awake and alert at the time of the theft.[109] Consequently, Blake riddles his mind for possible answers: "For the greater part of the night, I sat smoking, and building up theories, one more profoundly improbable than another. When I did get to sleep, my waking fancies pursued me in my dreams. I rose the next morning, with the Objective-Subjective and Subjective-Objective inextricably entangled together in my mind…"[110] Blake finds the discrepancy between what Rachel objectively saw, and what he himself subjectively experienced, inexplicable.

The reality of the situation—that what Rachel witnessed was in fact tainted by Blake's embodied experience—is the same reality that anyone who relied on the

[108] Ibid., 360-361.
[109] Ibid., 351.
[110] Ibid., 361.

"accuracy" of shorthand reporting had to accept. Even though it was against his will, Blake was dosed with laudanum, and Jennings believes that this drug affected him even more than it may have affected somebody else, since he had never used it before.[111] Such a possibility runs parallel to the reality that even the most accurate of transcriptions can contain mistakes, even if they are unintentional. Similarly, every shorthand report remains subject to the memory and skill of the individual stenographer who first recorded, and later re-transcribed, the events. Phonography may be sound-writing, but that necessitates that there is still a fallible human being writing it.

Furthermore, links to shorthand become literal in *The Moonstone* when readers reach the third, fourth, and fifth narratives, reported towards the end of the novel by narratives that alternate between Franklin Blake and Ezra Jennings. When describing how he discovered the true story of what occurred on the night of Rachel's party, Jennings explains that Mr. Candy was speaking from a state of delirium, and that his attempt to make sense of the doctor's disconnected speech was highly experimental:

> I understand the art of writing in shorthand; and I was able to take down [Mr. Candy's] "wanderings," exactly as they fell from his lips— […]
>
> At odds and ends of time, […] I reproduced my shorthand notes, in the ordinary form of writing—leaving large spaces between the broken phrases, and even the single words, as they had fallen disconnectedly from Mr. Candy's lips. I then treated the result thus obtained, on something like the principle which one adopts in putting together a child's "puzzle." It is all confusion to begin with; but it may be all brought into order and shape, if you can only find the right way. Acting on this plan, I filled in each blank space on the paper, with what the words or phrases on either side of it suggested to me as the speaker's meaning; altering over and over again, until my additions followed naturally on the spoken words which came before them, and fitted naturally into the spoken words that came after them. […] after putting the broken sentences together I found the superior faculty of thinking going on, more or less

[111] Ibid., 384.

> connectedly, in my patient's mind, while the inferior faculty of expression was in a state of almost incapacity and confusion.[112]

In response to Jennings's methodology, Murfin argues that what the doctor's assistant has done with writing "is not logically or scientifically defensible. From the moment he begins forming his word list until the time at which he completes his revelatory statement, [Jennings] works arbitrarily: other lists, orders, and paragraphs would doubtless be made by other analysts with other purposes."[113] Unlike shorthand reporters who might vary slightly in the minor details of their handwriting or abbreviations, Murfin asserts that every individual person, if given a random string of disconnected words and told to fill in the blanks, would inevitably fill in the missing words differently. In other words, their writing would be subjective rather than objective.

However, an such an analysis falls short of considering the book's own description of its methodology. Yes—a random onlooker would undoubtedly complete Mr. Candy's statement using whatever words or phrases came into their mind, and as a result, may create a message completely disconnected from any truth of the situation. However, to Jennings's (and Collins's) credit, the person transcribing and translating Mr. Candy's "wanderings" is not a random onlooker, nor someone who is unfamiliar with Rachel's party, unaware of the events surrounding the Moonstone, or even a stranger to Candy's typical behaviors. On the contrary, Jennings's backstory, as he explains it to Blake, clearly shows that the doctor's assistant shares a close personal connection to his

[112] Ibid., 377-378.
[113] Murfin, "The Art of Representation," 654.

employer, which renders him uniquely qualified to interpret what his friend may have been attempting to say.

Jennings tells Blake that he was born and partially raised in one of England's colonies, to an English father and non-English mother. Blake's narration tells readers that this confirms what the gentleman has long suspected: that Jennings "had suffered as few men suffer; and there was the mixture of some foreign race in his English blood."[114] Jennings explains that "at the outset of my career in this country, the vile slander to which I have referred struck me down at once and forever. […] I resigned my aspirations in my profession […] I parted with the woman I loved […] I scorn the guilty evasion of living under an assumed name."[115] In addition to the fact that the characters in the story universally receive Jennings as ugly, with "his gipsy-complexion, his fleshless cheeks, his gaunt facial bones, his dreamy eyes, his extraordinary parti-coloured hair, the puzzling contradiction between his face and a figure which made him look old and young both together," these descriptions show a clear, racialized Othering of him.[116] And this is all without even knowing the slanderous accusations which have ruined him, since he has managed to maintain his assumed name throughout his time in Yorkshire.

Jennings tells Blake that although he cannot bear to repeat what the slander that follows him actually is, he has always been honest with Candy about the possibility that the slander may eventually catch up with him, forcing him to flee and change his name yet again. Candy has chosen not only to believe in Jennings's innocence (which readers

[114] Collins, *Moonstone,* 371.
[115] Ibid., 379-380.
[116] Ibid., 369.

have no verification of, except his "oath as a Christian"[117]), but also to willingly accept the risk of employing him. Jennings says that Candy "has given me shelter, he has given me employment, he has given me rest of mind – and I have the certain conviction […] that nothing will happen now to make him regret it."[118] In this way, Candy is the one friend that Jennings has—the "one man on earth who has befriended [him]." The assistant was so dedicated to curing Candy's illness because without him, Jennings is left with no one: "I had no happy time to look back at, no past peace of mind to force itself into contrast with my present anxiety and suspense…"[119]

The accuracy of Jennings's shorthand report is not in question, so much as the way that the assistant chose to fill in the blanks (depicted by Collins as ellipses) that represent missing words. Blake provides the transcript, both with the words Jennings added, and without them:

> Mr. Franklin Blake … and agreeable … down a peg … medicine … confesses … sleep at night … tell him … out of order … medicine … he tells me … and groping in the dark mean one and the same thing … all the company at the dinner-table … I say … groping after sleep … nothing but medicine … he says … leading the blind … know what it means … witty … a night's rest in spite of his teeth … wants sleep … Lady Verinder's medicine chest … five-and-twenty minims … without his knowing it … tomorrow morning … Well, Mr. Blake … medicine to-day … never … without it … out, Mr. Candy … excellent … without it … down on him … truth … something besides … excellent … dose of laudanum, sir … bed … what … medicine now.
>
> There, the first of the two sheets of paper came to an end. I handed it back to Ezra Jennings.
>
> "That is what you heard at his bedside?" I said.
>
> "Literally and exactly what I heard," he answered […][120]

[117] Ibid., 379.
[118] Ibid., 380.
[119] Ibid., 373.
[120] Ibid., 386-387.

Considering how well Jennings knows his friend, and that he was by Candy's side throughout most of the party, it is not outside the realm of belief that, from this report, Jennings has composed a probable theory of what the doctor meant by his "wanderings." He even acknowledges to Blake that of course, he does not "claim to have reproduced the expressions which Candy himself would have used […] I only say that I have penetrated trough the obstacle of the disconnected expression, to the though which was underlying connectedly all the time."[121]

Even if Jennings had not filled in the blanks at all, the transcription enough provides enough information for him to ask Blake if he discussed sleeplessness with the doctor, and whether on the night of the party, he may have experienced a peaceful "night's sleep in spite of his teeth." Before fully sharing his theory, he asks Blake: "Do you remember having entered into anything like a dispute with [Mr. Candy] – at the birthday dinner, or afterwards—on the subject of his profession? […] Try, and forgive poor Mr. Candy […] he has done dreadful mischief, I own; but he has done it innocently."[122]

Of course, within the fiction of the book, Jennings's "manuscript-experiments"[123] must be effective, otherwise the mystery of the Moonstone would never be solved. However, discussions of his experiment's credibility are reminiscent of the present-day "reproducibility crisis" that has resulted from strict adherence to the "objectivity" of the scientific method, especially in social sciences that are all but inextricably linked to

[121] Ibid., 387.
[122] Ibid., 384-385.
[123] Ibid., 376.

subjective experience. In the 2016 *Proceedings of the National Academy of Sciences*, psychologists Jay Van Bavel et al. explain the Reproducibility Project, "a large-scale replication attempt of 100 studies published in top psychology journals" which found that "only 39% could be unambiguously reproduced." However, in order to make these findings meaningful, the psychologists argue that the studies which were re-tested must also be recoded for "contextual sensitivity," which can explain why the "failed" experiments were not easily or successfully replicated. These psychologists conclude that "researchers, replicators, and consumers should be mindful of the contextual factors that might influence a psychological process." In other words, the subjective influences on human behavior should "not [be] considered an artifact or a nuisance variable but rather [...] a driving force behind scientific inquiry and discovery."[124]

Such an argument builds on similar responses that have been put forth by social scientists around the world for several years. In 2014, psychologists from universities in the Netherlands and Germany, Wolfgang Stroebe and Fritz Strack, concluded that "the alleged 'crisis of replicability' is primarily due to an epistemological misunderstanding that emphasizes the phenomenon instead of its underlying mechanisms." As a consequence, they conclude, "a replicated phenomenon may not serve as a rigorous test of a theoretical hypothesis because identical operationalizations of variables in studies conducted at different times and with different subject populations might test different theoretical constructs."[125] Once again, they conclude that social experiments are deeply

[124] Jay J. Van Bavel, et al. "Contextual Sensitivity in Scientific Reproducibility." *Proceedings of the National Academy of Sciences of the United States of America* 113, no. 23 (2016), 6454.
[125] Wolfgang Stroebe and Fritz Strack, "The Alleged Crisis and the Illusion of Exact Replication," *Perspectives on Psychological Science* 9, no. 1 (2014), 59.

dependent upon the individual subjects, and a variety of factors that could never be replicated even if the same person participated again at a later date.

This also connects to the second, more involved experiment that Jennings conducts: to recreate the events of Rachel's birthday for a second time, even though Lady Verinder has since passed away, the same guests cannot attend, and very few factors will be the same except those surrounding Blake, including his room, his meal, and his being dosed with opium. Peters describes the "staged reconstruction" of the crime as "theatrical perhaps, but effective, and copied in innumerable detective stories."[126] Lewis, however, echoes the critiques leveled by Murfin, concluding that while Jennings explains his reasoning to Blake, the assistant cites a variety of scientists—some of whom were viewed as reliable or objective at the time of *The Moonstone's* release—and some of whom were not. This should spark necessary doubt, he suggests, in the minds of readers.[127] For example, Jennings explains to Blake that his sleepwalking theory is supported by the physiologist William Benjamin Carpenter (1813-1885), a Victorian authority on the unconscious mind; yet, only a few paragraphs later, the assistant also says that John Elliotson (1791-1868), a scientist known for specious claims about mesmerism and clairvoyance, supports his hypothesis.[128] For this reason, Lewis concludes that the "The linking of reputable and disreputable scientists over such a vital point in the novel's plot structure would seem to refute Collins's claims for realism and objectivity, and to throw

[126] Peters, *King of Inventors*, 309.
[127] Lewis, "The Shivering Sands," 175.
[128] Sandra Kemp, "Notes," in *The Moonstone* by Wilkie Collins (New York: Penguin Classics, 1998), 477. Note 49.

the character of Ezra Jennings into doubt," especially since he is already "problematized by his enigmatic personality and history" including his "exotic ugliness."[129]

However, once again, Jennings himself never claimed that the experiment was objective, that it went perfectly, or that it was even fully successful. After concluding the "recreation" with Blake, he explains to the lawyer Mr. Bruff:

> I told Mr. Blake from the first, that our complete success […] depended on our completely reproducing in him the physical and moral conditions of last year—and I warned him that this was the next thing to a downright impossibility. We have only partially reproduced the conditions, and the experiment has only been partially successful in consequence. It is also possible that I may have administered too large a dose of laudanum. But I myself look upon the first reason that I have given as the true reason why we have to lament a failure, as well as to rejoice over a success.[130]

Echoing the same principles agreed upon by twenty-first century psychologists, Jennings acknowledges that complete objectivity is neither possible nor required for the "physical and moral" experiment he has conducted upon Blake.

Ezra Jennings's "Otherness," especially in a story that expressly addresses the British Empire's colonial enterprises, is not so much a critique of rationality so much as a reminder of the ways in which the book has actively worked to blur the lines between "subjective" and "objective" knowledge. As George Levine writes in *Darwin among the Novelists*, "The peculiar Darwinian wrinkle in the scientific preoccupation with observation is that the observer becomes vulnerable, particularly because—as Darwin extends the rule of science from inorganic to organic phenomena—the observer also

[129] Lewis, "The Shivering Sands," 176.
[130] Collins, *Moonstone*, 428.

becomes the observed."[131] In this sense, critiques of Jennings's reliability serve once again, as they did when considering his shorthand notes, as a reminder that any observer's perspective is inevitably influenced by their subjectivity.

It is noteworthy, though, that Jennings (which is not his real name), a chronically ill, multiracial, lower-middle-class immigrant discovers the missing piece of the mystery when the renowned detective, Sergeant Cuff, could not. In fact, the presumably trustworthy policeman who is opposite of Jennings in virtually every (healthy, white, English, middle-class) failed to solve the mystery at first; he erred in his original conclusion that Rachel employed Rosanna to steal her own jewel. As Sean C. Grass explains, "Despite its innumerable detectives and clear preoccupation with ocular practices, *The Moonstone* records above all the disastrous consequences of obsessive staring—the way that rampant spying and prying end in the novel's decisive failure to provide a certain account of the crime."[132] However, in the final section of this chapter, I would suggest that in *The Moonstone*, the observations of othered characters, especially those who with disfigurements and disabilities, are presented as far more reliable than those of able-bodied characters.

"In Spite of His Eyes": Observations by Characters with Disabilities

In addition to the way that Jennings is Othered as a result of his racial background and the chronic illness that has aged him severely, at least three other characters in *The*

[131] George Levine, *Darwin and the Novelists: Patterns of Science in Victorian Fiction* (Chicago: University of Chicago Press, 1992) 15.
[132] Grass, "The Moonstone, Narrative Failure," 97.

Moonstone face prejudices based on their physical deformities. The servant Rosanna has a hunchback; her only friend, the fisherman's daughter "Limping Lucy," has a disabled foot; and the errand-boy "Gooseberry" (whose given name is Octavius Guy), earned his nickname due to his "ill-fixed eyes" that constantly "roll," as with a lazy eye or crossed eyes.[133] As Grass writes, characters who only trust the stare "ignore the subjectivity of those they see, dealing instead in superficialities that produce bigotry and cruelty."[134] Blake, for instance, never even notices that Rosanna is in love with him—so much that she would die to protect his secret—because he cannot see past her ugliness and "inferior" background. Betteredge, though he reinforces stark economic class differences, does critique the fastidious observation he observes among his employers: "Compare the hardest day's work you ever did with the idleness that splits flowers and pokes its way into spiders' stomachs," he tells his reader, as he observes Rachel and Blake engaging in scientific studies. "And thank your stars that your head has got something it *must* think of, and your hands something that they *must* do."[135]

Polyvocality and subjectivity play into *The Moonstone's* narratives of disability in the same way that they play into its narratives about "verbatim reporting" and the reliability of science. Martha Stoddard Holmes's essential book, *Fictions of Affliction: Physical Disability in Victorian Culture*, states:

> While mediation and multivocality are hardly features restricted to life writing about disability, they are possibly more significant and striking features of this genre, given how highly charged the issues of representation and access to self-representation have been for the disability community. These features also remind

[133] Collins, *Moonstone,* 439.
[134] Grass, "The Moonstone, Narrative Failure," 97.
[135] Collins, *Moonstone,* 63.

> us that pure autobiography is a construct; finally, there may be no way to isolate individual 'voices' from the multiple cultural discourses of embodied identity in which they participate.[136]

Kate Flint has argued that beyond simply tapping into sympathy, Collins's characters with disabilities offer "a commentary on the role played by the senses in perception in general—something which was very much a live issue for many commentators in the mid-nineteenth century in the rapidly consolidating field of psychophysiology."[137]

Wilkie Collins wrote many works featuring disabled characters, including *Hide and Seek*—the story of an adopted girl named Mary, nicknamed "Madonna" for her beauty and resemblance to Renaissance art. Readers spend most of the novel trying to solve the multiple mysteries about Madonna's past, as well as the histories of the other characters. In *Fictions of Affliction*, Holmes has argued that *Hide and Seek* is significant both because it attempts (though it often fails) to paint a realistic portrait of deafness, and also reveals the gendered ideologies of disability in the Victorian era. "The disturbing effect of Madonna's deafness," Holmes writes, "seems based in part on her new behavior's violation of gender codes: she loses not only her pretty temper, but also her pretty voice."[138] For this reason, Holmes calls the loss of Madonna's voice in *Hide and Seek* "a phenomenon rich in resonances of anxiety regarding little girls and how they should sound."[139]

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[136] Holmes, *Fictions of Affliction,* 134.
[137] Flint, Kate. "Disability and Difference," *The Cambridge Companion to Wilkie Collins*, ed. Jenny Bourne Taylor, 153-167. Cambridge Companions to Literature. Cambridge: Cambridge University Press, 2006.
[138] Holmes, *Fictions of Affliction,* 80.
[139] Ibid., 79.

Similarly, Holmes presents Collins's novel *Poor Miss Finch* as a "parody of melodramatic and sentimental stereotypes," for characters with disabilities. Miss Lucilla Finch is *not* poor, but rather, a wealthy young woman who falls in love with her wealthy neighbor, Oscar. Miss Finch undergoes an experimental surgery which allows her to become sighted once again; but Oscar, having become physically disfigured in the interim, is too afraid to allow his fiancée to see him. In his absence, Oscar's twin brother (who has squandered all of his own fortune) deceives Lucilla into believing that *he* is Oscar, and steals Lucilla away in an attempt to marry her for her money—there, her blindness returns once again. Fortunately, in the end, Oscar and a few other characters come to Lucilla's rescue, and they send Oscar's twin back to America, shamed and shunned once again. In this way, Holmes concludes that *Poor Miss Finch* is a novel in which "a young disabled heroine […] is allowed what even nondisabled Victorian heroines are usually denied, an assertive, abundantly expressed sexuality that does not result in prostitution, religious conversion, tragic death, or all three."[140]

Fictions of Affliction does not treat *The Moonstone* though, there are plenty of studies that have considered Rosanna, and, to a slightly lesser extent, her friend Limping Lucy. As Grass explains, "No one endures more […] brutality than Rosanna, perhaps because of all the characters she is the least fit to be seen, and the least often seen by others as a legitimate subject or object of desire."[141] What Rosanna sees—that is, the stain on Franklin Blake's nightgown which reveals that he must be the thief—*is* accurate:

[140] Holmes, *Fictions of Affliction,* 84.
[141] Grass, "The Moonstone, Narrative Failure," 106.

Blake really did take the diamond, and she correctly realizes that upon discovering the "truth," she "held all [Blake's] prospects in life in my own hands.[142] However, as Grass concludes, Rosanna's error is not in what she sees but in her unwavering trust that she understands Blake's motivations despite having never spoken to him: she suspects, wrongly, that he is in debt: "If *The Moonstone* like other detective stories has as its basic aim the complete narrative elucidation of the crime, it is the novel's great detective and narrative misfortune that its characters trust so entirely to what they see."[143] Like Rachel, who was also an eyewitness to the missing piece of the puzzle, Rosanna reports the events of the theft accurately in her suicide letter to Franklin Blake, but even the most accurate transcription fails to grasp what truly happened on the night of the party.

Gooseberry, however, has been conspicuously absent from scholarship about *The Moonstone*, except that which connects him to his literary descendants, Arthur Conan Doyle's "Baker Street Irregulars."[144] When Blake first sees the boy, Bruff asks:

> "Did you notice my boy — on the box, there?"
> "I noticed his eyes."
> Mr. Bruff laughed. "They call the poor little wretch 'Gooseberry' at the office," he said. "I employ him to go on errands — and I only wish my clerks who have nicknamed him were as thoroughly to be depended on as he is. Gooseberry is one of the sharpest boys in London, Mr. Blake, in spite of his eyes."[145]

Like Limping Lucy, Gooseberry's very name identifies him as a disabled character. However, in a book that is so eager to trace the result of "character on circumstances,"

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[142] Collins, *Moonstone,* 330.
[143] Grass, "The Moonstone, Narrative Failure," 97.
[144] Sandra Kemp, "Notes," in *The Moonstone* by Wilkie Collins (New York: Penguin Classics, 1998), 477. Note 51.
[145] Collins, *Moonstone,* 149.

rather than the other way around, it is no accident that the sharpest boy in London subverts the expectations placed on him by his physical appearance.

Even when Bruff and Blake (both are able-bodied, upper-class, and educated) fail to spot the correct man with Mr. Luker at the bank, Gooseberry does so easily. And when the famous detective, Sergeant Cuff, convenes with Blake the morning after, even he is impressed by the "extraordinary-looking" boy. Gooseberry explains his encounter:

> "If you please, sir, Mr. Bruff wanted to know whether Mr. Luker passed anything to anybody on his way out of the bank. I saw Mr. Luker pass something to the sailor with the black beard."
> "Why didn't you tell Mr. Bruff what you saw?"
> "I hadn't time to tell anybody, sir, the sailor went out in such a hurry."
> "And you ran out after him — eh?"
> "Yes, sir."
> "Gooseberry," said the Sergeant, patting his head, "you have got something in that small skull of yours — and it isn't cotton-wool. I am greatly pleased with you, so far."[146]

Cuff acknowledges that physically, Gooseberry may be perceived as unintelligent, but in fact, the opposite is true. Not only does Cuff conclude that Gooseberry cleverly followed the right man, he also calls the boy "meritorious" and predicts that "he will do great things in my late profession."[147]

Unlike Rosanna, who is granted her own voice, at least for a moment, in the novel, as Blake transcribes her full letter in his narrative, Gooseberry does not get to write his own perspective into the book. However, he does serve as a literal mediator for Blake at the crucial moment when the Cuff, Bruff, and Blake finally discover the dead thief:

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[146] Ibid., 439-440.
[147] Ibid., 440-441.

> Gooseberry had followed us into the room. His loose eyes rolled frightfully — not in terror, but in exultation. […]
>
> [Sergeant Cuff] traced with his finger a thin line of livid white, running backward from the dead man's forehead, between the swarthy complexion, and the slightly-disturbed black hair. "Let's see what is under this," said the Sergeant, suddenly seizing the black hair, with a firm grip of his hand.
>
> My nerves were not strong enough to bear it. I turned away again from the bed.
>
> The first sight that met my eyes, at the other end of the room, was the irrepressible Gooseberry, perched on a chair, and looking with breathless interest, over the heads of his elders, at the Sergeant's proceedings.
>
> "He's pulling off his wig!" whispered Gooseberry, compassionating my position, as the only person in the room who could see nothing. There was a pause — and then a cry of astonishment among the people round the bed.
>
> "He's pulled off his beard!" cried Gooseberry.[148]

Not only does the disabled Gooseberry stand in as an observer on Blake's behalf here, he also mediates the scene for the reader. Were it not for Gooseberry's "compassioning [Blake's] position," the narrative, as reported by Blake, would be all but devoid of the novel's most exciting reveal.

Peters reports that, although Dickens was initially enthusiastic about the money which The Moonstone had made for him via *All the Year Round,* he eventually reversed his opinion, calling the construction "wearisome" and complaining about its "vein of obstinate conceit." However, she ultimately concludes that "it would be wrong to read too much into this famous misjudgment," since Dickens' irritation with Collins likely stemmed more from his personal issues with Collins's son, Charles, who was married to Dickens's daughter, Catherine (Kate).[149]

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[148] Ibid., 446-447.
[149] Peters, *The King of Inventors,* 311.

Without shorthand, the characters in *The Moonstone* would not have had the tools they needed to solve the mystery of their missing diamond; and at the same time, without discussions and explorations of the subjective-objective, they would not have been able to reconstruct the events of the theft in order to ultimately put together the "pieces of the puzzle." As a detective novel, *The Moonstone* offers valuable insights into the nineteenth-century's urge to think phonographically in order to record and reflect on information objectively. While such a project was not yet able to be realized fully, the labor and efforts of marginalized people, including technical workers and immigrants (like Ezra Jennings), people with disabilities (Rosanna and Lucy), and working-class laborers with physical differences (Gooseberry), was central to its construction.

Chapter 4.

Darwin among Phonologists: The Crossroads of Sound-Writing and Evolutionary Biology

In this final chapter, I will bring together the reading and writing methods presented in this dissertation—engraved writing for students with disabilities, Morse code as practiced by women telegraphers, and phonographic shorthand used by aspiring middle-class journalists—I will suggest that reading and writing practices developed for specific, seemingly limited communities, in fact provide a crucial framework for understanding representations of scientific observation throughout the nineteenth century.

Following the method laid out by George Levine, this chapter recognizes that "what Darwin said was part of a much broader sweep of historical change;" his arguments were "part of a whole movement of which Darwin can be taken as the most powerful codifier."[1] In this way, I have chosen Darwin as a nexus point—a ready, concrete figure whose life and work connect specific pieces of literature to the natural sciences in ways that still offer new avenues of critical insight into nineteenth-century history and culture even after 200 years of intricate study. The substantial archive of Darwin's notes, diaries, letters, and manuscripts; his vast literary library and reading journals; and his status as an icon for numerous innovations in nineteenth-century scientific thinking, make him an apt figure for expanding "sound-reading" beyond a specialized skillset, exploring "sound-writing" as a necessary methodology of observing

[1] Levine, *Darwin and the Novelists,* 8-9.

sounds and transcribing them. Combatting the misconception that Sound Studies is "somehow whimsical, even 'trendy,'"[2] I use perspectives from this growing field to offer an example of how acoustemology can reframe nineteenth-century scholars' interpretations of scientific observation.

First, I will show how Charles Darwin was influenced by the attempts to scientifically record speech, which he had encountered through Erasmus Darwin and Gurney's brachygraphy. Second, I show how he attempted (and failed) to emulate such methods in the notes he took while planning his published works. Finally, I conclude that the insights Darwin made while attempting to write with sounds as meticulously as he communicated the sense of sight were critically important to the theories underlying *The Origin of Species*—which was so persuasive and influential particularly because of how grounded it was in concrete, sensory observations put forth as evidence of Darwin's theories.

Sound Studies: Acoustemology and the Soundscape

Ari Y. Kelman defines Sound Studies as "an emergent field of scholarly research that has coalesced around two critical questions." These are: "What does sound mean?" and "How do we […] attend to its meanings?"[3] Scholars in this field regularly employ the key terms "soundscape" and "acoustemology"—the former was coined by composer R. Murray Schafer in his 1977 book *The Tuning of the World*, and the latter by

[2] Mark M. Smith, "Sound—So What?" *The Public Historian*, 37.4 (November 2015), 132.
[3] Ari Y. Kelman, "Rethinking the Soundscape," *The Senses and Society*, 5.2 (2010), 212.

ethnomusicologist Steven Feld in 1992. However, as Kelman's 2015 article "Rethinking the Soundscape" explains, the growth and expansion of Sound Studies over the past 20 years, in particular, has disseminated these terms in such a way that they have lost touch with their own intellectual genealogies, and consequently, the precision of their meanings—the very precision that makes each term useful.[4]

Academic work about Darwin has long characterized him as a "reader" of both books and nature, and an author in his own right with great talent for describing the species he saw on his *Voyage of the Beagle* to a captivated literary audience. Since the 1980s, scholars have recognized that sensory experience was critical to Darwin's method: in *Darwin's Plots*, Beer suggests that by including the full range of the senses in his descriptions, Darwin "fills out and disturbs the narrowly descriptive authority of the scientific collector."[5] Likewise, Levine agrees that Darwin's published work, especially the *Origin of Species*, shifts noticeably between acknowledging his embodied experiences, and attempting scientific objectivity.[6] Other studies, like Devin Griffith's *The Age of Analogy,* have considered Darwin's metaphors, which often ask the reader to imagine a visual image or hypothesis in their mind's eye. In this sense, processes of reading and writing are present throughout Darwin's oeuvre. However, as Guglielmo Cavallo and Roger Chartier have written in their *History of Reading in the West,* it is important to remember that in the nineteenth century, reading was "not limited to the

[4] Ibid.
[5] Gillian Beer, *Darwin's Plots: Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth-Century Fiction* (Boston: Routledge & Kegan Paul, 1983), 34.
[6] Levine, *Darwin and the Novelists,* 1.

genealogy of how we now read, in silence and using the eyes alone."[7] As a nineteenth-century reader and writer, Darwin not only read nature—he heard it.

Eschewing the idea of reading "with the eyes alone" does not necessitate eschewing the eyes altogether; but it does entail understanding that the eyes are not the only sensory apparatus involved in the process of scientific observation. In his article tellingly titled, "Sound—So what?," Mark M. Smith reviews the emergence of Sound Studies from the 1990s to the moment he was writing in 2015. Smith suggests that, rather than pitting the eye against the ear, "sensory history generally, and the history of sound specifically, […] tend to claim that attention to the sensate and auditory past allows us a deeper appreciation of the texture, meaning, and human experience of that past…"[8] In other words, Sound Studies does not work against existing historical inquiries, but in conjunction with them. Interrogating the past's auditory environment, Smith argues, can reveal how sounds helped shape power relations, a wide variety of lived identities, and personal experiences.[9]

However, in this same paragraph, Smith back-steps, conceding that Sound Studies "rarely makes extravagant or especially daring claims about the field's interpretive power."[10] Why not? I would suggest that Sound Studies—and more particularly, acoustemology—does hold the potential to reshape crucial interpretations within the history of literature and science, at the very least. Steven Feld, who created the term,

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[7] Guglielmo Cavallo and Roger Chartier, "Introduction." *A History of Reading in the West*. Trans. Lydia G. Cochrane (Amherst: University of Massachusetts Press, 1999), 4.
[8] Smith, "Sound—So What?" 133.
[9] Ibid.
[10] Ibid.

defines this combination of "acoustics" and "epistemology," as a methodology designed to "theorize sound as a way of knowing," which recognizes sound "as something simultaneously social and material, an experiential nexus of sonic sensation." In doing so, Feld explains, acoustemology "inquires into what is knowable, and how it becomes known, through sound."[11] By its very definition, then, acoustemology challenges scholars to interpret history, literature, the environment—and the other topics previously invoked by Sound Studies, including lived identities and power relations—in newer, fuller ways than can be accomplished by relying solely on vision.

Smith anticipates one of the first associations that scholars of epistemology may bring forth when considering the sonic: that acoustemology might "help us calibrate and rethink the interpretive relevance of an old but central debate regarding the ways the Enlightenment, the advent of print culture, and the emergence of eye-empowering technologies initiated what Marshall McLuhan and other [scholars of modernism] called a shift in the ratio of the senses," sometimes called the Great Divide debate, which theorizes that the modern age is uniquely defined by its privileging of the ocular over the oral.[12] However, Smith observes, scholars of acoustemology have "long questioned this thesis," emphasizing that in myriad ways, the "heard world" is critical to modernity.[13]

Yet, considering the Great Divide debate does raise an important point, which I have also emphasized in Chapters 1 and 3: that experiences of any sensory variety are far from universal. On the contrary, the senses are "highly contingent on time and place,"

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[11] Steven Feld, "Acoustemology" in *Keywords in Sound,* ed. David Novak (Durham: Duke University Press, 2015), 12; 14.
[12] Smith, "Sound—So What?" 142.
[13] Ibid., 143.

including not only a person's historical moment, but their nationality,[14] their social and cultural conditioning, as well as their physical abilities or disabilities. Some people may not experience one of their five senses at all, while others might experience synesthesia, thus blurring multiple senses together.

In a similar vein, one of the important characteristics of a "soundscape"—which Kelman worries has been lost in the past few decades of study—is that it is not a neutral or inclusive term, but rather, as he explains, a provocative premise with a "problematic foundation."[15] At the surface level, a soundscape "is the sonic counterpart of a landscape, in which one sees trees or buildings, but hears wind, birds, or traffic."[16] Deeper down, though, Kelman adds a necessary qualification: Schafer's book which introduced the term to academia depicts a soundscape that is also "lined with ideological and ecological messages about which sounds 'matter' and which do not." Furthermore, his monograph "is suffused with instructions about how people ought to listen."[17] In its own academic history, the soundscape is "deeply informed by Schaefer's own preferences for certain sounds over others."[18]

This problematic formulation can be productive, however. John M. Picker's 2003 study *Victorian Soundscapes* harnesses the value judgments modeled by Schafer's work in order to reveal their parallels in nineteenth-century Britain. In his own words, Picker's book "steer[s] away from a monolithic conception of a singular Victorian soundscape

[14] Ibid., 144.
[15] Kelman, "Rethinking the Soundscape," 214.
[16] Ibid., 215.
[17] Ibid., 215.
[18] Ibid.

toward an analysis of the experiences of particular individuals listening under specific cultural influences with discernable motivations […] for hearing as they did."[19] Returning to Darwin, then, this chapter analyzes how, while on his foundational voyage in the 1830s, the famous naturalist observed sounds as part of his developing project, which, at the time, was an attempt to catalogue and classify a wide variety of creatures within the natural world.

Darwin's *Voyage of the Beagle* begs to be examined with acoustemology in mind, especially as it illuminates his lived experiences of sounds and his dedicated attempts to share those experiences with his reader—with the added challenge of growing both years and miles away from the original experiences he was attempting to transcribe. Acoustemology, Feld argues, "asks how the physicality of sound is so instantly and forcefully present" during sonic experience and interpretation but adds that reflection and relationality are also necessary to this approach. An acoustic epistemology "insists that one does not simply 'acquire' knowledge but, rather, that one knows through an ongoing cumulative and interactive process of participation and reflection."[20] Since Darwin immersed himself, quite literally, in his research, and experienced the sounds on his voyage so physically, he longed to record these sounds in order to better share them and reflect upon them.

Critically, as I will demonstrate, Darwin attempted this task on the early cusp of the phonographic craze. Since he inherited and consulted his grandfather's notebooks, he

[19] John M. Picker, *Victorian Soundscapes* (Oxford: Oxford University Press, 2003), 13.
[20] Feld, "Acoustemology," 12-13.

was aware that phonetic writing methods existed, and this cultural influence contributed to his extreme attentiveness to sound. As a naturalist with diverse interests, he was also in communication with contemporaries who were interested in languages and speech production, both of which Darwin also studied and focused on more intently during the latter half of his career. Yet, while he consulted with the philologists whose work would later contribute to the academic field of linguistics, Darwin was not himself a phonologist, nor was he trained in phonographic writing methods. What's more, it would be nearly 50 years from the date of his *Voyage* until the mechanical phonograph was invented. This put him in a unique position which, by limiting his ability to transcribe sound—and hindering him from either fully reflecting upon it or properly communicating it to others—forced him to think about the thoroughness of his descriptions, as well as the relationship between species, in new ways.

Gurney's Brachygraphy and Erasmus Darwin

Thomas Gurney first published his shorthand writing method in 1750, and developed it over the next thirty years. As he did so, he was in correspondence with a then-20-year-old Erasmus Darwin, the natural philosopher, poet, and grandfather of Charles Darwin, who became an enthusiastic practitioner of this "brachygraphy." Since Erasmus suffered from a stammer, Philip J.B. Jackson has argued that note-taking using Gurney's method allowed him to "sharpe[n] his awareness of the range of speech sounds

in English,"[21] adding an extra list of benefits in Erasmus's mind beyond the fact that he used brachygraphy to take notes at university, lectures, and more. Although the letters between Erasmus Darwin and Gurney are now lost, there are several references to their conversations among Erasmus's letters with his friend Albert Reimarus, son of the German philosopher Hermann Reimarus.[22]

Erasmus mastered Gurney's writing system while he was an undergraduate at Cambridge, and submitted a 32-line poem that praised the system to be included in the second edition of Gurney's manual. The opening of this effusive poem suggests that mankind struggled in vain to record human speech, until the invention of Gurney's "art unequal[led]," which "taught the eye to catch the letter'd sound," enabling one to "[see] the sounds he cannot hear." The "speaking hand" was too slow, Erasmus claims, "till Gurney sprung / and form'd the finger rival to the tongue."[23]

Erasmus Darwin's praise was not short-lived. For the third edition of Gurney's *Brachygraphy,* he provided an engraving which continued to be included in most subsequent editions of the manual.[24] Throughout the 1750s, Erasmus Darwin used Gurney's method to take lecture notes, both at university and beyond, eventually filling six volumes with shorthand notes.[25] His early interest and enthusiasm for phonetics continued to grow and flourish in Erasmus Darwin's life and works. Although Thomas

[21]Philip J.B. Jackson, "Mama and Papa: The Ancestors of Modern-Day Speech Science," in *The Genius of Erasmus Darwin,* eds. C.U.M. Smith and Robert Arnott (Burlington, VT: Ashgate, 2005), 218.
[22] Desmond King-Hele, *The Letters of Erasmus Darwin*, (New York: Cambridge University Press, 1981), 10.
[23] Thomas Gurney, *Brachygraphy; or, Short-Writing*. 8th edition (London: Thomas Gurney, 1772), 7.
[24] Jackson, "Mama and Papa," 218.
[25] Ernst Krause. *Erasmus Darwin, Translated from the German by W. S. Dallas, with a Preliminary Notice by Charles Darwin* (London: John Murray, 1879), 17.

Gurney died in 1770, Erasmus continued to expand upon Gurney's proto-phonetic interest in sound. As described in Chapter 3, Gurney's brachygraphy fell short of phonetic transcription when it came to consonant sounds, but offered a surprisingly modern understanding of the phonemic differences between English-language vowels.

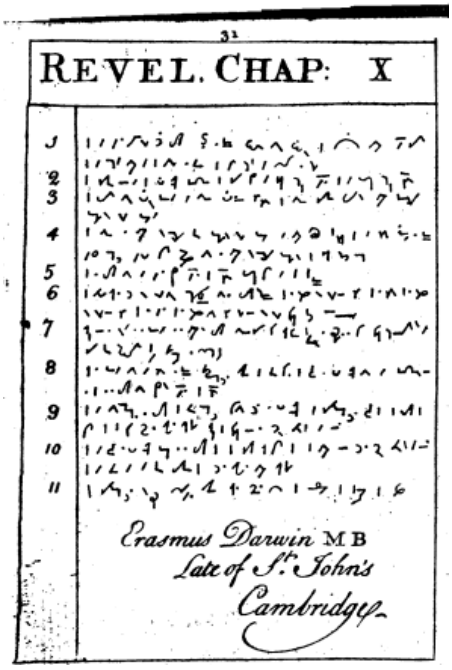

Fig. 4.1. A sample of Erasmus Darwin's shorthand writing, published in Thomas Gurney's shorthand manuals from the third edition onward.[26]

It is not surprising, then, that Erasmus Darwin wrote about speech production in correspondence with Benjamin Franklin as early as 1772. In this letter, he proposes a theory for the difference between various vowels, suggesting in a letter to the American polymath and soon-to-be revolutionary that, "I think there are but four Vowels, their successive Compounds, and their synchronous Compounds. For as they are made by

[26] Ibid. *Brachygraphy: or, Short-Writing*, 8th edition (London: Thomas Gurney, 1772), 31.

apertures of different parts of the mouth, they may have synchronous, as well as successive Combinations."[27] To test this theory, Erasmus was said to have constructed a mechanical mouth, capable of pronouncing some sounds so precisely that listeners thought it was indeed a person speaking. The invention is said to have been in operation by 1770.[28] In his letters with Benjamin Franklin, he enquires about the rumors that someone else has built a similar "speaking machine," and asks urgently if there is any truth to such reports.[29]

Although this may seem like a pet-project unrelated to Erasmus Darwin's more scientific treatises—like his physiological studies of the plant and animal worlds in *Zoonomia* (1794)—the production of sound and capacity to generate meaningful speech consumes the asides and footnotes of his zoological works. His final publication, an epic poem printed posthumously in 1803, was *The Temple of Nature: Or, the Origin of Society*. In addition to the immediate similarity between the titles *Origin of Society* and *Origin of Species,* the poem theorizes evolutionary progress from the first signs of life on earth to civilized human society—an earmark of which is, of course, human speech.[30]

In an appendix which he labels the "philosophical notes" to his poem, Erasmus Darwin describes the production of speech sounds at length. He writes the lines: "The tongue, the lips articulate; the throat / With soft vibration modulates the note" (Canto III.1.367). His endnote to these lines explains: "I have treated with greater confidence on

[27] Erasmus Darwin, Letter 72A, in *The Letters of Erasmus Darwin*, 63.
[28] Erasmus Darwin. Letter to Benjamin Franklin, 18 July 1772. Ed. The American Philosophical Society at Yale University. See editors' footnote 8. https://founders.archives.gov/documents/Franklin/01-19-02-0143
[29] Erasmus Darwin, Letter 72A in *The Letters of Erasmus Darwin*, 63.
[30] Ibid., *The Temple of Nature; or, the Origin of Society* (London: J. Johnson, 1803), 107.

the formation of articulate sounds, as I many years ago gave considerable attention to this subject for the purpose of improving shorthand." He then adds: "At that time I contrived a wooden mouth with lips of soft leather, and with a valve over the back part of it for nostrils, both which could be quickly opened or closed by the pressure of the fingers, the vocality was given by a silk ribbon about an inch long and a quarter of an inch wide stretched between two bits of smooth wood a little hollowed."[31] In this way, he connects the desire to imitate sound and speech in order to better understand it (inspired by his history with Gurney's brachygraphy) with the future potential for evolutionary theory, and this is the last word of the poem in the *Temple of Nature*. By choosing this note to accompany the poem and end his book, Erasmus Darwin suggests that understanding the nuances of phonetics is essential to understanding the development of the natural world and its evolutionary processes.

However, like many enthusiasts of shorthand writing, Erasmus Darwin's interest in sound-writing via techniques that were explicitly linked to phonetics quickly developed into a broader desire to advocate for spelling reform. The last words of his entire book are the following paragraph in the philosophical footnotes:

> I conclude with this agreeable hope, that […] the active and ingenuous [sic] of all nations will now attend to those sciences, which better the condition of human nature; and that the alphabet will undergo a perfect reformation, which may indeed make it more difficult to trace the etymologies of words, but will much facilitate the acquisition of modern languages; which as science improves and becomes more generally diffused, will gradually become more distinct and accurate than the ancient ones; as metaphors will cease to be necessary in conversation, and only be used as the ornaments of poetry.[32]

[31] Ibid.
[32] Ibid.

The task of learning to "perfectly" denote language by creating a system of sound transcription— that would make any language able to be accurately written down simply based on the way it sounds—adds another dimension to the interdisciplinary history of shorthand writing in conversation with the biological sciences and evolutionary theory.

Since Charles Darwin drew upon his grandfather's findings, Erasmus Darwin's interest in the possibilities of proto-phonetic shorthand provides critical insight into Charles Darwin's work. In the following section, I will detail the way that sound-writing connects the methodologies of the two Darwins, including Charles's observations during his early research expeditions, and his subsequent invocation of Erasmus Darwin's *Zoonomia* when he began drafting *On the Origin of Species* in 1837.

Pitman's Phonography and Charles Darwin

Charles Darwin inherited and consulted his grandfather's notebooks, and Erasmus Darwin's interest in the possibilities of proto-phonetic shorthand provides critical insight into Charles Darwin's work. By the late nineteenth century, Pitman's shorthand was so widely used that there were numerous journals for phonographic shorthand professionals and enthusiasts alike to discuss their skills. In an article called "Saving the Minutes," which was published in the *Phonographic Journal* in 1888, an unnamed author writes: "It was a favorite remark of the late Mr. Charles Darwin that saving the minutes was the way to get work done,"[33] referencing remarks made by

[33] The next sentence reads: "This reminds one of Franklin's well-known advice, 'do not squander time,'" though the author does not indicate his awareness (or lack thereof) concerning Erasmus Darwin's correspondence with Benjamin Franklin.

Charles Darwin's son Francis, as well as Charles Darwin's own autobiographical sketch in the then-recently published *Charles Darwin: His Life and Letters*. "For a man who had so high an estimate of the value of time, it does seem remarkable that Darwin should have employed a [writing] method so cumbrous and so wasteful," the article continues, referring to the fact that Darwin simply wrote with standard English orthography. "Remembering with what a thrill of delight he greeted every new discovery, one can imagine how he would have rejoiced had some kind of friend shown him a practical example, the usefulness of shorthand amanuensis."[34]

This anonymous writer makes an important point: Charles Darwin was no practitioner of shorthand like his grandfather, and in fact, admitted that he often thought much too long about what he might write, especially when it came to a publication.[35] However, as Devin Griffiths explains when introducing the influence of Erasmus's work upon Charles's evolutionary theories, in the summer of 1837, Charles Darwin filled the top portion of the first page of a new notebook "with one word, underlined and scored in dark ink: 'Zoonomia.' […] Charles used this citation to inaugurate the jumbled series of notes, quotes, musings, and diagrams that culminated in *On the Origin of Species*."[36] Here, Griffiths refers to Darwin's pocket-sized notebooks, filled with unfinished, handwritten musings. In the Cambridge University Library archives, librarians have catalogued seven such notebooks dating between 1837-1838, which reflect on similar topics. The first considers "Geology," the next four consider the "Transmutation of

[34] "Saving the Minutes" in *The Phonetic Journal* (18 August 1888), 385-386.
[35] Charles Darwin, "The Autobiography" in *The Autobiography of Charles Darwin*, ed. Nora Barlow (New York: W.W. Norton & Company, 1958), 111.
[36] Griffiths, *The Age of Analogy*, Loc. 150.

species," and the last two "Mind, Man, and Materialism." Darwin's large gesture in homage to his grandfather is written in across the top of the first notebook on transmutation, reinforcing the generally accepted notion that Erasmus Darwin's ideas were influential upon Charles Darwin's eventual theory of Natural Selection.

Most notably, in *Zoonomia* Erasmus Darwin analyzes the natural world in order to contend "that all warm-blooded animals have arisen from one living filament, with the power of acquiring new parts…" He reaches this conclusion from "meditating on the great similarity of the structure of the warm-blooded animals, and at the same time of the great changes they undergo both before and after their nativity." [37] Though Darwin reshaped this theory and added more explicit terminology, his concept in *The Origin of Species* is, of course, similar: that "the innumerable species, genera, and families of organic beings […] have all descended, each within its own class or group, from common parents, and have all been modified in the course of descent…"[38] It is Natural Selection, he argues, which "leads to divergence of character" and "on these principles […] the nature of the affinities of all organic beings may be explained."[39]

Far before he published this theory, however, Darwin plotted out his thinking, evidence, and connections in these pocket-sized notebooks. He engages with Erasmus Darwin familiarly and thoroughly, finding both common ground and contradictions between his grandfather's ideas and his own findings. For example, in one entry he reminds himself to "Say my grandfathers [sic] expression of generat[ion] being highest

[37] Erasmus Darwin, *Zoonomia; or, the Laws of Organic Life* (London: J. Johnson, 1794), 505.
[38] Charles Darwin, *On the Origin of Species: A Facsimile of the First Edition* (Cambridge, MA: Harvard University Press, 2003), 457-458.
[39] Charles Darwin, *On the Origin of Species,* 128.

end of organization good expression but does not include so many facts as mine."[40] Later, he reflects upon Erasmus Darwin's theories of hybridity and heredity, concluding that "My grandfathers theory of mules not hereditary, because generation highest point of organization, false. — The creator would thus contradict his own law."[41] In this way, Charles Darwin—with his grandfather's notebooks and published works in hand—drew upon his grandfather's work in the earliest days of his research, just as he continued to return to it in following years, when drafting his most famous work. His reading journals indicate that he also read *The Temple of Nature* again in 1842, including its "references at [the] end."[42] Later in this chapter, I will explore the written observations that Charles Darwin made, not in his published *Voyage of the Beagle* (1839), but during and immediately after the actual voyage itself, which took place from 1831-1836. When reflecting on the sounds that he heard on his journey, connections to Erasmus Darwin were clearly important to him.

Furthermore, Charles Darwin described Erasmus's relationship with Thomas Gurney when he wrote an introduction to Ernst Krause's 1879 *The Life of Erasmus Darwin.* In this introduction to Krause's biography, Darwin writes that in the 1750s, "It also appears from one of his letters to Reimarus, that Erasmus corresponded at this time about short-hand writing with Gurney, the author of a well-known book on this subject. Whilst still young he filled six volumes with short-hand notes, and continued to make use

[40] Charles Darwin, Notebook D: [Transmutation of species (7-10.1838)]. CUL-DAR123. 70.
[41] Ibid., 18-19.
[42] Charles Darwin, MS DAR 119. Charles Darwin Reading Notebooks, 1842. Page 12a. Transcribed by the Darwin Correspondence Project. https://www.darwinproject.ac.uk/people/about-darwin/what-darwin-read/darwin-s-reading-notebooks

of the art for some time." Following this description, Darwin mentions several additional letters, but says that on the whole, these pieces "are not worth publishing" in the way that his grandfather's scientific correspondences are. Yet, rather than suggesting that shorthand was unimportant to Erasmus or Charles, such a characterization highlights Charles Darwin's point of view, looking back on history from the end of the nineteenth century. By the time he was writing in 1879, shorthand-writing (especially Pitman's method) was at the peak of its popularity, and letter-writing, too, was more widespread than ever, even among everyday readers and writers who were not actively contributing to the academic community, as Darwin did.

Darwin was readily aware of the forms of writing available to Victorian speakers. Although educational reform in England was ongoing during both Charles and Erasmus Darwin's lifetimes, Martyn Lyon has demonstrated that progress in education "tended to follow, rather than precede, the growth of the reading public. Primary education only became effectively free, general and compulsory in England and France after the 1880s, when those countries were already almost completely literate." Statistics from Gregory Clark's *Brief Economic History of the World* support Lyons's analysis: at the start of the nineteenth century in England, about 40% of women and 60% of men were literate; by 1860, that was almost 60% of women and 70% of men, and by 1880, around the time that Charles wrote Krause's introduction, literacy rates for both men and women were between 80% and 90%. These statistics included many new readers in the rising middle classes, as well as at least 3 million lower-class readers, particularly of penny magazines. Throughout the nineteenth century, "oral reading still persisted, in spite of the trend

towards individual, silent reading. It was often encountered by [Henry] Mayhew, the assiduous observer of London street life [...] Oral reading still survived, too, in middle-class circles." [43]

Returning to the 1830s, then, Darwin was aware that there were methods of recording sound on paper, and he had intellectually connected the phonetic production of speech to the history of evolutionary development. This made it even more pressing—and even more difficult—for him to study, consider, and accurately transcribe the sounds he heard in nature while on his voyage of the Beagle. Many family members and biographers of Darwin have highlighted how he toiled over his writing when preparing papers and books that he intended to publish, but in his handwritten notes, Darwin often attempted his own anxious methods of transcribing sound, even if he did not practice Gurney's or Pitman's systems. These quick, immediate observations better show what Charles Darwin's granddaughter Nora Barlow describes as his "spontaneous first impressions," as he attempts to record sounds, as well as his "difficulty of expression"[44] when standard English orthography proves insufficient.

I have offered some analysis of Darwin's earliest, pocket-sized notebooks already, and now, since these notes are so rough that they are not always possible to follow, I will turn towards the handwritten notes that were written during the last period of the *Voyage* in 1836, as "an early assemblage of his personal experiences, written with the red-hot memory […] round the skeleton list of specimens." These are particularly useful because

[43] Cavallo and Chartier, "Introduction," 4.
[44] Nora Barlow, *Charles Darwin and the Voyage of the Beagle* (London: Pilot Press, 1945), 3.

many of these passages served as drafts for the prose of the published *Voyage of the Beagle,* showing what Darwin was thinking, and how he attempted to explain it sequentially, before he returned to the constraints of printing, publication, and others' opinions.

Discrepancies between the way Charles Darwin transcribes the sounds of the natural world by hand, versus how these descriptions were later printed, demonstrate that his understanding of natural structures did not rely on sight as the sole observational sense required to read an organism's place within its ecosystem, but rather, places sound in configuration with his embodied experiences with nature. His notes, written in the 1830s—during the same time that Pitman was developing phonetic shorthand—show that he is, in his own way, attempting to represent individual phonemes as he encounters them. In agreement with Erasmus's *Temple of Nature*, his zoological research depends upon the transcription of sound, suggesting that as he attempted to "read" and "write" nature, he craved alternative methods of recording that could more accurately capture particular sounds.

For example, the printed *Voyage*, published in 1846, describes a bird called the Carrancha: "At times, the Carrancha [bird] is noisy, but it is not generally so. Its cry is loud, very harsh and peculiar, and may be likened to the sound of the Spanish guttural *g*; followed by a rough double *rr*."[45] However, at this point, his ornithological notes, written in 1832, include a speculation that his printed text does not: "Perhaps the Gauchos from

[45] Charles Darwin, *The Voyage of the Beagle*. In *From So Simple a Beginning: The Four Great Books of Charles Darwin*, ed. Edward O. Wilson (New York: W. W. Norton & Company, 2006), 69.

this cause have called it Carrancha. Molina who says it is called Tharu in Chili, states, that…"[46] (then, the published version and manuscript match again, except for punctuation changes) "…when uttering this cry it elevates its head higher and higher, till at last, with its beak wide open, the crown almost touches the lower part of the back."[47] After this, however, the published version diverges into other observations about the Carrancha's diet and habits. The manuscript, on the other hand, continues to describe the embodied production of the Carrancha's sound: "This fact, which has been doubted is quite true; I have seen them several times with their heads. backwards. in a completely inverted position. — The Carrancha builds a large coarse nest indifferently; in any low cliff. or in a bush or lofty tree. — (a) I am in great doubt about the plumage of the two sexes & ages of this bird."[48]

The (a), noted in the quotation above, and pictured in figure 4.2, is an inserted manuscript note, added between two seemingly unrelated sentences, which points the reader to the brief description of the Carrancha's diet and habits which was ultimately published. Charles's understanding builds upon earlier eighteenth-century ideas of the relationship between language and music, like Rousseau's assertion that "…sounds proclaim movement, the voice proclaims a sensitive being; only animated bodies sing."[49] Yet, Darwin also complicates these ideas by honing in on the details of sound production to see what he can learn about the

bird in question.

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[46] Ibid. *Darwin Online* manuscripts, DAR 29.2 (ornithological notes, 1832-1836), Image 58.
[47] Ibid., *The Voyage of the Beagle*, ed. Edward O. Wilson, 73.
[48] Ibid., *Darwin Online* manuscripts, DAR 29.2, Image 58.
[49] Rousseau, "Essay on the Origin of Language," 325.

When he was recording his observations initially, Darwin's process went as follows: first, he heard the Carrancha's call, and compared it to human speech; second, he drew a conclusion from the sound, namely, that this is where the animal's name came from; third, he speculated about how the bird made the sound; fourth, he assured the reader that there was a scientific explanation for why the bird sounded the way it did; and fifth, he began to think about the animal's other habits. But then, he digresses from the standard descriptions of the Carrancha's nesting. He is struck with doubt. Although he has used visual observation to verify how the Carrancha makes its sound, he cannot be as sure of this observation as he was about others, for example, the plumage and sex of this species. Darwin's notes indicate that he knows there is useful information to be gained from the sound of the bird, and furthermore, that he is trying his best to understand how the bird makes that sound, in an attempt to better record the information.

Similarly, Darwin also struggled to describe other birds' sounds, even though ornithology was a passion of his, and his finches were so visibly and publicly pivotal in his thinking about nature. In his published *Voyage of the Beagle*, Darwin includes a passage about a bird that "sometimes attempt[s] to sing, or rather to hiss; the noise being very peculiar, resembling that of bubbles of air passing rapidly from a small orifice under water, so as to produce an acute sound."[50]

[50] Charles Darwin, *The Voyage of the Beagle*, ed. Edward O. Wilson, 70.

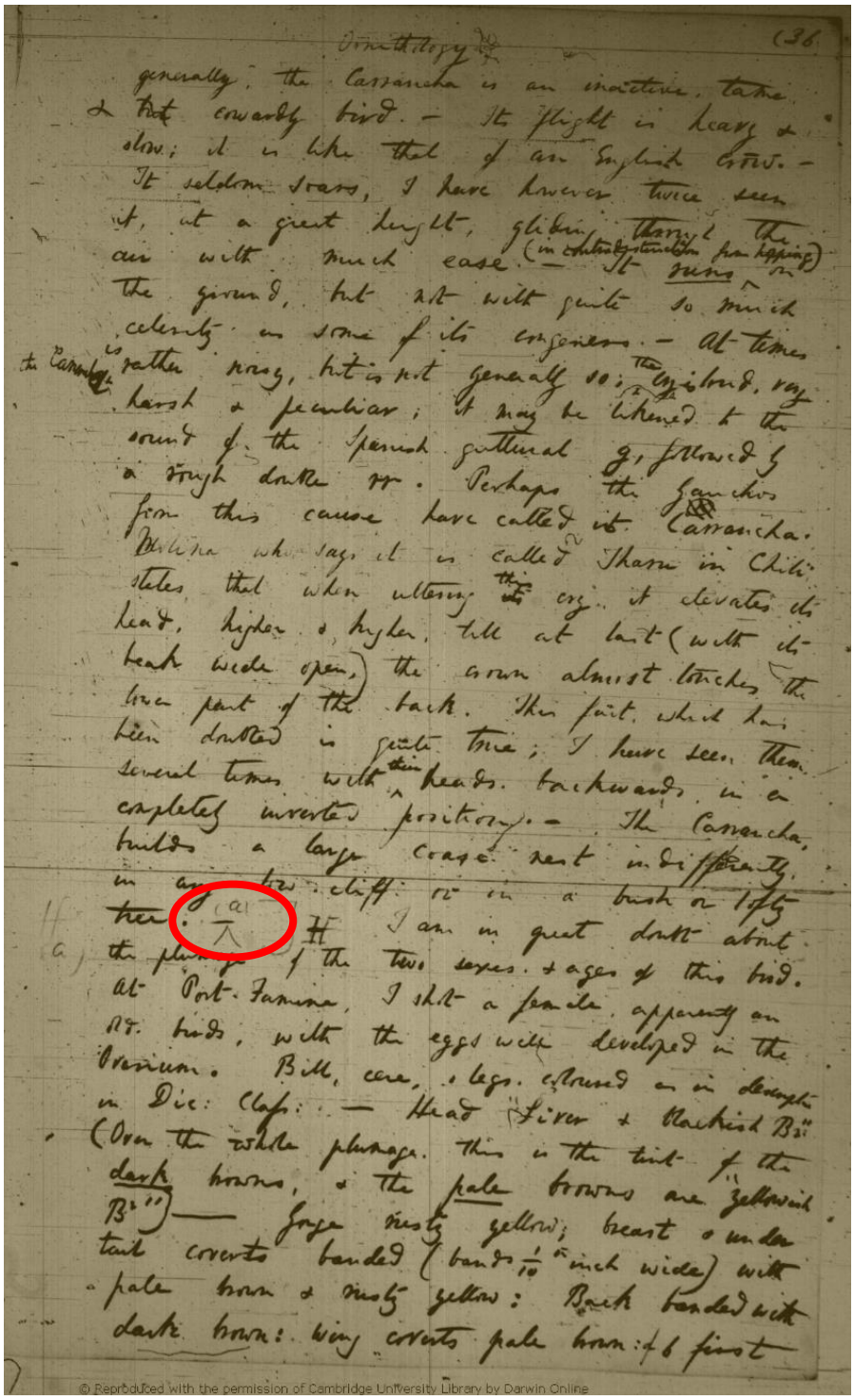

Fig. 4.2: Darwin describes the Carrancha in his ornithology notes. The (a), indicates that additional thoughts, written on the back of the previous page, were added between these two sentences.

However, in his manuscript, the passage looks like this: "I heard many of them attempting to sing or hiss for I do not know what to call it. – The noise was very peculiar resembling bubbles of air from a small orifice passing through water, but rapidly, so as to produce an acute sound. I at first thought it came from Frogs."[51] Most notably, the comparison to frogs is completely missing from his published work. But with this comparison in mind, it is clear that Darwin goes through a comparative process in the attempt to transcribe sound. When he tries to explain the most similar sound he can imagine, the only way to do that is by describing the *way* that that sound is made: bubbles of air from a *small* orifice, in particular, moving in a specific fashion. This sound, to Darwin, manages to make a particular type of bird suddenly seem connected to Frogs (with a capital F, but any type of frogs in general). It is interesting here that the simpler metaphor is the one that gets excluded from the published text, as opposed to the one that requires the reader to imagine how a particular sound is made. In his description of the bubbles, Darwin chooses to describe how the sounds were produced—a key line of inquiry in phonetic thinking.

Darwin often attempted to describe the "cry's" [sic] of birds. In another example, he describes a creature which, "At certain times it frequently utters a peculiar shrill, but gentle, quickly reiterated cry (so quickly reiterated as to make one ^running sound.) In this respect resembles the Oven bird, but as widely differs in its quietness, from that active bird."[52] By the time this description makes it into his book, it simply reads that the

[51] Charles Darwin, MS DAR 29.2. *Ornithological Notes,* 1836. Cambridge University Library. 8r.
[52] Ibid., 11r.

species “resembles the oven-bird in a peculiar shrill reiterated cry.”[53] Such a simple version may be preferable to editors or publishers, but Darwin’s handwritten notes reveal that he preferred to clarify even further what that reiteration sounded like, digging into how a continuous sound might be made. First, he realizes that it would be helpful to include a parenthetical explanation of what he means, but even after he has completed this parenthetical, he requires even more information to suggest that the way many sounds are strung together so quickly is what causes the sound itself to seem as if it is “running.” Similarly, through this line of thinking, we can see that even if sound is sometimes difficult or confusing, as it was in the previous example, once Darwin has had time to process, and attempt to write about and analyze the sounds, he understands that the animal sound provides important information that he can actually use to compare this bird to another seemingly similar species.

It was not only bird calls that urged Darwin to think about sound, its production, and its transcription. In his published book, Darwin describes a small, mole-like creature that lives in burrows. “This animal,” he writes, “is universally known by a very peculiar noise which it makes when beneath the ground. A person, the first time he hears it, is much surprised; for it is not easy to tell whence it comes, nor is it possible to guess what kind of creature utters it. The noise consists in a short, but not rough, nasal grunt, which is monotonously repeated about four times in quick succession: the name Tucutuco is

[53] Charles Darwin, *The Voyage of the Beagle*, 103.

given in imitation of the sound. Where this animal is abundant, it may be heard at all times of the day, and sometimes directly beneath one's feet."[54]

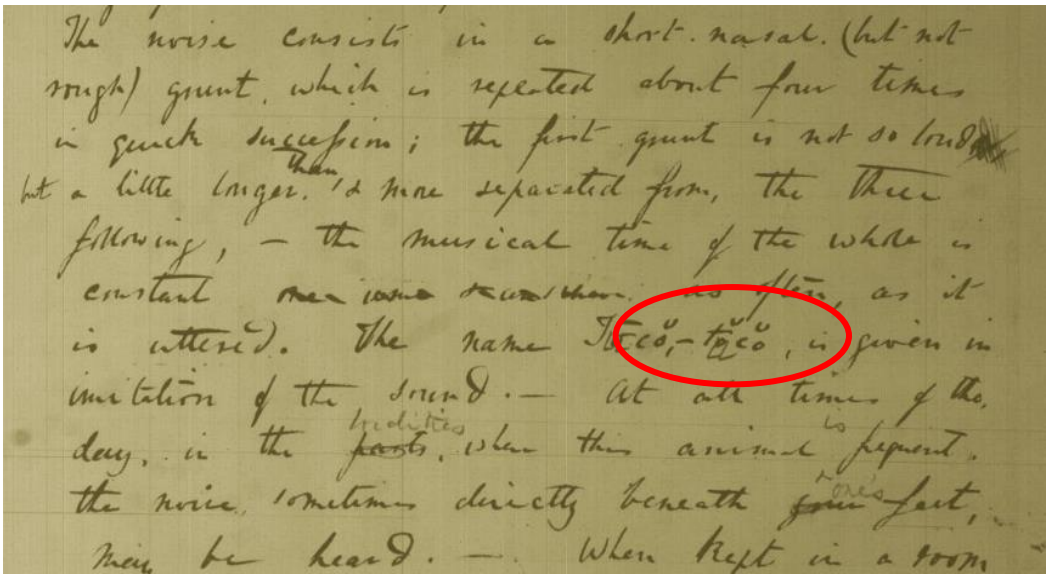

Fig. 4.3: Darwin attempts to phonetically transcribe the onomatopoeic name of the Tuco-tuco.

Darwin's notes about this description, pictured in figure 4.3,[55] correspond very closely to the passage he ultimately publishes. However, his notebook makes clear something that the printed book does not: the animal's sound is immensely difficult to write down accurately. When regular English orthography fails, the Cambridge-educated Darwin turns one of the only possible alternatives he has—the long and short marks often used in Classics—in an attempt to better transcribe the animal's onomatopoetic name. Yet, even these additional markings are not sufficient. Although the high-resolution scans of his notebook make it difficult to see for certain, an in-person examination of the

[54] Ibid., 69.
[55] Ibid. *Darwin Online* manuscripts, DAR 29.1.A1 (Darwin's *Beagle* animal notes, 1832-1833), Image 7.

manuscript makes it clear that Darwin originally wrote "TOco-toco," and then changed those o's to u's using a fine, light pencil. Once again, even the revision is not confident or clear: Darwin did not need to write down a letter at all, but rather, a sound, and he wanted that transcription to match the way he heard it.

These difficulties and creative explanations led Darwin to fascinating questions and comparisons of the tuco-tuco on the next page of his manuscript. Although some of these ideas made it into a brief, one-sentence footnote of the *Voyage of the Beagle*, this footnote does not depict the intense curiosity that Darwin displays when further elaborating on animal sounds. Darwin's complete attempt is as follows:

> At the Rio Negro some animal frequenting [similar situations] makes also the same kind of burrow, but its grunt or noise, although of the same class, is decidedly different from that of Maldonado. It is repeated only twice instead of three or four times, & it is more distinct, loud, & sonorous; it may be compared to the ^very distant sound of the blows of an axe when a <u>small</u> tree is cut down; so close is this resemblance, that I have sometimes remained in doubt for a few minutes. —
>
> At Bahia Blanca another (or the same) animal makes a similar noise, but repeated at single intervals, either at equal times or in an accelerating order. I was assured these animals are found of many different colours. At B. Blanca, having caught a mouse (1284), many of the country people maintained that it was the Tuco-tuco, & the author of the noise. — What is the truth?[56]

In an attempt to explain the different sounds, Darwin launches into an elaborate metaphor—the technique he found so effective in visual representation—in which every word is critical to try to capture each noise he describes. When he compares the noise of the similar animal to a distant sound of an axe, he feels the need to go back again and

[56] Charles Darwin, MS DAR 29.1. *Catalogues of Beagle Specimens: Animals*. Cambridge University Library. 8r.

add, with a carat, that this is the "very" distant sound of the axe. Similarly, when he says that it sounds like the cutting down of a small tree, he underlines the "small," again attempting to imagine a very particular cause and effect that will generate the desired sound. Following the lines of reasoning laid out by acoustemology, Darwin recognizes that descriptions of sound are socially mediated, in that his metaphor relies on cultural touchstones like the axe. Similarly, he recognizes that sonic experience is simultaneously material, since even the same sound is perceived differently based on the observer's physical distance from the production of that sound.

As he continues to reflect, Darwin writes about another animal with a similar sound. Although the previous page originally described the tuco-tuco as an animal that is, to people "in the country," known by the noise that it makes, he goes back, crosses this out, and changes it to "*universally* known by" when he finds that other people in other places know the animal almost *only* by its sound. When they see a mouse, they are convinced that this is the "author" of the noise, prompting Darwin to ask a profound question: what is the truth? Is the local, "expert" knowledge reliable, or should Darwin rely on his own handwritten notes, careful but imperfect descriptions, and potentially fallible memory, in order to determine if there is any difference between this new animal, and the tucotuco, at all?

The footnote he ultimately publishes removes the question and lengthy comparisons completely, and simply says, "I have sometimes remained in doubt concerning it." And by "it," he means "the sound."[57]

Sound haunted Darwin. As a meticulous scientific observer who relied on communicating physical examples and embodied experiences accurately as indisputable evidence of his claims, the recording and transcription of sound—and the desire for his reader to imagine those sounds in their mind's "ear" accurately—was something he came back to again and again. He attempted describe sound in myriad creative ways, struggled to both to separate and combine animal species by comparing their sounds, and gleaned through the failures of language and shortcomings of transcription that the boundaries between species or even different animals entirely may not be solidly drawn at all.

Paying careful attention to the tucotuco sounds, like many animals that he observed, was an important part of Darwin's interpretive "reading" process, which required him to start with the small details of the sound it utters, and also, keep track of the time in which the notes are iterated, in order to make conclusions about the ecosystem and structure surrounding that animal. Moreover, recall that Darwin calls the tucotuco the "author" of its sound. Of course, "author" can mean "creator" or "source," especially in the nineteenth century, but Darwin often in his handwritten notes uses this term to refer to an animal as the "author of the sound" that it makes, and does not use the term "author" in any other context related to his specimens (that I have found). This suggests that when

[57] Charles Darwin, Footnote 26. In *Footnotes to The Voyage of the Beagle*. *From So Simple a Beginning: The Four Great Books of Charles Darwin*, ed. Edward O. Wilson (New York: W. W. Norton & Company, 2006), 1488.

Darwin is "reading" the world around him, Darwin is also very intensely hearing it. In the conclusion of this paper, I will reflect on the broader implications that this approach, joining acoustemology and natural history, can offer to the study of literature and science more broadly.

Darwin's Dots: Rethinking Darwin and the Language Metaphor

In 1830, Lyell used the metaphor of language descent and change to describe deep time and the geological record in his *Principles of Geology:* "The ancient history of the globe was to [the ancient philosophers] a sealed book," he writes, "and although written in characters of the most striking and imposing kind, they were unconscious even of its existence."[58] This is the connection Gillian Beer makes[59] to Charles Darwin's later claim, in the *Origin of Species*, that:

> Following out Lyell's metaphor, I look at the natural geological record as a history of the world imperfectly kept, and written in a changing dialect; of this history we possess the last volume alone, relating only to two or three countries. Of this volume, only here and there a short chapter has been preserved; and of each page, only here and there a few lines. *Each word* of the slowly-changing language in which history is supposed to be *written*, being more or less different in the interrupted succession of chapters, may represent the apparently abruptly changed forms of life, entombed in our consecutive, but widely separated, formations.[60]

Even though this reflection is an attempt to describe deep geological time and the reconstruction of very large narrative histories, Charles Darwin nonetheless invokes

[58] Charles Lyell, *Principles of Geology, being an attempt to Explain the Former Changes of the Earth's Surface, by Reference to Causes now in Operation,* vol. 1 (London: John Murray, 1830), 26.
[59] Beer, *Darwin's Plots*, 44.
[60] Charles Darwin, *On the Origin of Species*, 310-311. Italics added for emphasis.

individual words ("each word") and writing practices. He hints at the importance of individual changes in language even further when he writes that, "No one supposes that all the individuals of the same species are cast in the very same mould.[61] These individual differences are highly important for us, as they afford materials for natural selection to accumulate." He adds a few pages later that, "I look at individual differences, though of small interest to the systematist, as of high importance for us, as being the first step towards such slight varieties as are barely thought worth recording in works on natural history."[62]

Ironically, the concept of small details which some naturalists find "barely worth recording" is to parallel Charles's own assertion that some of his grandfather's letters, were "not worth publishing." However, here, when Charles recognizes that he is writing about *writing* as a metaphor for his evolutionary thought, he acknowledges the importance of recording small details in order to understand the natural world. As biologist Ernst Mayr suggests in his introduction to the *Origin of Species*, Darwin's most revolutionary concept wasn't *typological* at all—that is, Darwin didn't rely on established types, but rather, recognized "species" from a *populationist* perspective. To Darwin, "averages [were] merely statistical abstractions" and "only individuals of which the population are composed have reality."[63]

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[61] The many meanings of the word "mould" in the nineteenth century invoke tactile ways of knowing, as exemplified by Braille transcription.
[62] Charles Darwin, *On the Origin of Species*, 45; 51.
[63] Ernst Mayr, "Introduction to *On the Origin of Species," From So Simple a Beginning: The Four Great Books of Charles Darwin*, ed. Edward O. Wilson (New York: W. W. Norton & Company, 2006), xiv.

Since the publication of *Darwin's Plots* in 1983, nineteenth-century scholars have continued to build upon Gillian Beer's description of the interplay between narrative structure in nineteenth-century fiction, and evolutionary theory. In *Darwin and the Novelists* (1988), George Levine explored the mutually constitutive relationship between literature and science, and more recently, in *The Age of Analogy* (2016), Devin Griffiths has argued that literary form and analogical thinking influenced the scientific writing of both Charles and Erasmus Darwin. However, Beer's original argument offers an open invitation to think about these topics in another way, as well: if "reading" requires the decipherment of "*not only* … single words and sentences," then of course, single words and sentences *are* necessarily an important contributing factor to nineteenth-century reading practices, and consequently, to the biological scientists who metaphorically "read" nature.

In the same way that Erasmus Darwin's proto-evolutionary theories developed into Charles Darwin's evolutionary theory of natural selection by the mid-nineteenth century, Gurney's proto-phonetic brachygraphy also informed and contributed to the development of phonetic writing and thinking through Pitman's phonography shorthand. These systems reveal that studies of sound provided crucial interventions in ways of knowing; I will now turn towards the methods of acoustemology to consider new directions in studying Darwin alongside sound writing.

Darwin's inability to transcribe certain sounds with human language complicated his attempts to neatly catalogue creatures from the natural world, and thus, to conceptualize the structures around them. As this chapter has argued, Charles Darwin's

revolutionary ideas did not come solely from "reading" the natural world in the narrative sense, but rather, from a long interdisciplinary history of thinking about the relationships between sounds, language, and meaning. For example, in the early 1830s, Wilhelm von Humboldt, elder brother to Alexander von Humboldt, wrote that without sound, human thinking "cannot ... achieve clarity, nor [can] representation become a concept."[64] To summarize Wilhelm's lengthy philological endeavor, titled (in German) *On the Diversity of Human Language Construction*, Michael Losonsky explains Humboldt's argument this way: that "external sounds are needed by the mind to 'compare, separate, and combine' the objects in the 'external nature' it experiences."[65]

Though Wilhelm's life-work in phonosemantics—the study of possible connections between the sounds of language its meanings—may seem a few degrees separated from Charles Darwin, *Alexander* von Humboldt, so often referenced by Darwin in *the Voyage of the Beagle*, was of great assistance to his brother's work—for which he wrote the 1836 preface after Wilhelm's death. In this way, this final section of my paper argues that language, to Darwin, was not only a *large-scale* comparative act, but also, a small-scale, detail-oriented practice in which the transcription of sound posed unique challenges that fueled his innovations.

Recent turns in the study of Darwin and literature have suggested that we must look to Darwin's readings of other imaginative scientists and thinkers—in addition to his

[64] Wilhelm von Humboldt, *On the Diversity of Language Construction* and Its Influence on the Mental Development of the Human Species. In *Humboldt: On Language*. Translated by Peter Heath (Cambridge: Cambridge University Press, 1999), 55.
[65] Michael Losonsky. Introduction to *Humboldt: On Language*. Translated by Peter Heath (Cambridge: Cambridge University Press, 1999), xvi.

enjoyment of literature and/or poetry—to understand him as a reader and writer—examining anew Darwin's metaphor of "the natural geological record, as a history of the world imperfectly kept, and written in a changing dialect" of which "we possess the last volume alone."[66] The way that Darwin imaginatively compared animal sounds while aboard the Beagle is consistent with the urge to observe phonetics and phonograph—that is, sound and sound writing—as these practices developed in the field of linguistics alongside Darwin's work in the 1820s and 30s.

Just as we know that Darwin and his family, like many nineteenth-century households, read aloud, the metaphorical "reading" world of Darwin's naturalist writings is an immensely auditory one, which asks the reader to imagine individual sounds, and the situations that would produce those sounds, just as often as Darwin will later, in the *Origin of Species,* ask his reader to imagine a variety of fictional scenarios in order to play them out in the mind and understand a broader concept. In fact, in one moment, Darwin's handwritten notes concede that when listening to a particular sound, he thought it was a bird called the Thenca, but, "I <u>imagined</u> however its note or cry was rather different from the Thenca of Chile?—" In this moment, Darwin underlines the word "imagined," highlighting the act.

To bring this chapter to a close, I will conclude with one final passage of his notes where Darwin describes a symphony of natural sounds:

> In my rough notes on the Chonos Islds, I describe the strange noises, which may commonly be heard ^[within,] yet without destroying the silence of those gloomy forests. The whelping of the Barking bird, & the sudden whew-whew of the Cheucau, sometimes come from afar & sometimes from close by; the

[66] Charles Darwin, *On the Origin of Species*, 310-311. Italics added for emphasis.

> little black wren adds its cry. The Certhia follows the intruder, screaming & twittering. The Humming bird, darts from side to side emitting like an insect its shrill chirp. And lastly from the top of some high tree, the indistinct, but plaintive note of the white-tufted Muscicapa. (1819) may perhaps be noticed. (a)[67]

This passage demonstrates another feature of Darwin's understanding of sound, that is, the importance of onomatopoeia, which has fascinating implications for my larger work that I would love to discuss at another time. However, my interest here is that in the notes, Darwin includes a letter "a" around the sound paragraph, indicating that he has gone back at some later point (again, how much later is unknown, but less important than the fact that it depicts a developing thought process). After reflecting on the soundscape of the natural world around him, this is the point where Darwin is inspired to write:

> — In central Chile both are found, but extremely in few numbers. — In that country (& in a like manner in a like case in other countries) one is apt to feel surprise that a species should have been created, which appears doomed to play so very insignificant a part in the great scheme of nature. One forgets, that these same beings may be the most common in some other region, or might have been so in some anterior period, when circumstances were different. — Remove the Southern extremity of America, & who would have supposed, that Certhia, Troglodytes, Myothera, Furnarius had been the common birds over a great country. —[68]

Here, with his questioning of creation, his reflection on different circumstances, and the possibility for other birds to be the most common in another location, we see that as he reflects on sounds, Darwin is not only being led to create interesting comparisons and metaphors, but also, to generate hypotheses and draw conclusions which show that his

[67] Charles Darwin, MS DAR 29.2. *Ornithological Notes,* 1836. Cambridge University Library. 69v.
[68] Ibid.

innovations in thinking about natural selection are in the works. Those thoughts began with an attempt not only to read the sounds of nature, but write with them.

Coda.

Furthering the Senses: Music, Synesthesia, Conclusions

Although it is beyond the scope of this dissertation to explore either of these two topics thoroughly, it is worth highlighting that my previous chapters have briefly touched upon provocative discussions of music and synesthesia. In another project, these could provide 200 additional pages (or more) of insights into nineteenth century literature, culture, objectivity, and observation—and my work in Sound Studies reading groups and conference panels has often encouraged me to work alongside scholars of music, musical performers, sound engineers, field linguists and anthropologists, among others.

After all, Louis Braille's 1829 method for engraved reading and writing not only included a stenographic system, but also, a way to transcribe "plainsong" music using series of dots, and the suffragette song "The Lords of Creation" was, of course, a song. Musicians have created shorthand systems to transcribe music for hundreds of years, and music overlaps with science in both direct and indirect ways. European Bird watchers, for example, have transcribed and imitated birdsong since at least the 1650s.[1] Even before the advent of recording technologies, graphic systems of symbolic marks, often adapted from musical notation, were widely used.[2] Just as he was acquainted with shorthand but not able to practice it himself, Charles Darwin's interest in ornithology suggests that he

[1] John Bevis, "A Complete History of Collecting and Imitating Birdsong," *The MIT Press Reader*. Accessed 3 November 2020. https://thereader.mitpress.mit.edu/a-complete-history-of-collecting-and-imitating-birdsong/

[2] Athanasius Kircher, "Bird Song," *Musurgia Universalis, sive Ars Magna Consoni et Dissoni* (*The Universal Musical Art, of the Great art of Consonance and Dissonance*), Rome: Ludovico Grignani, 1650, Giclee Fine Art Print.

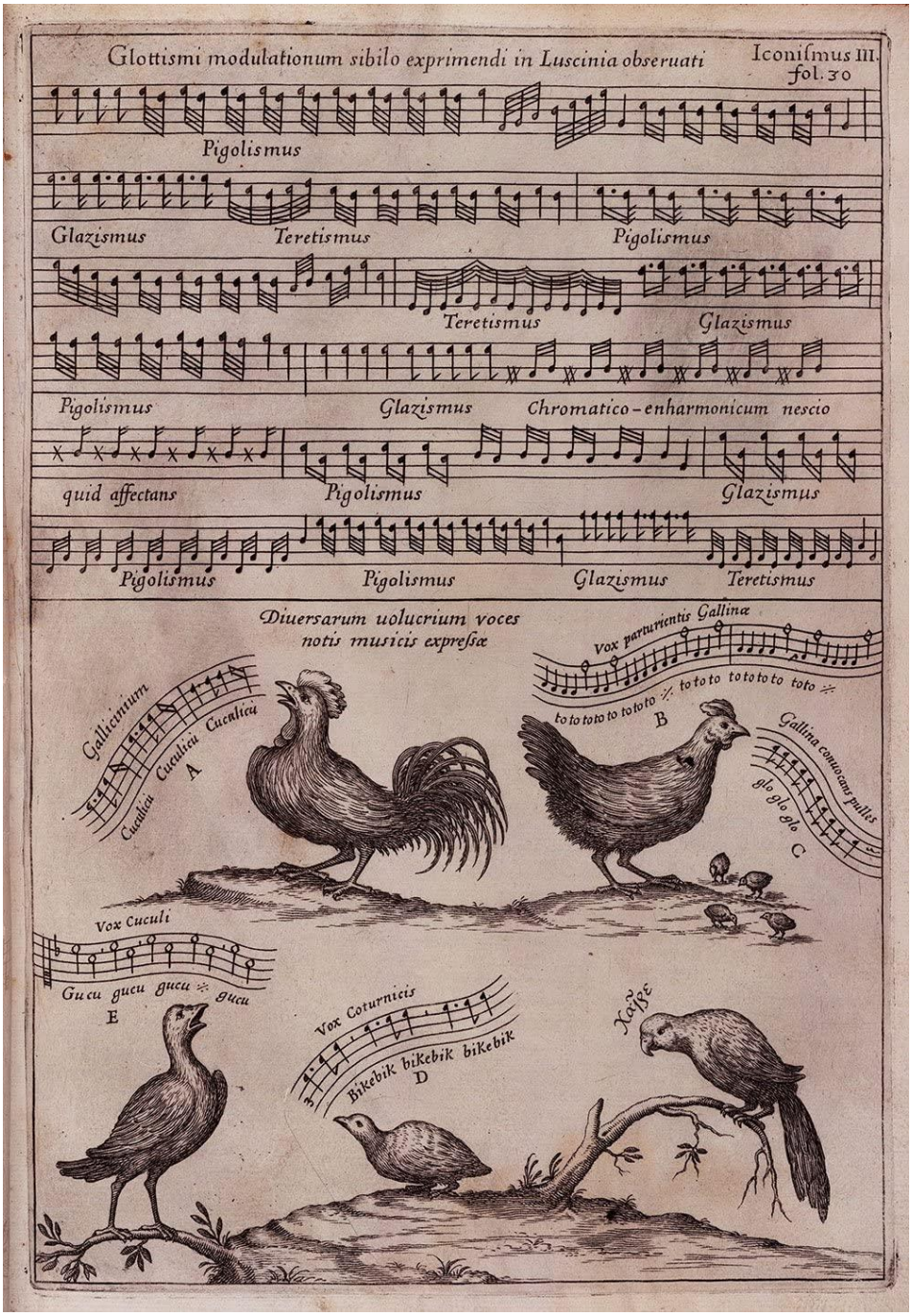

Fig. 5.1. Example of birdsong transcription from *Musurgia Universalis* (1650).[3]

[3] Ibid.

was aware that birdsong could be transcribed, although he himself did not use any established methods to do so.

Likewise, synesthesia connects discussions of sight, sound, and sensory observation—in both literal and idiomatic ways. Beyond the straightforward notion of "wire-crossing" between two sensory experiences that many readers associate with Romantic poetry. Roshanak Kheshti, author of *Modernity's Ear,* explained to my 2018 Sound Studies working group that "colored hearing" has been a preoccupation of music for millennia; Bach used the notion of "sound color," and many other musicians had similar conceptions.[4] As described in Chapter 3, of my project, many of Isaac Pitman's description of how "natural" his stenographic notation suggests that he may have connected sight, sound, and touch in a synesthetic manner.

Bridgman's story, too, hints that she learned reading and writing in a way that can is often described with synesthetic analogies. For example, archival sources examine Howe's reports describing her learning process:

> Using the manual (finger) alphabet she would have to learn twenty-six signs, / one for each letter, and by their combinations express whatever she might wish. […] The great difficulty in the use of the manual alphabet was the very first step: '…how to make her understand the arbitrary analogy which we would establish between three, or four, or more letters, and the thing of which it is the name—in other words that the letters s-h-o-e, for example, stood for the thing itself, shoe.'[5]

Eventually, Howe reported, Bridgman finally realized that the connection between the object in her hands, and the letters of the finger alphabet associated with it, was not as

[4] Roshanak Kheshti, "We See with the Skin: Zora Neale Hurston's Synesthetic Hermeneutics," panel presentation for the *UCHRI Sound Studies Working Group*, UC Berkeley. 13 January 2018.
[5] Harry Burke, "Language Development of Laura Bridgman" (Unpublished Paper Teacher Training Course Microfiche File 371.913 #9), Perkins School for the Blind, 1940, 4.

arbitrary as it seemed: eventually, she was able to "distingui[sh] that the crooked lines 's-p-o-o-n' differed as much from the crooked lines 'k-e-y' as the spoon differed from the key in form."[6] In other words, she was able to distinguish the smallest meaningful units of speech sounds, despite her inabilities to either see or hear the letters or phonemes.

In the 1890s, Michael Anagnos—the director who took Samuel Gridley Howe's place after his death, updated trustees about Laura Bridgman's progress at the end of her life. Anagnos wrote a positive review of a novella that was newly translated into English: *The Blind Musician* by Vladimir Korolenko.[7] Aline Delano translated this 1886 Russian novella for an American publisher who distributed it widely in the United States. It also made its way to England; within three years of the novella's English-language release, a British newspaper in Manchester described Korolenko as "the most distinctly promising of living Russian novelists […] after Tolstoy."[8] To concisely acknowledge the additional possibilities that my research methods can provide to studies of places and eras beyond my own, I will provide a critical analysis of this text in order to offers connections between my dissertation, music, and synesthesia—not only in Britain or America, but in world literature more broadly.

The Blind Musician was praised by critics for its realistic depiction of childhood blindness. Korolenko was both a journalist and social activist, well-known and internationally recognized for his advocacy in support of "those who suffered innocently

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[6] Qtd. In Burke, *Language Development,* 5.
[7] "Books and Authors" in the *Boston Daily Advertiser* (Boston, Massachusetts), 28 June 1890, Issue 154. Page 5. Digitized by *Nineteenth-Century U.S. Newspapers.*
[8] *Manchester Courier and Lancashire General Advertiser* (Manchester, England), 15 August 1893, Issue 11471. *British Library Newspapers, Part III: 1741-1950.* Page 6.

at the hands of the Tsarist government and police" as well as the rigid class distinctions in Russia at the time.[9] *The Blind Musician* follows Petrik, a young boy who is born blind, as he grows into adulthood and struggles to find his place in an able-bodied world. However, when Petrik's uncle teaches him to read in French and Braille, the world suddenly opens up to him: because reading in Braille hones his skills for reading music. Although there is a longstanding—though generally unwelcome and incorrect—cultural stereotype that people who "lose" their sight gain a superior sense of hearing, or vice versa,[10] Petrik is uniquely attuned to sound not because he can *or cannot* hear better, but because his blindness requires him to learn to read through his sense of touch. Although it is important to remember that Korolenko's work was originally written in Russian, French, British, and American audiences were reached by the book, and at the same time, those countries' cultural objects and inventions are included in the novel.

The Blind Musician's superior musical abilities are attributed to the fact that he recognizes sound as a physical, tangible object—a perception that was made possible by both late-nineteenth-century scientific and spiritualist discourse, as well as the blind reader's use of sound-based tactile writing systems. When Petrik is a young boy in the story, one of the very few people who is effectively able to communicate with him is his Uncle Maxim—oddly, because he is a progressive political radical, a character trait which is marked by his fluent reading of French, in order to study political philosophy (76). This unusual language skill allows Uncle Maxim to "stud[y] assiduously the best

[9] Neil Parsons, "Introduction" in *The History of My Contemporary* by V.G. Korolenko, (Oxford University Press, 1972), vii.
[10] Jessica Holmes. "Between Music and Sound: Music & Deaf Culture in the work of Christine Sun Kim," panel presentation for the *UCHRI Sound Studies Working Group*, UC Berkeley. 13 January 2018.

methods of instructing the blind," and thus, "[He] taught [Petrik] to read, and gave him a regular course of lessons" (57). Although Braille is not explicitly named at this point, Petrik describes his reading method, as taught to him by his uncle, thus: "I read from my own books, with my fingers. […] I read French, too."[11]

Korolenko continuously describes Petrik's sense of hearing as "his acutest sense" which "gave him the most satisfaction."[12] However, each of Petrik's five senses is never fully distinguished from any of the others: "The subtlety of his touch was extraordinary. It almost seemed as if he could distinguish with his fingers one color from another. Handling a piece of bright colored cloth gave him more pleasure than handling one that was dark or dull."[13] In other words, Petrik *feels* in such a powerful, multisensory way, that this is why music calls to him in the first place. The first time Petrik hears music, it is the sound of his neighbor playing the flute. While Petrik is lying in bed one night, he explains to his mother that something strange "[came] through my window." Upon realizing that her son is talking about the neighbor's song, Petrik's mother is perplexed. She is stunned by the fact that Petrik experienced the flute's music as "something tangible and real," and tells her husband that Petrik had "personifie[d]" the music notes.[14]

Considering the time period in which this novella was written, however, it is not surprising that Korolenko depicted sound as something physical, since this idea was being popularized in Helmholtz and Tyndall's writings. The flute is particularly apt for

[11]Vladimir Korolenko. *The Blind Musician.* Eds. William Westall and Sergius Stepniak (New York: John W. Lovell Company, 1890), 71.
[12] Ibid., 17.
[13] Ibid.
[14] Ibid., 34

describing a person whose limited options for learning to read centered around Braille—since this particular instrument is played by either covering up round holes with the fingers, and/or pressing down round keys to cover those holes. Eventually, Petrik's flautist neighbor, Tokim, agrees to teach him to play the instrument. When he does, Korolenko writes that the man "put his pupil's fingers on the holes." Petrik's comparable skills in Braille, as well as his synesthetic tendencies, give him an advantage in learning to play. As soon as he places his hands on the instrument, the boy's "vivid imagination" takes off, and "[gives] to each note a distinct personality. In every hole there dwelt a little sonorous spirit, whose voice he knew [...] He realized fully the consecutive notes by their respective positions."[15]

In this way, descriptions of synesthesia are sprinkled throughout Petrik's learning and playing of music. Like the real-life Bridgman, the fictional Petrik, a person with a disability, prompts readers to think more deeply and theoretically about the possible analogs between learning to read and experiencing synesthesia between the senses. As a young man, Petrik discusses the notion of "sound color" with his love interest, a young sighted woman named Velia. "If sounds have colors—and I cannot see colors—it follows that even sounds are not fully accessible to me," Petrik declares. Velia tries to console him by explaining: "It is a metaphor, a means of comparison, nothing more; as sound and light are really, in their essence, vibrations, there must [...] be a certain analogy between them."[16] Yet, even this fascinatingly scientific response does not truly answer the blind

[15] Ibid., 4.
[16] Ibid.

musician's question. Petrik obstinately insists: "But what properties are implied in the idea of a melody or a tune having color?"[17]

Such a question calls to mind a publication by Manley Hopkins, father of Victorian poet Gerard Manley Hopkins, from the late 1880s. In this work, the elder Hopkins writes: "Our modern more observant and deductive habit of looking at facts has discarded the ancient belief in the active power and almost *personality* of numbers; yet there is a circumstance connected with them which is very curious, and which, having once been announced, has shown itself to be somewhat largely prevalent. It is their apparition or visibility to the sight; so that, subjectively, figures representing abstract quantities, present themselves as if written in the air." Though of course, he adds, that such visibility must be necessarily "confined to the mind's eye."[18]

Although Hopkins's work is focused on what 21st-century psychologists call grapheme-color synesthesia[19]—that is, the neurological condition of associating letters or numbers with a color—the above quotation suggests another facet of synesthetic experience: the idiosyncratic association of any perceived concept with abstract qualities that are not or cannot be *logically* or physiologically associated with that concept. This includes associating music notes with personalities, or numbers/values with tangible relationships within physical space.[20]

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[17] Ibid., 136.
[18] Ibid., 16.
[19] P.G. Grossenbacher and C.T. Lovelace. "Mechanism of synesthesia: Cognitive and Physiological Constraints." *Trends in Cognitive Sciences*, 5.1 (2001): 36–41.
[20] Danko Nikolić, "Is Synaesthesia Actually Ideaesthesia?" *Proceedings of the Third International Congress on Synaesthesia, Science & Art.* Granada, Spain, 26-29 April, 2009.

Such research was of immense interest to Francis Galton, the hereditary scientist and yet another cousin of Charles Darwin's, who gathered numerous accounts of nineteenth-century synesthesia in his 1883 *Inquiries into Human Faculty and its Development.* Galton pursues, for example, many synesthetes' experiences of "the sudden and automatic appearance of a vivid and invariable 'form' in the mental field of view, whenever a numeral is thought of, in which each [value] has its own definite place."[21]

In this way, many textual details—for example, that the blind musician Petrik can learn music by associating notes with personalities, and likewise associating flute techniques with physical locations beyond simply their practical positions on the instrument—may not be taking such creative liberties as they seem to. As Petrik practices his musical talents, Korolenko writes: "He ascribed to each tone peculiar qualities. When his fingers touched some gay and brilliant note of the higher register, he would lift his lively face upward, as if that were the direction which the fugitive had taken."[22] Each note, for Petrik, has a physical location, as indicated by Petrik looking up or down, as well as a personality, which is hinted by the description of a note as a disobedient "fugitive."

Moreover, the subtitle of *The Blind Musician* is "an etude," which swaps the roles of music and writing in Korolenko's theoretical framework. This subtitle presents the novella itself—which was published in print and, to my knowledge, never in Braille—as

[21] Francis Galton, *Inquiries into Human Faculty and Its Development,* 1883. Ed. Gavan Gredoux. Galton.org Electronic Edition, 2001. 82.
[22] Korolenko, *Blind Musician,* 53.

a brief musical exercise. Its brevity is apt, since *The Blind Musician* rose to, and fell from fame as quickly as Laura Bridgman and many other celebrities.

In many ways, this coda is an etude as well—a gesture towards the implications of sound reading and the possibilities it can offer beyond the three dot-and-dash writing systems I have explored. Throughout these chapters, I have shown how Boston Line Print, Braille, and Laura Bridgman interplay with authorship and celebrity in the works of Charles Darwin as well as nineteenth-century scientists. I have analyzed the uniquely liberating ways of communicating through sound reading and Morse code, which propelled the American Suffragette movement while perplexing traditional masculine notions of labor and language. I have examined the history of Gurney's Brachygrpahy and Pitman's shorthand to think about reading and writing with sound as an epistemological project, and I have applied this methodology to archival research about the two Darwins, which demonstrate how observing and thinking with sound contributed to developments in evolutionary biology. The three dot-and-dash writing practices have come together in one way throughout this project, but they are sure to also offer future insights to other studies, both in nineteenth-century literature and science and beyond.

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