THE UNIVERSITY OF CHICAGO

VIRTUAL REALISM:

VICTORIAN FICTION AS OPTICAL TECHNOLOGY

A DISSERTATION SUBMITTED TO

THE FACULTY OF THE DIVISION OF THE HUMANITIES

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

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CHICAGO, ILLINOIS

JUNE 2019

For Peter

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ACKNOWLEDGMENTS

ABSTRACT

This dissertation explores the rich intersections between realist fiction and pre-cinematic optical technologies in Victorian Britain. Most scholars agree that the styles and techniques of literary realism are deeply shaped by visual culture, but they limit their inquiry to pictorial media like painting and photography. In "Virtual Realism: Victorian Fiction as Optical Technology," I reveal realist fictional aesthetics to be embedded in the visual culture of nineteenth-century optical technologies, from magic lanterns and optical conjuring to animation toys and stereoscopes. What distinguishes these technologies from other kinds of visual representation is their virtuality: they create images that exist only through the interface of the viewer's perception and the apparatus. Informed by optical technology, realist writers such as Charles Dickens, Elizabeth Gaskell, Wilkie Collins, and Thomas Hardy conceive of literary works less as a precise replica of the world, and more as a virtual scene modeled on visual illusions of light, motion, and depth. By blending literary analysis with archival methods of media history, my research contributes to our understanding of the rise of virtual reality in modern culture. Realist novels were not only engaged in creating virtual experiences, but also in conceptualizing a virtual modernity that they characterize and express through optical technologies. Optical culture both participates in creating these conditions and offers a framework through which Victorians could reflect on the virtualization of modern life.

Chapter One, "Fictional Apparitions: Magic in *Cranford*," stages the central claim of my dissertation: that realist fictionality seeks to create virtual experiences for the reader informed by the visual effects of optical technologies. Through a reading of Elizabeth Gaskell's *Cranford* (1853), a novel that centers on a scene of magic performed by an itinerant conjurer, I argue that realism harnesses the discourses surrounding optical apparitions in the early and mid-nineteenth century in order to conceptualize realist fiction as a form of optical illusion. Most scholars have

overlooked the significance of magic and magicians to novel, focusing instead on the orientalist characterization of the conjurer and his ties to India. However, by placing these episodes in the context of Victorian stage magic, I demonstrate that Gaskell both incorporates and challenges prevailing theories of magic spectatorship in order to conceptualize realist fiction as a type of apparition visualized by the reader. In so doing, Gaskell wrestles with the patriarchal implications of both stage magic and fiction, which operate by manipulating audiences or readers to see and believe in things that are not really there. This line of inquiry offers an important corrective to literary theories that position realism as a rejection or displacement of magic. My work shows that realism does not define itself in opposition to magic, but rather constitutes its fictional illusions through magic's capacity for optical entertainment.

Chapter Two, "Virtual Empire: The Koh-i-Noor Diamond and *The Moonstone*," focuses on the eponymous Indian diamond at the center of Wilkie Collins's detective novel, *The Moonstone* (1868). Because India was the origin of most nineteenth-century diamonds, critics have argued that literary diamonds function as objects or things through which we can read British attitudes towards colonialism and empire. My chapter takes up this line of inquiry but argues that Victorian diamond was not simply understood as an object or material, but also as an optical technological medium that operates through the reflection and refraction of light. By closely analyzing the reception of the Koh-i-Noor, the diamond on which Collins modeled his fictional Moonstone, during its public display in London at the Great Exhibition of 1851, I identify a growing public discourse of diamonds as optical technologies, one that associates diamond spectatorship with the types of visual pleasures and virtual experiences exemplified by magic lantern shows, dioramas, and optical conjuring. The Victorian diamond's status as optical technology is critical not only for understanding what literary diamonds signify about empire, but

for understanding how realist fiction portrays empire more broadly. Through the figure of the Moonstone, with its illusory shining depths, Collins depicts colonial India as an optical illusion, a faraway site that retains an uncanny virtual presence in everyday British life.

Chapter Three, "Phantasmal History: Phantasmagoria in *A Tale of Two Cities*," makes the claim that Charles Dickens's historical novel of the French Revolution (1859) turns on a motif of Phantasmagoria in order to portray historical experience as phantasmal and virtual. The Phantasmagoria was an optical ghost show popularized in Paris in the 1790s by the showman Etienne Gaspard Robertson. Using a hidden magic lantern in a pitch-dark room, Robertson projected images of ghosts and skeletons, as well as historical personages from the French Revolution. I argue that *A Tale of Two Cities* references medium-specific effects of the Phantasmagoria—spectrality, metamorphosis, and visual discontinuity—to represent the perceptual experience of historical transformation in a modern, technologized world. It is a novel about the historical past that questions how history is experienced in the present: through its phantasmagorical rendering of the French Revolution, Dickens explores the impact of technological and virtual media on the experience of world-historical events and the pressures that these media place on the authority of individual perception.

The final chapter of my dissertation, "Persistence of Character: Moving Images in *The Mayor of Casterbridge*," explores the relationship between realist fiction and moving images in the decade leading up to the advent of cinema. I argue that pre-cinematic persistence of vision technologies inform Thomas Hardy's development of a proto-psychoanalytic representation of character in *The Mayor of Casterbridge*. Persistence of vision is a theory of optical perception that describes how visual perception of an object can continue in its absence, allowing the eye to conjoin disparate images into a unified visual sequence. Until the late nineteenth century, almost

all optical toys that used persistence of vision to create moving images were circular and repeating, creating an endless loop of images. By placing *The Mayor of Casterbridge* in the context of Hardy's broader novelistic exploration of optics, I argue that the novel's representation of engages a motif of technological moving images in two ways. First, Hardy references looping toys like the phenakistoscope and the zoetrope when he represents his characters moving in circles and spinning in place. These optical toys and their discourses of fate, possession, and remote control allow him to render characters motivated by unconscious desires and the compulsion to repeat. Second, Hardy uses the framework of persistence of vision, and the way the eye experiences the discontinuous static images printed on a phenakistoscope disk as a single virtual image in motion, to suggest that character is a perceptual illusion created at the interface of the text and the reader.

INTRODUCTION
Hocus Focus

In 1853, the magazine *Household Words* published an essay on a new optical toy called

the stereoscope. To describe the optical illusion of stereoscopic depth created by looking into the

apparatus, the author turned to metaphors of magic. "Everyone has been told that the old priests of

Egypt and of Greece were better skilled in optics than in necromancy," the author writes. Perhaps,

he proposes, the "old form of incantation…has become slightly corrupted by the exchange of

convertible letters in the lapse of time, and was, in the first instance, hocus, focus."[1] "Hocus, focus"

describes the way all nineteenth-century optical technologies, from handheld toys like the

stereoscope to public spectacles like magic lantern shows, relied on the active optical engagement

of the spectator to create visual illusions. The hocus of Victorian optical technologies—their ability

to create seemingly magical effects like virtual depth, ghostly apparitions, or visual

transformations—really did require focus. For example, the stereoscope demanded that the viewer

patiently and laboriously focus her eyes as she gazed through the binocular lenses at a stereograph

(fig. 0.1). It could take several moments for the eyes to adjust from seeing the stereograph, two

nearly identical planar photographs pasted side-by-side on a horizontal piece of cardstock, to

seeing a single virtual image of nearly three-dimensional depth.[2] The term "hocus, focus" playfully

and elegantly demonstrates the way that the illusions created by optical devices were commonly

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[1] "The Stereoscope," *Household Words* Vol. 8, No. 181 (September 10, 1853), 37.
[2] An 1860 cartoon in *Harper's New Monthly Magazine* parodied the way the visual pleasures of optical technology could lead to optical strain by showing how the introduction of a stereoscope into the home turns the entire family into "cross-eyed human wrecks." Erkki Huhtamo, "The Pleasures of the Peephole: An Archaeological Exploration of Peep Media," in *The Book of Imaginary Media: Excavating the Dream of the Ultimate Communication Medium*, ed. Eric Kluitenberg (Rotterdam: NAi Publishers, 2006), 123, 126-127.

understood not as supernatural interference in ordinary life, but as perceptual, physiological, and technological phenomena. At the same time, it exemplifies the privileged status of optical spectatorship in Victorian cultural life. Spectating with optical technology is its own incantation for creating wondrous and amazing visual effects.

"Virtual Realism: Victorian Fiction as Optical Technology" is a study of the relationship between realist fiction and optical technological culture in Victorian Britain. I argue that Victorian realism is embedded in and informed by optical technology's visual effects and modes of spectatorship from the mid-nineteenth century to the fin-du-siècle. Unlike other forms of nineteenth-century visual representation, optical technologies created what I call *virtual images*: images that exist only through the interface of the spectator's perception and the technological apparatus. This can be best understood by returning to the example of the stereoscope. The image of depth and relief that the spectator sees when she looks through the stereoscope does not exist in the apparatus itself, nor in the two-dimensional stereograph. Rather, it exists in her perception while she is looking through the stereoscope at the stereograph. Unlike a photographic image, which has material existence as a chemical reaction preserved on sensitized paper, a virtual image like that seen through the stereoscope is irreducible to its material components. The proliferation of optical technology in mid-nineteenth century Britain led to the emergence of a widespread, multi-media virtual entertainment culture. Working and leisured classes, children and adults, men and women, could be privy to the ins and outs of "hocussing and focusing."[3] Victorians collected stereographs to view through their handheld stereoscopes and purchased colorful, spinning moving image toys like phenakistoscopes and zoetropes to show off to family and friends. For as little as

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[3] "The Stereoscope," 37.

a shilling or two, they attended magic lantern shows, dioramas, and magic shows where magicians used hidden mirrors to make objects appear and disappear.
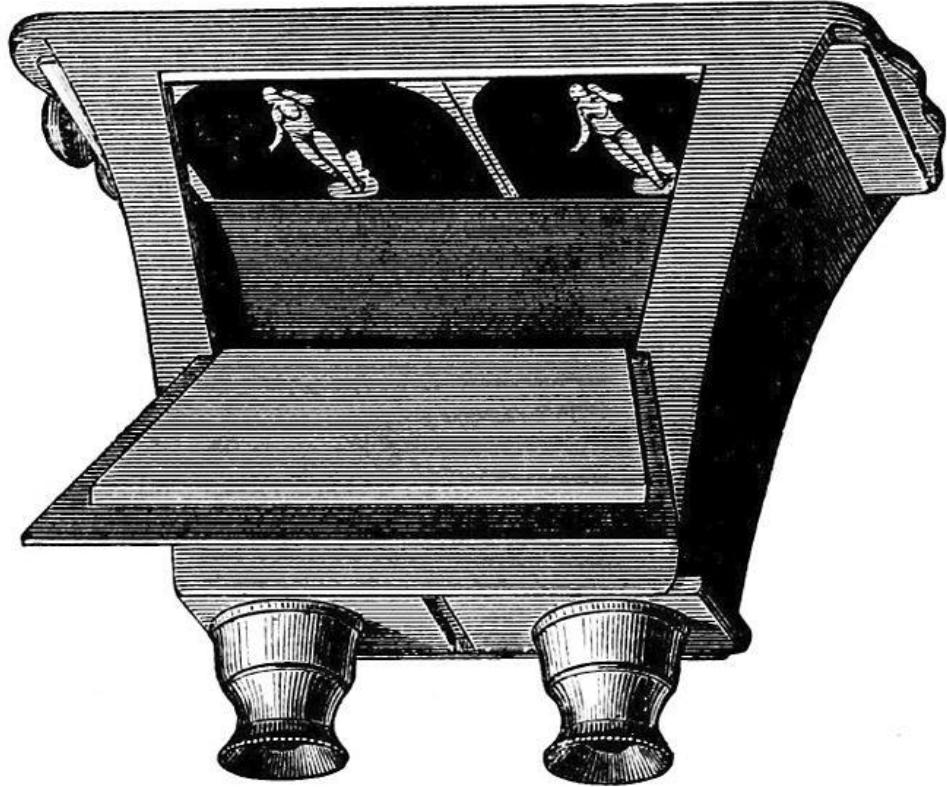
Figure 0.1: David Brewster's Stereoscope. The viewer looks through the binocular lenses at a stereograph slid into a slot at the back. The top flap, which has a mirror attached to it, opens to reflect light into the device. The Popular Science Monthly, *Vol. 21 (May 1882).*

This dissertation argues that the "real" of Victorian realism is constituted through this paradigm of optical spectatorship. Realist fiction posits a reader who, like the spectator of virtual images, must actively participate in the construction of an illusion. Informed by optical technology, Victorian novelists conceive of the literary text as a virtual scene created at the intersection of the text and the reading experience, and modeled on visual illusions of light, motion, and depth. Each of my chapters focuses on a canonical mid-to-late-nineteenth century realist who I argue is

exemplary of the crossover between fictional aesthetics and optical spectatorship during this period. The writers I discuss—Elizabeth Gaskell, Wilkie Collins, Charles Dickens, and Thomas Hardy—each appropriate the framework of optical technology and its visual effects to define the aesthetic work of realism in different ways. Although nineteenth-century realism is most frequently understood as a project of mimesis, one that is invested in effects of verisimilitude, my project demonstrates that Victorian realist fiction does not aim to precisely replicate reality. Rather, realism is a self-conscious exploration of the literary effects that create a virtual experience of reality for the reader.

Take, for example, the much-discussed opening lines of *Adam Bede*. George Eliot's 1859 novel is one of the paradigmatic examples of nineteenth-century British realism for its capacious sense of geographical place, meticulous study of local customs and manners, and immersive historical world. It is significant, then, that the novel opens by comparing itself to an apparition:

> With a single drop of ink for a mirror, the Egyptian sorcerer undertakes to reveal to any chance comer far-reaching visions of the past. This is what I undertake to do for you, reader. With this drop of ink at the end of my pen, I will show you the roomy workshop of Mr. Jonathan Burge, carpenter and builder, in the village of Hayslope, as it appeared on the eighteenth of June, in the year of our Lord 1799.[4]

In this extended metaphor, the author is a conjurer, the reader a spectator, and the literary text a virtual scene manifested through an optical illusion. The "drop of ink" that Eliot takes as a metaphor for literary production derives from a magic trick described by the British Egyptologist Edward William Lane. The magician pours a drop of ink into a child's palm and then hypnotizes him until he sees visions of the past "with a spectacular degree of accuracy and certainty."[5]

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[4] George Eliot, *Adam Bede* (Oxford: Oxford University Press, 2008), 5.
[5] Tamar Kumar Mukherjee, "The Egyptian Sorcerer in *Adam Bede*," *George Eliot Review*, No. 47 (2016): 97. Chapter Two discusses Wilkie Collins's re-imagining of this magic trick as Indian clairvoyance in *The Moonstone*.

Nevertheless, Eliot brings another set of meanings to the magic trick when she emphasizes that the drop of ink is a "mirror." Mirrors were the basis of optical magic in the nineteenth century, used to create virtual images and to make objects disappear. They were also components of countless optical technologies popular in Victorian Britain, from magic lanterns to kaleidoscopes. These opening lines imagine the world of the novel as a virtual scene envisioned by the reader through the novelist's optical showmanship. The text, composed of "drop[s] of ink," is an optical medium like a mirror that can make images appear, metamorphose, and vanish. The positioning of the reader as a seer empowered to engage in a form of virtual perception further reinforces the similarity between reading and optical spectatorship. The reader is not tricked or deceived by the apparition, because the narrator has demystified the procedures by which it is created. Instead, she is an active participant in the creation of the apparition. In this sense, Eliot's address to the reader is a variation on "hocus, focus." Rather than an incantation, it is an invocation that compares the novelist's tale to a magical vision, while self-consciously exposing itself as an illusion of reality.

"Virtual Realism" also contributes to the way we understand the rise of virtual reality in the modern era. Realist novels are not only engaged in creating virtual experiences, but in conceptualizing a virtual modernity that they characterize and express through optical technologies. For example, as I argue in Chapter Two, the growth and consolidation of the British Empire created a sense of spatial dislocation for Victorian subjects that Wilkie Collins, in his novel *The Moonstone*, analogizes through the perceptual delusions created by optical technologies and spectacles like stereoscopes and dioramas. Collins depicts India as an optical illusion, an impossibly faraway site that remains virtually present in everyday British life. Similarly, in Chapter Three, I consider how Charles Dickens's historical novel, *A Tale of Two Cities,* wrestles with the virtual experience of history and historical change in an era of technological mediation

by comparing it to spectating at the Phantasmagoria, an optical ghost show. In each case, these novelists reach for an optical framework to represent conditions of reality they see as inherent to modernity. I argue that optical culture simultaneously participates in creating these conditions and provides a framework through which Victorians could reflect on the virtualization of modern life.

Realism: From the Visual to the Virtual

The importance of optical technology to the Victorian novel has been largely overlooked by scholars of nineteenth-century literary and visual culture. Instead, the field has focused primarily on material images such as paintings, etchings, and photographs, demonstrating how their pictorial conventions and representational capacities inform and intersect with literary production. As Martin Meisel wrote in his seminal 1984 study *Realizations: Narrative, Pictorial, and Theatrical Arts in Nineteenth-Century England*, "Novels unfold through and with pictures."[6] This approach to the interplay between fiction and visual media underwrites recent work on realist fiction that considers its relationship to photography, painting, spectacle, exhibitions, and commodity culture.[7] This body of work builds on a theoretical tradition that has conceptualized realism as a mode of textual visualization, from Georg Lukàcs's claims about the descriptive

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[6] Martin Meisel, *Realizations: Narrative, Pictorial, and Theatrical Arts in Nineteenth-Century England* (Princeton: Princeton University Press), 3.

[7] Nancy Armstrong, *Fiction in the Age of Photography: The Legacy of British Realism* (Cambridge, MA: Harvard University Press, 1999); Daniel A. Novak, *Realism, Photography, and Nineteenth-Century Fiction* (Cambridge: Cambridge University Press, 2008); Jennifer Green-Lewis, *Framing the Victorians: Photography and the Culture of Realism* (Ithaca: Cornell University Press, 1996); Ruth Bernard Yeazell, *Art of the Everyday: Dutch Painting and the Realist Novel* (Princeton: Princeton University Press, 2008); Peter Brooks, *Realist Vision* (New Haven: Yale University Press, 2008); Alison Byerly, *Realism, Representation, and the Arts in Nineteenth-Century Literature* (Cambridge: Cambridge University Press, 1997); Andrew H. Miller, *Novels Behind Class: Commodity Culture and Victorian Narrative* (Cambridge: Cambridge University Press, 2009); Dehn Gilmore, *The Victorian Novel and the Space of Art: Fictional Forms on Display* (Cambridge: Cambridge University Press, 2013).

thickness and narrative vitality of nineteenth-century fiction, to Roland Barthes's view of realism as descriptive excess created through unassimilable details.[8] Realism is a realization of the visible world that takes its codes from existing visual media and the ways of seeing that these media make possible. In another vein, scholars such as Kate Flint and Isobel Armstrong have demonstrated that Victorian literature was informed not only by images, but also by scientific inquiry into the instability of visual experience and the processes of mediation that underly sight.[9]

Missing from all of these accounts, however, is a robust study of optical technology as a mode of image production. My dissertation seeks to restore to the conversation the Victorian period's virtual image culture—the toys, instruments, and spectacles that produce images that can be perceived but not touched. There are many reasons why the optical technologies I consider in this dissertation have been marginalized in the study of nineteenth-century visual culture, but three stand out in particular. First, these technologies have historically been classified as pre-cinematic, part of the pre-history of cinema that has been documented and interpreted by historians of film such as Laurent Mannoni, Tom Gunning, Anne Friedberg, and Erkki Huhtamo.[10] It is only in the

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[8] Georg Lukács, "Narrate or Describe?" in *Writer & Critic, and Other Essays*, ed. and trans. Arthur D. Kahn (New York: Grosset & Dunlap, 1970); Georg Lukács, "Realism in the Balance," in *Aesthetics and Politics: Theodor Adorno, Walter Benjamin, Ernst Bloch, Bertolt Brecht, Georg Lukács* (London: Verso, 2007): 28-59; Roland Barthes, "The Reality Effect," in *The Rustle of Language*, trans. Richard Howard (New York: Farrar, Strauss and Giroux, 1986), 141-149. On the role of visual description and details in nineteenth-century fiction, see also Cynthia Wall, *The Prose of Things: Transformations of Description in the Eighteenth Century* (Chicago: University of Chicago Press, 2014).

[9] Kate Flint, *The Victorians and the Visual Imagination* (Cambridge: Cambridge University Press, 2008); Isobel Armstrong, *Victorian Glassworlds: Glass Culture and the Imagination, 1830-1880* (Oxford: Oxford University Press, 2008).

[10] Laurent Mannoni, *The Great Art of Light and Shadow: Archaeology of the Cinema*, trans. and ed. Richard Crangle (Exeter: University of Exeter Press, 2000); Tom Gunning, "Hand and Eye: Excavating a New Technology of the Image in the Victorian Era," *Victorian Studies* 54, no. 3 (April 1, 2012): 495–516; Gunning, "Illusions Past and Future: The Phantasmagoria and Its Specters," (Paper presented at the First International Conference on the Histories of Art, Science and Technology, Banff New Media Institute, Canada, 2005) http://pl02.donau-

last thirty or forty years that that this pre-history has come into view as a field of study in its own right, and not simply as an appendage of film studies, through the groundbreaking work of Jonathan Crary on nineteenth-century spectatorship and the emergence of new methods of media history.[11] The second reason is the related problem of archival access. While paintings, photographs, and prints are collected by all major art museums and have given rise to the formation of an artistic canon, nineteenth-century optical media are primarily classified as ephemera—mass produced, cheap, and collected by enthusiasts. Many of the museums and cultural institutions that archive materials like magic lantern slides, stereoscopes, paper peepshows, and zoetrope strips contend with huge bequests of uncatalogued materials of unknown provenance; sometimes these objects are never properly inventoried. Since these objects are also fragile and can be poorly constructed, they are very often destroyed before they can make it to archives for long-term preservation. They remain invisible in scholarship because they have been largely invisible to scholars. Thirdly, optical technology poses a particular set of challenges to scholars of visual culture because its images cannot be reduced to an objective, material form. Optical images are

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uni.ac.at/jspui/handle/10002/286; Gunning, "The Long and the Short of It: Centuries of Projecting Shadows, from Natural Magic to the Avant-Garde," in *The Art of Projection*, ed. Stan Douglas and Christopher Eamon (Osfildern: Hatje Cantz Verlag, 2009), 23-35; Gunning, "Phantasmagoria and the Manufacturing of Illusions and Wonder: Towards a Cultural Optics of the Cinematic Apparatus," in *The Cinema: A New Technology for the 20th Century* (Editions Payot Lausanne, 2004), 32-44; "'We Are Here and Not Here': Late Nineteenth Century Stage Magic and the Roots of Cinema in the Appearance (and Disappearance) of the Virtual Image," in *A Companion to Early Cinema*, ed. André Gaudreault, Nicolas Dulac, and Santiago Hidalgo (Wiley-Blackwell, 2012): 52-63; Ann Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge, MA: The MIT Press, 2009); Erkki Huhtamo, *Illusions in Motion: Media Archaeology of the Moving Panorama and Related Spectacles* (Cambridge, MA: The MIT Press, 2013); Huhtamo, "From Kaleidoscomaniac to Cybernerd: Notes toward an Archaeology of the Media," *Leonardo*, Vol. 30, No. 3 (1997): 221-224.
[11] Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, MA: The MIT Press, 1992).

virtual and perceptual—to see them, to understand how they are constituted through perception, and to resist the overdeterminations of theory through close analysis, scholars must actually play with optical toys.[12]

In this project, I have sought to overcome these obstacles to the study of nineteenth-century optical technology by employing an interdisciplinary method that blends historicist literary interpretation with media studies. In particular, I work in the tradition of media archaeology, an emergent set of methods for excavating, historicizing, and analyzing the lives and afterlives of media objects. Media archaeology is a historical practice that has been uniquely attentive to "the forgotten, the quirky, the non-obvious" media that are quickly sidelined and made invisible by narratives of technological progress.[13] That is why, in the words of one of its most distinguished practitioners, media archaeology is a corrective method that seeks to "fill in media-historical lacunas and correct mistakes caused by uncritical reliance on second-hand sources."[14] Media archaeology affords me analytic precision in writing about the visual effects and technological affordances of optical media, as well as the ability to excavate apparatuses that are, indeed, non-obvious, quirky, and often forgotten. Each chapter of my dissertation integrates original research conducted in the material archives of nineteenth-century optical media, research that includes physically operating technologies in order to document and interpret their range of visual and perceptual effects. This interactive research enables me to clearly and precisely identify literary references to optical media that have been overlooked and might otherwise remain obscure, and to make historically and technologically grounded claims for what those references signify.

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[12] Meredith A. Bak, "The Ludic Archive: The Work of Playing with Optical Toys," *The Moving Image: The Journal of the Association of Moving Image Archivists* Vol. 16, no. 1 (Spring 2016): 1-16.

[13] Jussi Parikka, *What is Media Archaeology?* (Cambridge: Polity Press, 2012), 2.

[14] Erkki Huhtamo, *Illusions in Motion*, 13.

More broadly, a media-archaeological approach to the intersection of realism and optical technology allows me to challenge the prioritization of the pictorial, material image in Victorian Studies that has led to the marginalization of a major domain of mass visual culture. This dissertation sets out to demonstrate how recuperating virtual images to the history of Victorian visual culture can transform our understanding of realism's visuality. I argue that we cannot fully understand how Victorian realism functions as a technology of visualization unless we look to the visual media that made the act of spectatorship central to the production of an image. Optical technology allows us to re-frame the relationship between realist fiction and visual culture not simply as formal, narratological, or ontological, but also, and just as crucially, phenomenological. To paraphrase Martin Meisel, realist novels unfold through and with virtual images because the process of visual mediation that creates such images offers a framework through which realism can conceptualize its own phenomenological properties. In this sense, my work contributes to the field of visual studies, while seeking to expand and reorganize our definition of visual culture to include virtual, perceptual, and technologically-produced images.

"Virtual Realism" participates in a new wave of scholarship in Victorian Studies that has gathered momentum in the last five years—what could be characterized as an incipient "virtual turn." Jonathan Farina, Alison Byerly, Jules Law, and John Plotz have sought to characterize the virtuality of Victorian fiction—its production of "virtual experience," "virtual travel," or "virtual reality."[15] In this small sample size alone, virtuality has proliferating and often contradictory

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[15] Jonathan Farina, "Dickens' 'As If': Analogy and Victorian Virtual Reality," *Victorian Studies*, Vol. 53, No. 3 (Spring 2011): 427-436; Alison Byerly, *Are We There Yet?: Virtual Travel and Victorian Realism* (Ann Arbor, MI: University of Michigan Press, 2013); Jules Law, "Virtual Evidence," *Victorian Studies* Vol. 56, No. 3 (Spring 2014): 411-424; John Plotz, *Semi-Detached: The Aesthetics of Virtual Experience since Dickens* (Princeton, NJ: Princeton University Press, 2017).

meanings. It can refer to phenomenological conditions of aesthetic immersion and absorption, representational claims to verisimilitude, and expressions of the speculative and suppositional. These usages of the term are inspired by philosophical conceptions of virtuality and by virtual reality in digital culture, which are themselves sometimes hazily employed and often elude clear definition.[16] In general, however, Victorian scholars have turned to virtuality in order to characterize elements of Victorian fictional aesthetics that resonate with and can help us understand the virtuality of the contemporary world—its virtual spaces, realities, selves. For example, in Alison Byerly's *Are We There Yet?: Virtual Travel and Victorian Realism*, nineteenth-century realist novels are like twenty-first-century digital virtual reality environments because both have the ambition "not just to create alternative worlds but to give us the illusion of entering them, a journey that is itself part of the process of creation."[17] Meanwhile, in *Semi-Detached: The Aesthetics of Virtual Experience since Dickens*, John Plotz describes virtuality as "one important way to think about the interplay between actual and aesthetic mimesis." For Plotz, semi-detachment—the way readers can "experience the world of a book as if it were real, while nonetheless remaining aware of the distance between such invention and one's tangible physical surroundings"—is an example of virtuality.[18]

In this project, my use of the term virtual derives not from philosophy or digital culture, but from the context of nineteenth-century optical technology and its modes of visual representation. I will speak of the virtual or virtuality throughout the dissertation in three related

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[16] For a primer on the origins of philosophical virtuality, see Keith Ansell Pearson, "The Reality of the Virtual: Bergson and Deleuze," *MLN* Vol. 120, No. 5 (December 2005): 1112-1127. On virtuality as a concept in digital studies, see *The Oxford Handbook of Virtuality*, ed. Mark Grimshaw (Oxford: Oxford University Press, 2014).
[17] Byerly, *Are We There Yet?*, 3.
[18] Plotz, *Semi-Detached*, 3.

senses. First, I refer to *virtual images*, a technical term that describes images created through the mediation of an optical apparatus. In *The Virtual Window*, Friedberg offers an instructive analysis of the history of "the virtual" as a concept within optics that was operative for centuries before it was coopted to describe the mediations of electronic and digital media. The term "virtual" first appears in English in in 1831, when it was used by Sir David Brewster, one of the most significant optical inventors and thinkers of the nineteenth century.[19] For Brewster, a virtual image was an image perceived only in the brain. Virtual images could be defined in contrast to "real images" formed by a convergence of rays of light. While a real image will appear on a surface that is placed in a plane with the image, a virtual image will not appear on a surface in its plane.[20] However, in seventeenth-and-eighteenth-century optics, the virtual image also described images produced through optical mediation, specifically through the effects of reflection and refraction on rays of light.[21] Both of these senses of the virtual image—as a purely retinal image, and as a mediated optical image—were operative in the nineteenth century. When I describe an image as virtual in my discussions of optical technologies, I am using it in a historically and technologically specific sense that refers to the ontological status of that image. In these moments, virtual is not descriptive but definitional.

I have chosen the term virtual for all the technologies I discuss in the dissertation not only for its technical precision, but also because it offers a favorable alternative to describing optical technologies as "pre-cinematic." The foundational studies of nineteenth-century optical technology were conducted under the aegis of the history of cinema, and technologies like the magic lantern, the stereoscope, and the zoetrope have long been labeled pre-cinematic or proto-

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[19] Friedberg, *Virtual Window*, 8.
[20] Friedberg, 9.
[21] Friedberg, 9, 255 (28n).

cinematic for their role in the development of the cinematographic apparatus. Avoiding the cinematic as a framework for these devices helps me avoid the twin lures of technological determinism and historical presentism that might lead me to fashion Victorian media experiences as a series of precursors to an as-yet-unrealized technological culture. I hope that by reframing these technologies, their visual effects, and their discursive imaginaries outside of the shadow of cinema, my work may act as a corrective to linear, technologically determinist histories of cinema and in this way be more helpful to cinema scholars. Moreover, the term "virtual image" anchors my call for Victorian Studies to consider optical technology alongside other forms of image production, from printmaking to painting to photography.

At other points in the dissertation, I extrapolate from the concept of a virtual image to refer to the *virtual experiences* that optical technologies can produce. By virtual experience, I mean a form of visual spectatorship in which the spectator experiences a convincing, absorptive, or entertaining illusion that she understands is not real. This aesthetic experience is intimately tied to the production of virtual images and derives from my analysis of nineteenth-century media discourses surrounding optical technological culture. I develop this account more fully in Chapter One. Finally, I use the term virtual to describe the way Victorian realist novels generate an intangible, unreal reality within the text that is experienced by the reader. In each chapter of my dissertation, I show how the writers I discuss employ tropes of optical virtuality—such as the apparitional, the phantasmagorical, and the kaleidoscopic—in order to ground their explorations of how fiction creates virtual experiences. My sense of literary virtuality is also informed by Catherine Gallagher's concept of fictionality. For Gallagher, fictions are "believable stories that

[do] not solicit belief."[22] The reader's disbelief in fiction makes possible a new literary ontology outside of the binary of the real and the unreal, and therefore new forms of aesthetic pleasure. I use the term "virtuality" for the unreal reality of Victorian fiction.

The framework of optical virtuality challenges and provides new dimensions to some of our fundamental assumptions about realism's visuality. Nineteenth-century realism has often been described as an exhaustive visualization of the world in prose, a project shaped by industrial capitalism, the growth of commodity culture, and the elevated status of "things." It is crucial, however, that realism's project of visualization coincides and actively engages with an emergent cultural paradigm in which reality is no longer safely located in the external world. Victorian realism must be situated in the context of emerging scientific discourses about the physiology of sight and the unreliability of the senses. Summarizing the groundbreaking research into physiological optics that emerged in the 1830s, Jonathan Crary writes:

> Vision is redefined as a capacity for being affected by sensations that have no necessary link to a referent, thus imperiling any coherent system of meaning. […] What was at stake and seemed so threatening was not just a new form of epistemological skepticism about the unreliability of the senses, but a positive reorganization of perception and its objects. The issue was not just how does one know what is real, but that new forms of the real were being fabricated, and a new truth about the capacities of a human subject was being articulated in these terms.[23]

This uprooting of the relationship between visual experience and objective referent was broadly communicated to the British public in the second half of the nineteenth century through optical toys and spectacles, along with the fundamental principles of optics such as the behavior of light and its ability to produce virtual images. Victorians understood the capacity of vision not as a transparent registration of a reality that existed outside of the sensorium, but as a complex

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[22] Catherine Gallagher, "The Rise of Fictionality," in *The Novel: History, Geography and Culture* Vol. 1, ed. Franco Moretti (Princeton: Princeton University Press, 2006), 340.
[23] Crary, *Techniques of the Observer*, 91-92.

mediation that was engaged in visualizing and producing reality. Optical toys and spectacles not only mobilized and embodied this paradigm of vision but actively sought to educate spectators in what it meant for their perception of the world.

I argue in this dissertation that realism understands and imagines itself as an optical technology capable of fabricating the real. For Crary, the nineteenth-century spectator is "susceptible to external procedures of manipulation and stimulation that have the essential capacity *to produce experience for the subject*."[24] This sinister sounding description is accurate in its particulars, but misleading in its tone. The nineteenth-century technologies that manipulated and stimulated the senses to produce experience for the subject made possible a new paradigm of aesthetic pleasure and laid the groundwork for a modern technological entertainment culture. The spectator who plays with an optical toy sees pictures in the mind temporarily, while knowing they are not real. She is the one spinning the zoetrope, changing the stereographs in the stereoscope, and focusing the lens on a magic lantern—she is always conscious of the apparatus and the procedures by which her experience is being produced. As both showman and spectator, she is engaged in the manipulation of her own senses. Even in public spectacles like magic shows, the visual domain of optical technology was not thrust on Victorian spectators as a set of tricks or deceptions mobilized in the service of social control. On the contrary, the disciplinary orientation of Victorian optical technology was geared towards cultivating sophisticated, educated, and disenchanted spectators who could simultaneously experience an optical illusion and understand how the illusion was produced. Optical toys and spectacles embodied and promoted a pedagogy of demystification.

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[24] Crary, 92.

By situating realism within the framework of optical technology and virtual images, each of my chapters show how realist novels imagine themselves as creating non-referential visual experience for the reader. Unlike its counterparts in France and Russia, nineteenth-century British realism is consumed with ghosts and specters, magic and hallucination, somnambulism and dreams. Ian Duncan and George Levine have each sought to explain these tendencies by referring to realism's emergence from and imbrication with the British gothic and romance traditions.[25] Rather than refer this to genre hybridity, my work suggests that these tropes emerge precisely because they signify and support the realist project of producing an apparitional reality. As we will see in Chapter One, Elizabeth Gaskell turns to ghosts and magic in her novel *Cranford* not simply to distinguish realistic fiction from the fantastical, or to satirize supernatural belief, but to explore the way fiction generates an illusion of the real that is comparable to the visual illusions created through Victorian optical technology. The reader uses a novel like she uses a stereoscope, as a medium for virtual experience that feels real, even though she never loses sight of the "apparatus"—the book in her hands, the words on the page.

Victorian critics promoted the analogy between realistic effects in literature and optical illusions. In 1872, George Henry Lewes wrote an essay on Charles Dickens that addressed the polarizing nature of his literary legacy: his immense popularity, on one hand, and the critical contempt with which his work was received on the other. To reconcile these perspectives, Lewes proposed that Dickens practiced a form of hallucinatory realism. His novels are characterized by their coercive power to induce belief in their reality, even when the reader experiencing the

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[25] Ian Duncan, *Modern Romance and the Transformations of the Novel: The Gothic, Scott, Dickens* (Cambridge: Cambridge University Press, 1992); George Levine, *The Realistic Imagination: English Fiction from Frankenstein to Lady Chatterley* (Chicago: University of Chicago Press, 1981).

hallucination is perfectly capable of understanding its unreal nature. Reading Dickens, he explained, is like experiencing an optical illusion:

> If I see a stick partly under water, it is impossible for me not to have the same feeling which would be produced by a bent stick out of water—if I see two plane images in the stereoscope, it is impossible not to have the feeling of seeing one solid object. But these beliefs are rapidly displaced by reference to experience. I know the stick is not bent, and that it will not appear bent when removed from the water. I know the seeming solid is not an object in relief, but two plane pictures.[26]

Dickens's writing is like the stereoscope because it produces images so vivid, so "definite and insistent," and "in such relief" that "even while knowing it was false we could not help, for a moment, being affected, as it were, by his hallucination.[27] Lewes's remarks on Dickens echo the opening lines of *Adam Bede* by comparing novelistic reality effects to optical illusions. The phenomenological realness of fiction is a temporary visual delusion, a hallucination or apparition, engineered by the writer-magician.

Lewes's essay also allows us to see how writers and critics in the second half of the nineteenth century were re-apprehending the novel as a medium for organizing the reader's perception. Dickens's novels are not like a set of pictures, but like an apparatus for producing a set of pictures in the mind of the reader. This distinction offers us a window into what a media archaeological approach to optical technology can offer the study of Victorian literature that paintings, photographs, maps, exhibitions, and store windows cannot. Optical technology illuminates a set of historical discourses positioning realist novels as perceptual media, and therefore it makes available to scholars a set of methods for analyzing fiction as medium in its own right. How does realist fiction operate on the reader's perception, and how does the reader's

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[26] George Henry Lewes, "Dickens in Relation to Criticism," *The Fortnightly Review* Vol. 11 (London: Chapman and Hall, 1872), 146.

[27] Lewes, 146.

perception operate on fiction? What kinds of experiences are produced at the intersection of the literary text and the reading subject? The broad ambition of this project is to provide some coordinates for reconceptualizing Victorian fiction not as a set of formal or narrative practices, but as a form of mediation. The writers I discuss in this dissertation were entirely aware of their work as mediation, and their allusions to optical technology help them self-consciously explore what it means for a novel to be a medium and what its medium-specific operations might be.

As the first study of British realism and optical technology, "Virtual Realism" also expands our critical framework for realism's visual codes. It contributes to a growing body of work on optical technology and nineteenth-century fiction by scholars such as Isobel Armstrong, John Plunkett, Helen Groth, Stefan Andriopoulos, Alberto Gabriele, David J. Jones, Joss Marsh, and Grahame Smith, who have explored the influence of optical media on the novel's formal innovations.[28] Through my readings of novels by Gaskell, Collins, Dickens, and Hardy, I seek to identify their optical vocabulary, to make it accessible to other scholars by recuperating the historical and technological context for this vocabulary, and to interpret some of the ways in which optical technology gives shape to descriptive and rhetorical forms. For every tableau vivant in realist novels, there is a moving image; for every still life, a visual metamorphosis; for every mirror

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[28] Isobel Armstrong, *Victorian Glassworlds: Glass Culture and the Imagination* (Oxford: Oxford University Press, 2008); John Plunkett, "Optical Recreations and Victorian Literature," *Essays and Studies: Literature and the Visual Media* Vol. 58 (2005): 1-28; Helen Groth, *Moving Images: Nineteenth Century Reading and Screen Practices* (Edinburgh: Edinburgh University Press, 2013); Stefan Andriopoulos, *Ghostly Apparitions: German Idealism, the Gothic Novel, and Optical Media* (New York: Zone Books, 2013); Alberto Gabriele, *The Emergence of Pre-Cinema: Print Culture and the Optical Toy of the Literary Imagination* (New York: Palgrave Macmillan, 2016); David J. Jones, *Gothic Machine: Textualities, Pre-Cinematic Media and Film in Popular Visual Culture* (Cardiff: University of Wales Press, 2011); Joss Marsh, "Dickensian 'Dissolving Views': The Magic Lantern, Visual Story-Telling, and the Victorian Technological Imagination," *Comparative Critical Studies* 6, no. 3 (2009): 333–346; Grahame Smith, *Dickens and the Dream of Cinema* (Manchester: Manchester University Press, 2003).

that signifies verisimilitude, there is a mirror that signifies visual illusion. At the simplest level, this dissertation parses these allusions and makes a case for their significance.

Light, Depth and Motion: Optical Technology, 1851 – 1895

The literary texts and optical technologies that I look at in this dissertation span the second half of the nineteenth century, roughly 1851 to 1895. This period encompasses the major works of the nineteenth-century realist tradition. Elizabeth Gaskell's novel *Cranford*, the subject of Chapter One, began serialization in 1851, while Thomas Hardy's final novels, which I consider in Chapter Four, were published in the mid-to-late 1890s. The dates I have chosen to bracket this study also demarcate a period in which pre-cinematic optical technology was a subject of mass cultural engagement and inquiry. 1851 marks the opening of the Great Exhibition, where the exhibition of David Brewster's stereoscope led to a craze for stereoscopy that lasted through the second half of the nineteenth century. I therefore consider this moment exemplary of the dominance of multi-media optical technology in mass cultural life, a dominance that is slowly displaced by cinema, beginning with the first exhibition of cinematographic projection by Auguste and Louis Lumière in 1895. At various points in the dissertation, I address major technologies or optical discourses from the early nineteenth century. For example, Chapter One places *Cranford* in the context of David Brewster's influential 1832 book *Letters on Natural Magic*, a study of the scientific origins of illusions, while Chapter Four argues that Hardy's *The Mayor of Casterbridge* is informed by the phenakistoscope, a moving image device that was first released on the market in 1833. However, I argue that it is specifically in the second half of the nineteenth century that realism appropriates the framework of optical technology in order to grapple with the virtuality of modern experience.

Furthermore, I argue that realist fiction's engagement with virtuality as a form of experience and a literary aesthetic has its source in the cultural dominance of optical technology in post-1851 Britain. The first decades of the nineteenth century saw optical researchers like Johannes Müller and Joseph Plateau and philosophers like Johann Wolfgang von Goethe and Arthur Schopenhauer reconceiving the relationship between visual experience and the world.[29] The 1830s and 1840s saw the growth of an optical entertainment industry in urban centers, with the emergence of commercial scientific galleries such as London's Adelaide Gallery and Royal Polytechnic Institution, which boasted spectacular optical demonstrations and were responsible for the diffusion of optical literacy among the middle and working classes. By 1851, I argue, optical technology and spectatorship were not only part of the cultural mainstream, but also powerful tools for making sense of ordinary experience precisely because of their virtuality. Magic lantern projections, stereoscopy, and dioramas of imperial landscapes and scenes helped Victorians understand themselves as a part of a global empire without leaving their homes, as I claim in Chapters One and Two, while phantasmagorical lantern shows and moving image devices indexed the virtuality of historical change, as I show in Chapter Three.

In order to capture this cultural turn towards virtuality in the second half of the nineteenth century, I have taken a synoptic approach to Victorian optical technological culture. That is to say, I have not focused exclusively on a single type of optical technology, such as magic lantern shows of stereoscopes, or a single type of reception, such as public spectacles or household toys, but surveyed a wide range of apparatuses and media experiences. Broadly, I have organized the optical technologies I discuss in terms of the type of virtual image that they produce. I address three kinds of virtual images in the dissertation: what I am calling *light-based images*, *virtual depth images*,

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[29] Crary, *Techniques of the Observer*, 67-96.

and *moving images*. Each category contains a range of technologies that operate within a shared technological mode and perceptual framework. For instance, light-based images use projection, reflection, and refraction of light to create a virtual image, while moving images are created through the illusion of persistence of vision. These categories are not intended to be exhaustive. Some of the most important optical technologies of the nineteenth century, such as the kaleidoscope and the diorama, do not fit cleanly into any of these boxes. Quite simply, these categories register some of the most significant visual and perceptual effects of nineteenth-century optical technology, and reflect the variety of media experiences that I address in the dissertation.

Light-based images encompasses the wide range of nineteenth-century optical technologies that rely on the projection, reflection, and refraction of light to create virtual images. The best known among these is the magic lantern, one of the most popular and beloved modes of visual representation in nineteenth-century Britain. The magic lantern is an apparatus for projecting painted, printed, or photographic slides. It was first invented in the seventeenth century by Christiaan Huygens and was popular as a visual spectacle throughout the eighteenth century, usually purveyed by traveling lanternists who strapped their magic lanterns to their backs as they journeyed from town to town. The turn of the nineteenth century saw the vogue for the Phantasmagoria, a Gothic style of magic lantern show popularized in Paris by the Belgian inventor Etienne-Gaspard Robertson. However, the lantern was at the height of its popularity and reached the pinnacle of technical achievement in Britain during the second half of the nineteenth century.[30] By the mid-nineteenth century, traveling lantern shows were almost entirely supplanted by the mass production of magic lanterns and the institutionalization of the magic lantern show in site-

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[30] Mannoni, *Great Art of Light and Shadow*, 264. Although the magic lantern was widely used across Europe, it was most popular in Britain.

specific venues.[31] Magic lanterns were marketed and sold for home use, including as children's toys with collectible slide sets, while urban centers boasted theaters and scientific galleries devoted to magic lantern shows.

The Royal Polytechnic Institution in London was foremost among these scientific galleries. Founded in 1838 and renovated ten years later to include a state-of-the-art optical theater, the Polytechnic was celebrated as a "temple" of projection that boasted the most spectacular lantern shows of the century.[32] The most popular of these were exhibitions of Dissolving Views, a style of projection that Joss Marsh calls "the ancestor to the cinematic dissolve."[33] Dissolving Views were created with multiple lanterns or with lanterns designed with multiple lenses. The projectionist slowly stops light from one lens and increases light in the other in perfect synchronization, so that one image dissolves into the next to create an effect of metamorphosis or transformation. Magic lantern shows at the Polytechnic usually illustrated lectures, or "lecture entertainments," on topics ranging from the Crimean War to the flowering of spring buds, or drew on popular stories and fairy tales, from Cinderella and the Arabian Nights to Dickens's 'Gabriel Grub' tale from *Pickwick Papers*. For example, the Polytechnic's Easter 1876 production, *Alice's Adventures or The Queen of Hearts and the Stolen Tarts,* was the first theatrical adaption of Lewis Carroll's *Alice's Adventures in Wonderland*, featuring masterful, iridescently colored slides painted by W.R. Hill.[34] Early cinematography, with its shaky gray images, literally paled in comparison with the extraordinarily vibrant oil paintings executed by slide painters, composed of

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[31] Mannoni, *Great Art of Light and Shadow*, 264.
[32] Mannoni, 264.
[33] Marsh, "Dickensian 'Dissolving Views,'" 334.
[34] Brenda Weeden, *The Education of the Eye: History of the Royal Polytechnic Institution, 1838-1881* (London: University of Westminster Press, 2008), 91-92.

"Venetian red, Indian yellow, carmine, Prussian blue, indigo…all transparent and bright as the sun."[35]

The magic lantern was far from the only optical technology to create virtual images with light. The Polytechnic and Adelaide Gallery, another commercial gallery of science in London, offered lecture-demonstrations with a projection microscope. Much like the magic lantern, the projection microscope used an oxyhydrogen lamp to project images onto a screen. Instead of slides, however, the microscope projected magnified images of things invisible to the naked eye, such as the microscopic organisms that thrive inside the contaminated water of the Thames. In the mid-to-late nineteenth century, stage magic and theater turned to optics to create ghostly virtual images on the stage. Under the showmanship of its director, John Henry Pepper, the Polytechnic premiered Pepper's Ghost in 1862. The "Ghost," which used a bright illumination source trained on an actor below the stage and a transparent pane of glass to project ghostly images of actors on the stage, would become one of the most influential magic tricks of the nineteenth century. Finally, light was manipulated to create virtual effects within scenographic illusions like the diorama. Dioramas used modulated lighting effects on a transparent painted screen, achieved through a complex system of screens, shutters, pulleys, and counterweights, to create astonishing transforming views, from day to night, season to season, or even from one scene to another.[36] Although dioramas do not necessarily involve the projection of light, their use of light to create virtual transformations is visually similar to Dissolving Views. The most frequent subject matter for dioramas was geographical locations, such as a tour through India, expedition along the Nile,

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[35] Mannoni, *Great Art of Light and Shadow*, 267.
[36] Huhtamo, *Illusions in Motion*, 146.

or ascent of Mount Blanc, with the goal of creating scenes that were "uncannily 'alive'" and of "achieving a sense of 'being there.'"[37]

The second category of optical technology I discuss in this dissertation is media that create *virtual depth images*. The primary medium for illusions of virtual depth in Victorian Britain was the stereoscope. One of the most popular optical toys of the nineteenth century, the stereoscope is a device for viewing stereographs: pairs of nearly identical photographs depicting left-eye and right-eye views of the same scene. When seen through a stereoscope, the stereograph appears as a single image that has depth and solidity. Based on this description, it may be tempting to imagine that the stereoscope is a three-dimensional viewer. However, the images created by the stereoscope are not technically three-dimensional. It would be more accurate to say that they are illusions of *depth* and *relief*. In the stereoscopic image, two-dimensional objects look solid, curving into rounded lifelike shape, and the spaces between them suddenly expand. Landscapes extend outwards towards their vanishing point and interiors pop into deeper focus. These effects are similar to those achieved by the paper peepshow, another nineteenth-century virtual depth technology. Paper peepshows are pocket-sized devices made of cardstock, paper, or cloth that folded up like an accordion. The spectator expands the peepshow and peers through an aperture to see layers of cut-outs that create an illusion of perspectival depth. At the same time, as David Brewster wrote, stereoscopic representation is distinct from visually comparable technologies like the peepshow because its depth illusion does not rely on pictorial conventions like perspective. "The stereoscopic creation," he wrote, "is due solely…to the distinct and instantaneous perception

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[37] Huhtamo, *Illusions in Motion*, 145.

of distance by the convergency of the optic axes upon the similar points of the two pictures which the stereoscope has united."[38]

The first stereoscope was invented in 1838 by Charles Wheatstone and predates the advent of practicable photography. As such, it was designed for use with illustrated pictures. Wheatstone's stereoscope was a cumbersome tabletop device that featured a pair of mirrors angled towards the spectator's eyes at forty-five degrees. Each mirror reflected a picture placed at either end of the device, causing the spectator to synthesize them into a single binocular image. In 1849, David Brewster improved upon Wheatstone's invention with the lenticular stereoscope, a simplified device that used binocular lenses instead of mirrors to create the same visual effect. When the distinguished optical instrument maker Jules Duboscq manufactured a model of Brewster's device for display at the Great Exhibition, it became a massive commercial success. By 1856, more than half a million stereoscopic viewers had been sold in Britain alone.[39] In the early 1860s, Oliver Wendell Holmes invented an even more streamlined lenticular stereoscope that could be easily held in the hand. His decision not to patent his device fueled the popularity of stereoscopy by making the stereoscope more affordable to manufacture and purchase. Writing about the stereoscope in 1876, John Henry Pepper described it as "a piece of domestic equipment without which no drawing room was thought complete."[40]

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[38] David Brewster, *The Stereoscope: Its History, Theory and Construction with its Application to the Fine and Useful Arts and to Education* (London: John Murray, 1856), 3.
[39] Zoe Clayton, "Stereographs," Victoria & Albert Museum, accessed April 16, 2019, https://www.vam.ac.uk/blog/caring-for-our-collections/stereographs.
[40] John Henry Pepper, *Light: Embracing Reflection and Refraction of Light, Light and Colour, Spectrum Analysis, the Human Eye, Polarized Light* (London: Scribner, Welford, and Armstrong, 1876), 68.

In the mid-nineteenth century, new virtual depth technologies sought to capitalize on the popularity of the stereoscope. In the 1860s, an inventor named Henry Swan created a short-lived photographic apparatus he named the casket photograph or crystal cube miniature. Swan's invention uses two hand-painted positives of a portrait arranged on two flint glass prisms, one image placed at the back of the prisms and one at the side. When the spectator looks into the "crystal cube," she sees the portrait in a stereoscopic illusion of virtual depth. The effects are uncanny. The stereoscopic illusion gives sharpness and definition to details in the portraits, like wrinkles and wisps of hair, making the faces appear waxy, hard and corpse-like. In the same year that Swan was creating his first crystal cube miniatures, René Dagron displayed his Stanhope Viewer, also known as *bijou microscopique* or *bijou optique*, at the London Exhibition of 1862. Dagron's device placed a small one-piece microscope and a microphotograph inside of novelty souvenirs like pens or rings. Spectators could peer into the lens of the microscope to engage in virtual sight-seeing. Although the Stanhope Viewer is not stereoscopic, it creates a different form of depth illusion by apparently containing panoramic space within a miniature object.

Finally, this dissertation discusses optical technologies that create *moving images*. Pre-cinematic moving image apparatuses were invented, manufactured, and sold throughout the nineteenth century, fueled by scientific and technological research on persistence of vision. In the nineteenth century, persistence of vision was the scientific explanation for the optical illusion of motion. Scientists believed that a spectator's visual perception of an object continued momentarily after that object disappeared, allowing the eye to conjoin discontinuous visual impressions into a fluid sequence. This meant that when images were presented to the eye in rapid succession, in the words of the pioneering optical inventor and researcher Joseph Plateau, "the impressions they produce on the retina will blend together with confusion and one will believe that a single object

is gradually changing form and position."[41] The easiest way to explain persistence of vision is through the flipbook, one of the many Victorian toys designed to illustrate it. When the thumb flicks through the pages of a flipbook, each one representing a figure or scene in different phases of motion, the eye sees a single image in motion. First patented in 1868 as the Kineograph, the flipbook was also labeled "the living picture book" and sold as booklets of "living photographs."[42] These names register the way the pre-cinematic moving image imaginary was invested in the fantasy of pictures coming to life. The term "Living Picture" was applied to moving image toys as early as 1833, when Plateau released a device called the phenakistoscope that he had designed the previous year to illustrate his research on persistence of vision.[43]

Although the flipbook and the phenakistoscope both create moving images or "living pictures" intended to exemplify the theory of persistence of vision, they represent two distinct formal and temporal frameworks for Victorian moving image toys. The flipbook has a beginning, middle, and end; although you can flick the pages forward or backward, it offers a visual model of linear motion or development. The phenakistoscope, by contrast, is a spinning disk mounted to a wooden handle. The disk has a series of figures in phases of motion printed radially around the axis and interspersed with apertures. When the spectator holds a spinning phenakistoscope up to her eye before a mirror and gazes through the aperture, she sees a reflection of circular and repeating moving images. While the flipbook shows an image move towards a particular end, the phenakistoscope shows images moving in what André Gaudreault and Nicolas Dulac call an

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[41] Joseph Plateau, *Dissertation sur quelques propriétés des impressions*, quoted in Crary, *Techniques of the Observer*, 109.
[42] Alexander Streitbeger, "Living Photographs or Silent Films?: The Flipbook as a Critical Object Between Tactility and Virtuality," *Image & Narrative* Vol. 16, No. 3 (2015), 32.
[43] A folio of phenakistoscopes designed by W. Soffe, most likely in the 1830s, included "Directions for using the Phenakistoscope or Living Pictures." In the archives of the National Science and Media Museum, Bradford, UK.

"endless loop."[44] The phenakistoscope was the paradigmatic moving image toy of the nineteenth century. It was adapted for the magic lantern, first by a Glaswegian inventor named Thomas Ross and then by Eadweard Muybridge, the pioneer of chronophotography, both of whom figured out how to project the phenakistoscope's moving images. The phenakistoscope also led to the invention of new moving image toys constructed on the model of the "endless loop." The zoetrope and praxinoscope both used circular drums in place of circular disks, which are fitted with a strip of images that created moving images when spun. Nineteenth-century moving images were not primarily vehicles of storytelling. Rather, they established a form of visual attraction based in circularity, rotation, and repetition.[45]

Virtual Realism: Gaskell, Collins, Dickens, Hardy

To make the case that realism is engaged in creating and conceptualizing modern virtual experience, "Virtual Realism" focuses on the work of four canonical Victorian realists: Elizabeth Gaskell, Wilkie Collins, Charles Dickens, and Thomas Hardy. Each chapter pairs a novel by one of these writers with a type of technologically-produced virtual image that I have outlined here. My readings of these novels situates them within the visual effects of and cultural discourses surrounding optical technology in order to demonstrate how realism conceptualizes itself as a virtual scene modeled on visual illusions of light, depth, and motion. Chapter One stages the central claim of my dissertation, that realist fiction seeks to create virtual experiences for the reader informed by the visual effects of optical technologies, through a reading of Elizabeth Gaskell's

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[44] Nicolas Dulac and André Gaudreault, "Circularity and Repetition at the Heart of the Attraction: Optical Toys and the Emergence of a New Cultural Series," in *The Cinema of Attractions Reloaded*, ed. Wanda Strauven (Amsterdam University Press, 2006), 230.
[45] Dulac and Gaudreault, 228.

Cranford (1853). *Cranford* centers on a scene of magic performed by the itinerant conjurer Signor Brunoni, an Englishman who learned his tricks in India. However, most scholars have overlooked the significance of magic and magicians to the novel altogether. I place Gaskell's magic narrative in the context of Victorian stage magic and optical conjuring, from the Phantasmagoria to Pepper's Ghost, which rely on light-based virtual images. In so doing, I demonstrate that Gaskell both incorporates and challenges prevailing theories of magic spectatorship in order to conceptualize realist fiction as a type of apparition visualized by the reader. Furthermore, I argue that *Cranford* wrestles with the patriarchal implications of both stage magic and fiction, which operate by manipulating audiences to see and believe in things that are not really there.

The following two chapters demonstrate how realist fiction's status as an optical apparition informs its commitments to representing history and geopolitics in an era of imperial consolidation and expansion. Chapter Two addresses the novelistic representation of empire by focusing on the eponymous Indian diamond at the center of Wilkie Collins's detective novel *The Moonstone* (1868). While previous readings of the novel have argued that Collins's diamond is an object or a thing, I propose that the Moonstone is represented as an optical technological medium that creates an illusion of virtual depth through the reflection and refraction of light. I closely analyze the reception of the Koh-i-Noor, the Indian diamond on which Collins modeled the Moonstone, during its public display at the Great Exhibition of 1851 in order to argue that Victorian diamonds were understood as optical technologies and invested with the imaginary capacity to produce a virtual encounter with empire. Through his engagement with the optical and imperial imaginary of diamonds, Collins represents the Moonstone as a medium through which the novel's characters virtually experience empire. At the same time, Collins suggests that in order to represent empire, fiction must necessarily understand itself as a virtual medium, like the diamond.

In Chapter Three, I turn from the virtuality of empire to the virtuality of history. I argue that *A Tale of Two Cities* (1859), Charles Dickens's historical novel of the French Revolution, turns on a motif of the Phantasmagoria in order to portray historical experience as phantasmal and virtual. The Phantasmagoria was an optical ghost show popularized in Paris in the 1790s by the showman Etienne Gaspard Robertson. Using a hidden magic lantern in a pitch-dark room, Robertson projected images of ghosts and skeletons, as well as historical personages of the French Revolution. *A Tale* references the medium-specific effects of the Phantasmagoria, such as spectrality, metamorphosis, and visual discontinuity, to represent the perceptual experience of historical transformation in a modern, technologized world. Through its phantasmagorical rendering of the French Revolution, Dickens explores the impact of technological and virtual media on the experience of world-historical events and the pressures that these media place on the authority of individual perception. While the traditional historical novel of the early nineteenth century views the individual as an index of world-historical events, registering the forces of history through his actions and choices, Dickens suggests that modern historical experience can only be apprehended virtually. *A Tale* therefore details the dissolution of character as a medium for registering or intervening in historical change.

In Chapter Four, I leap forward in time to explore the relationship between realist fiction and virtual moving images in the late 1880s and 1890s, a period marked by the formal decomposition of the nineteenth-century realist novel and the advent of cinema. I argue that Thomas Hardy's proto-psychoanalytic representation of character in *The Mayor of Casterbridge* (1886) is informed by pre-cinematic moving images. Moving image toys are a genre of optical device that demonstrated the nineteenth-century optical theory known as persistence of vision. Persistence of vision was the principle that a spectator's visual perception of an object will

continue momentarily after that object disappears, allowing the eye to conjoin discontinuous visual impressions into a fluid sequence. Until the late nineteenth century, almost all moving image toys designed to illustrate or embody the theory of persistence of vision were circular and repeating, creating an endless loop of images. By placing *The Mayor of Casterbridge* in the context of Hardy's broader novelistic exploration of optics, I argue that the novel's representation of character turns on a motif of technological moving images in order to render characters motivated by unconscious forces and the compulsion to repeat, as well as to explore character as a perceptual illusion created at the interface of the text and the reader.

　　The Mayor of Casterbridge takes a deconstructive approach to character based in the visual effects of persistence of vision that distinguishes it from the other novels I address in the dissertation. In the first three chapters, I characterize mid-century realism as self-consciously exploring its virtual effects in order to mobilize a literary illusion of the real that has the perceptual force of an apparition. The novels I discuss each differently position the reader as actively constructing an illusion of narrative coherence through the act of reading. In *Cranford*, the reader is the ambivalent spectator at a magic show whose perception is manipulated to make her see ghosts. In *The Moonstone*, the reader simultaneously encounters and imagines empire as hypnotic visual spectacle. In *A Tale of Two Cities*, the reader bears witness to history as a sequence of phantasmal, metamorphic virtual images. In Chapter Four, however, I propose that Hardy's late-nineteenth-century realism turns to optical technology to do the reverse. Hardy decomposes the illusion of character into a set of perceptual tricks modeled on the visual effects of moving image toys. By engaging the reader in deconstructing character and, by extension, the realist project of illusionistic coherence, *The Mayor of Casterbridge* signals the end of Victorian virtual realism.

CHAPTER ONE
Fictional Apparitions: Magic in *Cranford*

Halfway through Elizabeth Gaskell's 1853 novel, *Cranford*, Miss Matilda Jenkyns pens an excited letter to the narrator, her friend Mary Smith, announcing one Signor Brunoni is slated to exhibit "his wonderful magic" in the Cranford Assembly Rooms the following week.[46] Brunoni, a stranger to the small provincial town of Cranford, astonishes Miss Matty, Mary, and the other Cranford ladies with his conjuring tricks and feats of legerdemain. The narrative does not dwell on the tricks themselves, but the ways in which they are refracted in the consciousness of the women spectators. The women's inability to reconcile what they see with what they know unleashes "the great Cranford panic," a kind of contagious paranoia about foreign invasion, robbery, and ghosts. Why does a Victorian realist novel like *Cranford* center on magic, illusions, and ghost belief? One way to answer this question is to read *Cranford*'s scenes of magic as a comic parable of realism's anti-supernaturalism, advancing a moral about the perils and follies of superstitious belief in illusion. Following this path, we might say that the magic plot in *Cranford* is structured as a narrative of disenchantment that participates in a broader set of optical discourses at midcentury about the natural origins of apparently supernatural phenomena. The "panic" subsides when Brunoni is revealed not to be the mysterious oriental conjurer he styles himself as, but an impoverished Englishman named Samuel Brown with an improbable twin brother who assists him in carrying off his tricks.

This reading, while not entirely wrong, has a crucial limitation. It fails to account for the novel's ambivalence towards the optical discourses of disenchantment that it clearly acknowledges

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[46] Elizabeth Gaskell, *Cranford* (Oxford: Oxford World's Classics, 2009), 81. All further references to *Cranford* will be cited parenthetically in text.

and integrates into its magic narrative. This ambivalence stems from what the novel repeatedly

identifies as the masculinist and disciplinary orientation of these enlightenment discourses, and

from its protective stance towards the importance of optical illusion—and even of supernatural

phenomena—for the effects of realist fictions. By attending to this ambivalence, we are afforded

a more complex version of realism's relationship to magic. Realism does not seek to displace

magic, or to define itself in opposition to magic's effects; rather, it constitutes its fictional illusions

through magic's capacity for optical entertainment. What I will argue in this chapter is that

Cranford, in both incorporating and challenging Victorian theories of optical spectatorship,

articulates a program for what I am going to call optical readership. That is, that reading realist

fiction can be a process of visualizing an illusion. Furthermore, this practice of visualization is

shaped by optical illusions drawn from Victorian magic culture. I take this novel to include a theory

of its own reception—an exploration of how readers read realism that is constituted through an

exploration of how audiences view magic illusions.

Scholars have almost entirely overlooked the centrality of magic to *Cranford*'s plot and

thematic structure.[47] Most readings of the novel that touch on the Signor Brunoni episode eschew

the magic show to focus on the imperial implications of his status as an Englishman who cross-

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[47] There are a few exceptions. An unpublished dissertation by Michael Jay Claxon entitled "The
Conjurer Unmasked: Literary and Theatrical Magicians, 1840-1925" offers the only sustained
reading of Signor Brunoni as a magician. Claxon makes a claim similar to the one staged at the
beginning of the chapter: that the novel entertains magic in order to show its aesthetic superiority
to magic embodied in its attention to the intricacies of ordinary life. Michael Jay Claxon, "The
Conjurer Unmasked: Literary and Theatrical Magicians, 1840-1925," (PhD diss., University of
North Carolina at Chapel Hill, 2003). In "Language Among the Amazons: Conjuring and
Creativity in *Cranford*," Adrienne E. Gavin argues that magic serves as a metaphor for women's
language use. However, she does not offer a thorough analysis of the magic scene or contextualize
the thematic of conjuring in the history and practices of Victorian magic. Adrienne E. Gavin,
"Language Among the Amazons: Conjuring and Creativity in *Cranford*," *Dickens Studies Annual:
Essays in Victorian Fiction*, Vol. 23 (1994): 205-225.

dresses in orientalist garb, or, more frequently, on his wife, whose dramatic tale of traveling alone from India to England in an attempt to save her sick infant advances the novel's exploration of motherhood.[48] By illuminating the importance of magic to *Cranford*, I seek to make visible the reliance of realist fiction on tropes of the magical, the supernatural, the spectral, and the illusionary. These tropes are usually understood to belong to the domain of the Gothic. Scholars such as David J. Jones, Helen Groth, and Stefan Andriopoulos have argued that optical media informed the development of nineteenth century Gothic fiction.[49] However, the example of *Cranford* demonstrates that these tropes not only occur in realist fiction, but also figure into realism's representational project.

In order to make this case, I place *Cranford* in the context of the practices and discourses of mid-nineteenth-century British stage magic. In the early-to-mid-nineteenth century, magic's connotations of folkloric and primitive belief were slowly displaced by a new set of references to optical spectacle and technological illusions. Rationalist and enlightenment discourses of spectatorial disenchantment informed Victorian magic shows, which actively promoted an anti-supernatural pedagogy. The magic show's visual illusions, whether sleight-of-hand tricks based in visual misdirection or spectacles based in optical technology, assumed an educated audience

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[48] For a reading of Signor Brunoni as an "Oriental Other," see Jeffrey Cass's work. Jeffery Cass, "'The Scraps, Patches and Rags of Daily Life': Gaskell's Oriental Other and the Conservation of *Cranford*," *Papers on Language and Literature: A Journal for Scholars and Critiques of Language and Literature*, Fall 1999 (4): 417-433. Margaret Case Croskery addresses the role of Mrs. Brown, or "the Signora" in her article. Margaret Case Croskery, "Mothers Without Children, Unity Without Plot: *Cranford*'s Radical Charm," *Nineteenth-Century Literature*, Vol. 52, No. 2 (Sept. 1997), 198-220.

[49] David J. Jones, *Gothic Machine: Textualities, Pre-Cinematic Media and Film in Popular Visual Culture, 1670-1910* (Chicago: University of Chicago Press, 2011); Helen Groth, *Moving Images: Nineteenth Century Reading and Screen Practices* (Edinburgh: University of Edinburgh Press, 2013); Stefan Andriopoulos, *Ghostly Apparitions: German Idealism, the Gothic Novel, and Optical Media* (New York: Zone Books, 2013).

capable of understanding that the tricks were not real, and thus a form of spectatorial pleasure based in disbelief. This style of magic show and its attendant form of spectatorship took on the name of "natural magic," after the optical scientist and inventor David Brewster's *Letters on Natural Magic*, the British nineteenth century's definitive treatise on the scientific origins of optical illusions. Although *Cranford* refers to magic's meaning as an archaic belief system, the novel is more invested in natural magic. It both engages with and extends Brewster's conception of magic as a modern mode of visual entertainment. Gaskell's exploration of the midcentury paradigm of optical spectatorship offers a framework for her to advance a theory of how realist fiction generates a new reality for readers, allowing them to perceive what would otherwise remain imperceptible and unknowable.

"A Mere Affair of the Alphabet": Magic and Fiction in *Cranford*

   Cranford's turn to magic is part of its broader attempt to articulate something like a phenomenology of modern, realist fiction.[50] From the first chapters, the novel wrestles with fictional and narrative style, and the way style can mediate and manipulate a reader's perceptual experience. It was first published in Charles Dickens's periodical *Household Words* in December of 1851 as "Our Society at Cranford," a story consisting of what are now the first two chapters of the completed novel. This original sketch focuses on a debate between Deborah Jenkyns, the elderly matriarch of Cranford, and Captain Brown, its brash new citizen, over the relative merits of Dr. Johnson and Charles Dickens. Each author stands in for a model of storytelling with implications for Gaskell's own style. The philosophical and pedagogic allegory of Johnson's

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[50] The term "realism" would not be applied to literary style until 1856, four years after *Cranford* was published in novel form. See Ian Watt, *The Rise of the Novel: Studies in Defoe, Richardson and Fielding* (Berkeley: University of California Press, 2011),10.

Rasselas, with its flat characters and thin plot, is pitted against Dickens's absorptive realism. Dickens's style creates the illusion of another world to such an extent that readers like the Captain are likely to bump into their neighbors while buried in the *Pickwick Papers*.

The victory of one style over the other, however, remains ambiguous. By the end of the second chapter, Miss Jenkyns and Captain Brown are both dead, the Captain run over by a train with the newest number of *Pickwick* in his hands. If this seems to point out the dangers of fiction that induces the reader to visualize something other than the real world, it also suggests that reading modern fiction inculcates bonds of sympathy. Captain Brown is run over in the act of saving a child who toddled onto the train tracks. Although only the first two chapters of the novel deal with Dickens's fiction, the immersive nature of the reading experience he provides lingers over the rest of the narrative.[51] In a novel that has often been described as "plotless" because of its episodic structure and lack of a singular narrative arc, the questions raised by Captain Brown's reading of *Pickwick Papers* are a significant source of thematic and narrative coherence.[52] Scholars have conventionally read Gaskell's allusions to *Pickwick Papers* as a reference to Dickens's role in modernizing the marketplace for fiction.[53] Thematically, however, *Cranford* is much less concerned with the new economic model for literary production than it is with a new phenomenology of reading based in modern fictional aesthetics.

For example, it is precisely these questions of readership and fictional entertainment that Gaskell chose to take up when Dickens, her editor, persuaded her to follow "Our Society at

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[51] For a reading of how Charles Dickens's editorship of *Household Words*, where *Cranford* was serialized, informs Gaskell's portrayal of his fiction and exploration of female authorship, see Hilary M. Schor, *Scheherazade in the Marketplace: Elizabeth Gaskell and the Victorian Novel* (New York: Oxford University Press, 1992), 83-119.
[52] Croskery, "Mothers Without Children," 199-201.
[53] Borislav Knezevic, "An Ethnography of the Provincial: The Social Geography of Gentility in Elizabeth Gaskell's *Cranford*," *Victorian* Studies, Vol. 41, No. 3 (Spring 1998), 422.

Cranford" with further narrative installments. Gaskell's next episode deals with the reappearance of Mr. Holbrook, a lover from Miss Matty's youth and a voracious reader of poetry and fiction. The narrator dubs Mr. Holbrook a "Don Quixote" (31, 33, 36) figure for his inability to disentangle Tennyson's poems—which he quotes with abandon—from the real world around him. The subsequent episode returns to questions of storytelling and fictional immersion through Matty's memories of her lost brother, Peter Jenkyns, a living "Arabian night" whose storytelling is laced with deception and enchantment. Peter's stories are a described as a kind of magic trick—a "hoax," in Miss Matty's words (151).

Cranford turns to this thematic of readers and storytellers in order to advance a theory of itself as a magical apparition visualized by the reader. When the novel introduces Signor Brunoni, otherwise known as Samuel Brown, he can be read as an extension and transposition of the novel's overarching concern with the phenomenology of reading. Signor Brunoni's bewitching effect on his audience extends the novel's interest in Quixotic readers, spellbinding writers, and hoaxing storytellers. It is not a coincidence that he shares a name with Captain Brown, the champion of Dickens.[54] Brunoni's tricks of metamorphosis, appearance, and disappearance, like Dickens's fiction, upend the fixed positions of an older and statelier world represented by the dead generations of Cranfordian aristocracy. The tricks capture a new and protean modernity that is difficult to visualize, characterized by fast trains speeding through slow towns, invisible flows of capital that can strip a bank note of its value overnight, and distant imperial conquests that re-map

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[54] Gaskell's play on words with "Brunoni," a dressing up and exoticizing of the magician's real name, Samuel Brown, is prefigured in the original text of "Our Society at Cranford." Miss Jenkyns, in her typically ornate, epistolary style, modeled self-consciously on Johnson, writes to Mary of Captain Browns's "Brunonian meal." In Miss Jenkyns' letter, "Brunonian" is a pseudo-Latinate flourish to describe a meal shared with the Browns. Samuel Brown's use of "Brunoni" to disguise his English origins for theatrical effect is a different, but related, form of imposture.

the nation as an empire. Magic not only codes modernity as a condition of reversals and transformations, but also sources these reversals and transformations to the contingent and malleable nature of perception. Gaskell is interested in how her novel, like the magic show, can draw readers in and subject them to illusions that infiltrate their sense of the real. *Cranford*'s scenes of conjuring reimagine the contest of narrative style with which the novel begins in terms of magic.

The magic narrative shifts this meta-literary exploration from writerly style towards questions of skepticism or credulity in the face of convincing illusions. Threaded through these scenes are a series of card party conversations about "conjuring, sleight of hand, magic, witchcraft" (83) that turn on questions of superstition and supernatural belief. While Mrs. Forrester, a proponent of supernaturalism, "believe[s] everything from ghosts to death-watches," Miss Pole is "inclined to think there might be a scientific solution found for even the proceedings of the Witch of Endor" (83). After trying to pass behind the curtains being hung in the Assembly Room, where a man she takes for the conjurer "seemed very determined that I should not pass," Miss Pole becomes determined to expose him and his illusions (83). She prepares by studying "the scientific explanations for the tricks" in Miss Matty's old encyclopedia, throwing out instructions to the perfect bewilderment of her listeners:

> "Ah! I see; I comprehend perfectly. A represents the ball. Put A between B and D – no! between C and F, and turn the second joint of the third finger of your left hand over the wrist of your right H. Very clear indeed! My dear Mrs. Forrester, conjuring and witchcraft are a mere affair of the alphabet." (84)

Miss Pole's insistence on "explain[ing] and detect[ing] Signor Brunoni's arts" becomes more and more vehement in the lead-up to the magic show. On the walk to the Assembly Rooms, she "throw[s] A's and B's at our heads like hail-stones" (85). As the curtain goes up, "revealing to our sight a magnificent gentleman in the Turkish costume" who introduces himself as Signor Brunoni, Miss Pole is indignant:

> 'I don't believe him!' exclaimed Miss Pole, in a defiant manner. He looked at her again, with the same dignified upbraiding in his countenance. 'I don't!' she repeated more positively than ever. (86)

Throughout the magic show she reads out loud from what she calls her "receipts," explanations copied out from the encyclopedia, to the conjurer's intense and visible disapproval.

Miss Pole's role as the frustrated detective focuses the scene of conjuring on how magic is constituted through a suspension of disbelief. Sleight-of-hand tricks, optical illusions, and even the persona of the magician himself rely on the willing susceptibility of audiences, their tacit agreement to participate in a game of occlusion and mystery. Miss Pole's explanatory outbursts, as attempts to theorize the technical basis of illusion, also encode a question about the phenomenology of fiction: what makes something unreal feel real for its readers? When Miss Pole describes conjuring as "a mere affair of the alphabet," reducible to its component parts in apparatus and the skillful coordination of hand and eye, she also invokes the smallest technological unit of written fictions in the letters of the alphabet. The meta-literary registers of such "alphabetic affairs" is central to Hilary Schor's important argument that *Cranford* is a novel about how discourse constructs its readers, in which everything is an affair of the alphabet.[55] Adrienne E. Gavin has taken the same phrase as evidence that the novel figures language as a kind of magic; she argues that the Cranfordians "perform magic with language" through creative and transformative acts of semantic construction comparable to a conjurer's sleight-of-hand.[56]

While I agree with these scholars that the novel deploys conjuring self-reflexively, as a commentary on fictional practice, they neglect to address the significant fact that Miss Pole's account of conjuring ultimately fails to hold up. Gaskell is explicitly concerned with how the magic

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[55] Schor, *Scheherazade in the Marketplace*, 87

[56] Gavin, "Language Among the Amazons," 206.

show cannot be captured by or reduced to Miss Pole's didactic explanations. "We *were* astonished," Mary reports, her choice of emphasis ventriloquizing the women's collective refusal of Miss Pole's "A's and B's." "How he did his tricks I could not imagine; no, not even when Miss Pole pulled out her pieces of paper and began reading aloud" (87). Mary's description of the magic show is focalized through its reception by other audience members, and she repeatedly invokes Miss Pole's explanations in order to reject them as an acceptable hermeneutic for magic's effects:

> If Miss Pole was skeptical, and more engrossed with her receipts and diagrams than with his tricks, Miss Matty and Mrs. Forrester were mystified to the highest degree. Mrs. Jamieson kept taking her spectacles off and wiping them, as if she thought it was something defective in them which made the legerdemain; and Lady Glenmire, who had seen many curious sights in Edinburgh, was very much struck with the tricks, and would not at all agree with Miss Pole, who declared that anybody could do them with a little practice – and that she would, herself, undertake to do all he did, with two hours given to study the Encyclopedia and make her third finger flexible. (87)

While Miss Pole is technically correct about how magic tricks are done, the magic scene does not validate the perspective that conjuring is "a mere affair of the alphabet." Instead, it draws attention to how the perceptual effects of a magic trick are greater than the sum of its component parts in rules, apparatus, and manual dexterity. It is not simply that the novel refuses Miss Pole's deconstructive approach to magic. Instead, the novel approaches the question of magic from a phenomenological, not technological, perspective that makes visible an extra dimension to the execution of a magic trick in the performance of magic itself. Gaskell shows that magic illusions are relational, because their visual effects depend on the conjurer's control of audience perception. These visual effects have the capacity to withstand their own demystification.

By presenting the scene of magic through the contrast between Miss Pole's receipts and the audience's astonishment, Gaskell re-imagines the literary contest with which the novel begins. Miss Pole's attempts to explain the conjuring tricks by looking them up in "the old Encyclopedia

which contained the nouns beginning with C" evokes Dr. Johnson's *Dictionary*, as do her alphabetic explanations for the tricks which associate letters with demystification, rationality, and edification. By contrast, the "astonishment" that overpowers Miss Pole's explanations echoes the laughter and amusement of the same group of women over the excerpts from Dickens that Captain Brown reads aloud. Furthermore, Gaskell's comic scene of Miss Pole reading the encyclopedia is itself an allusion to *Pickwick Papers*, the Dickens novel at stake in the Johnson-Dickens debate. One of the *Pickwick Papers*'s characters reads the *Encyclopedia Britannica* to learn Chinese metaphysics: "He read for Metaphysics under the letter M, and for China under the letter C, and combined his information, sir!"[57] This passage is a satire on what Alan Rauch has called Victorian Britain's "knowledge industry," its vast network of educational periodicals and books that sought to promote personal advancement through learning.[58] Miss Pole's didactic "A's and B's" essentially recreates Dickens's joke. In this way, *Cranford*'s magic scene advances the novel's opening conceit of associating itself with *Pickwick Papers* as a form of entertainment distinct from the educational sphere of encyclopedias and dictionaries. Gaskell casts her novel as an entertainment like magic and suggests that its effects on a reader's perception cannot be reduced to the rationalist explanations provided by dictionaries or encyclopedias.

The chapter that follows the magic show, of "the great Cranford panic" (103), continues to undermine Miss Pole's skepticism and the meta-fictional implications of her analogy between the alphabet and magic. It bears out the notion that stories, like magic tricks, are illusions that have the capacity to produce a new reality. The "panic" is, in Mary's words, "a series of circumstances dated from Signor Brunoni's visit to Cranford, which seemed at the time connected in our minds

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[57] Charles Dickens, *Pickwick Papers*, quoted in Alan Rauch, *Useful Knowledge: The Victorians, Morality and the March of Intellect* (Durham, North Carolina: Duke University Press, 2001), 1.
[58] Rauch, 22.

with him, though I don't know that he had anything really to do with them" (88). A spate of robberies in a nearby town leads to rumors of thieves forming holes in the walls by silently removing and then replacing the bricks in the dead of night, a "trick fit for a conjurer" (90). The sudden death of Mrs. Jamieson's dog, Carlo, similarly prompts suspicions of Brunoni: "He had apparently killed a canary with only a word of command; his will seemed of deadly force; who knew but what he might yet be lingering in the neighborhood willing all sorts of awful things!" (94). The contagious hold of superstition culminates in reports of a ghost that haunts Darkness Lane, down which the ladies have to walk to return home from an evening at Mrs. Forrester's, a tale that transforms Brunoni's sleight-of-hand appearances and disappearances into spectral apparitions and ghosts. While Miss Pole is quick to disavow the supernaturalism of such ghost belief, citing prevailing nineteenth-century theories of apparitions as "indigestion, spectral illusions, optical delusions" and quoting "a great deal out of Dr. Ferrier and Dr. Hibbert besides," the panic springs from her own gossipy storytelling (99). These apparitions are neither spectral illusions nor optical delusions; they are narrative constructions. Even Mrs. Forrester's telling of the ghost story takes the form of a literary ghost tale, examples of which Gaskell wrote throughout the 1850s, with Mrs. Forrester self-consciously performing the genre in a challenge to Miss Pole's determined rationality: "She paused, and stirred the fire, and snuffed the candles, and then she said, in a sounding whisper, 'Ghosts!'" (98).[59]

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[59] Examples of Gaskell's ghost stories from the 1850s include "The Old Nurse's Story," written for *Household Words* as one of a set of nested ghost stories by various authors for Christmas 1852, and "The Poor Clare," a novella serialized in *Household Words* in 1856. "The Old Nurse's Story," in *Gothic Tales*, ed. Laura Kranzler (New York: Penguin, 2002), 11-32 and "The Poor Clare," in *Gothic Tales*, ed. Laura Kranzler (New York: Penguin, 2002), 49-102.

This meta-fictional chapter is striking because it is one of the first instances, of only a few, in which the conspicuously self-effacing narrator Mary Smith opens her private imaginings up to the reader's scrutiny. In a sharing of "our individual fears,"

> I owned that my pet apprehension was eyes—eyes looking at me, and watching me, glittering out from some dull, flat, wooden surface; and that if I dared to go up to my looking-glass when I was panic-stricken, I should certainly turn it round, with its back towards me, for fear of seeing eyes behind me looking out of the darkness. (97)

Mary's fear is an afterimage of the conjuring show, and specifically of her impatience for it to begin when she watches "the obstinate green curtain, that would not draw up, but would stare at me with two odd eyes, seen through holes, as in the old tapestry story" (86). The sight of the conjurer peeping out of the curtain is a sign of the magic show's makeshift nature. These are the same improvised curtains bisecting the Assembly Room to transform it into a theater that Miss Pole unsuccessfully seeks to penetrate the day before the show. When the eyes do disappear and the curtain rises "one side went up before the other, which stuck fast; it was dropped again, and, with a fresh effort, and a vigorous pull from some unseen hand, it flew up" (86), an indication of comically poor showmanship. All the same, those peeping eyes recall, to Mary, a frightening "story," most likely one of the many ghost stories popular in the nineteenth century featuring tapestried chambers and figures in tapestry that come to life.[60] Although she tries to look away, Miss Pole implores her not to turn her head towards the lower class of visitors seated behind them. "So we all sat eyes right, square front, gazing at the tantalizing curtain and hardly speaking

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[60] Examples include Sir Walter Scott, "The Tapestried Chamber; or, The Lady in the Sacque," *The Talisman* (New York: D. Appleton and Company, 1869), 166-172; Théophile Gautier, "The Adolescent," *My Fantoms* (New York: NYRB Classics, 2008), 3-14; Margaret Oliphant, "The Secret Chamber," *Selected Short Stories of the Supernatural*, ed. Margaret K. Gray (Edinburgh: Scottish Academic Press, 1985), 1-29.

intelligibly," Mary reports, "we were so afraid of being caught in the vulgarity of making any noise in a place of public amusement" (86).

The dreamlike return of the "two odd eyes, seen through holes" in Mary's fear of "eyes looking at me, and watching me," reveals a different source to the "great Cranford panic" than the supernatural. What frightens Mary is not that Brunoni's illusions may be the result of supernatural agency, but rather that he executes his tricks by commanding perceptual power over his audience. Her fear of eyes registers an understanding of the actual spectatorial and relational dynamic underlying magic illusions: the way the magician controls what and how the viewer sees through visual manipulation. The magic show subverts the apparent power dynamic implicit in a spectatorial situation. While an audience believes they are the ones watching the spectacle of the conjurer's illusions, the illusions succeed on the basis of the conjurer's ability to covertly watch his audience, to know them better than they know themselves. In the magic show, to look is to risk an abdication of one's sovereignty over oneself, to be susceptible to the remotely controlling presence of the conjurer whose tricks and illusions signify the manipulation and distortion of one's perceptions. When, before the show, Mary describes the curtain first as "obstinate" and then as "tantalizing," she takes the curtain as a figure for the whole apparatus of the conjurer and his illusions: a dazzling surface that doubles as an occlusion, the embodiment of an epistemological limit splitting off mysterious phenomena from their source. The curtain controls what and how she can see, simultaneously forcing her to look and making it impossible for her to know. The conjurer becomes a curtain with eyes; a concealment that watches.

If this strange image of peering eyes condenses the reality of magic as a form of spectating, it also evokes another dimension of magic in the figure of the apparition. When she expresses her fear of "seeing eyes behind me looking out of the darkness," Mary is in fact describing a specific

kind of magic trick described by the magic historian Jim Steinmeyer as "optical conjuring," or the use of reflections to create illusions on stage.[61] While Steinmeyer argues that optical conjuring is born in the 1860s, the use of mirrored glass to create virtual images extends back to the sixteenth century and was an area of active, intensive exploration for magicians, inventors, and optical enthusiasts throughout the first half of the nineteenth century. In his 1558 book *Natural Magic*, the Giambattista Della Porta described an illusion of "How We May See in a Chamber Things That Are Not," based in the way a polished glass window, when seen by a spectator standing outside, can reflect objects outside as if they were inside the room.[62] In 1852, during the period Gaskell was composing *Cranford*, the artist Paul Séguin filed a patent for a small viewer that used a transparent rectangle of glass angled at 45 degrees to reflect a concealed painted image.[63] The mid-nineteenth century was a crucial period for the development of magic as an optical art, based in a knowledge of human eyesight; optical principles such as light, reflection, and refraction; and "how people react to what they see (or think they see)."[64]

Both Della Porta's illusion and Seguin's optical toy prefigure the stage illusion that Steinmeyer cites as the first definitive example of optical conjuring. This is the illusion popularly known as "Pepper's Ghost," after John Henry Pepper, the showman and later manager of the Royal Polytechnic Institution in London where the illusion premiered in 1862 (fig. 1.1). The key innovation of this trick was the use of plain glass as a projection surface. Its complete transparency, unlike the silvered glass of a mirror, and the 45-degree angle at which it was inclined before the stage rendered it invisible to the audience. However, when a strong lantern was trained on an actor

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[61] Jim Steinmeyer, *Hiding the Elephant: How Magicians Invented the Impossible and Learned to Disappear* (Cambridge, MA: Da Capo Press, 2003), 43.
[62] Steinmeyer, 33.
[63] Steinmeyer, 33.
[64] Gunning, "We Are Here and Not Here," 55.

beneath the stage, the glass acted as a mirror by reflecting the actor in the glass. The essence of the illusion lies in this dual capacity of glass to be invisible to the eye while still reflecting an image. The reflected actor "would be transparent and ghostly and would appear at a distance behind the glass equal to the actor's distance from the front of the glass," meaning that the reflected actor appeared to move in the same space with the stage actors and, when all actors were perfectly synchronized, could interact with characters on stage.[65]
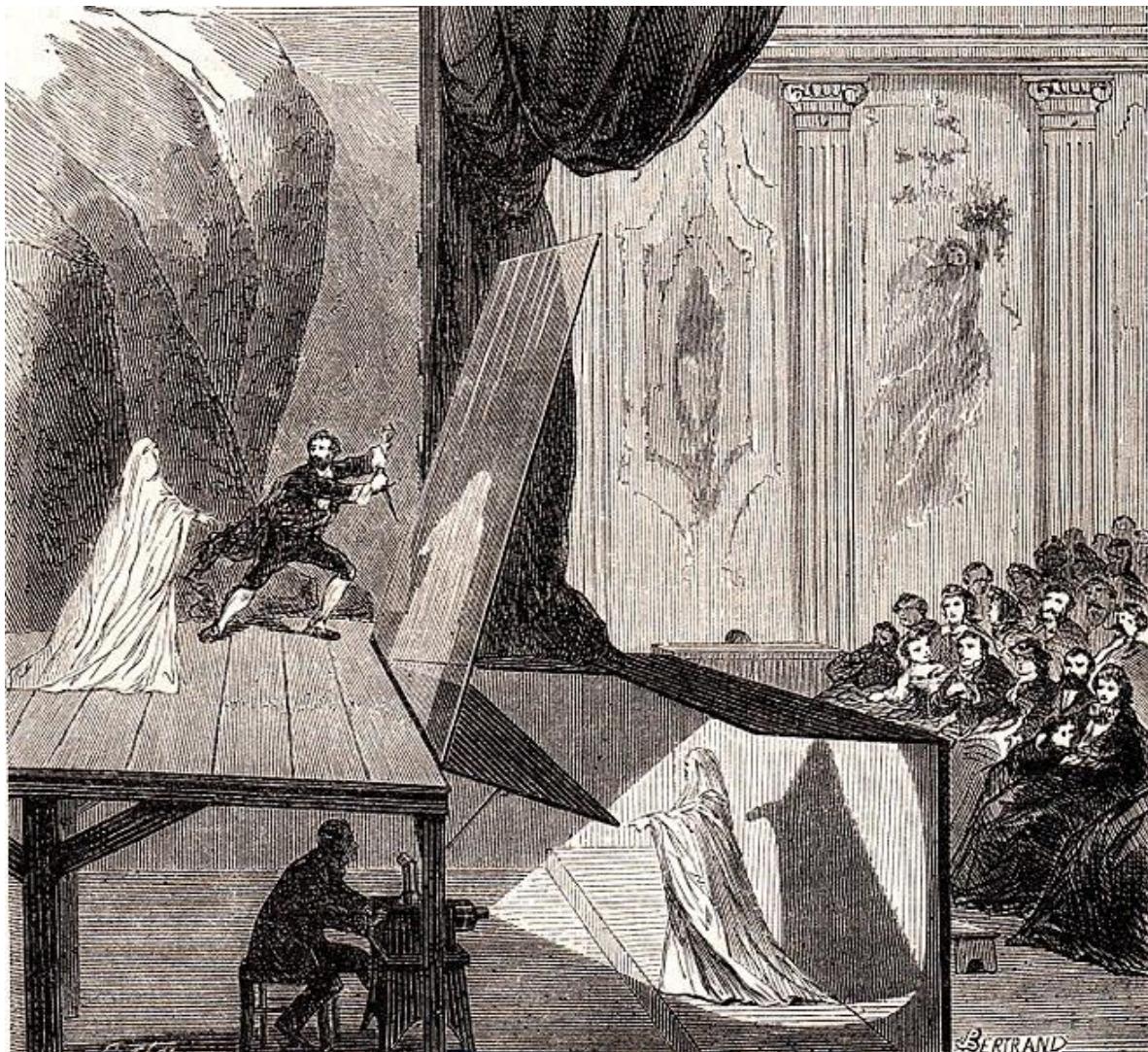
Figure 1.1: Pepper's Ghost. Le Monde Illustré, *1862.*

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[65] Steinmeyer, *Hiding the Elephant,* 34.

Although Pepper's Ghost is too late to be an influence on Gaskell, *Cranford* registers the development of a modern magical practice based in reflection, mirrors, and glass. Mary is not afraid of the darkness of her room, or of a person hidden in the shadows, but of the virtual image of eyes that can be revealed in a dark room through a hidden mirror. The eyes are a ghostly apparition manifested through reflection, a terrifying magic illusion, and a prefiguration of the technological ghost. Her fear explicitly references the technological basis of optical conjuring. It also evokes one of the most important forerunners to Pepper's Ghost, the late-eighteenth-and-early-nineteenth-century tradition of the Phantasmagoria, or ghost show. The basic formula of the Phantasmagoria was a magic lantern in a dark room. Painted slides were back-projected onto a screen that was shrouded in darkness, producing luminous spectral images that hovered and surged into the audience. The hiding of the apparatus behind the screen was essential to the illusion because it split off the image from its source, implying that the image had automaticity and was imbued with its own volitional power. At the same time as it turned the appearance of the image into a riddle, the hidden apparatus also constructed the showman as the source of mysterious and untold power. Through misdirection and implication, the viewer was encouraged to attribute a causal relation between the showman and the appearance, disappearance, and transformation of the optical images projected from the magic lantern.[66] It is worth noting that the original inventor of the apparatus used for Pepper's Ghost, Henry Dircks, called his device "The Dircksian Phantasmagoria" in order to capitalize on its connection to this earlier form of visual illusion.[67] Mary's description of disembodied eyes "looking out of the darkness" evokes Phantasmagoria

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[66] For a more robust account of the visual effects and spectatorial dynamics of the Phantasmagoria, see Chapter 3.

[67] Gunning, "We Are Here and Not Here," 58.

slides, in which painted images are contoured and surrounded by lampblack, a black pigment made of soot, and the screen onto which they are projected is obscured by darkness in order to give the impression that the projections are floating and moving of their own accord.

It is significant that the fullest description of a magic trick that the novel provides is not one that Brunoni performs, but one that Mary imagines. The novel gives us no reason to believe that Signor Brunoni's magic resembles Mary's fantasy. He is not a modern, technological showman conjuring spectacular apparitions, but a humble sleight-of-hand magician who performs tricks of manual dexterity and misdirection: he pulls a lady's pocket-handkerchief out of a loaf of bread that "had been in [Mrs. Forrester's] own hand not five minutes before" and stumps Miss Pole with "the ball trick" (87). A technological magician would travel with cumbersome, expensive, and infinitely delicate scientific apparatus, while all Brunoni travels with is a single "great box" of tools.[68] Gaskell writes a magician who is a remnant of the old world of provincial magic entertainment, of fairgrounds and itinerant street performers, that was rapidly being displaced by the new technologized magic of the modern metropolis, set in specialized optical theaters. Yet, the image of an optical apparition, apparently produced in Mary's imagination by Brunoni's magic, alerts us that this novel is interested in the virtual dimensions of magic and of fiction.

In this sense, the apparitional eyes not only distill and condense the visual, perceptual, and relational dynamics at the core of magic, but they also register the interface between narrators and readers. In addition to an afterimage of her position as spectator at the magic show, Mary's fear of

[68] In fact, Victorian sleight-of-hand magicians were branded "carpet bag" magicians precisely because, unlike scientific conjurers, they could travel light, with a single suitcase. See Mike Cavenay, "From Black Magic to Modern Magic," in *Magic: 1400's to 1950* (Cologne: Taschen, 2009), 152.

being secretly, silently watched exposes her position as the narrator of this text whose function is to make "visible," through narration, the world that surrounds her to the eyes of her readers. In this sense, the image of eyes also signals Mary's likeness to the conjurer, as an engineer of an apparitional world for her readers. Perhaps Mary's likeness to the conjurer is a literal likeness. In her fantasy of seeing eyes staring out from her looking-glass, the eyes could simply be reflections of her own. Once again, magic and fiction, and the magician and the storyteller, are twinned. Mary's feared, virtual image of eyes is symptomatic of the relational and perceptual dynamics of storytelling, and an uncanny inscription of the intersubjective work of narration into the text itself as a form of optical readership. This moment draws on the tradition of projection and optical magic to visualize visualization as the work of reading. The analog between magic and reading in *Cranford* is therefore not simply that both are "affair[s] of the alphabet," orderly and rational, but more importantly that both are based in illusions. Like magic tricks, fiction can organize the attention and perception of the reader and induce them to "see" something that is not really there. *Cranford* recasts reading fiction as an optical experience.

Apparitions as Entertainment: Victorian Natural Magic

To understand how *Cranford* articulates a reading experience modeled on optical spectatorship, we must turn to the mid-nineteenth-century discourses of magic that Gaskell draws on. Magic occupied a prominent place in mid-nineteenth-century British mass culture. The problem of how to view, enjoy, and interact with optical illusions was the subject of books and articles in every newspaper, magazine, and journal that covered arts, science, or industry. Scientific analysis and debate over the nature of optical illusions and the human propensity to ocular deception also spurred the rise of a new class of scientific galleries and entertainment venues

clustered in major urban centers. In the London of 1832, the American entrepreneur Jacob Perkins established the Adelaide Gallery, or the National Gallery of Practical Science, to showcase scientific inventions and exhibitions, as well as public lectures and demonstrations, magic lantern shows, and dioramas.[69] Six years later, Regent Street's Royal Polytechnic Institution opened its doors to the public. The Polytechnic grew into arguably the single most important site for the diffusion of optical science, technology, and illusions in Victorian Britain. A major renovation in 1848 saw the opening of an optical theater that enabled the creation of sophisticated magic lantern shows and the exhibition of stage illusions like Pepper's Ghost. Victorian magic, including the emergence of optical conjuring, flourished as part of what historians of science Aileen Fyfe and Bernard Lightman call the nineteenth century's "scientific marketplace," which combined scientific invention, showmanship, and commodities such as optical toys.[70] While optical conjuring was invented at the Polytechnic, the Adelaide Gallery boasted magic shows performed by the "Adelaide Wizard."[71]

Magic and optical shows were bulwarks of the nineteenth-century anti-supernatural and anti-spiritualist movements. At the Adelaide Gallery and the Polytechnic, audiences knew that the illusions and apparitions they witnessed were created through scientific and technological tricks. Magic shows invited viewers into a hermeneutic process, challenging them to decipher the trick and constructing audiences as groups of what Colin Williamson has called "spectator-

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[69] Iwan Rhys Morus, "'More the Aspect of Magic than Anything Natural': The Philosophy of Demonstration," in *Science in the Marketplace: Nineteenth-Century Sites and Experiences*, ed. Aileen Frye and Bernard Lightman (Chicago: University of Chicago Press, 2007), 340.

[70] Aileen Fyfe and Bernard Lightman, "Science in the Marketplace: An Introduction," in *Science in the Marketplace*, 1-19.

[71] Morus, "'More the Aspect of Magic,'" 341.

detectives."[72] Moreover, spectators left these shows with what Miss Pole calls "receipts"—with explanations for the tricks. For example, Pepper's Ghost was a didactic show, in accordance with the Polytechnic's mandate to promote scientific understanding, and it was designed to disabuse audiences of belief in ghosts by teaching them how the ghost illusion was achieved. A poster designed by the lithographer Alfred Concanen in the 1880s advertised "Professor Pepper's Ghosts Exhibited & Explained Daily" (fig. 1.2), while the Polytechnic promoted Pepper's Ghost throughout the 1860s as "A Strange Lecture" and "Professor Pepper's Lecture of Optical Illusions."[73] The example of Pepper's Ghost demonstrates that the magic show and the scientific lecture-demonstration were not only comparable genres of scientific entertainment, but sometimes collapsed into a single entertainment. The pleasure of these exhibitions for spectators was located in their amazing visual illusions, but also in the way they "pandered to their audiences' sense of their own superiority—their sense that they were the kind of people who could be depended upon to see through the smoke screen of effects."[74]

At the same time, Concanen's lithograph for Pepper's Ghost challenges the notion that these exhibitions were simply exercises in rationalist pedagogy. By transposing the showman and his optical ghosts into a painter haunted and menaced by his creations, his image suggests a link between Pepper's technological ghosts and the dark, irrational, and uncontrollable nature of the imagination. The ghosts are pictures that refuse to stay on the page, or thoughts that refuse to stay in the mind, that instead burst troublingly into life. While optical conjuring had the mandate of policing the boundaries of scientific reality, it was also seemingly invested with the power to create

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[72] Colin Williamson, *Hiding in Plain Sight: An Archaeology of Magic and the Cinema* (New Brunswick, NJ: Rutgers University Press, 2015), 22.
[73] Groth, *Moving Images*, 118.
[74] Morus, "'More the Aspect of Magic,'" 338.

a new reality for spectators through virtual images. This apparent paradox is central to the construction of optical spectatorship in the early and mid-nineteenth century, and to Gaskell's exploration of magic in *Cranford*. Optical spectacles and devices posited a new form of enchantment that was routed through scientific disenchantment.
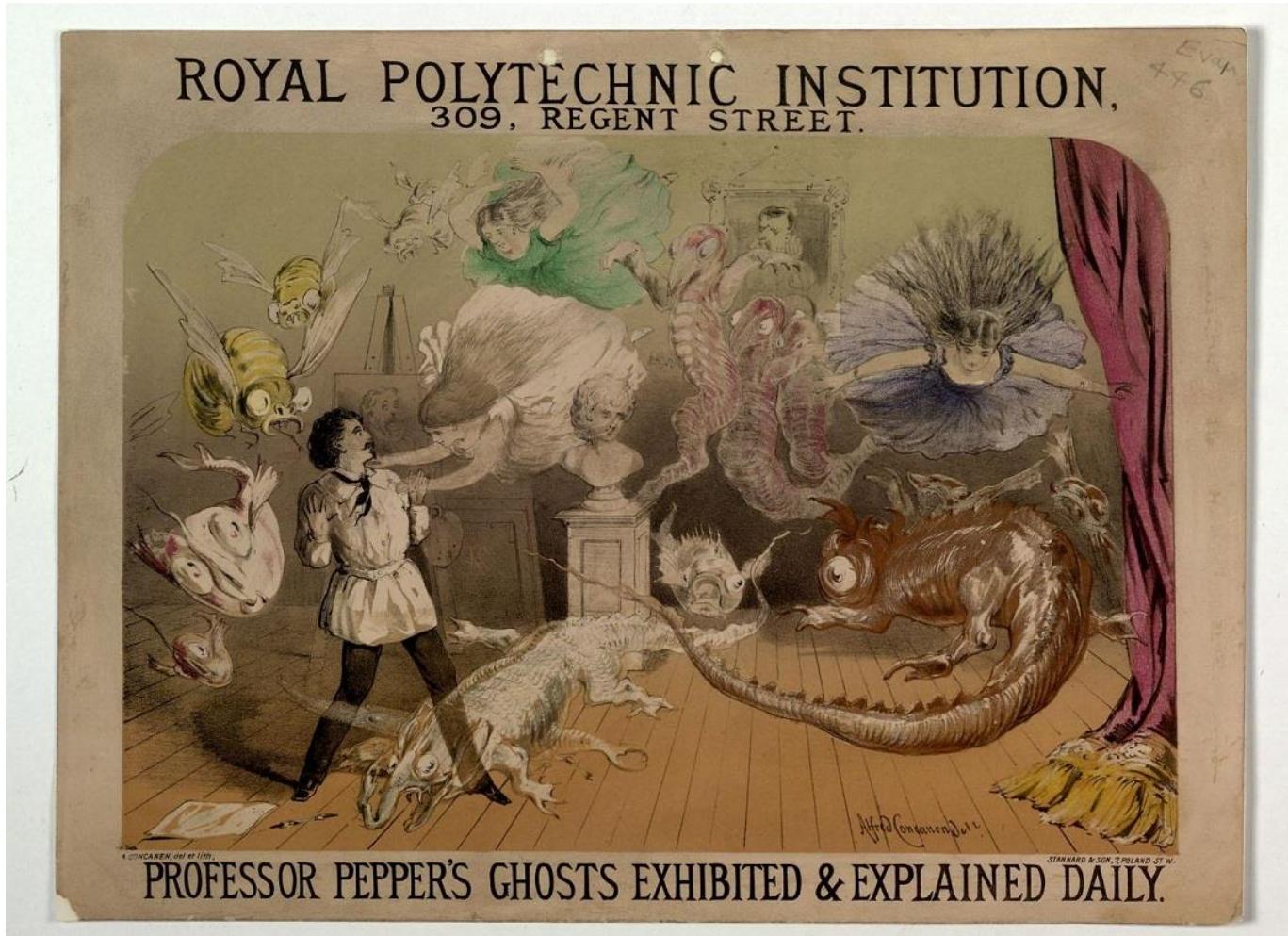
Figure 1.2: Advertisement for Pepper's Ghost at the Royal Polytechnic Institution. Alfred Concanen, poster, lithograph, 1885? © British Library Board. Evanion Collection 446.

This mode of disenchanted spectatorship found its definitive formulation in the early-nineteenth-century writings of David Brewster. A scientist, writer, and inventor, Brewster was a polymath whose driving passion was optics. In addition to creating the nineteenth century's two

most popular optical toys, the kaleidoscope (in 1817) and the lenticular stereoscope (in 1849), Brewster also wrote prolifically on optics, including his volume *Letters on Natural Magic* (1832), arguably the nineteenth century's most important work on magic as scientific and technological entertainment. A treatise on illusions, including those caused by acoustics, hydrostatics, and mechanics, its primary contribution was to a growing body of scientific literature on "apparitions," or visual perceptions that cannot be empirically verified because they do not have basis in reality. "Of all the sciences," Brewster wrote, "Optics is the most fertile in marvelous expedients" and "consequently the principal seat of the supernatural."[75] This topic was of considerable cultural interest in the early nineteenth century as one battleground for driving out the residues of ghost belief in Britain. John Ferriar, in *An Essay Towards the Theory of Apparitions* (1813), and Samuel Hibbert, in *Sketches of the Philosophy of Apparitions; or, an Attempt to Trace Such Illusions to Their Physical Causes* (1824), popularized scientific arguments against the existence of ghosts by arguing that apparitions were the result of ocular deceptions inherent to the human eye, and that they could be caused not only by overexcited imaginations or vivid memories, but also by diseases of the stomach. *Cranford* references this discourse when Miss Pole fires back at Mrs. Forrester's claims for the existence of ghosts by citing "indigestion, spectral illusions, optical delusions, and a great deal out of Dr. Ferriar and Dr. Hibbert besides" (99). "Spectral illusions" and "optical delusions" were buzzwords of early-nineteenth-century scientific culture, and "indigestion" was the most popular way of explaining them.

This new scientific literature of apparitions had its roots in Romantic-era storytelling traditions that forged an intimate, if under-theorized, connection between reading fiction and

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[75] Sir David Brewster, *Letters on Natural Magic: Addressed to Sir Walter Scott, Bart.* (London: W. Tegg, 1856), 5.

seeing apparitions. *Letters on Natural Magic* was addressed to Walter Scott and conceived of as a response to Scott's 1830 *Letters on Demonology and Witchcraft*, a collection of anecdotes about the history of superstition and the psychology of supernatural belief. Both volumes were published by John Murray as part of "Murray's Family Library," his collection of affordable, educative texts for the family reading market, and sought to capitalize on "a period of intense interest in gothic and supernatural tales."[76] Scott's son-in-law J.G. Lockhart, to whom Scott's *Letters* were addressed, described the tales in *Letters on Demonology and Witchcraft* as "transcripts of [Scott's] own fireside stories."[77]

Like *Letters on Demonology and Witchcraft*, *Letters on Natural Magic* attracted readers by offering ghost stories turned inside out. Although Brewster emphasized the deductive procedures and rational principles that prove that ghosts are not real, he also offered a model of scientific demystification as its own source of narrative pleasure. Unlocking the secrets of magic becomes a source of wonder and a compelling narrative telos. Moreover, as Helen Groth has detailed, Brewster's primary case study of optical apparitions in *Letters on Natural Magic* had its etiology in a reading experience.[78] The Edinburgh doctor John Abercrombie, who happened to be Scott's personal physician, treated a patient who suffered from hallucinations inspired by a character from the popular French novel *The Adventures of Gil Blas De Santillane*. Abercrombie gave Scott permission to discuss this case history in *Letters on Demonology and Witchcraft*, and Abercrombie also wrote about it himself in *Inquiries Concerning Intellectual Powers* (1830), his philosophical treatise on the workings of the mind. In a bizarre mis-en-abyme, Abercrombie's wife read this case history in her husband's book and began to suffer from apparitions herself. To cure

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[76] Groth, *Moving Images*, 84.
[77] J.G. Lockhart, *Memoirs of Sir Walter Scott*, quoted in Groth, 85.
[78] Groth, 89-90.

his wife, Abercrombie reached out to Brewster, who wrote at length about the case history of "Mrs. A" in *Letters on Natural Magic*.

Although Brewster does not develop or fully account for the idea that reading can cause people to see apparitions, the implication is nascent in his case study. He diagnosed Mrs. Abercrombie with "a disordered state of the digestive organs," which he believed affected the retina and caused the appearance of spectral illusions, but further acknowledged that "Mrs. A has naturally a morbidly sensitive imagination" and that this sensitivity made her predisposed to apparitions. "She is subject to talk in her sleep with great fluency," he offers, as evidence of her susceptibility, "to repeat long passages of poetry, particularly when she is unwell, and even to cap verses for half an hour together, never failing to quote lines beginning with the final letter of the preceding one till her memory is exhausted."[79] Mrs. Abercrombie's delusions also bear a conspicuous resemblance to the visual imaginary of Gothic novels. In one instance, Brewster describes Abercrombie observing his wife's "eyes fixed with a strong and unnatural stare on a chair about nine or ten feet distant." Then "the expression on her countenance changed" as "she told Mr. A that she had seen his brother…dressed in grave clothes, and with a ghastly countenance, as if scarcely alive."[80] While Mrs. Abercrombie's apparitions seem to have sprung from Gothic fiction, so has Brewster's prose style here, which dramatically aligns the reader's point of view not with Mrs. Abercrombie's disordered perception, but with Dr. Abercrombie's gaze as it takes in the spectacle of a woman possessed by visions.

While Brewster is not mentioned by name in *Cranford*'s discussion of ghosts and superstition, I would claim that *Letters on Natural Magic* is the true intertext for the novel's

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[79] Brewster, *Natural Magic*, 48.
[80] Brewster, *Natural Magic*, 46.

exploration of magic and optical spectatorship.[81] Ferriar and Hibbert, the optical thinkers that Miss Pole cites as evidence against the existence of ghosts, were primarily interested in the physiological origins of apparitions. Brewster, on the other hand, offered the definitive theorization of apparitions as a modern form of entertainment, the issue that concerns Gaskell most in her portrayal of the magic show, its effects on perception, and its afterlife in the imaginations of her characters. What set Brewster apart from Ferriar, Hibbert, and Scott, and made him an important influence on the development of optical culture throughout the nineteenth century, was his realization that the human eye's susceptibility to seeing apparitions was not merely of medical interest. This susceptibility also had enormous entertainment potential, potential that could only be actualized if spectators did not believe in ghosts. By not believing, the spectator could experience an apparition as a source of aesthetic pleasure, wonder, and stimulation.

Brewster named this kind of illusion "natural magic." The term originates in the tradition of sixteenth-and-seventeenth-century magic, exemplified by inventors and showman such as Della Porta and Athanasius Kircher, that sought to unfurl the wondrous or marvelous in nature. Like those early modern magicians, Brewster was fascinated by the possibility of creating spectacular optical illusions through technological apparatuses like the magic lantern, the invention of which

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[81] Gaskell's inclusion of a kaleidoscope, Brewster's best-loved and most famous invention, in her description of Mrs. Jamieson's drawing room, demonstrates her awareness of his work on optics, and she would have been exposed to his lenticular stereoscope when she visited the Great Exhibition in 1851. Although the only recorded meeting between Gaskell and Brewster took place in 1854, after the novel was published, Gaskell may also have been aware of him from her childhood in Edinburgh, where Brewster lived his entire life. Gaskell's father, the nonconformist preacher William Stevenson, wrote for Brewster's *Edinburgh Encyclopedia*; both were active members of the Edinburgh intellectual and literary scene in the early nineteenth century. For more on the historical connections between Gaskell and Brewster, see Margaret Maria Gordon, *The Home Life of David Brewster* (Edinburgh: Edmonston and Douglas, 1870), 252-253 and J. A. V. Chapple, "William Stevenson and the Edinburgh Literary Scene," *Gaskell Society Journal 8* (1994), 50.

was attributed to Kircher.[82] However, unlike the natural magic of Kircher, which sought to mystify

its audiences, Brewster's natural magic was based in demystification of the source of illusions. As

he wrote in an article for *Hogg's Weekly*, "Modern science has put into our hands a key that unlocks

all the secrets of ancient magic," a claim that playfully evokes earlier traditions of natural magic

as the key to unlocking the secrets of nature and turns it back on itself.[83] For Brewster, unlocking

the secrets of magic could become its own source of wonder.

Brewster's natural magic is based in his respect for the way that apparitions have the

capacity to solicit belief in their reality. As he describes it in *Letters*,

> When the eye in solitude sees before it the forms of life, fresh in their colours and
> vivid in their outline; when distant or departed friends are suddenly presented to its
> view; when visible bodies disappear and reappear without any intelligible cause;
> and when it beholds objects, whether real or imaginary, for whose presence no
> cause can be assigned, the conviction of supernatural agency becomes under
> ordinary circumstances unavoidable.[84]

Liberating spectators from "the conviction of supernatural agency" by teaching them how to

identify the natural origins of apparitions was politically important to Brewster. He repeatedly

warns against the possible uses of optical illusion for political and religious imposture, such as

"the pretended exhibition of supernatural power," and extols scientific rationalism as a means of

dismantling such regimes.[85] In this spirit, Brewster promotes optical magic as a form of

entertainment that embodies an anti-supernatural pedagogy by transforming apparitions into a

source of entertainment. For example, while Mrs. Abercrombie is haunted by apparitions of her

dead relatives that no one else can see, Brewster describes how this same illusion can be created

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[82] Scholars now know that the magic lantern was invented by the Dutch scientist Christiaan Huygens.

[83] David Brewster, "Magic," *Hogg's Weekly Instructor*, September 27, 1845.

[84] Brewster, *Natural Magic*, 11.

[85] Brewster, *Natural Magic*, 57.

for an audience through a technological apparatus. He recommends training a bright light source on a bust or portrait of "an absent or deceased friend" placed before a concave mirror (65). This will create a virtual image that can be projected on the air or on smoke. When "the instruments of illusion are themselves concealed," the lighting is controlled, and the mirrors are "well-polished," Brewster writes, "even those who know the deception, and perfectly understand its principles, are not a little surprised at its effects" (66).

For Brewster, spectators do not need to be deceived or tricked to experience the wonder of magic. The visual effects that can be produced through technological ingenuity and a magician's technical skill and showmanship are aesthetic phenomena that are irreducible to optical principles. In fact, tricking and deception are the enemy of sophistication in magic: "It is only when knowledge has made considerable inroads on the domain of the magician," he writes, "that he is compelled to enlist the creative faculty in his service."[86] In this sense, *Letters on Natural Magic* provided a modern account of optical aesthetics for the Victorian era. Brewster promotes optical literacy as essential to achieving optical pleasure. Literacy does not diminish pleasure, but rather enables a form of aesthetic playfulness that relies on an active and educated eye and is made possible only through the dissolving of superstition. To put it another way, Brewster values disenchanted spectatorship precisely because it makes available a new form of enchantment—not naïve and unconditional belief, but aesthetic pleasure undergirded by rational detachment. Only disenchantment can liberate this aesthetic experience from the tyranny of superstition and supernatural belief.

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[86] Brewster, *Natural Magic*, 293.

"Hoaxing": Magic Tricks and Women Spectators

In *Cranford*, Gaskell imagines modern realist fiction as operating through a similar dialectic of disenchantment and enchantment as Brewster's optical illusions. Through the magic scene and its aftermath, she conceives of her novel as an optical apparition visualized by the reader through the medium of the literary text. The novel, like the magic show, creates an aesthetic experience that is irreducible to its component parts. However, Gaskell also identifies and explores gendered power relations built into the genre of the magic show and the cultural framework of optical spectatorship that complicate her meta-fictional analogy between her novel and the optical apparition.

Gaskell is clearly responding to Brewster's theory of apparitions as a source of entertainment when she writes a narrative about magic performance and the perils of superstitious spectatorship. Her tale of how the magic show produces a paralyzing state of superstition and ghost belief in the women of Cranford is a satire of superstition, a genre of comic sketch that sprung up in response to Brewsterian optical culture. The satire of superstition demonstrates how belief in the reality of optical illusions, rather than a necessary or constitutive element of magic spectatorship, makes magic entertainment break down. In writing a sketch like this, Gaskell may also have recognized that *Household Words*, the journal publishing each new installment of *Cranford*, had a strong Brewsterian perspective. In 1850, the year before she published "Our Society at Cranford" in the journal and the first year of the journal's circulation, *Household Words* published numerous articles about science, magic, and superstition informed by *Letters on Natural*

Magic.[87] One such article lauded Brewster as "the Delphic Oracle of science."[88] Another cited one of the principal arguments of *Letters* when it argued that "everyone has been told that the old priests of Egypt and of Greece were better skilled in optics than in necromancy."[89] In mid-nineteenth-century Britain, it was Brewster, along with a handful of other writers like Scott, who had informed "everyone" of the optical basis of magic and the use of technology for supernatural imposture by ancient political and religious regimes.

Like other pieces written for *Household Words*, *Cranford* integrates and animates Brewsterian discourses of disenchanted spectatorship by demonstrating through satire the correct way to engage with optical illusions. However, the novel also subverts the satire of superstition to critique the very system of rational, educated spectatorship that authorizes them—the system authored by, and most closely associated with, the "Delphic Oracle" himself. By showcasing how Matty, Mary, and other women's attendance at a magic show leads to superstition, delusion, and ghost belief, Gaskell does not simply suggest that these women are failed Brewsterian spectators. Rather, she suggests that natural magic spectatorship is modeled on male spectators and partially designed to trick women.

Natural magic was culturally associated with and developed for Victorian masculinity. For example, Victorian collections of boyhood diversions and educative playtime activities like *The Boy's Own Book*, *Every Boy's Book*, *The Boy's Book of Science,* and *The Boy's Playbook of*

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[87] Examples include "The Planet-Watchers of Greenwich" (Vol. 1, May 4, 1850) describing the work of astronomers in the Greenwich Observatory and the optical instruments they use while joking on the belief that astronomers are magicians who can foretell the future; "A Shilling's Worth of Science" (Vol. 1, July 24, 1850) a narrative of a day spent at the Royal Polytechnic Institution," and "The Magic Crystal" (December 14, 1850) which pokes fun at the attribution of supernatural forces to crystals."

[88] "Chemical Contradictions," *Household Words*, Vol. 1, September 14, 1850, 592.

[89] "The Stereoscope," *Household Words*, Vol. 8, September 10, 1853.

Science inevitably included sections on conjuring and optics, complete with explanatory diagrams reminiscent of the ones Miss Pole studies in the encyclopedia. The *Boy's Own Book* reflects on how a boy's first experience of magic is seared in his memory for life: "Every feature of that seeming magician who swallowed fire—kept it alive and brilliant before the surface of water—enacted other feats of apparent dominion over the elements…and in a hundred ways cheated our eyes…is as well remembered as though we had never ceased to look upon him."[90] The conjurer, even more than his tricks, is the point of fixation here, as well as the origin of a boy's first acts of philosophical reasoning: "What could he be then? Certainly not a mere mortal; and if not—what was he?"[91] However, the conjurer's apparent supernatural powers are identified as the chief attraction of stage magic only as a preface to a series of what Miss Pole would call "receipts" that enable boys to become conjurers themselves, to the amusement and instruction of family and friends. The *Boys Own Book* reclaims the superstitions of children as dialectically related to demystification and mastery; they not only compel them to ask of the conjurer, "what could he be?" but also to become him. One manual on parlor magic addressed itself specifically to "the boy whose wonder and curiosity have been excited" by magic shows and promised, through teaching this boy the means of performing those tricks himself, "to enable him to escape an imputation which every boy of spirit would consider the depth of disgrace—that of being 'No Conjurer!'"[92]

The example of the boy conjurer reveals how the hermeneutics of spectatorial disenchantment was often staged as a model of patriarchal development, in which boyhood

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[90] *The Boy's Own Book of Indoor Games and Recreations: An Instructive Manual of Home Amusements* (London: The Religious Tract Society, 1912), 342.

[91] *The Boy's Own Book*, 342.

[92] *Parlor Magic: A Manual of Amusing Experiments, Transmutations, Sleights and Subtleties, Legerdemain, &c. for the instruction and amusement of youth*, 3rd edition (London: W. Kent and Co., 1861), vii – ix.

susceptibility is disciplined into adult mastery and control.[93] If the position of the spectator-detective has its exemplary instantiation in the boy conjurer, it was most commonly satirized through the trope of the foolish old woman—often an uneducated woman of the lower classes, whose failure to spectate deductively and whose faulty hermeneutics was a reverse illustration of proper magic spectatorship. In a *Punch* cartoon of a lecture-demonstration at the Royal Polytechnic Institution, a woman jumps up in fright at the sight of a kind of apparition—in this case, an image cast by a projection microscope magnifying the tiny microbes inside a droplet of Thames water. When her husband exhorts her to sit down and "see the show," the woman incredulously replies, "See the show! God save us all, man! What would come of us if those awful-like brutes was to break out of the water!"[94] Her literal interpretation of the image on the screen, which fails to consider the scientific properties of projection and magnification, signals her lack of optical literacy and inability to take part in a paradigm of Brewsterian disenchantment or detection.

In writing a scene of spinster women watching a magic show, Gaskell alludes to this genre of satirical and didactic sketches and cartoons that sprung up in response to the spread of optical and scientific literacy. She also appropriates their common trope of the foolish old woman who persists in her ghost belief and appears immune to the rationalizing potential of disenchanted spectatorship. One example of such a sketch was an article about the Royal Polytechnic Institution published in *Household Words* in 1850, the year before *Cranford*'s serialization began. The

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[93] This model of patriarchal development also encoded a fantasy of imperial mastery. In his introduction to *The Boy's Playbook of Science*, John Henry Pepper metonymized his young male readers as "Young England," exhorting him "not [to] forget the mental race he has to run with the educated of his own and of other nations" and to view scientific learning as "a useful ally which may some day help him in a greater or lesser degree to fight the battle of life." John Henry Pepper, *The Boy's Playbook of Science* (London: George Routledge and Sons, 1912), vi-vii. For a discussion of this passage, see Groth, *Moving Images*, 95-96.
[94] Charles Samuel Keene, "Microscopy for the Millions," *Punch* (London, 1878).

educated, male narrator offers a virtual tour of the Polytechnic, at one point bemoaning "our fate to sit next two old ladies" at a lecture on Magnetism and Electricity "who seemed to be very incredulous about the whole business."

> "If heat and light are the same thing," asked one, "why don't a flame come out at the spout of a boiling tea-kettle?"
> "The steam," answered the other, "may account for that."
> "Hush!" cried somebody behind them; and the ladies were silent: but it was plain they thought Voltaic Electricity had something to do with conjuring, and that the lecturer might be a professor of Magic.[95]

Compare these two "incredulous" old ladies to Miss Matty and Mrs. Forrester loudly whispering together throughout the magic show. As Matty worries that her attendance is endorsement of sacrilege, Mrs. Forrester reflects, of a particular magic trick, that she "was quite certain that it was her pocket-handkerchief which was in that loaf just now; and it had been in her own hand not five minutes before. She wondered who had furnished the bread? She was sure it could not be Dakin, because he was the churchwarden" (87). Like the *Household Words* sketch, Gaskell's scene centers on women trying to reason their way through a performance of visual marvels that their current methods of making sense of the world cannot account for. While both sets of women are engaged in a kind of hermeneutic puzzle-solving, the topsy-turvy logic behind their reasoning, narrow domestic framework in which they can reason, and persistence of superstition within the act of reasoning turns them into parodies of the spectator-detective who fail to properly demystify the illusions.

Unlike the women in the *Punch* cartoon and the *Household Words* sketch, the susceptibility of the Cranfordian women to magic does not reduce them to the punchline of a joke. Instead, Gaskell's magic scene actively explores how the patriarchal underpinning of the prevailing model

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[95] "A Shilling's Worth of Science," *Household Words*, vol. 1 (July 24, 1850), 508.

of disenchanted spectatorship turns women into jokes. As Mrs. Brown, the illiterate, lower-middle class female character created by the humorist George Rose, puts it after she attends a magic lantern show at the Polytechnic, "you might spend a whole day there a-lookin' into things; but it would never suit me…there's too many larks played on you."[96] Gaskell highlights how the rational spectacles that entertain men make fools of women. While the *Punch* cartoon and *Household Words* sketch figure the women spectators as disrupters of a male-controlled pedagogy, Gaskell's scene is written from the perspective of the women and identifies the magic show as the source of disruption. It also suggests that men enjoy magic not despite of the disruption playing larks on women causes, but because of it. When Mary is commissioned by Mrs. Forrester and Miss Matty to look over her shoulder at whether the Rector is in attendance, to confirm whether "this wonderful man is sanctioned by the Church," she finds that the Rector and his flank of schoolboys are in fits of laughter (88). Their mode of spectating contrasts jarringly with the ladies' astonishment and fears of social transgression. The boys' laughter likely comes from taking in the double spectacle of the magic show, with its low-rent curtains and conventional tricks, and the women's state of disturbance in the front two rows.

 Cranford's thematic of magic and apparitions may read like another *Household Words* satire of superstition, but it can be better understood as an ironic commentary on the genre that acknowledges the gendering of reason and credulity within the discourses of natural magic and optical spectatorship. All boys may grow into conjurers, Gaskell observes, but old women, even when they have their "receipts," are stuck in an endless present of susceptibility and belief. Gaskell compares the reading experience created by novels like hers to the apparitional capacities of

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[96] Arthur Sketchley, "Mrs. Brown Visits the Polytechnic," *Mrs. Brown at the Play* (London: George Routledge and Sons, 1871), 89.

modern magic, while at the same time pointing out how magic's trickery and make-believe figures patriarchy as a disciplinary regime based in scopic power and perceptual control. The conjurer is the man behind the curtain whose peering eyes haunt Mary, the spectacle that stares back, a figure against whose Miss Pole's declaration, "I don't believe him!" might be seen as a political refusal to abdicate epistemological sovereignty over herself. Earlier, we saw how Miss Pole's obsession with her "receipts" for Signor Brunoni's magic tricks illuminated the phenomenological irreducibility of magic to such explanations. By parodying natural magic's spectator-detective through Miss Pole, Gaskell is not commenting on the inability of women to participate in rational spectatorship but rather on the socially-imposed epistemological limitations of women spectators. Miss Pole's refusal to believe registers the ways in which women's magic spectatorship becomes a site of proxy conflict over the patriarchal consolidation of knowledge and control.

In the final chapters of the novel, Gaskell extends this discussion of magic tricks and women spectators beyond the magic show through the return of Matty's brother Peter to Cranford. Peter, who fuses the conjurer with the storyteller, also functions within the novel to translate these questions about trickery, gender, and spectatorship into the realm of fictional practices and reading experiences. When he returns to Cranford at the end of the novel, he is portrayed as a magical storyteller who chronicles partially or entirely fabricated tales ("more wonderful…than Sinbad the Sailor") from his time in India. Peter's "wonderful stories" echo Signor Brunoni's "wonderful magic" by tricking the women of Cranford with fantastical tales. His stories are an evolution of his boyhood tricks, or "hoaxes," which involved dress-up and play-acting and prefigure Samuel Brown's imposture as Signor Brunoni (151). While Signor Brunoni's magic is a trade practiced by a poor family man, Peter's tricks are tinged with mean-spiritedness and rebellion. He directs his ire against both what he takes to be the absurd intellectual pomposity and genteel patriarchal

values embodied by his father, the Rector, and against the "old ladies" of the town and their intellectually confined world. His stories exploit the women's trust in patriarchal authority and their lack of knowledge about the wider world in order to play tricks on them. Mary observes that he "told me stories that sounded so very much like Baron Munchausen's, that I was sure he was making fun of me." Later, she realizes that he *is* making fun: "If we swallowed an anecdote of tolerable magnitude one week, we had the dose considerably increased the next" (152). Finally, she notices that when in conversation with the Rector, one of the few men of Cranford with whom Miss Matty's set socializes, "Mr. Peter talked in a different way about the countries he had been in. I don't think the ladies in Cranford would have considered him such a wonderful traveler if they had only heard him talk in the quiet way he did to him."

Peter's stories of India specifically exploit the condition of these women's limited knowledge and experience of the wider world. While Peter can leap from continent to continent, his sister and her friends are immobilized in Cranford by their gender and class position. Mary acknowledges that because "I had vibrated all my life between Drumble and Cranford, I thought it was quite possible that all Mr. Peter's stories might be true although wonderful" (152). Neither Mary nor Matty understand how to read a globe: "equators and tropics, and such mystical circles" are "very imaginary lines indeed" and "the signs of the Zodiac…so many remnants of the Black Art" (129). The entire world beyond Cranford, and beyond the direct experience of the women, is Peter's to create.

The term that Matty uses to describe her brother's childhood pranking further reinforces the connection between his storytelling and magic tricks. "He was always hoaxing" the women of Cranford, Matty explains to Mary. ""Hoaxing" is not a pretty word, my dear, and I hope you won't tell your father I used it" (51). The verb "to hoax" appears to date to the turn of the nineteenth

century, when it meant to deceive or take someone in by inducing them to believe in a fabrication or fiction; the *Oxford English Dictionary* offers the secondary definition, "to play upon the credulity of."[97] Grose's *Classical Dictionary of Vulgar Tongue* defined hoaxing in 1796 as "bantering, ridiculing" and a form of "university wit." However, it appears to have derived etymologically from "hocus pocus," a sham-Latin incantation used by conjurers as early as the 1620's as part of their stage patter. In the words of Thomas Ady in his 1655 book on witchcraft, "hocus pocus" could be used by a magician to "blinde the eyes of the beholders" and "make his Trick pass more currantly without discovery."[98] A hoax, therefore, is a kind of trick that uses fiction rather than sleight-of-hand. Hoaxes are verbal magic tricks that take in their listeners by exploiting their gullibility. Matty's fixation on the vulgarity of the word displaces her discomfort about what the word denotes: the use of language to delude, manipulate, and exploit even as it can entertain and amuse. Peter's tall tales give pleasure to his listeners, but they are also, as Wendy Carse writes, "at least partially motivated by a basic contempt" for the gullibility of his listeners— in other words, by a contempt for women.[99] "He seemed to think the old ladies in Cranford would believe anything," Miss Matty says (51).

Through Peter and the tricks he plays on women, Gaskell moves her meta-fictional exploration of the novel as an apparition to a place of increasing ambivalence and contestation. *Cranford* ends with Peter commissioning a magic show by Signor Brunoni to mend a feud between two of Matty's friends, an act of kindness that is nevertheless executed through his characteristic

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[97]*Oxford English Dictionary Online*, s.v. "hoax, (v.)," accessed October 25, 2017, http://www.oed.com.proxy.uchicago.edu/view/Entry/87427?rskey=nmDa2Q&result=2&isAdvanced=false.

[98] *Online Etymology Dictionary*, s.v. "hocus-pocus (interj.)," accessed October 25, 2017, http://www.etymonline.com/word/hocus-pocus.

[99] Wendy Carse, "A Penchant for Narrative: Mary Smith in Elizabeth Gaskell's *Cranford*," *The Journal of Narrative Technique*, Vol. 20, No. 3 (Fall, 1990): 326.

charm and deception. He persuades Mrs. Jamieson that he shot a "cherubim" while climbing the Himalayan mountains because he is "bent on propitiating her" (157-158) to make friends with her sister-in-law Mrs. Hoggins. The deception brings "Peace to Cranford," a happy ending in which all harms are healed, losses repaired, and problems resolved. At the same time, this ending remains radically unresolved insofar as it seems to suggest that fiction and trickery, apparition and delusion, and, ultimately, entertainment and patriarchal control are inextricable from one another.

The problem that this ending raises could be described as Brewsterian: can a fictional illusion, like an optical illusion, create reality for readers without deceiving or disempowering them? As an attempt to dismantle popular superstition through an anti-supernatural pedagogy, Brewster's natural magic participates in a genealogy of philosophical and political writings that identified superstition as a form of social, religious, political, and intellectual oppression and enslavement associated with Catholicism and the priesthood.[100] Brewster cites the "bishops and pontiffs" who "wielded the magician's wand over the diadems of kings and emperors, and, by the pretended exhibition of supernatural powers, made the mightiest potentates of Europe tremble upon their thrones."[101] For the women in Gaskell's novel, however, magic that has no "pretended exhibition of supernatural powers," but rather forwards an Enlightenment project of discovery and deduction, has the same effects of reinforcing and entrenching their subordinate social position. Women are not the proper subject of magic's rationalizing work because the limitations of their education and mobility turns science itself, even when presented as a set of principles rather than a spectacle or trick, back into supernatural magic. Through its exploration of women spectators,

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[100] Williamson, *Hiding in Plain Sight*, 27.
[101] Brewster, *Letters*, 57.

the novel asks: Can fiction and fabrication be delaminated from exploitation and deceit, without expense of wonder, astonishment, and pleasure? Is there such thing as an illusion without a trick?

Victorian Optical Readership

I have argued for the construction in *Cranford* of what I am calling optical readership, a translation of Victorian optical spectatorship into reading practices. Gaskell constructs the reading experience as an ongoing act of visualization, and in particular, of visualizing something like an apparition: an image or illusion that cannot be empirically confirmed as real. While this chapter has argued for optical readership as a concept in *Cranford*, I consider it paradigmatic of the phenomenology of Victorian realism that I will explore throughout this dissertation. Realist novels not only integrate optical images, but also conceive of the novel as an optical apparition to be activated by the reader through the medium of the literary text. As the subsequent chapters will show, mid-and-late-nineteenth-century realism consistently invokes the spectral and the virtual to style itself as a form of apparition. *Cranford*'s particular emphasis on women spectators also sets the stage for the rest of the dissertation. I argue that realist fiction turns to optical technology to represent aspects of reality that are not available to direct experience through virtual images. The necessity of virtuality to perceive the world is all the more evident in a story about women. Because of the social and economic restrictions placed on women's lives, Gaskell suggests, women's direct experience is limited to what is radically local—the environs of a small town, the domestic sphere, the society of a small handful of peers. The rest of the world can only be perceived virtually.

Figure 1.3: Single Lever Slide of Ship Rocking in Moonlit Bay. Courtesy of the Bill Douglas Cinema Museum, University of Exeter.

Gaskell stages this condition most vividly in a scene where Mary mails a letter to Peter in the hopes of bringing him back to Cranford. Mary has an unusual moment of reverie gazing at the mailbox:

> I dropped it in the post on my way home; and then for a minute I stood looking at the wooden pane, with a gaping slit, which divided me from the letter, but a moment ago in my hand. It was gone from me like life—never to be recalled. It would get tossed about on the sea, and stained with sea-waves perhaps; and be carried among palm-trees, and scented with all tropical fragrance;—the little piece of paper, but an hour ago so familiar and commonplace, had set out on its race to the strange wild countries beyond the Ganges! (127)

Mary's reverie of her letter traveling to "the strange wild countries beyond the Ganges" as she stands looking at the mailbox is a melancholic registration of her geographically and epistemologically limited existence. The letter will travel where she cannot and even experience what she cannot. At the same time, the "gaping slit" that "divide[s]" Mary from her letter also produces a vivid sequence of images of travel in which she imagines the journey to India that she cannot physically undertake. The slit in the "wooden pane" is reminiscent of a variety of optical

devices that similarly allowed spectators to virtually travel to "strange wild countries" they would never visit. Peepshows, stereoscopes and the *polyorama panoptique*, a tabletop dioramic viewer created by the French optical inventor Paul Séguin in 1849, are all wooden boxes with apertures or peepholes, while magic lantern slides are transparencies—"gaping slit[s]"—framed in wood. Thus, the scene contrasts the letter's physical travel to India with Mary's virtual apprehension of India through motifs of optical technology and illusion.

The virtual scene of sea-waves and palm-trees is staged to reinforce Mary's gendered immobility. While Peter has lived in England and India, and has the power to crisscross continents, Mary's life is restricted to traveling between the neighboring towns of Cranford and Drumble. However, as we will see in the following chapter, this passage is also symptomatic of a broader realist project of representing British Empire as a virtual scene through metaphors and motifs of optical technology.

CHAPTER TWO
Virtual Empire: Diamonds in *The Moonstone*

The Moonstone Diamond, the fictional Indian gem at the center of Wilkie Collins's *The Moonstone*, enthralls the guests at Rachel Verinder's party when it is presented to her as an eighteenth-birthday gift. As the servant Gabriel Betteredge, narrator of the first volume of the novel, describes it:

> Lord bless us! it *was* a Diamond! … The light that streamed from it was like the light of the harvest moon. When you looked down into the stone, you looked into a yellow deep that drew your eyes into it so that they saw nothing else. It seemed unfathomable; this jewel, that you could hold between your finger and thumb, seemed unfathomable as the heavens themselves.[102]

Gabriel's description registers the paradoxical nature of diamonds: that a gem small enough to be held "between your finger and your thumb" appears to contain "unfathomable" depth. What the eye sees is not a materially bounded object, but a "yellow deep," the phrase itself dematerializing the diamond into visuality without form. Although Gabriel is stymied by these amazing effects of color, light, and depth, Collins understands that the diamond's infinite depth is an illusion created by the diamond's mediation of light. Gabriel's perception of the "yellow deep" is framed by the way Rachel presents it, "flash[ing]" it "before my eyes in a ray of sunlight that poured through the window" (67). Collins demonstrates that a diamond's sparkling luminosity is an effect of it reflecting and refracting the sun. What makes the Moonstone so spectacular is not merely that it is an object of beauty, but that it is an optical medium that produces beautiful visual effects through its manipulation of light.

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[102] Wilkie Collins, *The Moonstone* (New York: Modern Library, 2001), 67. All further citations for this text are in parentheses.

This chapter reads *The Moonstone* through mid-nineteenth century discourses of the Victorian diamond as an optical technological medium that operates through the reflection and refraction of light. Collins models his fictional moonstone on the Koh-i-Noor, one of the largest cut diamonds in the world. By analyzing the reception of the Koh-i-Noor during its public display in London at the Great Exhibition of 1851, I identify a growing public discourse of diamonds as optical technologies. This discourse associates spectatorship of diamonds with the visual pleasures and virtual experiences exemplified by magic lantern shows, stereoscopes, dioramas, and optical conjuring. Furthermore, I argue that the exhibition of the Koh-i-Noor gave rise to fantasies of diamonds as orientalist media that offer spectators a virtual experience of India. In *The Moonstone*, Collins extends these discourses by creating a fictionalized Koh-i-Noor that does enable the novel's characters to virtually experience empire through its entrancing and hypnotic visual effects. His Moonstone diamond is coded as an optical toy that creates a form of virtual perception.

In focusing on Collins's fictional diamond, I follow scholars such as John Plotz, Stephanie Markovits, and Suzanne Daley, who argue that we can read Victorian attitudes towards empire through literary diamonds. Since nineteenth-century diamonds predominantly came from India and (after 1868) South Africa, they can be interpreted both as symptoms of a global marketplace created through colonial resource extraction and as "things" that materialize the networks of trade and military domination. When diamonds show up in Victorian literary culture as "portable property," in John Plotz's terms, they are metonymic of the colonial territories from which they were mined or plundered.[103] It is not a coincidence that India, the country most associated with diamonds in the British imagination, was euphemistically referred to as the "jewel in the crown"

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[103] John Plotz, *Portable Property: Victorian Culture on the Move* (Princeton, NJ: Princeton University Press, 2009).

of the British Empire. However, I take a different approach than these scholars by arguing that the significance of diamonds for the mid-nineteenth-century imperial imagination is constructed not only through their thing-ness or materiality, but also through their opticality. By recuperating the optical discourses of diamond spectatorship in mid-nineteenth-century British culture, I demonstrate that diamonds became imaginary media capable of staging a virtual encounter with India for Victorian subjects. Diamonds were not only commodities or material possessions, but also constructed as sites for visionary experience. In *The Moonstone*, Collins mobilizes this imaginary of diamonds as imperial media to explore the modern experience of empire as a virtual scene.

Victorian Diamonds as Optical Media

Victorian diamonds were a source of visual pleasure and optical spectacle. They sparkled, gleamed, and glowed; emanated yellow, white, and blue light; and seemed to contain the "unfathomable" space of the heavens. In *Victorian Glassworlds*, Isobel Armstrong's magisterial study of Victorian glass culture and its effects on literature and art, Armstrong argues that glass possesses a dialectical aesthetics based in its trick transparency. Glass is simultaneously something you see and something you see through—doubling presence with absence, materiality with immateriality, and reality with illusion.[104] Put another way, glass is both material and medium; it is both a visual object in its own right and a means of shaping visual experience.[105] I employ a similar framework for interpreting the aesthetics and cultural significance of Victorian diamonds. I argue that a diamond is not simply a material object, but also an optical medium that produces

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[104] Isobel Armstrong, *Victorian Glassworlds: Glass Culture and the Imagination, 1830-1880* (Oxford: Oxford University Press, 2008), 7.
[105] Armstrong, 12.

virtual effects. Diamond can be distinguished by a set of optical effects—the way it sparkles, its unparalleled luminosity, its sense of infinite depth—that are virtual in nature. That is to say, these qualities are not only inherent to the diamond as material, but also produced through the way the diamond interacts with light.

In the nineteenth century, the virtual effects of diamonds were associated with optical technologies and the production of visual illusions. For example, David Brewster made several studies of diamonds, crystals, and gems throughout his career and was, according to his daughter and biographer, Margaret Maria Gordon, "the first person to investigate the remarkable optical structure of the diamond."[106] Whether or not Brewster was technically the first, his research clearly motivated renewed interest in diamond among nineteenth-century scientists, inventors, and opticians in two ways. First, scientists considered diamonds as constitutive materials for optical technologies. In the 1820s, Brewster succeeded in encouraging the manufacture of microscopes with diamond lenses by arguing that the high refractive index of diamond would increase the resolution of the microscope.[107] Second, the virtual effects of diamonds and other gems inspired the creation of optical toys. Brewster's kaleidoscope, one of the most popular optical toys of the nineteenth century, sprung from his study of the polarization of light in crystals and gemstones

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[106] Margaret Maria Gordon, *The Home Life of David Brewster* (Edinburgh: Edmonston & Douglas, 1870), 215. Gordon also describes an instrument that Brewster invented for testing and examining precious stones. Called the "Lithoscope," it was exhibited at the British Association of York in 1832. See Gordon, 214.

[107] Gerard L'Estrange Turner, "The Rise and Fall of the Jewel Microscope," in *Essays on the History of the Microscope* (Oxford: Senecio Publishing Company, 1980), 109-110. As Turner explains, it is not clear whether Brewster actually considered making lenses from diamonds. In *A Treatise on New Philosophical Instruments* (1813), he suggested that any improvement in the microscope would have to come from the discovery of a substance "like a diamond" that combined high refractive power with low power of dispersion. The optician Andrew Pritchard took up the proposal in an 1825 paper in the *Quarterly Journal* entitled "On the Art of Forming Diamonds into Single Lenses for Microscopes," sourcing the idea to Brewster.

and sought to imitate the fractured luminosity of diamonds.[108] Nineteenth-century diamonds were therefore not only aesthetic objects, but also valued as prothesis for human vision and as object lessons in the principles and operations of light. They are part of the history of Victorian optical technology. To better understand what it means to view diamonds as optical and virtual media, let's look more closely at two of their medium-specific effects: what I call *sparkling* and *virtual depth*.

When diamonds sparkle, they can look like containers for light that are always overflowing. They shimmer and glitter with an excess of light that streams outwards and engulfs them. A diamond's sparkle is produced through the principle of refraction. While the external facets of a diamond can reflect light, it is the way light moves inside the diamond and bounces off internal facets before exiting that makes them sparkle. All diamond possesses the same refractive properties, but certain diamonds can sparkle more brightly than others depending on how they are cut. The number, size, shape, and angle of a diamond's external facets will determine how light enters and exits the diamond and therefore how brightly it sparkles. Because of the important role that cut plays in the way diamonds sparkle, sparkling can be understood as a technological effect. It is a capacity inherent to diamond, but one that is realized and manipulated to greater degree by human ingenuity. The mechanization of diamond-cutting in the nineteenth century, with new steam-powered and motorized machines, allowed diamond polishers to achieve ever finer and more polished cuts that would maximize a diamond's refractive properties. The technological

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[108] John R. R. Christie, "Brewster and Scientific Instruments," in *"Martyr of Science": Sir David Brewster 1781-1863: Proceedings of a Bicentenary Symposium: Held at the Royal Scottish Museum on 21 November 1981: Together with a Catalogue of Scientific Apparatus Associated with Sir David Brewster: And a Bibliography of His Published Writings* (Edinburgh: Royal Scottish Museum, 1984), 60.

design of Victorian diamonds both fueled and was fueled by the aesthetic taste for diamonds that sparkle when placed in the light. They were increasingly understood not as naturally occurring marvels, but as objects of research, design, and manufacture.

The sparkle of diamonds can be linked to lenticular optical technologies that function through the manipulation of light. In order to project a slide, for instance, a magic lantern relies on a light source that it reflects and refracts through the use of mirrors and lenses. The intensity of that light source matters, and the introduction of the oxyhydrogen lamp in the 1820s substantially improved the image quality of lantern projections. Still, the difference between a common, low-cost lantern for home use and a high-quality lantern for professional use was how effectively its lenses captured the light to magnify and project an image that is at once bright and sharp.[109] Diamonds similarly function through the interface of lens and light. A diamond is a sophisticated and powerful multi-faceted lens, yet one that relies entirely on borrowed light—sunlight or moonlight pouring in from windows, or artificial light from lamps and chandeliers. When diamonds are shown indoors, their nature "depends as much upon the character of the building which is to receive them, as it does upon their own individual character."[110] The way a structure admits light and how that light hits the diamond is largely responsible for how brightly a diamond will sparkle.

Sparkling makes the material form of the diamond seem paradoxically both immaterial and formless. Diamonds appear to raise the immateriality of light to the status of form while the form of the diamond dissolves through its interface with light. They engage the fantasy "that matter

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[109] *The Magic Lantern: Its History and Effects, Together with an Explanation of the Method of Producing Dissolving Views, the Chromatrope, Phantasmagoria, etc.* (London, 1854), 17-18.
[8] Charles Babbage, "The Exposition of 1851; or, Views of the Industry, the Science, and the Government of England," *North British Review* 15 (1851), 542.

might be transmuted to pure light, a sea of light, a mountain of light, released for contemplative delight,"[111] a fantasy not only of immateriality but of formlessness, as though the diamond were a pure visual field into which the viewer can lose herself in the act of looking. In this sense, the aesthetic experience of a diamond's sparkle is related to, but distinct from, image-producing technologies like the magic lantern. The magic lantern also seems to transmute matter into immateriality, but its images are painted pictures trickily rendered as "pure light." The diamond is more like Marshall McLuhan's classic example of the lightbulb: a medium without content. Instead of using light to animate images, like magic lanterns, a diamond animates light itself. It allows light to perform and, further, to take center stage. This representational emptiness leaves diamonds radically open to meaning, which is one reason that diamonds are so overdetermined in their signification: any value or ideal can be projected onto their sparkling.

The second medium-specific effect that characterizes diamonds is what I call virtual depth. Virtual depth is the sense that there is an interior space within the diamond, even though it is a solid object. When a diamond refracts light—when it sparkles—the viewer sees both the physical entity, its density and volume, and an optical illusion of infinite internal space. The facets of the diamond reflect each other endlessly, like a room full of mirrors, so that the diamond seems to become an infinite brilliant expanse (fig. 2.1). When Gabriel Betteredge exclaims that "this jewel, that you could hold between your finger and thumb, seemed unfathomable as the heavens themselves" (67), he refers to diamond's virtual depth. Because of the way their facets refract light, diamonds can seem like miniatures that contain spatial infinity. Virtual depth, like sparkling, is a technological effect that is produced by the cut of a diamond and enhanced by diamond-polishing. For example, figure 1 shows the Cullinan I diamond at the center of the Sovereign's Sceptre,

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[111] Armstrong, *Victorian Glassworlds,* 231.

sourced from the Premier Mine in the South African republics of the Transvaal and Orange Free State in 1905, shortly after the territories were incorporated into the British Empire. Cut as a pear-shape, the diamond glows with a shattered light that gives it the appearance of untold interior depths. Each facet seems like a window that opens onto more and more windows, plunging the eye further inside the diamond, when in fact this illusion of depth is created by the play of light off the diamond's surfaces.

Figure 2.1: The Sovereign's Sceptre with Cross. Royal Collection Trust/ © Her Majesty Queen Elizabeth II 2017. Reprinted under fair use exception.

The virtual depth of diamonds touches on a critical visual effect of optical technologies in the mid-nineteenth century. The craze for stereoscopy, beginning in 1851 with the unveiling of the Brewster stereoscope at the Great Exhibition in London, demonstrates the Victorian fascination with virtual spaces.[112] The stereoscope is an optical device composed of a pair of lenses, opposite which can be placed a stereograph, a card bearing two nearly identical photographic images taken approximately seven centimeters apart to mimic right-eye and left-eye views of the same scene. When the viewer looks through the lenses, she superimposes the two flat images into a single virtual image that shows up in nearly three-dimensional relief. The stereoscope is an optical toy designed to demonstrate the principle of binocular depth perception—that two eyes work together to perceive three-dimensional objects—but it was used recreationally simply as a way of viewing photographs that increased their lifelikeness through an effect of spatial mimesis.

Stereoscopic virtual depth is clearly different from a diamond's hall-of-mirrors effect. One simulates three-dimensionality, while the other tricks the eye into seeing unbounded interior space. Nevertheless, stereoscopy's hold on the Victorian imagination came from the fantasy it engaged that the space of an image could open up untold distances in front of the viewer. In an untitled and undated stereograph in the collection of the Victoria & Albert Museum in London (fig. 2.2), the perspectival illusion of depth created by the view of a country path, hedged by the stone gate of a country house on one side and a row of vast branching trees on the other, is accentuated by a female figure seen from behind at the farthest visible reach of the scene. Her white garments are

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[112] While an elaborate tabletop stereoscope that used mirrors was invented by Charles Wheatstone in 1838, before the advent of practicable photography, it was Brewster's simplified, handheld lenticular device that popularized stereoscopy and made the stereoscope an essential drawing room recreation. The even more streamlined stereoscope invented by Oliver Wendell Holmes in 1862 fueled its popularity yet further. Holmes's decision not to patent his device meant that any manufacturer could produce it and allowed more people to own one at a lower cost.

set into relief against the dark opening that surrounds her and into which she is poised to enter. Seen through the stereoscope, the illusion of perspective that the composition creates within the picture plane transforms, bursting into virtual perspective and pulling the eye along the path and *past* the woman into the darkness. The composition of the stereograph seems designed to imaginatively draw the viewer inside the virtual depths, a process symbolized by the woman pedestrian represented as physically moving across the path. At the same time that she figures the work of imaginative projection into virtual space, the woman marks the boundary of optical perception as she gazes into the darkness beyond the image, a space that only she can see. As a virtual image, this stereograph animates the fantasies about virtual depth illusions mobilized by nineteenth century optical technologies: that simply through the act of looking, the viewer can enter the image and become immersed in a complete world. The non-representational depths of diamonds, as we will see later in the chapter, similarly inspired fantasies of foreign encounter with new worlds and alien scenes.
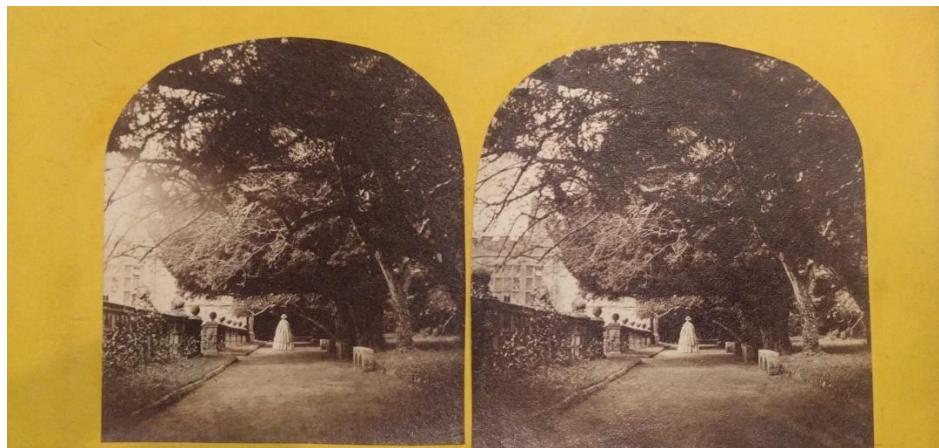
Figure 2.2: View of a Path in the Grounds of a Country House. *Stereograph, late nineteenth century. Courtesy of Victoria and Albert Museum, London.*

Other popular depth illusion technologies mimic the illusion that diamonds are larger on the inside than the outside. The Stanhope Viewer, also sometimes called *bijoux microscopique* or

bijoux optiques, was popularized at the London Exhibition of 1862 by its inventor René Dagron. This device allowed spectators to view microphotographs inside of novelty souvenirs by virtue of a simple one-piece microscope composed of a glass cylinder with rounded lenses on either end. The rather unassuming-looking carved pen in figure 2.3 contains visual "reminiscences of Tunbridge Wells" when its owner peers into the small rounded convex lens at the top of the handle. By closing one eye and squinting with the other, she can engage in virtual sight-seeing. Stanhope Viewers do not create an illusion of three-dimensionality, like stereoscopes, but rather an illusion of panoramic space hidden within a miniature that can expand until it fills the viewer's entire field of vision.

Figure 2.3: Stanhope Viewer Containing "Reminiscences of Tunbridge Wells." The lens is visible at the top of the pen's handle. Courtesy of the Bill Douglas Cinema Museum, University of Exeter.

As is suggested by the French names for this technology, *bijoux microscopique* and *bijoux optiques*, jewelry was a popular form for Stanhope Viewers. Rings were made with glass lenses placed so as to mimic gemstones. Although Stanhope Viewers were usually cheaply made souvenirs, David Brewster speculated in an 1864 essay for *The Photographic Journal* that ornamental diamonds might themselves be constructed as magnifying lenses for

microphotographs.[113] Observers would literally look into their own diamonds to view photographic images. This expensive and impractical proposal reflects Brewster's enthusiasm for the lens-like properties of diamonds, while also demonstrating the significant overlap between the study of diamonds and the creation of optical toys throughout the nineteenth century. For Brewster, the virtuality of the Stanhope image and the diamond were linked and had the potential for mutual enhancement. When combined, they could create new forms of optical illusion.

Diamond's Optical Effects and the Imperial Imagination

Diamonds existed in the Victorian imagination not only as optical devices, but also as optical tools to envision empire. More than any other optical technology or spectacle discussed in this dissertation, diamonds were orientalized and used to uphold and express imperialist discourses of India as magical, primitive, and savage. We saw in Chapter One that Victorian stage magic authorized itself by referencing India and China through racial cross-dressing. *Cranford*'s magician Samuel Brown, an Englishman who dresses up in a turban and false beard, claims that his magic tricks are of oriental provenance. The connection between a diamond's optical effects and Britain's Indian empire was more powerful and more direct. The proliferation of diamonds in Victorian Britain reflects the explosion of European diamond mining in the colonial territories of India, Brazil, Borneo, and Africa throughout the nineteenth century.[114] British diamonds are therefore symptoms of a global marketplace created through European imperial expansion, "portable property," in John Plotz's terms, that make visible networks of imperial and colonial

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[113] David Brewster, "On the Photomicroscope," *The Photographic Journal*, Vol. 8 (January 15, 1864), 441.

[114] Suzanne Daley, *The Empire Inside: Indian Commodities and Victorian Domestic Novels* (Ann Arbor, MI: University of Michigan Press, 2011), 61.

resource extraction and trade.[115] Even after commercial mining in South Africa took off in the late Victorian period, India remained as the privileged site of gemstones in the British imagination.[116] While colonial trade in India in the second half of the nineteenth century focused on more pedestrian raw materials like cotton, diamonds were the imaginary source of British wealth derived from India and, therefore, part of the cultural understanding of colonization itself.[117]

Scholars have approached the imperial significance of diamonds through the lens of the commodity form or thing. For example, Plotz reads diamonds as the embodiment of what he characterizes as a mid-Victorian preoccupation with portability because they defy classification, refusing "to turn either into pure liquidity or pure bearers of sentimental value."[118] Suzanne Daley extends this line of inquiry when she reads diamonds as Indian commodities through the questions they raise about ownership and governance. "Diamonds can invoke England's vexed and vastly complicated relationship to India," she writes, "even as they illuminate class and gender axes of property ownership and ways in which belief systems regarding who is fit to own and administer wealth come to possess the force of law."[119] But, as we have seen, Victorian diamonds were not simply commodity, property or plunder; they were also an optical medium capable of unique virtual effects that were themselves orientalized and seen as bearing meaning about India. Their sparkling and depth were seen as geographically tied to India and geologically formed in Indian mines. If a diamond can be, as Plotz proposes, a "portable metonym for India" in British culture,

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[115] John Plotz, *Portable Property.*
[116] Daley, *Empire Inside,* 62.
[117] For more on British colonial trade with India in the mid-nineteenth century, see Paul Young, "'Carbon, Mere Carbon': The Kohinoor, the Crystal Palace, and the Mission to Make Sense of British India," *Nineteenth-Century Contexts*, Vol. 29, No. 4 (December 2007): 343-358.
[118] Plotz, *Portable Property* 75.
[119] Daley, *Empire Inside,* 67.

we must account for the ways that this metonymic valence was communicated through diamonds' optical effects.[120]

Stefanie Markovits offers a model for the diamond's visual expressivity when she takes it as a master trope of literary form. "Diamonds are, in some ways, *all* form," she writes, "a shape as well as a thing."[121] It is true that the virtuality of diamonds is expressed through form: a diamond's cut was crucial to achieving particular effects, and Victorians were attentive to the relation between a diamond's form and its visual quality. At the same time, what marks out diamonds as distinct from materials like crystal or glass is its optical illusion of light overflowing its own form, radiating outwards while seeming to expand inwards. Like other optical technologies, diamonds are difficult to read outside of the framework of embodied visual experience because they are not reducible to their form: they come alive through a perceptual encounter.

The exhibition of the Koh-i-Noor, or Mountain of Light, at the Crystal Palace for the Great Exhibition of 1851 can offer us a framework for how diamonds participated in the construction of an imperial imaginary through their optical effects. The Koh-i-Noor was arguably the most famous diamond of the nineteenth century, the subject of six hundred years of eastern legend because of its reported size (a staggering 186 carats), the brilliance for which it was named, and its role in the formation of successive eastern empires. Although the earliest record of the diamond came from the memoirs of Babur, the founder of the Mughal Empire, it was the Mughal Empire's Persian conqueror Nader Shah who named it "mountain of light" in 1734. The Koh-i-Noor passed subsequently into the hands of Ahmad Shah Durrani, founder of the Afghan Empire, and Duleep Singh, founder of the Sikh Empire. It remained in the coffers of the Lahore Treasury until the

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[120] Plotz, *Portable Property* 40.
[121] Stefanie Markovits, "Form Things: Looking at Genre through Victorian Diamonds," *Victorian Studies*, Vol. 52, No. 4 (2010), 599.

British East India Company annexed the Punjab at the culmination of the Second Anglo-Sikh War in 1849. The diamond was deeded to Queen Victoria and arrived on British shores in 1850, where it was immediately drafted for display in the Great Exhibition that was to open the following year.

The Koh-i-Noor was one of the most compelling attractions of the Great Exhibition. Shown centrally in the east nave and contained by a large gold bird-cage, it drew massive pleasure-seeking crowds and was buried in a sea of expectant visitors who wanted a glimpse of the legendary gem. Public excitement about the diamond had been skillfully generated by Prince Albert, the royal patron of the Great Exhibition, and the marquis of Dalhousie, the governor-general of India who oversaw the annexation of the Punjab and was single-handedly responsible for the deed of the Koh-i-Noor to Queen Victoria. Together, they commissioned research into the history of the Koh-i-Noor that was then fed to British newspapers. Some of these narratives conflicted, proliferating multiple historical records, and the stories printed in British newspapers often conflated fact with myth. One of the most persistent legends associated with the diamond was the "Hindu superstition" that the diamond was cursed to bring ruin upon its owner. That this was in fact not a Hindu superstition, but a story generated by the British press during their feverish reporting on the Koh-i-Noor, reveals the enormous extent of public fantasizing about the diamond in the months leading up to the exhibition.[122] *The Illustrated London News* described visitors to the exhibition, having paid their one-shilling entrance fee, rushing "convulsively" to the Koh-i-Noor to "stare their very eyes out."[123]

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[122] Danielle C. Kinsey, "Koh-i-Noor: Empire, Diamonds, and the Performance of British Material Culture," *Journal of British Studies*, Vol. 48, No. 2 (April 2009), 400-401.

[123] *Illustrated London News*, Vol. 19 (July 1851), quoted in Paul Young, "'Carbon, Mere Carbon': The Kohinoor, the Crystal Palace, and the Mission to Make Sense of British India," *Nineteenth-Century Contexts*, Vol. 29, No. 4 (December 2007): 353.

In spite of its obvious success as a public attraction, the Koh-i-Noor was in another sense a notorious failure. As dozens of newspapers and magazines reported, echoing the almost palpable discontents of the viewing public, the Koh-i-Noor would not sparkle. Far from the Mountain of Light that viewers were expecting, *Punch* satirized the diamond as a "Mountain of Darkness" wearing "a gloom which nothing could dispel."[124] *The Illustrated Exhibitor*, the illustrated guide to the Great Exhibition, warned that although "the Koh-i-Noor is a great source of attraction for those who visit the Crystal Palace for the first time, it is at least doubtful whether it obtains such admiration afterwards."[125] Other first-person accounts of the Koh-i-Noor, written up in newspapers and magazines, described the visual appearance of the diamond in disparaging terms. According to *Reynold's Miscellany*, the famous diamond had "merely the appearance of a thick piece of glass,"[126] while *Tallis' History* went a step further, calling it "nothing more than an egg-shaped lump of glass."[127] *The Illustrated Exhibitor* accused the Koh-i-Noor of being "only *a very fine specimen of charcoal*."[128]

The Victorian public's disenchantment with the Koh-i-Noor reveals that spectators were evaluating the diamond in optical terms. Commentators demonstrated an awareness of the unique visual effects of diamond by comparing it to glass, a substance with visual similarities to diamond that nevertheless does not share a diamond's capacity to sparkle in the light. The Koh-i-Noor presented as a "thick" "lump," as a mere thing with density and weight. It was a "specimen" rather

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[124] "The Front Row of the Shilling Gallery," *Punch* 5 (July 1851), 11; "The Koh-i-Noor Cut and Come Again," *Punch* 23 (August 1852), 54.

[125] "The Great Eastern Nave," *The Illustrated Exhibitor*, Vol. 1 (June 7, 1851), 19.

[126] "The Koh-i-Noor Diamond," *Reynolds Miscellany of Romance, General, Literature, Science and Art*, Vol. 13, Issue 335 (December 9, 1854), 312.

[127] "Five Shilling Days and One Shilling Days," *Illustrated London News* (July 1851), 102, quoted in Young, "Carbon, Mere Carbon," 354.

[128] "The Great Eastern Nave," 19, 3.

than a performance. The press's analogy between the Koh-i-Noor, a priceless treasure, and common glass was validated by the uncomfortable presence of a glass Koh-i-Noor. The replica was manufactured by the British glassware manufacturer Apsley Pellatt and displayed in the North Gallery, just above the original. By one account, it was "quite rivalling in brilliancy the two-million original downstairs."[129] The Koh-i-Noor failed to live up to what the public understood to be diamond's medium-specific relationship to light. The public expected not only to see an object, but also to see an object that produced an optical performance of virtuality through sparkling depths.

Two material factors influenced the disappointed response of spectators. The first was the unfamiliar Indian cut of the Koh-i-Noor (fig. 2.4). The Koh-i-Noor had last been polished in the sixteenth century as a rose cut, with a rounded oval top and flat bottom. Its 169 facets, like tiny gradations along the surface of the gem, were supposed to emit a soft prismatic light distinct from the kaleidoscopic sparkle of the brilliant cuts more common to Victorian diamonds. Some experts, such as the eminent Victorian gemologist Charles King, argued that it was an "ugly and unskillful" attempt at a rose cut, "a rude hemisphere facetted all over."[130] The circulation of a legend that the Indian lapidary who cut the Koh-i-Noor was executed for his poor performance sought to explain the diamond's unspectacular appearance.[131] The second factor shaping public response to the Koh-i-Noor was not inherent to the diamond itself, but the conditions of its display. The Crystal Palace was so named because it was a glass structure built on the model of a greenhouse, meaning that

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[129] Armstrong, *Victorian Glassworlds*, 230. According to David Brewster, the Koh-i-Noor was actually inferior in color to Pellatt's glass model.

[130] Charles King, *Antique Gems: Their Origin, Use, and Value as Interpreters of Ancient History; and as Illustrative of Ancient Art* (London: John Murray, 1860), 68.

[131] John R. Davis, *The Great Exhibition* (Gloucestershire, UK: Sutton Publishing Limited, 1999), 138.

while its exterior glowed marvelously in the sun, its interior was saturated with light. Displayed in daylight hours inside a cage that did nothing to filter the natural light pouring in from every direction, the Koh-i-Noor appeared heavy and bleached. Under such conditions, it was simply incapable of sparkling.

THE KOH-I-NOOR, OR MOUNTAIN OF LIGHT, IN ITS ORIGINAL SETTING.
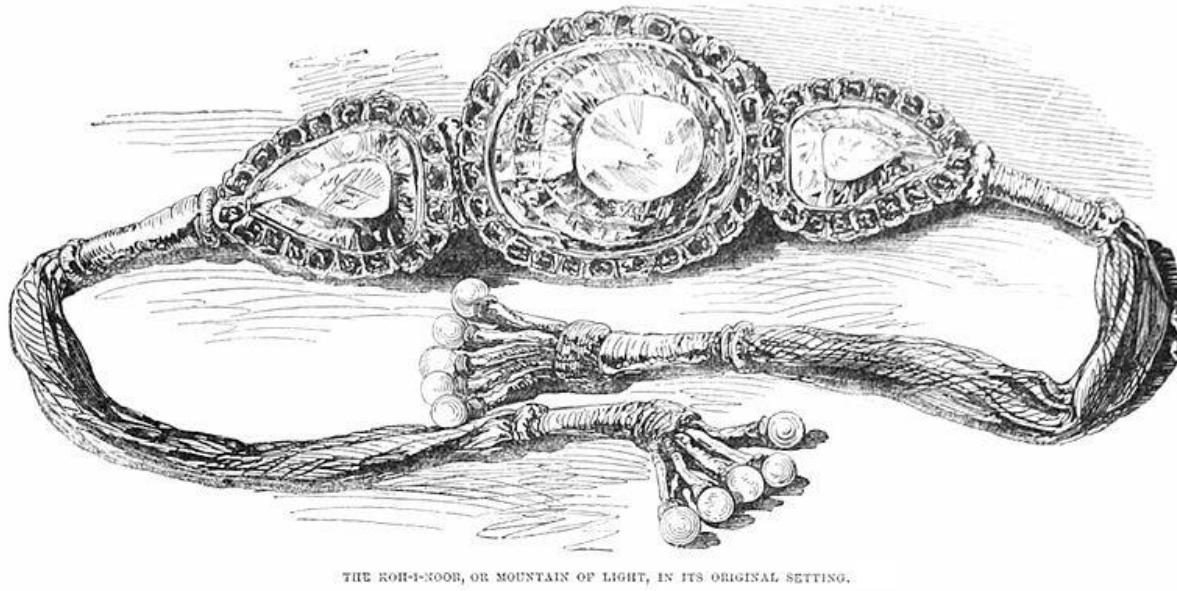
Figure 2.4: "The Koh-i-Noor, or Mountain of Light, in its Original Setting." The Koh-i-Noor is the central diamond in the bracelet. The Crystal Palace and its Contents: An Illustrated Cyclopedia of the Great Exhibition of 1851 *(November 1851).*

This thoughtlessness about the lighting conditions that would best suit the Koh-i-Noor reveals the misalignment between how exhibition organizers and patrons perceived the value of the diamond as a public display. While viewers expected to see an optical medium that would animate light in visually exciting ways, the exhibition presented the Koh-i-Noor instead as an artifact of, and synecdoche for, British imperial conquest. The Koh-i-Noor's value as a material symbol of British Empire had been painstakingly constructed by the marquis of Dalhousie from the moment it fell into the East India Company's possession. As governor-general, Dalhousie had supported the East India Company's army in the Second Anglo-Sikh War of 1848-1849 and

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overseen the annexation of the Punjab region to the British Empire. While the seizure of territory meant that the Lahore Treasury, "a vast collection of precious metal and gemstone artefacts," fell to the British, Dalhousie was aware of the Koh-i-Noor's singular symbolic power as a token of imperial might.[132] Because of its distinguished provenance in the treasuries of powerful emperors, the Koh-i-Noor was shadowed by a superstition that its owner would possess sovereignty over the Indian subcontinent.[133] Dalhousie decided that this symbol of imperial sovereignty could be harnessed to uphold the integrity and power of the growing British empire, and therefore took "extraordinary measures" to retain the Koh-i-Noor from the category of war booty seized by the East India Company by sending it to England to become the special property of the queen.[134] For Dalhousie, the Koh-i-Noor was a symbol of conquest articulated through its artifactuality—in his own words, a "historical memorial of conquest" that would "shine, and shine, too, with the purest ray serene" in "its final and fitting resting place in the crown of Britain."[135]

Clearly, Dalhousie was most interested in the Koh-i-Noor shining *metaphorically*. For him and for Prince Albert, the public display of the diamond would function similarly as commemoration of conquest and symbol of British imperial sovereignty over India. The layout of the exhibition complicated this message, however, through its ambivalent placement of the diamond. While technically part of the British pavilion, it was positioned immediately outside the Indian court and framed by exhibition writers "as the single object in the Crystal Palace that most

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[132] Kinsey, "Koh-i-Noor," 393.

[133] Cecil Davenport, *English Regalia* (London: Kegan Paul, Trench, Trübner and Company, 1897), 59.

[134] Kinsey, "Koh-i-Noor," 393-394. This decision was later contested by the East India Company, which believed the ownership of the Koh-i-Noor rested properly with the EIC along with the rest of the contents of the Lahore Treasury. This was only the beginning of disputes over ownership of the Koh-i-Noor, which India and Pakistan both continue to lay claim to today.

[135] Kinsey, 396.

intensely represented India itself."[136] In 1849, John Forbes Royle, credited with organizing the Indian exhibit, even described India not as the "jewel in the crown" of the British Empire, but the "Koh-i-Noor of the British Crown."[137] The Great Exhibition thus both extended and troubled the symbolic values Dalhousie wanted to assign the diamond, featuring it not just as a representation of British conquest, but also of the mystery of India, and by extension, of Britain's imperial authority over India. The public, meanwhile, was more interested in the question of whether the diamond could literally shine than in its role in the geopolitical history of the British Empire.

In the gap between Dalhousie's vision and the disappointment of patrons, another construction of the Koh-i-Noor emerges: one in which its optical effects, and not its history, expresses an imperial imaginary. The Koh-i-Noor's display at the Exhibition unleashed fantasies of large diamonds that could produce a virtual encounter with empire. Another way to describe this is to say that while Victorian diamonds like the Koh-i-Noor were understood as optical media, they also became what media archaeologists call "imaginary media." Imaginary media can be what Siegfried Zielinski calls "conceptual media": only ever sketched as models or drafted as ideas but never realized.[138] However, as Eric Kluitenberg has written, they can also be realized media technologies to which hypothetical, purely discursive or technologically impossible effects are attributed.[139] For example, the telephone is imbricated in a cultural imaginary that suggests it has

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[136]Lara Kriegel, "Narrating the Subcontinent," in *The Great Exhibition of 1851: New Interdisciplinary Essays*, ed. Louise Purbick (Manchester: University of Manchester Press, 2001), 166.

[137] Kriegel, 166.

[138] Siegfried Zielinski, "Modeling Media for Ignatius Loyola: A Case Study on Athanasius Kircher's World of Apparatus between the Imaginary and the Real," in *The Book of Imaginary Media*, ed. Eric Kluitenberg (Rotterdam: NAi Publishers, 2006), 30.

[139] Eric Kluitenberg, "On the Archaeology of Imaginary Media," in *Media Archaeology: Approaches, Applications, and Implications*, ed. Erkki Huhtamo and Jussi Parikka (Berkeley, University of California Press, 2011), 61-63.

the technological capacity to create "(tele-)presence over great distances," or, in the words of a Samsung ad, to allow the consumer to be "in two places at once!"[140] In the case both of conceptual media and realized media that have imaginary effects, the study of imaginary media recognizes that "the expectations contained in [media] imaginaries far exceed" the actual technological capacities of media machines.[141] I argue that the Great Exhibition turned the Koh-i-Noor into an imaginary medium for the virtual perception of empire, a medium that seemed to combine the capacities of existing optical technologies like the magic lantern and the diorama to make imperial sights and scenes virtually present for a British viewer.

The sense of the diamond as an imaginary imperial medium that emerged in the reception of the Koh-i-Noor's exhibition at the Crystal Palace was more robustly explored in "The Diamond Lens," a short story published in 1859 by the Irish-American writer Fitz-James O'Brien. Born in County Cork, O'Brien moved to London in 1849 before settling in New York, where he would spend the rest of his life. In the intervening years, he worked as an editor and sometime contributor to the *Parlour Magazine of the Literature of All Nations*, a magazine devoted to the Great Exhibition that appeared in weekly numbers from May to December of 1851.[142] O'Brien would therefore have been intimately familiar with the collections on display at the Crystal Palace. "The Diamond Lens," published in *The Atlantic* in 1859, is a feverish scientific romance haunted by the specter of the Koh-i-Noor and the discourses surrounding its capacity to symbolize Britain's Indian empire. The story analogizes the modern European history of colonization and empire through the metaphor of optical perception achieved by looking through a diamond.

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[140] Kluitenberg, "On the Archaeology of Imaginary Media," 62.
[141] Kluitenberg, 48.
[142] Francis Wolle, "Fitz-James O'Brien in Ireland and England, 1828-1851," *American* Literature 14, no. 3 (November 1942), 244.

Linley, the protagonist and narrator of "The Diamond Lens," is consumed by his obsession with creating the world's most powerful microscope. He consults a spirit medium through whom he communicates with the spirit of Leeuwenhoek, the father of microscopy, who instructs him to use as a lens "a diamond of one hundred and forty carats."[143] After he discovers his neighbor to be in possession of precisely such a gem, a "vast rose-diamond" comparable to those "in the regalia of Eastern or European monarchs," but stolen from the mines of Brazil, Linley steals it to construct his apparatus.[144] His first use of the microscope is to peer into a single drop of water, and the magnifying power of the diamond lens is so strong that he discovers inside an entire world. Within this world, he perceives an animalcule he genders female and falls in love with. O'Brien imagines the diamond as an analog to the spirit medium—a magical medium through which a spectator can discover mysterious and hitherto unknown lands. Named "The Eye of Morning," in a reference to Indian diamonds like the Mountain of Light, Linley's diamond is in fact a prosthetic eye that extends human vision. Its refractive capacities make it visually spectacular to behold as a medium for light, which "seemed to pulsate in its crystalline chambers" as it "shivered" the "mild lamplight…into a thousand prismatic arrows." [145] O'Brien imagines that the diamond's virtual depths and sparkle also make it a medium for perception. This diamond is not simply something to see, but something to see with.

"The Diamond Lens" not only treats diamond as an optical medium, but as a kind of imperial medium. The diamond is of course a product of empire, but more significantly, the diamond's technological use as a lens analogizes ocular discovery as territorial conquest. Linley

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[143] Fitz-James O'Brien, *The Diamond Lens and Other Stories* (London: Hesperus Press Limited, 2012), 15.
[144] O'Brien, 19, 16.
[145] O'Brien, 19.

imagines himself as an "Alexander" on the precipice of new worlds to be conquered. It is no coincidence that what Linley discovers inside the diamond is an impossibly lush territory fertile in natural resources ripe for extraction. He encounters an "illimitable distance" of "prismatic forests" and "vast auroral copses" filled with "gauzy, colored veils" and "many-colored drooping silken pennons;" a "luminous ocean;" and "brilliant ether" tinged with purple, gold, and opaline. The words "prismatic", "auroral," "luminous," and "brilliant" echo the original description of The Eye of Morning, and O'Brien implies that Linley is not seeing inside the drop of water at all, but instead seeing the diamond lens refracting the light from his lamp. Even his precious Animula, the animalcule with whom he falls in love, moves "like a flash of light."[146] O'Brien captures the imaginary discourses of the Koh-i-Noor as medium emerging from its display at the Great Exhibition. He invents a diamond that truly operates as an optical medium for visualizing otherwise imperceptible colonial and imperial lands. Importantly, O'Brien goes further by implying that Linley, like exhibition patrons, has projected mystical powers of perception onto the distinct visual effects of the diamond. Sparkling, "magical luminousness," and the virtual depth that turns the diamond into "a vast space, the limits of which extended beyond my vision… a broad sea of light," helps him imagine a world within the drop of water.[147]

After the Great Exhibition closed in December of 1851, Prince Albert sought the consent of Parliament to have the Koh-i-Noor re-cut into an ornamental gem using modern, mechanical cutting techniques. The re-cutting was a major technological event. A steam engine was commissioned from the firm of Maudsley, Sons, and Field, manufacturers who had won a prize at the Great Exhibition for their coin pressing machine, and the cutting itself was performed by

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[146] O'Brien, 27.
[147] O'Brien, 24, 26.

Coster's of Amsterdam, one of the largest and most famous Dutch diamond merchants. The process lasted a harrowing 38 days, during which time the diamond lost nearly half its weight to become a stunning oval brilliant. Like Dalhousie's acquisition of the diamond for Victoria, the re-cutting was a piece of political theater. The large and ungainly diamond was "rationalized" by British science and technology in an allegory of the incorporation of India into the British Empire and its civilizing mission, and it was positioned as a colonial raw material to be transformed through British industrial technological prowess into a valuable British commodity.[148] Although they were similar political events, the acquisition of the Koh-i-Noor and its re-cutting reflected different imaginaries of empire. By having the diamond re-cut into a more suitable shape, Albert showed an awareness of the public's desire for the diamond to function as an optical technology. The re-cut diamond was no longer an artefact of India, but a product of British manufacture and design, one that promised to symbolize and communicate empire through its visual effects.

By the end of the decade, empire itself had transformed with the formation of the Raj. The era of audacious land grabs executed by the East India Company under Dalhousie had ended with the Sepoy Rebellion of 1857-1858, a popular Indian uprising that threatened the economic power and territorial integrity of British India. The Koh-i-Noor was the most powerful symbol of England's unbridled territorial annexation and willful erasure of Indian culture during the decade leading to the Sepoy Rebellion. By 1860, the renowned gemologist Charles King proposed that the cursed diamond itself was responsible for the uprising. "Lord Dalhousie presented [the Koh-i-Noor] to the Queen in 1849," King wrote, and "within ten years the usual consequences of its possession were manifested in the Sepoy revolt, and the all but total loss of India to the British crown, in which beams its malignant lustre, lighting up a very inauspicious future for that

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[148] Kinsey, 412.

region…"[149] King's vision of the Koh-i-Noor shining in the British crown with a "malignant lustre" is far from the "purest ray serene" with which Dalhousie hoped it would shine. King's history of the Koh-i-Noor registers a tonal shift from the optimism about the future of empire that infused Dalhousie's writings to the panic, fear, and dread of a post-Rebellion Britain.

King also introduces a new element into the modern history of the Koh-i-Noor by imagining that the luster of the diamond possesses powers of its own. King's Koh-i-Noor has a dark magic contained within its brilliant glow that both "light[s] up" the history and future of British India and has the power to act within that history. The diamond's "lustre," which is to say its distinct optical and visual effects, becomes the expression of its mythic curse. At the same time, King's explanation of the Sepoy Rebellion as a consequence of the curse expresses, through deliberate mystification, a historical causality that links the theft of the diamond through conquest to the ensuing revolt. King was widely read by his contemporaries, including Wilkie Collins, who conducted extensive research into diamonds to invent the fictional diamond at the center of *The Moonstone*.[150] As we will see in the following section, Collins's Moonstone expands on post-Rebellion discourses of the Koh-i-Noor's nefarious agency by imagining that the sparkling and virtual depth of the diamond is a kind of Indian magic capable of perceptual manipulation and control.

Virtual Empire in *The Moonstone*

In his 1868 preface to the first edition of *The Moonstone*, Wilkie Collins acknowledged that his tale was

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[149] Charles King, 68n.
[150] Mark M. Hennelly, Jr., "Detecting Collins' Diamond: From Serpenstone to Moonstone," *Nineteenth-Century Fiction*, Vol. 39, No. 1 (June 1984), 29.

founded, in some important particulars, on the stories of two of the royal diamonds of Europe. The magnificent stone which adorns the top of the Russian Imperial Sceptre, was once the eye of an Indian idol. The famous Koh-i-Noor is also supposed to have been one of the sacred gems of India; and, more than this, to have been the subject of a prediction, which prophesied certain misfortune to the persons who should divert it from its ancient uses. (xxiv)

Both the Koh-i-Noor and the Orlov diamond were legendary Indian gems that, in the eighteenth and nineteenth centuries, became part of the crown jewels of European empires and the accoutrements of their most famous empresses. While Queen Victoria alternatively wore the Koh-i-Noor as a brooch and in the front cross of her Regal Circlet, the Orlov diamond was placed atop Catherine the Great's Imperial Scepter.[151] As these prefatory remarks suggest, Collins alludes to the Orlov and Koh-i-Noor diamonds through various sensational plot points of his novel. His fictional Moonstone was "set in the forehead of the four-handed Indian god who typifies the moon" (3), part of a sacred Hindu shrine. It is commanded by the god Vishnu to be watched and preserved by three Brahmin priests and cursed with "certain disaster to befall the presumptuous mortal who laid hands on the sacred gem" (4). This backstory fuses the legend of the Orlov Diamond's sacred origins with that of the Koh-i-Noor's curse, a choice that reflects what Paul Young calls the "narrative exuberance" of famous diamonds as well as the Victorian associations between diamonds and the genre of historical romance.[152] Edwin Streeter's 1882 volume *The Great Diamonds of the World: Their History and Romance* begins by proposing that diamonds represent the collapse of history and romance into one another: "fable" and "Oriental fancy" are nearly

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[151] Anna Keay, *The Crown Jewels: The Official Illustrated History* (London: Thames & Hudson, 2012), 141. Victoria was not formally named Empress of India until 1876, but she presided over the British Raj from its founding in 1858. While the Koh-i-Noor was viewed as a symbol of her imperial power, she preferred to wear it as a personal jewel. In 1902, it was set in the crown of Queen Alexandra, consort to Edward VII, a choice that both reflected the diamond's importance as a symbol of British Empire and its legendary curse upon male rulers.

[152] Young, "Carbon, Mere Carbon,"348.

inextricable from fact.[153] By making his allusions to the Orlov and Koh-i-Noor diamonds explicit in his preface, Collins is also making explicit certain genre expectations. *The Moonstone* will be a story of an Indian diamond in Britain that harnesses the thrills of diamond's "romance"—its association with magic, curses, and other fables—to a "history" of its movements.

The novel fulfills these expectations through its elaborate mystery plot. The Moonstone, we learn in the prologue, is a legendary Indian diamond violently plundered by a British soldier named Herncastle during the Storming of Seringapatam in 1799. In the opening chapters, which take place nearly fifty years later, Herncastle has died and bequeathed the gem to his niece Rachel Verinder on the occasion of her eighteenth birthday. Rachel's cousin and suitor, Franklin Blake, is tasked with bringing the diamond to the party at the Verinder country house in West Yorkshire, where he is followed by three mysterious Indians—high-caste Brahmins posing as itinerant magicians who are tasked with following and attempting to take back this sacred Hindu gem. The diamond goes missing the night of Rachel's party and all the guests and servants, as well as the three Indians, are suspects. Sargent Cuff, the Scotland Yard detective charged with solving the case, concludes that Rachel herself has pocketed the diamond with the likely plan to sell it to pay secret debts. In spite of the ample evidence stacked against Rachel, including her suspicious and secretive behavior, Lady Verinder and Franklin Blake refuse to believe Cuff's evidence, and dismiss him from the case.

The true solution to the mystery, which is slowly uncovered over the next three hundred pages, is deliciously complicated and beyond the imagining even of the talented Sergeant Cuff. Rachel, we later find out, saw Franklin take the diamond from her bedroom "with my own eyes"

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[153] Edwin Streeter, *The Great Diamonds of the World: Their History and Romance* (London: G. Bell and Sons, 1882), ix.

(352), an accusation that Franklin has no memory of. Improbably, both Rachel and Franklin are telling the truth here. Franklin did take the diamond, but while sleepwalking under the influence of laudanum poured secretly into his drink by the doctor Mr. Candy the night of Rachel's party. Franklin was acting unconsciously out of fear of the danger posed to Rachel by the Moonstone's Indian guardians. While still asleep, he asks Godfrey Ablewhite, the slick and hypocritical Christian philanthropist, to deposit it with the bank; instead, Godfrey steals the diamond with the intention of having it re-cut into more valuable stones to pay off his gambling debts. The final pages of the novel reveal that the Brahmin guards have murdered Ablewhite, recaptured the diamond, and returned it to the city of Somnauth, where it is restored to its original place in the statue of the Hindu deity. The story of the Moonstone, like the biographies of famous diamonds such as the Koh-i-Noor, unites history with exoticized eastern magic and supernatural belief.

Collins's prefatory remarks on *The Moonstone*'s relationship to the histories of famous Indian diamonds, and the way it is borne out in his plot, seems like a clear example of Stephanie Markovits's argument that Victorian literary diamonds figure moments of heightened self-reflexivity about genre and form.[154] The novel is composed in the style Collins first developed a decade earlier in *The Woman in White*, out of "manuscripts" written by a variety of characters. "The idea is that we should all write the story of the Moonstone in turn," Franklin explains to the steward Gabriel Betteredge, the most frequent narrator, "as far as our own experience extends, and no farther" (12). In this context, the hypertextual form of the novel suggests a formal recreation of the diamond. The novel is faceted and emanates mystery and grandeur. The eight narratives that

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[154] Markovits, "Form Things," 595.

compose the novel's "second period," in which the truth about the diamond's loss is uncovered, even mimics a diamond's octahedral structure.[155]

I want to propose that *The Moonstone* is working self-reflexively within an additional set of discourses about diamonds: diamonds as optical media through which British subjects virtually encounter imperial India. I argue that the novel plays with and expands on the imperial media imaginary developed through the Koh-i-Noor in the early 1850s. Collins's Moonstone re-invents the Koh-i-Noor as an imaginary medium capable of creating an encounter with India through its effects on consciousness and perception. As we will see, the diamond is connected to two other modes of altered perception in the novel, both of which are also connected to India. First, it is prefigured by the clairvoyance of the three Brahmins, which is achieved with the use of mysterious "black ink" of presumably Indian origin. Second, it is echoed in Franklin Blake's hypnotic somnambulism, the effect of his unconsciously taking laudanum, another kind of inky substance that comes from opium. Like Charles King's description of the Koh-i-Noor's "malignant lustre," Collins's Moonstone embodies through its hypnotic visuality the racialized threat of barbarism and violence that dominated British representations of India in the decade following the Sepoy Rebellion of 1857. At the same time, it fulfills the fantasy of the diamond as a virtual medium that emerged from the display of the Koh-i-Noor at the Great Exhibition. In the Moonstone, Collins creates a diamond that can facilitate a virtual encounter with India through its visual effects.

Before we can understand the force of Collins's characterization of the Moonstone diamond, it is helpful to understand how the novel is engaged with the true history of the Koh-i-Noor in England. For *The Moonstone* is not merely founded on some "particulars" of the story of the Koh-i-Noor. Rather, the novel self-consciously reimagines the history of the Koh-i-Noor's

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[155] Markovits, 605.

acquisition, exhibition, and technological transformation by the British crown.[156] While the Koh-i-Noor was plundered by the British during the conquest of the Punjab, Collins sets the theft of the Moonstone diamond during another decisive moment in the violent consolidation of the British Empire: the Storming of Seringapatam in 1799. This was the final battle of the fourth and final Anglo-Mysore War that saw the Kingdom of Mysore fall to the East India Company and established England as the major colonial power in India. Although the Moonstone originates as part of Hindu religious practice, like the Koh-i-Noor, it has fallen into the hands of Tipu Sultan, Mysore's Muslim ruler, who sets it in the handle of a dagger. Collins's choice of setting capitalizes on the romantic status of the Storming of Seringapatam in the British imagination. The death of Tipu, at the culmination of the battle, was widely written about and the subject of many paintings, including one by Collins's godfather and namesake Sir David Wilkie, that depicts the British General Baird presiding commandingly over the fallen body of Tipu.[157] Collins seems to place Herncastle's plunder of the Moonstone in the background of the memorable scene depicted in Wilkie's painting—"at dusk, when the place was ours, and after General Baird himself had found the dead body of Tippoo under a heap of the slain" (6).

At the same time, by choosing events that took place almost exactly sixty years before the publication of the novel, Collins is operating within the framework of nineteenth-century historical fiction pioneered by Walter Scott in *Waverly, or, 'Tis Sixty Years Hence*, and later championed by

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[156] In this respect, I agree with John R. Reed, who argues that "Collins consciously constructed his novel in relationship to a pattern of historical events" that include the Anglo-Sikh War of 1848-1849 and the presentation of the Koh-i-Noor to Queen Victoria in 1850. John R. Reed, "English Imperialism and the Unacknowledged Crime of *The Moonstone*," *Clio* Vol. 2, No. 3 (June 1973): 281-290.

[157] Daley, *The Empire Inside,* 62-63. By placing the Moonstone diamond in the hilt of a dagger, Collins may also have been thinking of the sword of Tipu Sultan, which was seized by the British army as a battle trophy after the conquest of Seringapatam.

George Eliot. In novels like *Felix Holt, the Radical,* and *Middlemarch*, Eliot addressed issues of franchise reform and political representation vital to her present-day context of the late 1860s and early 1870s by displacing them onto the political climate surrounding the First Reform Act of 1832. Collins takes a similar approach, setting his novel in an earlier moment of empire in order to address the geopolitics of empire in the 1850s and 1860s. His choice to set the plunder of the Moonstone during the Storming of the Seringapatam not only conjures sights and scenes vividly portrayed in other imperial media, but simultaneously effects a double displacement of the history of the Koh-i-Noor's acquisition by the British. The conquest of the Punjab is displaced onto the conquest of Mysore that paved the way for such expansion fifty years earlier, while the theft of the Koh-i-Noor by the British East India Company in the name of the crown is displaced onto the individual mercenary Herncastle.

Figure 2.5: Franz Xaver Winterhalter, Queen Victoria, *1856. Oil on canvas, 88.8 x 73.1 cm. Royal Collection Trust. This portrait shows Victoria wearing the Koh-i-Noor "as a brooch in the bosom" of her dress.*

The rest of the novel is set during the period of 1848-1849, the years of the Second Anglo-Sikh War, a choice that makes explicit the connection established in the prologue between the conquests of Seringapatam and the Punjab. The epilogue ends with a short statement from Mr. Murthwaite, the celebrated Indian traveler and guest at Rachel Verinder's birthday, who watches from a distance as the Moonstone is returned by the three Brahmins to its sacred shrine in Somnauth. The year is 1850, the same year that the Koh-i-Noor diamond was presented to Queen Victoria at St. James Palace. Throughout the novel, the mystery of the diamond's disappearance is shadowed by the legal and moral question of to whom it rightfully belongs, questions through which Collins explores the morality of empire. It is significant, then, that the main suspects when the diamond is first stolen are the Indians—its original owners—and Rachel, who is described as "queen for the day" on her birthday and who, like Queen Victoria, comes into possession of an Indian diamond through a dubious and contested deed and as the result of violent plunder. Collins reinforces this connection by having Rachel wear the Moonstone "as a brooch in the bosom of her white dress" (70), clearly mirroring Queen Victoria. Victoria, who wore the Koh-i-Noor as a brooch, was painted with it pinned to her bodice in 1856 (fig. 2.5). The placement of the diamond emphasizes the low, draping neckline of her dress.

What we have seen is that *The Moonstone*'s inheritance and mystery plot re-imagines Britain's theft of the Koh-i-Noor, and in doing so, provides a framework for Collins's exploration of British empire. Having established the relationship between the novel and the history of the Koh-i-Noor, let us turn to the novel's representation of the diamond itself. While numerous readings of *The Moonstone* have noted how the Moonstone diamond registers an imperial and orientalist imagination of India as sublime and savage, these readings tend to overlook the question

of why this imaginary is constructed through a diamond in particular.[158] What does the diamond's status as a visual wonder offer this imaginary? As we will see, *The Moonstone* does not simply explore the geopolitics of empire by referencing the Koh-i-Noor's acquisition by the British, but more importantly, it participates in and expands on the popular imagination of diamonds as orientalist optical media that emerged out of its display at the Great Exhibition. The way the Moonstone diamond looks, and what it feels like to look at it, are central to the progress of the narrative. Unlike the Koh-i-Noor, the Moonstone really is a mountain of light: its "stream[ing]" light is "like the light of the harvest moon… unfathomable as the heavens themselves" (67). Its visuality is almost hypnotic and has the power to transfix and possess those who look upon it. Collins's diamond embodies the fantasy of spectators at the Great Exhibition who do not want to view the Koh-i-Noor as a piece of imperial history, but as an orientalist spectacle, and captures the desire for an experience of India made visible and perceptible through the diamond's optical effects. Through the diamond, the novel explores the Victorian experience of empire as an imaginary composed of virtual perceptions and sensations.

It is significant that the only extended visual description of the Moonstone diamond in the novel foregrounds its reflection and refraction of light. As we saw earlier in the chapter, mid-nineteenth-century spectators would have related the virtual effects of diamonds to other optical toys like stereoscopes and Stanhope Viewers that offered variations on the diamond's optical illusion of depth. Betteredge's account of looking into a "yellow deep that drew your eyes into it so that they saw nothing else" echoes contemporary accounts of optical spectatorship that

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[158] See Ian Duncan, "*The Moonstone*, the Victorian Novel and Imperial Panic," *Modern Language Quarterly* 55, No. 3 (September 1994) and Mark M. Hennelly, Jr., "Detecting Collins' Diamond: From Serpentstone to Moonstone," *Nineteenth-Century Fiction*, Vol. 39, No. 1 (June 1984): 25-47.

emphasize the virtual depths and sense of spatial immersion created by optical devices. One writer for *The National Magazine* in 1856 described the experience of spatial immersion created by the panorama as a sudden "expansion" of the painted images. "The same picture that a few seconds earlier was nothing but a dim opaque, hanging almost within reach of the hand," the writer explains, "is now a scene of boundless expanse, filled with light and animation."[159] Much like for the spectator at a panorama, the diamond begins for Betteredge as a mere glimmer and quickly expands to claim his entire field of vision, submerging him in unbounded visual experience so that he can see "nothing else." An object held in the hand becomes a "yellow deep," a virtual depth.

Through this optical relation between the miniature apparatus and its visual effects of sublime, unbounded distance, Collins expands on imperial discourses of the Koh-i-Noor as an optical miniaturization of India. For Lara Kriegel, the presentation of the Koh-i-Noor at the Great Exhibition was part of a broader practice of "miniaturizing the "vast" subcontinent for the purposes of entertainment, consumption and rule at midcentury."[160] The Indian Courts at the Great Exhibition boasted detailed ethnographic models of colonial scenes in miniature that included hundreds of human figures, and optical entertainments like dioramas and magic lantern shows made colonial sights and scenes familiar to British viewers.[161] Lauded for its size, the Koh-i-Noor was in reality a tiny object onto which fantasies of the vastness of India were projected. Replicas of the Koh-i-Noor were even sold at the Crystal Palace as souvenirs, and one writer, in a letter published in the Christmas 1851 edition of *The Illustrated London News*, promised his wife that "I shall bring you home the koh-i-noor in glass."[162] In describing the Moonstone diamond, Collins

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[159] "How to See Pictures," *The National Magazine*, Vol. 1, No. 1 (November 1856), 23.
[160] Kriegel, 168.
[161] Kriegel, 168.
[162] Kriegel, 168.

connects these discourses of miniaturization and containment in the display of the Koh-i-Noor to the particular optical effects of diamonds. The Moonstone, a "yellow deep" inside a faceted lens, is rendered as an optical souvenir of India that makes India virtually visible and perceptible through an illusion of virtual depth.

Rachel and her party certainly receive the diamond as though it is an optical toy. When Betteredge enters the drawing room after Franklin has given Rachel the diamond, he beholds a scenic tableau. Rachel "stood…like a person fascinated" with the diamond in her hand, while two female guests on either side of her "[devour] the jewel with their eyes… every time it flashed on them a new light," and Ablewhite "[claps] his hands like a large child" in amazement (66). This is a tableau of optical spectatorship, like *Cranford*'s magic show scene that focuses not on the tricks but the spectrum of skeptical and credulous reactions from the audience, freezing in time a multivalent moment of encounter with an optical illusion. However, like an optical toy, the Moonstone is not only for looking at but also for playing with. When Rachel holds it up "in a ray of sunlight" from the window, the diamond becomes a prismatic lens (67). The Moonstone also absorbs light: the party "set[s] it in the sun, and then shut[s] the light out of the room" so that "it shone awfully out of the depths of its own darkness" (67). Its phosphorescent sparkling reveals its kinship with the moon (which also borrows sunlight to shine in the dark) and foregrounds a mode of visual spectatorship based in interactive play. Like a kaleidoscope, magic lantern, or stereoscope, all of which were displayed and played with in Victorian drawing rooms, the Moonstone becomes a kind of optical pre-dinner entertainment that gives virtual views of India.

The diamond's promise to make India virtually present in Britain more specifically recalls the proliferation of stereoscopic views of British colonies and imperial outposts in the late nineteenth century. Photographic studios like Negretti and Zambra, Underwood & Underwood and

Keystone Views Company commissioned photographers to travel the globe taking stereoscopic views. For example, in the 1850s and 1860s, Negretti and Zambra sponsored photographic expeditions to Egypt, Ethiopia, China, and Siam, among other locations in Africa and South Asia, and was responsible for publishing some of the first commercial photographs of those countries for view through the stereoscope. Stereoscopy became an important medium for what Alison Byerly has called the Victorian preoccupation with "virtual travel" or "armchair travel."[163] For example, Underwood & Underwood marketed its series of stereographs as "Underwood Stereoscopic Tours" or the "Underwood Travel System" that could transport viewers to diverse locations with stereographs "arranged in the order in which a tourist might visit the actual scenes."[164] It also published a series of virtual travel guides, including the American travel photographer James Ricalton's 1900 volume *India Through the Stereoscope: A Journey through Hindustan*. Meant to accompany a series of stereoscopic views, the book guides readers in their "journey over this mystic wonderland" by providing maps and explanatory text for each image.[165] Stereographs were another kind of miniature that allowed viewers to realize India as an optical illusion within the safe confines of the home.

The stereoscope was not the only optical technology that allowed virtual travel to India. Small panoramic magic lantern slides, designed for use in toy lanterns created for children, often featured ethnographic and travel images of India. In the late nineteenth century, W. Butcher and Sons' Primus trademark released "A Tour Round the World," including a panoramic slide of "a native village…terrorized by the [visit] of a man-eating tiger" and rescued by "the nearest

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[163] Alison Byerly, *Are We There Yet?: Virtual Travel and Victorian Realism* (Ann Arbor, MI: The University of Michigan Press, 2013), 25-28.
[164] "Underwood Stereoscopic Tours," in James Ricalton, *India Through the Stereoscope: A Journey Through Hindustan* (New York: Underwood & Underwood, 1900), 384-387.
[165] Ricalton, *India Through the Stereoscope*, 15.

Europeans."[166] Public spectacles also harnessed optical technology to transport audiences to India. In 1876, Egyptian Hall in London advertised "Hamilton's Grand Moving Diorama of New Overland Route to India," which promised to illustrate "a journey of nearly 10,000 miles" beginning at Charing Cross Station.[167] In 1878, a diorama at the Horns Assembly Room, also in London, advertised "thousands of miles of oriental scenery" of "Our Indian Empire."[168] Optical representations like these were essential to making British India "ours" for Victorian subjects, instilling a sense of ownership expressed through the spectatorial gaze.

In other words, Collins centers his novel's imaginary of India on an optical illusion at a moment when India was frequently represented as an optical illusion. His Moonstone diamond must be understood as part of a broader cultural construction of India through optical technology in mid-nineteenth-century and late-nineteenth-century Britain. The virtual representation of India through stereoscopes and dioramas served the ambition to create views of India that were pictorially and perceptually realistic, while also registering the virtuality of India in everyday British life—its status as something between a possession that belonged to British subjects and an intangible, dreamlike reality. Optical technology made India visible, but it also expressed India as a vision: hallucinatory, strangely vivid, and conjured through the focusing of the eyes (in the case of stereographs) or the shifting of the light (in the case of dioramas). While technologies like the stereoscope brought the outside world into the privacy of the Victorian parlor, as Erkki Huhtamo

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[166] "Primus Magic Lantern Slides: Series VIII – A Tour Round the World," lecture reading, Bill Douglas Cinema Museum at the University of Exeter, no. 64412.

[167] "Hamilton's Grand Moving Diorama of New Overland Route to India, 1876," poster, Evanion Collection, British Library, Evan. 2829.

[168] "Horns Assembly Room, Kennington, 1878," poster, Evanion Collection, British Library, Evan. 1000.

has argued, they also enabled a perceptual interiorization of the outside world.[169] The Victorian fascination with armchair travel can be understood not simply as a desire to domesticate the foreign, but as a desire to interiorize the external world as a set of perceptual or sensory phenomena. The Moonstone diamond's reorganization of vision and perception speaks to the way optical technological representations of India communicated and shaped India's already virtual status in the Victorian imagination. Like India in the British imagination, the diamond is both a material possession and an immaterial vision.

If the rendering of the Moonstone as a "yellow deep" imagines it through mid-nineteenth century optical technologies and modes of optical spectatorship, it blends these with an orientalist imagination. "Yellow" is a descriptor used by eighteenth-century and nineteenth-century race science for Asian peoples, while "deep" references what Edward Said terms "the distant Oriental deep," or India as a land of mystery and inscrutable wisdom that the white European seeks to uncover.[170] The experience of looking into this "yellow deep" is appropriately hypnotic, transfixing spectators as though they were apprehending "the distant Oriental deep" itself and the immanence of its mysteries. The experience of gazing into the diamond is even mirrored by the clairvoyant magic performed by the Brahmins and their assistant, a small English boy, in their attempt to recover the diamond.

> …the Indian took a bottle from his bosom, and poured out of it some black stuff, like ink, into the palm of the boy's hand. The Indian—first touching the boy's head, and making signs over it in the air—then said, "Look." The boy became quite stiff, and stood like a statue, looking into the ink in the hollow of his hand.
> […] The chief of the Indians said these words to the boy: "See the English gentleman from foreign parts."
> The boy said, "I see him." (22)

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[169] Erkki Huhtamo, "The Pleasures of the Peephole: An Archaeological Exploration of Peep Media," in *The Book of Imaginary Media* (Rotterdam, Netherlands: NAi Publishers, 2006), 117.
[170] Edward Said, *Orientalism: Western Concepts of the Orient* (New Delhi: Penguin Books India, 2001), 128.

The way the country house party perceives and plays with the Moonstone mimics this ritual magic through which the English boy is made, against his will, "to see persons and things beyond the reach of human vision" by his Indian masters (54). The little boy who receives the ink in his hand and his stiffening body while he is under the trance will be mirrored by Rachel when she receives the diamond. She stands "like a person fascinated with the Colonel's unlucky Diamond in her hand" (66). The symbolic equivalence between the diamond and the magic ink codes the Moonstone as another kind of Indian magic that can remotely control British perceptions. Like the ink, the diamond is an apparitional medium into which the spectator "looks" and "sees" that which is not there.

Franklin Blake's sleepwalking, caused by his unwittingly taking opium, is another kind of "Indian" or "oriental" remote control of vision and perception. The novel's pseudo-scientific explanation for his sleepwalking further suggests that the Moonstone diamond has the power to act on and interfere with a spectator's perception. Under the influence of opium, "The latest and most vivid impressions left on your mind—namely, the impressions relating to the Diamond—would be likely…to become intensified in your brain, and would subordinate to themselves your judgment and will" (400). It is as though the opium only "intensifie[s]" the diamond's impression on the sensorium. At the same time, the laudanum poured into Franklin's drink is another kind of Indian black ink; it recalls the "small bottle" containing "black stuff" with which the Indians perform their magic. The physiological experiment that seeks to reproduce Franklin's somnambulism through his intake of another dose of laudanum turns him into a seer in the grip of a vision, like the clairvoyant child. In a clear echo of the child lulled into a trance by black ink and watched closely by the three Brahmins who depend on him to reveal the future, Franklin's opium-induced hypnosis is monitored by three men—Jennings, Bruff , and Betteredge—who have planted

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the vision of the diamond in his head in order to uncover a mystery of the past. Collins frames the diamond, like the opium and black ink, as an Indian medium for British visionary experience.

The Moonstone's opticality is therefore orientalized and racialized not only through its yellowness and mystic depths, but also through its phenomenological effects. Building on discourses of diamonds as optical media and imaginary media for virtually encountering India emerging from the Great Exhibition, Collins turns the Moonstone into a technology for perceptual distortion and control. Ian Duncan describes the thematic of altered perception in the novel as a kind of reverse colonization in which opium "enthralls the inner subject to an alien, Asiatic identity."[171] The novel imagines a scenario in which the thing you possess—diamond or nation, Moonstone or India—comes to possess you.[172] Because of this, for Duncan, *The Moonstone* is a meditation on the loss of character and the sapping of British identity.[173] It is true that the novel is haunted by voided subjectivities. Mr. Candy, the doctor, whose delirium after he catches fever the night of Rachel's party leaves him capable of producing only "disconnected words" and "fragments of sentences" riddled with "blank space" (394), anticipates Ezra Jennings, his assistant whose "story is a blank… forgotten and unknown" (470). Rosanna Spearman, the reformed jewel thief working as a servant in the Verinder country house, is another empty vessel, "a creature moved by machinery" (152).

However, the mystery of the diamond is just as much about the discovery of internal multiplicity as it is about voided subjectivity. The Moonstone does not only figure the emptying out of self, but also the filling up of self with new and exotic perceptions. Like opium, the diamond

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[171] Duncan, 310.

[172] This kind of vampiric remote control was given even more robust expression later in the century in Bram Stoker's *Dracula*, a novel that appropriates *The Moonstone*'s hypertextual form alongside its racialist fantasy of foreign influence and psychic possession.

[173] Duncan, 306-308.

is "a stimulating influence" (400) through which spectators seem to take on, recreationally and temporarily, different self-states. The novel is not simply a parable of imperial panic, of the negative threat of India and Indian-ness permeating Britain and invading its homes, but also a positive articulation of imperialism as an infusion of foreign influences that innervate and excite the sensorium. Consider that, while the novel's first hundred pages tease the threat of violence against Rachel by the Moonstone's Brahmin guards while she is in possession of the diamond, that threat is removed by the theft of the diamond from her cabinet. This is not, ultimately, a story about the material dangers posed to the protagonists by their association with the diamond. Rather, it is about how their encounter with the diamond—an encounter that is optical, perceptual, and virtual—temporarily infects and excites them through its "oriental" magic and hallucinatory effects. With its streaming yellow light and illusion of infinite depth, the Moonstone is an optical toy that accomplishes a fantastical form of imperial intimacy through the senses of sight and touch. It provides the characters with an experience of empire stripped of geopolitical context or consequences, of responsibility of guilt: empire as virtual spectacle.

Victorian Realism and Virtual Perception

My reading of the Moonstone diamond as a medium for the virtual perception of empire demonstrates that the novel expands on a set of discourses surrounding diamonds as imperial media circulating in Britain after the display of the Koh-i-Noor at the Great Exhibition. I read *The Moonstone* as a novel about imperial media, and the way virtual mediation shaped Victorians' understanding and experience of British India. This argument raises another set of questions about the realist novel as another medium that operates on perception. As we saw in the previous chapter, mid-nineteenth-century realist fiction often turned to optical spectatorship to theorize itself as a form of apparition half-created by the reader. *The Moonstone* provides another model for the

virtual and the visionary as modes of realistic representation. It understands itself, like the diamond, as a medium for virtual perception.

This line of inquiry may seem counterintuitive. Just as *Cranford*, a novel that falls squarely in the realist tradition, is not usually understood to be about optical magic, *The Moonstone*'s exploration of imperial experience through magic, hallucination, and visionary states may not seem particularly realist. Victorians classified *The Moonstone* as a "sensation novel," a subgenre combining elements of domestic realism and Gothic romance that became popular over the course of the 1860s and into the early 1880s. The sensation novel was supposed to produce novel sensations. It ripped murders and other crimes from the headlines and recreated them with new narratives full of twists and turns, secrets and revelations, and corruption and criminality, which the novels hinted haunted everyday life in order to make the reader feel visceral excitement.[174] For Victorians, the sensation novel and the realist novel were distinct. "The novelists who are considered to be anti-sensational are generally called realistic," Anthony Trollope wrote drily in his *Autobiography* of the "great division" among modern English novelists. "I am realistic. My friend Wilkie Collins is generally supposed to be sensational."[175] While the sensation novel is still treated as a genre in its own right, contemporary scholars often approach it as a hybridized form of realism. For example, for Patrick Brantlinger, the sensation novel represents both "an infusion of romantic elements into realism" and "the reduction of romance to fit Biedermeier frames."[176]

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[174] For a more robust account of the sensational novel as a genre, see Patrick Brantlinger, "What is 'Sensational' about the 'Sensation Novel'?", *Nineteenth-Century Fiction*, Vol. 37, No. 1 (June 1982): 1-28 and *Victorian Sensations: Essays on a Scandalous Genre*, ed. Kimberly Harrison and Richard Fantina (Columbus: The Ohio State University Press, 2006).

[175] Quoted in Brantlinger, "What is 'Sensational,'" 15.

[176] Brantlinger, 4.

The Moonstone can certainly be read as a "Biedermeier frame" for its tale of violent criminality and supernatural agency, a way of both releasing and containing subversive energies and occult themes. It is also a novel of empire that infuses its historical narrative of British colonial relations with India with occult themes. However, my choice to consider this a realist novel is not simply grounded in its basis in traditionally realist elements. Instead, I understand some of the qualities associated with its "sensationalism" to be hallmarks of mid-nineteenth-century realistic representation. Victorian critics of the sensation novel condemned its apparent capacity to intoxicate the reader with sensations, "of exciting in the mind some deep feeling of overwrought interest," as the Archbishop of York preached in 1864.[177] By this standard, I would argue that *The Moonstone* is more of a "perception novel" than a sensation novel. Rather than exciting in the mind "deep feeling," it seeks to excite in the mind a kind of deep seeing—like the black ink, it induces the reader "to see persons and things beyond the reach of human vision." Like *Cranford*, *The Moonstone* is interested in how fiction operates through manipulating the reader's perception to make her see something that is not there and to experience something that is not real as if it were real. For both Collins and Gaskell, the real of realism is not only authorized by the text's mimetic relation to the world it represents. It is also something that the text creates.

Furthermore, *The Moonstone* demonstrates that making the reader "see…beyond the range of human vision" is necessary for the project of writing about empire. In *Cranford*, India shows up in the narrative through magic and apparitions. Gaskell addresses the fact that, for the Cranford women who are immobilized by their gender and social position, India remains a virtual scene. Collins takes this problem further. In the mid-nineteenth century, empire was constitutive of

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[177] W. Fraser Rae, "Sensation Novelists: Miss Braddon," *North British Review* 43 (1856), 203, quoted in Brantlinger, "What is 'Sensational,'" 7.

modern British experience but, for the vast majority of the population, impossibly vast and distant, and only every approximated indirectly. In the face of representing such a phenomenon, a model of realism based in the recording of direct experience simply begins to break down. What Collins recognizes in *The Moonstone* is that Victorians already experience empire through a complex media imaginary as a kind of virtual reality. In this way, *The Moonstone*'s metaphorics of optical spectatorship and virtual perception function to bring the reality of empire into view for the reader. The novel turns to the aesthetics and discourses of virtual media technology in order to represent a virtual world.

CHAPTER THREE

Phantasmal History: Phantasmagoria in *A Tale of Two Cities*

Charles Dickens was perhaps the most exuberantly optical of Victorian novelists. Fascinated from childhood with optical entertainments, and a practicing magician himself,[178] his novels are filled with dramatic light-and-shadow sequences and spectral imagery that evoke lantern projection and other optical illusions. His realist fiction of the 1850s and 1860s relies particularly on allusions to optical projection to depict history and historical consciousness. When Ada and Richard play music together at the piano in *Bleak House*, "their shadows blended together [upon the wall], surrounded by strange forms" that seem to the narrator to express "the mystery of the future."[179] The empathic Mrs. Boffin in *Our Mutual Friend* sees the faces of a dead family "growing out of the dark" as she folds linens.[180] Old faces grow young, young faces grow old, each face turns into the next. The images augur the revelation that the child John Harmon is alive and living among them in disguise. Playing on the nineteenth-century trope of the lantern as a crystal ball that can reveal the future, optical projection intervenes in both passages to represent moments of historical self-consciousness, when characters seem suddenly to become aware of their own historicity.

Critics have argued over whether Dickens has a philosophy of history and what it might be.[181] It has seemed to many at its most obscure in *A Tale of Two Cities* (1859), Dickens's historical

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[178] Christopher Pittard, "The Travelling Doll Wonder: Dickens, Secular Magic, and *Bleak House*," *Studies in the Novel* 48, no. 3 (Fall 2016): 279-300.

[179] Charles Dickens, *Bleak House* (New York: Modern Library, 2002), 74.

[180] Charles Dickens, *Our Mutual Friend* (London: Penguin Books, 1997), 190.

[181] Patrick Bratlinger, "Did Dickens Have a Philosophy of History? The Case of *Barnaby Rudge*," *Dickens Studies Annual: Essays on Victorian Fiction* 30 (2001): 59-74; William J. Palmer, *Dickens and New Historicism* (New York: St. Martin's Press, 1997); John Gardiner, "Dickens and the Uses of History," in *A Companion to Charles Dickens*, ed. David Paroissien (Malden, MA: Blackwell, 2008); Richard Alter, "The Demons of History in Dickens' *Tale*," *NOVEL: A Forum on Fiction* 2,

novel of the French Revolution. The novel has long been critiqued for its historical representationality. Georg Lukàcs reserved a few choice words in *The Historical Novel* for its insufficiently historical treatment of the French Revolution. He calls Dickens's representation of historical events "romantic background" and contrasts it with Walter Scott's dialectical integration of character and historical events in novels like *Waverley* and *Ivanhoe*.[182] *A Tale of Two Cities* has also been accused of over-reliance on second-hand records. Its zealous borrowing from Thomas Carlyle's *History of the French Revolution*, which Dickens claimed to have read nine times, led G.K. Chesterton to remark that *A Tale of Two Cities* was "not entirely by Dickens."[183] In recent years, scholars have begun to take the historical impulse in *A Tale of Two Cities* more seriously, and have argued for its commitment to a variety of historiographic methods, from theories of historical inevitability[184] to comparative history.[185] This chapter shares with these works the ambition of digging *A Tale of Two Cities* out from underneath the weighty legacies of Walter Scott on the one hand, and Thomas Carlyle on the other, to uncover what Dickens might have to say about history. But, rather than approaching Dickens as a historian, as other scholars have, I am interested in Dickens as a phenomenologist who is concerned with the perceptual experience of history in a modern, technologized world. In this chapter, I argue that Dickens turns to the visual and technological effects of nineteenth-century phantasmal entertainments—most especially, Robertson's Phantasmagoria—to portray history as a phantasmal and virtual experience.

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no. 2 (1969): 135-142; Devin Griffith, "The Comparative History of *A Tale of Two Cities*," *ELH* 80, no. 3 (Fall 2013): 811-838; Irene Collins, "Charles Dickens and the French Revolution," *Literature and History* 1, no. 1 (Spring 1990): 40-57; David Paroissien, "Dickens and the Voices of History," in *Charles Dickens: Modernism, Modernity,* ed. Christine Huguet and Nathalie Vanfasse (Wimereux: Editions du Sagittaire, 2014), 103-118.

[182] Georg Lukàcs, *The Historical Novel* (Lincoln, NE: University of Nebraska Press, 1983), 243.

[183] Michael Goldberg, *Carlyle and Dickens* (Athens, GA: University of Georgia Press, 1972), 161.

[184] Collins, "Charles Dickens and the French Revolution," 48-49.

[185] Griffith, "Comparative History," 811-838.

The Phantasmagoria was an optical ghost show popularized in Paris in the 1790s by the Belgian physicist-turned-showman Etienne Gaspard Robertson.[186] In a darkened room, a projectionist operating a hidden magic lantern projected images of ghosts and other frightening creatures onto a screen. Because the lantern was mounted on rollers, it could roll towards and away from the screen, causing spectral forms to appear as if they were surging into the audience. Trick slides created the visual effect of projected forms in a state of perpetual transformation. While it advertised "apparitions of Specters, Ghosts and Revenants, such as have appeared in all times, in all places and to all people,"[187] Robertson's Phantasmagoria also regularly projected images of revolutionary figures such as Danton, Marat, and Robespierre. Tom Gunning, Terry Castle, and Max Milner have read the Phantasmagoria as a drama of perception that plays out the dialectical relation between Enlightenment rationality and superstition.[188] But, as the choice to exhibit slides

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[186] Although its invention is often credited to Paul de Philipsthal and Etienne Gaspard Robertson, both of whom worked in Paris, it is fruitless to try to trace a definitive inventor or place of invention for the Phantasmagoria. An 1805 pamphlet by the showmen Schirmer and Scholl produced for a London exhibition of the Phantasmagoria relate that a lawsuit between two French proprietors of the spectacle was decided in favor of neither because it was proven "that they had only produced *copies from copies*." Schirmer and Scholl, *Sketch of the Performances at the Large Theatre, Lyceum, and a Short Account of the Origin, History and Explanation of all the Late Optical and Acoustic Discoveries, called the Phantasmagoria, Ergascopia, Phantascopia, Mesoscopia, &c. Together with The Invisible Girl* (London: Ward and Betham, 1805), 16.

[187] Etienne Gaspard Robertson, "Fantasmagorie de Robertson, Cour des Capucines, près la place Vendôme. Tous les jours a sept heures,"([Paris?]: printed by author, [1800?]), 5. My translation.

[188] Terry Castle, "Phantasmagoria: Spectral Technology and the Metaphorics of Modern Reverie," *Critical Inquiry* 15, no. 1 (October 1, 1988): 26–61; Tom Gunning, "Illusions Past and Future: The Phantasmagoria and Its Specters," (Paper presented at the First International Conference on the Histories of Art, Science and Technology, Banff New Media Institute, Canada, 2005) http://pl02.donau-uni.ac.at/jspui/handle/10002/286; Tom Gunning, "The Long and the Short of It: Centuries of Projecting Shadows, from Natural Magic to the Avant-Garde," in *The Art of Projection*, ed. Stan Douglas and Christopher Eamon (Osfildern: Hatje Cantz Verlag, 2009), 23-35; Tom Gunning, "Phantasmagoria and the Manufacturing of Illusions and Wonder: Towards a Cultural Optics of the Cinematic Apparatus," in *The Cinema: A New Technology for the 20th Century* (Editions Payot Lausanne, 2004), 32-44; Max Milner, *La Fantasmagorie* (Presses universitaires de France, 1982).

of revolutionaries makes clear, Robertson's Phantasmagoria also played out a historical drama for its audiences. Dickens, who was fascinated by Robertson and his ghost show, thought the Phantasmagoria worked by exploiting the affective charge of the recent history of the French Revolution to create an aura of terror for Parisian audiences.[189] By the 1850s, when Dickens was writing *A Tale of Two Cities*, the Phantasmagoria was outdated compared to newer projection technologies like the dissolving view. Nevertheless, its cultural association with the history of the French Revolution made it a resonant media intertext for Dickens's novel about the revolutionary period. For Dickens, Robertson's technological ghosts were also vital metaphors for the work of historical fiction to conjure the ghosts of the past and make them experientially present for the reader.

Robertson's Phantasmagoria also stands in for a larger problem with which Dickens was concerned throughout the 1850s and 1860s: how technologized perception transforms the experience of history. Phantasmagoria, like other forms of optical magic and conjuring, enables its audiences to visualize what cannot be seen. For Dickens, these techniques of visualization offer a metaphor for the new information technologies that were transforming mid-century British culture and the ways in which British people experienced world-historical events. The Crimean War (1853-1856), sometimes called the first media war, saw the technological circulation of information across the globe, from telegraphic war reports sent from the front lines to battle photography to statistical graphs representing military deaths. For Dickens, the British public's virtual, technologically mediated experience of the war put new pressure on the authority of individual perception as a way of gaining knowledge about the world. His writing during the

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[189] Charles Dickens, "Robertson, Artist in Ghosts," *Household Words*, no. 253 (January 27, 1855), 556.

1850s, from *A Child's History of England* to *Little Dorrit*, a novel set in the 1830s, to his current affairs journalism for *Household Words*, shows a renewed interest in the relationship between history and the present. With *A Tale of Two Cities*, Dickens writes a novel about the historical past that questions how history is experienced in the present. By comparing the French Revolution to the technological images of the Phantasmagoria, Dickens is exploring the transformation of world-historical experience in an age of technological and virtual media.

Dickens and Robertson: Artists in Ghosts

Dickens's lifelong love of stage magic, magic lanterns, and other optical entertainments influenced his writing from the beginning of his career. The magic lantern was a particularly favored childhood toy and a frequent metaphor for the vibrancy of imagination. In an 1846 letter to John Forster, complaining of the dullness of writing *Dombey and Son* in a small Swiss town, he expressed longing for London: "the toil and labour of writing, day after day, without that magic lantern [before me], is IMMENSE!"[190] Allusions to the magic lantern abound in his fiction, not only creeping into the imagistic and metaphoric registers of his novels but influencing his formal and narrative practices. For example, Helen Groth has explored the influence of magic lantern projections on the Christmas story "The Haunted Man," which was later adapted for the stage in the 1862 premier of John Henry Pepper and Henry Dirck's ghost illusion.[191] Joss Marsh has argued that the "dissolving view," a lantern projection technique that dissolved one image into another, both inspired Dickens's representation of the ghostly visions in *A Christmas Carol* and supplied a

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[190] Joss Marsh, "Dickensian 'Dissolving Views': The Magic Lantern, Visual Story-Telling, and the Victorian Technological Imagination," *Comparative Critical Studies* 6, no. 3 (2009): 336.
[191] Helen Groth, *Moving Images: Nineteenth Century Reading and Screen Practices* (Edinburgh: Edinburgh University Press, 2013), 100-125

framework of visual transformation for the narrative arc of Scrooge's spiritual conversion.[192] Groth and Marsh focus on Dickens's ghost stories, which possess clear similarities to the supernatural imaginary of the Phantasmagoria and Gothic lantern slides. Their scenarios may even have been inspired by the magic lantern, and some of them—like *A Christmas Carol* and the Gabriel Grub tale from *Pickwick Papers*—would go on to become two of the most popular stories for lanternists.[193]

Less frequently explored, however, is the influence of the magic lantern on Dickens's realist novels. Dickens's realism draws on the visual effects of the lantern projection not in the service of supernatural imagery, but in order to represent the conditions of reality. For example, Dickens's last completed novel *Our Mutual Friend* places two different senses of reality in competition with each other through different codes of lantern projection. The first of these two senses of reality is the vision of moral coherence and redemption embodied in the "pictures in the fire" that the illiterate Lizzie Hexam describes to her brother while sitting before the fireplace of their grim and dank shanty.[194] Lizzie's ability to "read" the firelight evokes Victorian storytelling lantern slides, which used an oxyhydrogen lamp to tell stories in pictures made of light. The nature of her stories—saturated with a Christian didactic morality, a stand-in for the moral education that her brother has never properly received—only reinforces the connection to late Victorian magic lantern shows, which were vehicles for Bible stories and temperance narratives, and were adapted by missionaries to inspire conversions in the British colonies. The second sense of reality is the state of meaninglessness, fragmentation, and dissociation embodied in characters like Eugene Wrayburn, the wandering soul Lizzie will eventually rescue and marry, and John Harmon, a man

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[192] Marsh, "Dickensian 'Dissolving Views," 333-346.
[193] Marsh, 336-337.
[194] Charles Dickens, *Our Mutual Friend*, 37.

metaphorically returned from the dead. This meaninglessness is expressed through the phantasmagorical images that Mrs. Boffin sees of old Harmon and his children "growing out of the dark" while she folds the laundry. These metamorphosing, shifting, transitory faces that seem to come from nowhere evoke the techniques of the Phantasmagoria's lantern projections, and the fact that they appear "hidden among the folds" of a sheet references the screen onto which Phantasmagoria slides were projected.[195] These competing optical visions of the real have distinct temporalities. Against the teleology of Lizzie's firelight pictures, Mrs. Boffin's phantasmagorical vision reveals a world where past and present, and the living and the dead, are grotesquely, terrifyingly entangled.

In *A Tale of Two Cities*, Dickens turns to the Phantasmagoria in order to represent the conditions of history and historical experience. Like *Our Mutual Friend*, the novel is saturated with references to nineteenth-century projected and moving images, among other optical illusions of light and shadow. However, Phantasmagoria is the novel's dominant media metaphor, and references to its particular visual and technological effects course through the novel. The choice is apt: the Phantasmagoria emerged in Paris at the tail-end of the French Revolution and occupied, in Tom Gunning's words, "the threshold between Enlightenment and Terror,"[196] making it an ideal vehicle for telling the story of the Revolution and Terror. However, Dickens does not take up Phantasmagoria simply for its historical link to the revolutionary period, but for the ways in which its visual techniques suggest a set of approaches for narrating the historical past. For Dickens, who once described himself as "a resurrectionist in search of a subject,"[197] the Phantasmagoria and the historical novel were both technologies of resurrection—approaches to re-animating the past and

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[195] Dickens, *Our Mutual Friend*, 190.
[196] Gunning, "Illusions Past and Future."
[197] Peter Ackroyd, *Dickens* (London: Sinclair-Stevenson, 1990), 169.

making it experientially present for a viewing, or reading, subject. His writings on Etienne Gaspard Robertson, the Phantasmagoria's showman and entrepreneur, were published a few years before *A Tale of Two Cities* and show his curiosity about how the aesthetic force of the illusions—what Dickens calls Robertson's "ghosts"—came from his ability to simulate the traumatic historical memories of his audiences.

If Dickens was a resurrectionist in search of a subject, Robertson might have been described as a resurrectionist in search of a medium. A Belgian painter and physicist active in France in the late 1790s, Robertson (born Robert) conceived his Gothic vision of exhibiting spectral moving images in a dark theater after the French government turned down his proposal for an Archimedean mirror that would direct sunrays onto invading ships from the British Royal Navy and burn them up on the spot. Faced with his failure to weaponize the mirror in service of fiery mass destruction, Robertson re-imagined it as a tool of resurrection through his patent for an improved magic lantern he called the Fantascope. The magic lantern is a form of slide projector first invented in the seventeenth century, capable of projecting painted images onto a wall or screen. Inside the lantern are a candle and a convex mirror; at the front, a tube with convex lenses at each end holds a small image painted on glass. Robertson's Fantascope innovated on this apparatus by mounting the projector on rollers that allowed it to be moved forwards and backwards, creating the effect of spectral images surging and retreating (fig. 3.1). Trick slides with levers and pulleys created quick visual juxtapositions in the projected images that reinforced their apparent automaticity.

Although Robertson never claimed to be a resurrectionist, or that his ghosts were real, the Fantascope and its projections were designed to challenge the rationality of his audiences. For instance, the Fantascope was rear-projecting, meaning that both Robertson and his apparatus were

located behind the screen on which the slides were projected, invisible to the audience. The screen was made of fine white cambric and treated with varnish to render it diaphanous and to block any pores that could reveal the hidden light source, which was itself hidden by a black curtain that was only raised when all the lights in the hall were extinguished.[198] This set-up served to decontextualize the images from their projection apparatus and to dislocate them in space, heightening their apparent status as spectral beings imbued with volitional capacity.[199] The images on the slides themselves also contributed to this effect. Vignettes like Three Graces turning into skeletons, Orpheus and Eurydice, and the Bloody Nun all represented a world beyond death. These technological and visual effects conspired to evoke the notion of resurrection, even if such supernaturalism was explicitly disavowed.[200] As one contemporary reviewer raved, as well as warned: "A decimvir of the republic has said that the dead return no more, but go to Robertson's exhibition and you will soon be convinced of the contrary, for you will see the dead returning to life in crowds."[201]

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[198] Mervyn Heard, *Phantasmagoria: The Secret Life of the Magic Lantern* (Hastings: The Projection Box, 2006), 98.

[199] Gunning, "The Long and the Short of It," 25.

[200] For an important reading of how the resurrection effect was conveyed in Robertson's show, see David J. Jones's *Gothic Machine: Textualities, Pre-Cinematic Media and Film in Popular Visual Culture* (University of Wales Press, 2011), 57-78. Through a thorough study of the spatial and architectural design of the Phantasmagoria, Jones argues that the exhibition reinforced the association between optical images and resurrection, even as its showman explicitly disavowed it. For example, the Phantasmagoria was located in a Capuchin convent, and the attractions hosted in other rooms of the exhibition included Galvani's famous experiment of shooting electric sparks through a dead frog's legs to make it twitch. As Jones puts it, ventriloquizing the spectator at the Phantasmagoria, "If dead frogs could move again, could Robespierre rise?" (65).

[201] Quoted in Fulgence Marion, *The Wonders of Optics* (New York: Scribner, 1871), 189.
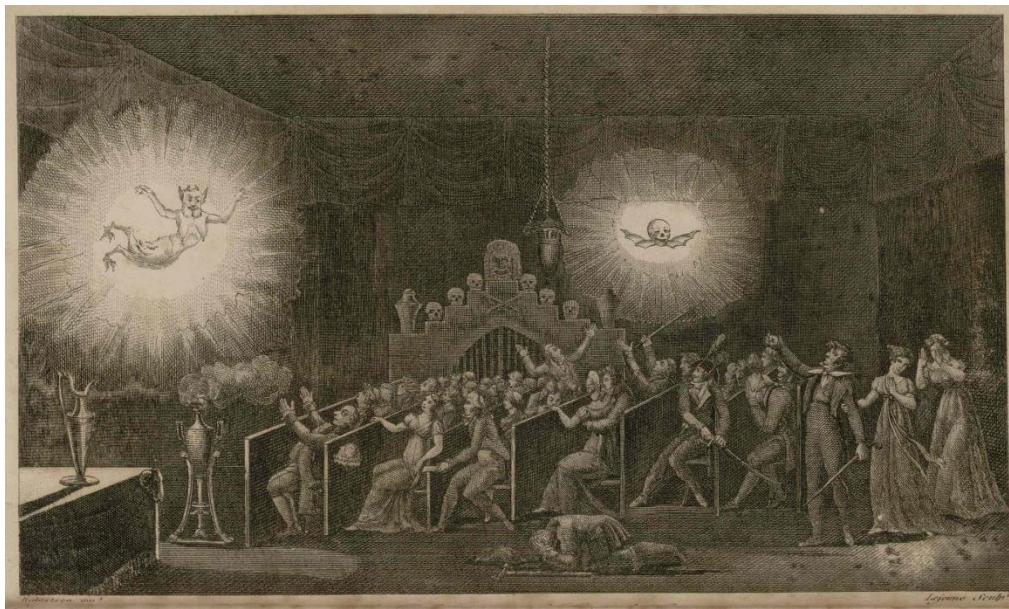
Figure 3.1: Engraving of Robertson's Phantasmagoria, from Etienne Gaspard Robertson, Mémoires récréatifs, scientifiques et anecdotiques du physician-aéronaute E.G. Robertson *(Paris: Librairie encylopédique de Roret, 1840).*

Robertson's Phantasmagoria premiered in Paris in 1798, at the tail end of the Terror. If his Archimedean mirror was a technology imagined for France's war with Britain, a product of its moment's political turbulence, the Fantascope was Robertson's homage to the French Revolution. As the French writer Sebastian Mercier, who was imprisoned in the Bastille during the Terror, wrote of Robertson's show, "The ghosts and specters that were conjured in the theatres and that we took pleasure in contemplating were the reflection of revolutionary days."[202] Mercier might have been referring to Robertson's trick of "conjuring" revolutionary martyrs through the lantern; one of Robertson's regular illusions was to show the head of Danton projected onto smoke.[203] The notion of the Phantasmagoria as a séance capable of reverse-engineering history was tenacious. Robertson was even run out of Paris, under suspicion of Royalist sympathies, and his show was

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[202] Max Milner, *La Fantasmagorie*, 20. My translation.
[203] Gunning, "The Long and the Short of It," 27.

shut down by police, after a man in attendance at his exhibition reportedly demanded to see an apparition of Louis XVI.[204] The censoring of Robertson's Phantasmagoria speaks to the cultural and political anxieties about the "raising" of the past during the post-revolutionary period, but it also reflects Robertson's commitment to the Phantasmagoria as a visual mediation of history. An editorial published in *L'Ami des lois* in 1798 described Robertson "conjuring" Marat out of smoke by throwing onto the coals "two glasses of blood, a bottle of vitriol, a few drops of aqua fortis and two numbers of the *Journal des Hommes Libres.*"[205] According to another eyewitness account, later iterations of Robertson's show ended with an image of "a brilliant star whose center carries these characters: 18 BRUMAIRE," followed by an apparition of Minerva crowning Napoleon.[206]

Like the Phantasmagoria, nineteenth-century historical writing was also imagined to have the capacity to resurrect the past, albeit from a considerably safer metaphoric distance. "We want to get to know what existence held for peoples and individuals before our times," the French historian Prosper de Barante wrote in 1824. "We insist that they should be *summoned up and brought living before our eyes*."[207] This account of what Stephen Bann calls the Romantic "desire for history" uses the language of conjuration and resurrection, positioning the historian as a showman capable of "summoning" the phantasmagorical ghosts of the past to deliver historical evidence for the reader.[208] In Britain, Thomas Carlyle turned to the Phantasmagoria in his *History of the French Revolution* to describe the experience and witnessing of violent uprising as well as

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[204] Milner, *La Fantasmagorie,* 10.
[205] Heard, *Phantasmagoria,* 92.
[206] Heard, 111.
[207] Prosper de Barante, *Etudes historiques et biographiques* (Paris: Didier, 1857). Quoted in Stephen Bann, *Romanticism and the Rise of History* (Twayne Publishers: New York, 1994), 20. My emphasis.
[208] Bann, 10.

the spectacle of history itself: historical events are "Phantasmagories" and "Spectral Realities."[209]

If Robertson understood his Phantasmagoria as a kind of historical representation, nineteenth-century historians similarly understood history through the visual effects of the Phantasmagoria. Many nineteenth-century optical entertainments would become vehicles for historical representation, from panoramas and dioramas of battles to stereographs of historical sites. Thomas Clare's sensational large-format lantern slides of the Crimean War, made for the Royal Polytechnic Institution's optical theater in 1854, are one example of how rapidly world-historical events could be transformed into optical spectacle.[210] While these media represented history more directly than the Phantasmagoria, by visually depicting historical events with great attention to detail, nineteenth-century historians relied on the Phantasmagoria as a metaphor for the practice of history because of its technological capacities of animation and its visual rhetoric of bringing the past—or the dead—to life.

Dickens references this discursive link between Phantasmagoria and history in a profile of Robertson that he wrote for *Household Words* in 1855, four years before *A Tale of Two Cities* was serialized in *All the Year Round*. Dickens calls Robertson an "Artist in Ghosts," a moniker that not only riffs on Dickens's notion of the literary resurrection, but also evokes Carlyle's concept of historians as "Artists in History."[211] Echoing other popular writings on the Phantasmagoria, Dickens describes it as a visual remediation of the revolutionary Terror—a "reign of terror" on its audiences, in his words.[212] But, Dickens goes further in conceptualizing the Phantasmagoria's

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[209] Castle, "Phantasmagoria," 26.
[210] Thomas Clare's lantern slides, 1854, Clay Collection, Museum of the History of Science, Oxford, England.
[211] Thomas Carlyle, "On History," *Critical and Miscellaneous Essays in Five Volumes*, Volume II (New York: C. Scribner, 1903-4), 88.

relationship to history by arguing that it does not simply echo the Terror through the affective terror it induces, but uses visual suggestion to evoke and manipulate the historical memory of a Parisian audience traumatized by its recent experience of bloody rebellion and insurgency. Like Prosper de Barante's notion of historical narrative, the Phantasmagoria can summon the past and bring it to life before the eyes of its audience by viscerally re-animating memories and experiences.

For Dickens, the art of Phantasmagoria lies less in the showman's tools—his slides and projector—than in its ability to manipulate the credulity of spectators. "It was very easy to excite the wonder" of post-revolutionary Parisians, he wrote,

> even without any great dexterity or conjurer's tools of a refined description. Crowds were flocking daily to the gardens of the Palais Royal to gape at the shadow of a chimney, which, at a certain hour of the day, resembled the figure of Louis the Sixteenth. Thousands believed that the shadow of the king upon whom they had trampled haunted the Parisians by appearing daily in the garden. A commissary of police, by the help of a few masons, at last caused the demolition of the august shade in the presence of a concourse of astonished people. It does not take much to produce a ghost.[213]

This passage satirizes the superstition of Robertson's audiences and their susceptibility to supernatural belief, playing on a popular trope of discourses surrounding the Phantasmagoria: that its visual effects are so powerfully convincing that viewers believe they are real.[214] However, Dickens is ultimately less interested in the question of whether the ghost of Louis XVI is of

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[212] Charles Dickens, "Robertson, Artist in Ghosts," *Household Words*, no. 253 (January 27, 1855), 556.

[213] Dickens, "Robertson," 557.

[214] This trope mirrors the legend surrounding early cinema: that the first audiences believed that Lumière's train was speeding towards them out of the screen. As Tom Gunning has shown, it is similarly fictitious. While the premise of the Phantasmagoria was to provide a total immersion of the spectator, late eighteenth and early nineteenth century spectators could use basic reality testing to confirm that its ghosts were visual tricks and appreciated the Phantasmagoria as a pleasurable, playful challenge to their rationalist worldview. See Gunning, "Phantasmagoria and the Manufacturing of Illusions and Wonder," 34-35.

supernatural or natural origin than he is in its source in historical memory. He views revolutionary history as a kind of secular haunting that leaves behind a phantasmal residue in the minds of those who experienced it. Dickens echoes Marx's claim about Louis-Napoleon Bonaparte's coup d'état that seemed to resurrect France's post-revolutionary capitulation to another dictator in 1799, this time as farce: "the tradition of all the dead generations," he wrote, "weighs like a nightmare on the brain of the living."[215] Writing about that original moment of post-revolutionary anxiety, Dickens imagines that the psychological weight of the overthrown monarch creates after-images in optical projections; the crowds that flock to the gardens in dumbstruck horror mirror the violent, agitated crowds of revolutionaries just a few years before. "It does not take much to produce a ghost," Dickens explains, because the lived experience of history makes people susceptible to seeing them.

Dickens's essay on Robertson is a blueprint for his phantasmagorical approach to historical fiction in *A Tale of Two Cities*. Instead of analogizing the Phantasmagoria as a "reign of terror," the novel reverses the analogy: the lived experience of the revolution is like being a spectator at the Phantasmagoria. In its depiction of historical character and temporality, *A Tale* references specific visual effects of the Phantasmagoria, and other related phantasmagorical spectacles, that would have been recognizable to a Victorian readership. For example, in a subplot concerning Jerry Cruncher, a porter for Tellson's Bank in London by day and a resurrection man by night, his little son follows him to the cemetery one night to find out what his father does after dark. The son panics and runs home after seeing his father pry open a coffin because, "he had a strong idea that the coffin he had seen was running after him," appearing in the night shadows and sky: "he pictured it as hopping on behind him, bolt upright, upon its narrow end, always on the point of overtaking

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[215] Karl Marx, *The Eighteenth Brumaire of Louis Bonaparte* (International Publishers Co., 1994), 15.

him."[216] The imagery of chase and the terrifying ubiquity of the coffin call upon the Phantasmagoria's Gothic animation effects to describe the boy's terrified imagination projected onto the city. It also extends the metaphorical connection between resurrection and phantasmagoria.

The coffin's ability to chase the boy specifically recalls the Phantasmagoria's most characteristic effect of motion. By rolling the projector away from the screen, the projectionist could strategically enlarge the image, a trick that, when combined with the darkness of the room, produced the effect of specters surging into the audience and created an uncanny sensation of direct confrontation with the image.[217] "In the remote distance," as Robertson described the motion effect from the audience's perspective, "a mysterious point seemed suddenly to appear: a figure, first small, took shape, then approached in slow steps, and at each step seemed to enlarge."[218] The complete darkness of the hall and occlusion of the screen were key to this success. The use of lampblack, a black pigment made of soot, to surround the figures on Robertson's hand-painted slides eliminated any visible border that might betray the location of the figures in space.[219] Similarly, when the boy imagines that the coffin is always right behind him, the moving image betrays this same ability to disorient the viewer's sense of space in the dark. In an eerie extension of the Fantascope's powers of projection, the image of the coffin is transposed onto the night itself.

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[216] Charles Dickens, *A Tale of Two Cities* (New York: Penguin, 2003), 168. All subsequent references to this edition will be noted parenthetically in text.
[217] Gunning, "Phantasmagoria and the Manufacturing of Illusions and Wonder," 35.
[218] Robertson quoted in Milner, *La Fantasmagorie,* 11. My translation.
[219] Gunning, "Phantasmagoria and the Manufacturing of Illusions and Wonders," 26.

Figure 3.2: Phantasmagoria Lantern Slide: Figure of "Death." Courtesy of the National Science and Media Museum / Science and Society Picture Library, Bradford, UK.

The Resurrection Men storyline touches on the novel's favorite metaphor of resurrection, one that recurs as a way of conceptualizing history. History that is forgotten and repressed can, in this novel, be "recalled to life." Dickens uses the phrase "recalled to life" repeatedly in reference to Dr. Manette, the French-born doctor, to describe his liberation from prison upon the storming of the Bastille. The same phrase also comes to figure in the situation of Charles Darnay, a Frenchman condemned by the revelation ("recalling") of a set of documents that tie him to aristocratic malfeasance. The way in which Manette's documents are liberated—against his will—from his former prison cell reinforces the novel's understanding of revolutionary actions as the resurrection of what history has suppressed. "Recalled" is a multivalent term: to recall is to enable something to be returned, but also to remember, even to effect return through the act of remembering. These varied meanings tie the novel's metaphorical resurrections not just to history but also to historical memory and perception. Characters also "recall themselves," or, remember

who and where they are, as Manette does when he shakes himself out of his recursive fugue states that begin during his prison sentence. As a structure of meaning, Dickens's use of "recalled to life" re-imagines the scene of the Parisians "produc[ing] a ghost" through their own distorted subjectivity: while they believe that Louis XVI has been recalled to life in the sense of a resurrection, they have in fact recalled (remembered) the king when looking at a shadow.

Dickens references the Phantasmagoria's technological resurrections in order to represent the historical past as something that returns like a ghost to haunt the present. The first encounter between Dr. Manette and his daughter, Lucie, when he is released from the seventeen-year imprisonment, is represented as a kind of spectral theater. Before the meeting, Lucie exclaims, "I am going to see his Ghost! It will be his Ghost—not him!" (28). Meanwhile Mr. Lorry, the family banker, imagines himself exhuming Manette from the coffin where he has been buried alive. These fantasies contribute to the novel's metaphoric treatment of Manette as confined to purgatory, neither completely alive nor exactly dead. As one "recalled to life," he is split in two and prone to schizoid recursive behaviors, a condition that references the ghosts and specters of the Phantasmagoria and their apparent ontological half-life. Other textual clues hint further at the technological metaphor. Lucie and her father communicate through facial expression that pass "like a moving light" (45) while Lorry and the innkeeper, standing by the door, are variously named by the narrator as "spectators" or "beholders." This theatrical situation evokes optical spectacles like the Phantasmagoria, where an audience spectates at moving images composed of light. It most closely resembles a theater technique derived from the Phantasmagoria called "Pepper's Ghost" that projected on to the stage spectral images of hidden actors. Fittingly, Pepper's Ghost premiered at the Royal Polytechnic Institution in 1862 through a dramatization of Dickens' ghost story "The Haunted Man."

A Tale of Two Cities places the reader in the position of "watching" characters in the act of both participating in and spectating at something like a Phantasmagoria. This effect produces a sense of historical immediacy for the reader—of bearing witness to, experiencing, and undergoing a state of historical transformation that is analogized through the Phantasmagoria's spectral metamorphoses. While this desire to create an immediate experience for the reader reflects the priorities of nineteenth-century history-writing, Dickens is also concerned with the ways in which this kind of readerly immediacy is mediated. Through its allusions to and metaphors of Phantasmagoria, the novel does not simply seek to make history present, but to explore the technological conditions through which history, in mid-century Britain, was becoming a virtual and communal experience understood as the purview not of individual actions, but of mass phenomena. As we will see in the next section, Dickens explores this problem through his phantasmagorical depiction of historical characters interfacing with crowds, mobs, and masses.

Phantasmagorical Character: "Crowds of the Wicked and the Wretched"

Beginning with Lukàcs' *The Historical Novel*, scholars of nineteenth-century fiction have viewed character as one of the primary technologies of historical representation. For Lukàcs, historical fiction relies on the representation of well-known historical personages as well as average and unremarkable protagonists who embody and condense the dialectical forces of history through their identity, actions, and behavior. Unlike *Barnaby Rudge: A Tale of the Riots of Eighty* (1841), Dickens's novel about the Protestant-Catholic riots in London and his first foray into historical fiction, *A Tale of Two Cities* has never fit cleanly into this model of historical characterization. To begin with, Dickens does not incorporate historical personages into his narrative of the revolution. There is no Danton or Robespierre, only the wine merchant M. Defarge

and his wife, the revolutionary couple who are depicted as orchestrators of the rebellion in their quarter of Paris, and a fictional Marquis who stands in for the aristocracy more broadly. Moreover, every character in the novel is dramatically upstaged by Dickens's depiction of the revolutionary mob, a ferocious and faceless corporate entity described in densely and vibrantly metaphoric passages as "a living sea," "a vast dusky mass of scarecrows heaving two and fro," and "a forest of naked arms struggl[ing] in the air like shriveled branches of trees in a winter wind" (222-3). The central cast of characters, all of whom reside in London as an extended family circle and wind up in Paris at the height of the Terror, are at the mercy of this living sea: a young woman (Lucie), her aged father (Alexandre Manette) and her soon-to-be-husband (Charles Darnay), each of whom have blended English and French nationality; as well as Lucie's second, unrequited suitor (Sidney Carton), her governess (Miss Pross), and the family banker (Jarvis Lorry), whose business shuttles him between the titular cities of London and Paris. History is what happens to them, not something that have a role in actively shaping. Richard Alter's remark that the revolutionary mob is *A Tale*'s "most brilliantly realized character" is indicative of the ways in which the energies of character seem to have been transferred from individual protagonists to an anonymized collective.[220] It is this mob, not individual characters, that has the power to act in history and its actions—decisive, rupturing, overwhelming, destructive, and sublime—represent the forces of history itself.

What I will argue in this section is that *A Tale of Two Cities* formulates the historical character as a phantasmagorical specter: diminished in power, controlled by strange and invisible forces, and metamorphosing and dissolving into new forms. While the optical valence of this structure of character is particular to *A Tale of Two Cities*, it registers an anxiety that courses through Dickens's late fiction: the question of whether what Elaine Hadley calls "the ethical

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[220] Richard Alter, "The Demon of History in Dickens' "Tale," 140.

character of character" or "fictional depiction of humans as intentional, ethical beings" has any power of redress in large-scale systemic injustices.[221] Hadley links this concern in Dickens's writing of the 1850s to the growing role of statistics in public discourse throughout the decade, but especially during the Crimean War. Statistics posit what the celebrated statistician Quetelet called "man in general," a statistical abstraction theorized as fundamentally discontinuous from the individuals out of whose aggregated data it is composed.[222] This autonomous entity, "wholly different…from the people who had been counted to make its sum," was seen as responsible for large-scale historical and social trends, raising the question of whether and how individual actions, thoughts, and feelings have force in the world.[223] Echoes of this virtual and all-determining average man can be heard in Dickens's characterization of the revolutionary mob poised to storm the Bastille as a "whirlpool of boiling waters" with "every human drop…sucked towards the vortex" (223). The mob becomes a singular entity motivated by singular intention. In this novel, historical events are not caused by a collection of individuals, but by a virtual and corporate will into which individuals are absorbed and through which individuality is lost entirely.

The central characters of *A Tale of Two Cities* are not under-realized or washed out, as many critics have complained, but reflective of a thought experiment in which individuals' lack of world-historical force threatens the bounded integrity and psychological robustness of individuality itself. Each character is differently described as spectral, plural, and metamorphic, liable to dissolve, split into two, or become someone or something else. They live double lives, sometimes with double identities. The young Marquis Saint Evrémonde escapes his position as French nobleman to become the expatriate Charles Darnay, while Solomon Pross, the long-lost

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[221] Elaine Hadley, "Nobody, Somebody, and Everybody," *Victorian Studies* 59, no. 1 (2016), 83.
[222] Hadley, 72.
[223] Hadley, 70.

brother of Lucie's governess, returns as the spy and traitor John Barsad. Doctor Manette, locked for eighteen years in 105 North Tower, takes on a second identity as the Shoemaker, and, after his release, he suffers from recurrences of this alter ego taking possessing of his mind. Manette, Darnay, and Carton are each "recalled to life"—metaphorically buried and exhumed, or executed and resurrected—and split between two ontological states. Finally, characters are exchangeable for one another. When Darnay is put on trial at the Old Bailey for treason because he is suspected of spying for France, he has in fact been mistaken for the real spy Barsad. When he is put on trial by the revolutionary Tribunal at the novel's climax, he is saved from the guillotine because Carton takes his place.

None of these characters operate as the average, middle-of-the-road protagonist that Lukàcs sees in the novels of Walter Scott. Lukàcs' average protagonist is a sociological construction, a vision of character as a technology for registering dialectical change through his identity, origins, actions, and movement through the world. But, in the mid-nineteenth century moment of aggregative sociological data systems, when Dickens is writing, the "average man" is not expressed through the individual, but through the collective or mass. Character, for Dickens, is not a technique for materializing the otherwise imperceptible forces of history, as Lukàcs argues it should be. Rather, Dickens explores the ways in which historical process seems to act on characters by dematerializing them—both stripping them of individuality and stripping individuality of world-historical effectiveness. Dickens's French Revolution, in Daniel Stout's terms, is a "mass event in which individuals wash up as mere flotsam." [224]

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[224] Daniel M. Stout, *Corporate Romanticism: Liberalism, Justice, and the Novel* (Bronx, NY: Fordham University Press, 2016), 117.

Stout has linked the de-individuation of character in *A Tale of Two Cities* to the political ideology of the French Revolution that elevates the general over the particular, and the corporate over the individual. Similarly, Frances Ferguson argues that the novel attempts to come to terms with a modern logic of terrorism arising out of the revolutionary period that erodes distinctions between individuals and challenges any theory of moral action centered on a concept of individualism.[225] For both Stout and Ferguson, Dickens approaches character as a political form that reflects the ideological specificity of the historical period about which he is writing, a claim that seems undeniable. Certainly, the choice to metaphorize the revolutionary mob as a "whirlpool" that sucks individuals towards the center is not simply a reference to the virtualization of historical agency, but also registers and amplifies anxieties about the threats of revolutionary populism. At the same time, even though it is a historical novel concerned with rendering a specific set of historical events, *A Tale of Two Cities* remains concerned with a broader question of what individuality looks like under pressure of historical change.

Take the example of Charles Darnay. As a French aristocrat who disavows his class position and national identity and lives in self-imposed exile in London, Darnay embodies the between-worlds position that Lukàcs associates with the ordinary protagonists of historical fiction.[226] Yet, Darnay is characteristically ineffective at taking any historically meaningful actions. His choice to relinquish his inheritance and redistribute the wealth to the people fails to affect the revolutionary cause and leads the tribunal to imprison his servant in part because of his own mismanagement and indecision. "He had watched the times for a time of action" and the times "shifted and struggled until the time had gone by" (251). More than a moral or political action,

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[225] Frances Ferguson, "On Terrorism and Morals: Dickens' *A Tale of Two Cities*," *Partial Answers: Journal of Literature and the History of Ideas* 3, no. 2 (2005): 49-74.
[226] Lukàcs, *The Historical Novel*, 243.

Darnay's renunciation of his social position is a desperate attempt to retreat into "the happiness of his chosen English home" (251), not to act in history but to escape it. Darnay is exemplary of the relationship Dickens sees between individuals and history. Individuals cannot act meaningfully in history; they can only be acted on. The power to shape historical events rests with an anonymous, faceless mass.

Dickens registers Darnay's diminished historical agency by rendering him as an image in a Phantasmagoria. The reader first encounters him when he is a prisoner in London, facing the death penalty at the Old Bailey on suspicion of spying for the French government:

> Over the prisoner's head, there was a mirror, to throw the light down upon him. Crowds of the wicked and the wretched had been reflected in it, and had passed from its surface and this earth's together. Haunted in a most ghastly manner that abominable place would have been, if the glass could ever have rendered back its reflexions, as the ocean is one day to give up its dead. (66)

In this passage, Darnay appears to the reader as an object of vision, mediated. He stands beneath a mirror that acts as a spotlight, transforming him into an image for the audience to view. At the same time as the mirror illuminates him, it de-individualizes him, reflecting him back not as himself but as one of the "crowds of the wicked and the wretched" that have stood in his place.

The mirror that can capture its reflections evokes contemporary discourses surrounding the daguerreotype, an early photographic medium that was popularly known as the "mirror with a memory" for its mimetic accuracy and glassy, reflective surface.[227] While the photographic link between memory and technological medium is apparent in Dickens' mirror, it is significant that the description does not emphasize the power of this mirror's reflections to materialize or preserve

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[227] Susan Cook, "Season of Light and Darkness: *A Tale of Two Cities* and the Daguerrean Imagination," *Dickens Studies Annual* 42, 254. See Cook for a reading of how this passage fits into what she reads as the novel's Daguerrean motif of light and darkness.

an image in the manner of a daguerreotype. Instead, the passage connects the mirror's function of illuminating Darnay for an audience with the production of immaterial, ephemeral, and ghostly images like those created through the Phantasmagoria's projections. In the mid-nineteenth century, mirrors were associated with magic and illusions. David Brewster called the mirror "the staple instrument of the magician's cabinet" because of the myriad optical tricks that can be created through a mirror's ability to reflect, refract, and project light.[228] Much like the mirror in the interior of Robertson's Fantascope, Dickens's mirror both reflects light to illuminate an image and is associated with the production of ghosts.[229] The description of the glass "render[ing] back its reflexions, as the ocean is one day to give up its dead," an allusion to the Day of Judgment as described in the Book of Revelations, references the supernatural effect most associated with Robertson's projections: of the dead apparently "returning to life in crowds." This mirror does not reflect an image, but it seems metaphorically to project images.

The mirror's function of spotlighting Darnay for the benefit of the Old Bailey's spectators reinforces the phantasmagorical dimensions of the image. Dickens establishes the trial scene as theatrical, attended by a "tainted crowd" of people who had "paid to see the play at the Old Bailey" (63). Although it is possible to read this as a reference to melodramatic theater, the narrative's repeated suggestion that we should understand the courtroom as a purgatory more strongly evokes the Phantasmagoria. The narrator describes the Old Bailey as a "deadly inn-yard, from which pale travelers set out continually, in carts and coaches, on a violent passage into the other world" (63). The image of an inn-yard invokes Elizabethan theater in which plays were staged and watched from the balconies. The Old Bailey becomes a combination of the theatrical and the

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[228] David Brewster, *Letters on Natural Magic* (London: W. Tegg, 1856), 61.
[229] Robertson also referred to the hidden screen onto which he projected his slides as a "mirror." Heard, *Phantasmagoria,* 98.

phantasmagorical spectacle's discursive association with liminal ontology. The jail and the Phantasmagoria both contain ghostly beings who are neither dead nor alive. Furthermore, the attraction that the Old Bailey's spectators have come to watch is precisely this "violent passage into the other world." The gruesome nature of Darnay's proposed sentence, hanging and quartering, makes this prisoner's expected passage to the other world especially spectacular, so that even before the trial begins he has been "mentally hanged, beheaded, and quartered, by everybody there" (66). This bloody spectacle references the transformations of the Phantasmagoria, and especially its standard repertoire of illusions of men and women transforming into corpses, skeletons, and ghosts. Among the regular scenarios for the Phantasmagoria that Robertson reported in his memoir were Envy torn to pieces by serpents, a madwoman in a white robe "metamorphosing into a skeleton," and an adaptation of Macbeth featuring the murder of the king and the apparition of the dead monarch.[230] These clues suggest that the mirror above Darnay's head that casts light upon him is a metaphorical magic lantern that projects him as a phantasmagorical specter; the audience, like the audience at one of Robertson's shows, gathers to watch his expected transformation.

In introducing Darnay into the novel, Dickens concocts a complex scene of technological and optical mediation that registers the relationships between individual and crowd, and individual action and historical phenomena, in the novel. The image of the "crowds of the wicked and the wretched" that the mirror holds is phantasmagorical, but it is also historical. It immediately establishes a historical framework for Darnay's appearance in court by referencing those who have stood in his place in the past, not as a series of individuals but as a virtual "crowd." If the mirror reflects Darnay's image, it seems to reflect him back as a historical figure stripped of his

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[230] Heard, *Phantasmagoria,* 108-110.

individuality by his place in history—no longer himself but one of "the wicked and the wretched," absorbed into an abstract collective. The mirror's reflection dissolves the boundaries of individual identity, and so dissolves Darnay into a crowd. John Plotz has argued that the emergence of urban crowds in the nineteenth century invited fantasies of dissolution of individual identity that were often associated with the Phantasmagoria. For example, in Wordsworth's *Prelude*, the speaker's interaction with the London throngs draws on phantasmagorical imagery to depict the interface between self and crowd as a ghostly dreamscape, one that creates "permanently muddled boundaries between self and world."[231] This first courtroom scene in *A Tale of Two Cities* seems to operate similarly by turning to the visual effects off the Phantasmagoria to describe the way experiencing oneself as part of a crowd seems to make the boundary between self and world porous. However, while Wordsworth's speaker literally moves through urban crowds, the crowd to which Darnay belongs remains virtual and historical. The "wicked and the wretched" have never appeared together, as part of a single crowd, but reference a sequence of individuals across time. Thus, the image of Darnay that the mirror reflects is of a man whose status as a historical subject entails a loss of identity and dissolution into a virtual crowd.

Even though Darnay is narrowly saved from death and acquitted at the end of the trial, this does not seem to restore him from his phantasmagorical state. Stryver, Darnay's counsel, wins the case on the basis of Darnay's apparent resemblance to Sidney Carton. In spite of the fact that the prime witness has identified Darnay as a spy, Stryver wins over the jury by asking the witness to "look well upon that gentleman, my learned friend over there [Carton]," and to consider whether the two men are not so alike as to be nearly interchangeable (77). As Ferguson points out, nothing

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[231] John Plotz, *The Crowd: British Literature and Public Politics* (Berkeley, CA: University of California Press, 2000), 18.

in the novel suggests that Carton and Darnay actually look alike, and in fact, all evidence—Darnay is "well-grown and well-looking, with a sunburnt cheek and dark eye," whereas Carton is the "idlest and most unpromising of men…a dissipated cat"—suggests the contrary.[232] Justice is carried by a visual trick, an optical illusion of likeness, with Stryver as a showman who uses verbal suggestion to manipulate the visual perception of the audience. Darnay's exoneration does not verify or authenticate his identity or shore up its boundaries. Rather, it bears out the image of him as one of the crowds by showing him to be radically interchangeable and indistinguishable from any other.

Darnay's phantasmagorical dissolution in the "crowds of the wicked and the wretched" is exemplary of the novel's approach to the intersection of world historical events and character. Although it appears to violate the terms of Lukàcs's theory of historical characters, for Fredric Jameson, the phantasmagorical tropes of "dissolution of individuality and a loss of self in the crowd" can be methods of historical representation.[233] Jameson argues that history emerges in fiction at the intersection of what he calls character and collective, the latter of which he describes as "nation, people or multitude," because this intersection dramatizes the ways in which individuals are absorbed into a totality greater than themselves.[234] The specificity of the historical novel as genre is in the strategies that texts use to integrate character and collective, one of which he argues is the uncanny or dreamlike sequence in which a character is "briefly raised to another ontological level" and seems to dissolve into the collective. Although Jameson does not discuss the example of *A Tale of Two Cities*, it is clearly paradigmatic of this mode of historical representation.

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[232] Ferguson, "On Terrorism and Morals," 66-68.
[233] Fredric Jameson, *Antinomies of Realism* (New York: Verso, 2015), 286.
[234] Jameson, 280.

Dickens's portrayal of the diminished authority of the individual as a witness to history is part of the novel's broader exploration of the limits of individual perception. In a now famous passage of the novel, the narrator muses:

> A wonderful fact to reflect upon, that every human creature is constituted to be that profound secret and mystery to every other. A solemn consideration, when I enter a great city by night, that every one of those darkly clustered houses encloses its own secret; that every beating heart in the hundreds of thousands of breasts there, is, in some of its imaginings, a secret to the heart nearest it! Something of the awfulness, even of Death itself, is referable to this […] In any of the burial-places of this city through which I pass, is there a sleeper more inscrutable than its busy inhabitants are, in their innermost personality, to me, or than I am to them?

Plotz uses this passage to argue that the novel authorizes a different view of the relation between self and crowd than Wordsworth's *Prelude*, one in which individuals remain hermetically bounded and unknowable rather than phantasmagorically fluid. But, this claim only makes sense when the passage is taken out of context of the rest of the novel. *A Tale of Two Cities* tells a story about the buried and forgotten in history being "recalled to life." Everything that transpires in the novel resists the idea that secrets remain within the "innermost personality" of individuals any more than the dead remain in their metaphorical graves. Dickens relies on phantasmagorical images of resurrection, dissolution, and spectrality to dramatize the revealing of the buried and forgotten "secret[s]" lodged in "every one of those darkly clustered houses… every room… every beating heart" (14-15). Plotz does not acknowledge the irony that this passage opens a chapter that describes Manette's release from prison as both resurrection and exhumation—Lorry, on his way to retrieve Manette from Paris, imagines that he "was on his way to dig some one out of a grave" (17). These metaphors undermine the premise of the narrator's analogy—that just as the dead are inscrutable, so are individuals—and they challenge Plotz's claim that *A Tale of Two Cities* rejects the confusion of boundaries between self and world that he associates with the Phantasmagoria.

Rather than reading this passage as a statement on the boundedness of self in the novel, I would argue that it registers Dickens's epistemological uncertainty about whether knowledge about individuals can provide us with knowledge about the world. In an era of technological modernity, history is only knowable and explainable in virtual and aggregative terms. History is referable not to individual choices, thoughts, and actions, but to the movements and patterns of crowds. When the narrator remarks that the death of friends and lovers is "the inexorable consolidation and perpetuation of the secret that was always in that individuality" (15), he is remarking not just on the inscrutability of individuals to one another, but on the death of the individual as a legible and meaning-bearing entity in history. Ultimately, *A Tale of Two Cities* does not make the claim that we cannot know individuals; it makes the claim that what we can know about individuals is incommensurate with our ways of understanding the world. The image of Darnay dissolving into a virtual crowd through an optical technology indexes a mid-century cultural anxiety about the virtualization of social and historical experience, and the diminished role of individuals in the process of history.

Phantasmagorical Temporality: The "Bright Continuous Flow"

The French Revolution was the defining historical problem for the nineteenth century, and nineteenth-century historians vigorously debated its causes.[235] For Adolphe Thiers, the causes of the Revolution had been present for centuries, and its outbreak was only a matter of timing. Thomas Carlyle objected that this view absolved the revolutionaries of their actions and argued that certain variables might have prevented the revolution or stopped it in its course.[236] Dickens's

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[235] Griffin, "The Comparative History of *A Tale of Two Cities,*"815.
[236] Collins, "Charles Dickens and the French Revolution," 48-9.

own perspective seems to have hovered somewhere between these two theories. During the Chartist rebellions in 1848, Dickens had written passionately in favor of the view that the French Revolution was unavoidable, "the horrible catastrophe of a drama, which had already passed through every scene and shade of progress."[237] In the mid-1850s, however, Dickens applied a more nuanced understanding of historical contingency when he worried that the popular discontent in England during the Crimean War was "extremely like the general mind of France before the breaking out of the first Revolution, and is in danger of being turned by any one of a thousand accidents – a bad harvest – the last strain of too much aristocratic insolence or incapacity – a defeat abroad…"[238]

Given this context, what is perhaps most notable about the way *A Tale of Two Cities* approaches the history of the French Revolution is that it seems fundamentally uninterested in the questions of historical causality or contingency. Through a mixture of Christological and classical motifs of predestination and fate, Dickens is content to view the Revolution as an almost cosmic inevitability. His focus is not on why historical events occur, or in tracking their causes and effects through character or plot, but with history as an ongoing state of change. Dickens's French Revolution is a scene of heightened, rapid, telescoped change that reveals the nature of historical process as a series of magical transformations, metamorphoses and transfigurations, an idea he expresses through allusions to Ovid's *Metamorphoses* and the *Arabian Nights* that are peppered throughout the novel.[239] His sense of historical process is also defined by optical techniques of

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[237] Dickens, "Judicial Special Pleading," *The Examiner* (December 23, 1848), quoted in Collins, "Charles Dickens and the French Revolution," 48.

[238] Dickens to A.H. Layard, April 10, 1855, *Selected Letters of Charles Dickens*, ed. David Paroissien (London: Palgrave Macmillan, 1985), quoted in Collins, "Charles Dickens and the French Revolution," 42.

[239] Richard Maxwell, notes to *A Tale of Two Cities*, by Charles Dickens (New York: Penguin, 2003), 452, 488.

visual transformation and continuity, emerging not just from the Phantasmagoria, but from mid-nineteenth century magic lantern projection. History, for Dickens, is not just transformation but spectral transformation, a phantasmal process that reveals the instability and immateriality of persons and things in time.

In this section, I will focus on two descriptions of processions of carriages in *A Tale of Two Cities* that show how the novel's vision of historical process transposes the visual effects of optical technologies of projection and animation. In these passages, Dickens plays on the trope of historical fiction as a carriage ride, established in an early chapter of Walter Scott's *Waverley*. The narrator interjects, "I do not invite my fair readers…into a flying chariot drawn by hippogriffs, or moved by enchantment. Mine is a humble English post-chaise, drawn upon four wheels, and keeping his Majesty's highway."[240] While *A Tale of Two Cities* offers its own humble post-chaise in the form of the Dover mail coach that travels between London and Paris in the opening scenes of the novel, it also uses descriptions of carriages and tumbrils processing through the streets to allegorize history as a spectacle that the reader "watches" unfold. For example, in the final chapter of the novel, the narrator reflects on the transfigurations of time while observing a procession of tumbrils:

> Six tumbrils roll along the streets. Change these back again to what they were, thou powerful enchanter, Time, and they shall be seen to be the carriages of absolute monarchs, the equipages of feudal nobles, the toilettes of flaring Jezebels, the churches that are not my father's house but dens of thieves, the huts of millions of starving peasants! (385)

This description offers a historical palimpsest: a view of the tumbrils that implies that the wood itself is hacked from the accouterments of the monarchic era, the carriages and churches and huts

that both represented and upheld the old order. The rolling tumbrils evoke the ineluctable forward momentum of history as they proceed to the guillotine, but another temporality is conveyed through the image of the tumbrils metamorphosing back into their past forms. Where Scott constructs historical fiction as steady, reliable, and unromantic, like a humble post-chaise, Dickens offers a contrasting sense of history as, in Scott's terms, "moved by enchantment." Time is literally figured as an enchanter.

The mode of enchantment that Dickens associates with the movements of history is coded as optical. The syntactical unfurling of the tumbril's former states through the form of the list mimics the metamorphic effects of phantasmagorical projection. These effects were primarily created through a type of trick slide called a slipping slide. Slipping slides are composed of a conventional lantern slide, a piece of painted glass enclosed in a wooden frame, but with a lever attached to a secondary piece of glass that sits behind it. The secondary slide can be painted in one of two ways: with a visual component that complements the primary slide, or in all black to cancel out a visual component of the primary slide. When the lever is pushed or pulled, the projected image transforms. The rudimentary motion effect created by slipping slides might best be described as juxtapositional. For example, figures 3.3 and 3.4 show two stages of a slipping slide from the collection of the Bill Douglas Cinema Museum that may be a variant of "The Birth of Rustic Love," a Phantasmagoria sequence popularized by Robertson. In Robertson's description of the scenario, Eros emerges from a rose to unite a peasant girl and shepherd as lovers.[241] This slipping slide, in a variation on Robertson's theme, depicts a woman's head emerging from a flower on a stem. The image on the right-hand side shows the second stage of image: the same flower on the stem with the head of a woman instead. The image of the head is painted on the

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[241] Heard, *Phantasmagoria,* 108.

secondary slide, hidden in the left-hand image beneath the primary slide by its black background. When the showman activates the slipping slide, the implication is that the head sprouts from the mouth of the flower. However, the actual visual experience of the transformation is different. The showman pulls the lever, which can be seen on the left-hand side of the slide, outwards, meaning the image of the woman's head is pulled into the mouth of the flower from the right. What this example shows is that slipping slides, by and large, cannot effectively represent progressive movement or change. Rather, they evoke or allegorize progressive change through juxtaposition and substitution. The Phantasmagoria's metamorphosis effect relies on the viewer to synthesize a rapid succession of discontinuous images into a continuous movement. The viewer registers an image of a flower replaced by an image of a flower with the head of a woman, and reads this as the head of a woman "appearing in" the flower.

Dickens's description of the tumbrils metamorphosing into carriages and churches mimics the way slipping slides visually reconcile juxtaposed images. Slipping slides were used in magic lantern shows throughout the nineteenth century to represent magical transformations—states of transfiguration where one thing become another. The transfiguration of the tumbrils in Dickens's passage references one of the most popular stories for Victorian lantern shows: Cinderella. Slipping slides were used in magic lantern representations of the Cinderella story to render its many magical transformations at the hands of Cinderella's fairy godmother (figures 3.5 and 3.6). Just like the pumpkin that is transformed into a coach, and that turns back into a pumpkin at midnight, Dickens imagines revolutionary tumbrils as subject to a state of bewitchment that has transformed them from their past forms.

Figure 3.3: First Phase of "Woman's Head Appears from Flower." Single slipping slide, n.d. Courtesy of the Bill Douglas Cinema Museum, University of Exeter.

Figure 3.4: Second Phase of "Woman's Head Appears from Flower." Single slipping slide, n.d. Courtesy of the Bill Douglas Cinema Museum, University of Exeter.

Figure 3.5: First Phase of "Cinderella and her Fairy Godmother." Single slipping slide, n.d. Courtesy of the Bill Douglas Cinema Museum, University of Exeter.

Figure 3.6: Second Phase of "Cinderella and her Fairy Godmother." Single slipping slide, n.d. Courtesy of the Bill Douglas Cinema Museum, University of Exeter.

Scholars have generally overlooked the influence of the magic lantern on Dickens's prose style in favor of other media-specific influences. For example, Juliet John and Carolyn Williams have read the visual expression of narrative discontinuity in the work of Victorian novelists like Dickens and George Eliot as an imitation of the techniques of stage melodrama.[242] John describes Dickens's characteristic list-like syntactical structure as a "metonymic chain of stylized animation" that is influenced by the static tableaux of melodramatic theater.[243] The tendency towards bold, static images on the melodramatic stage produced what William Hazlitt described as "a perpetual succession of striking pictures," a structure that John reads into Dickens's descriptive prose and argues produces a paradoxical "fluidity."[244] While it is true that melodramatic theater has a profound influence on Dickens's visual imagination, the syntactical "fluidity" that John identifies, in which "stasis can never be other than metamorphosis," was also deeply associated throughout the nineteenth century with the rapidly changing spectral images of magic lantern shows, including the Phantasmagoria. The optical nature of this fluidity is apparent in the analogy John uses to describe it: "photographic stills shown in rapid succession to create the illusion of a moving picture."[245] However, the similarities between pre-cinematic optical illusions and Dickens's prose description is more than analogic. It is another more direct site of influence for how Dickens renders the effects of historical change.

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[242] Juliet John, *Dickens' Villains: Melodrama, Character, Popular Culture* (Oxford: Oxford University Press, 2001); Carolyn Williams, "Moving Pictures: George Eliot and Melodrama," in *Compassion: The Culture and Politics of an Emotion*, ed. Lauren Berlant (New York: Routledge, 2004): 105-144.
[243] John, *Dickens' Villain,* 107.
[244] John, 105, 107.
[245] John, 107.

The procession of the tumbrils is an example of a passage that associates the structure of "fluidity" with the visual sequences of the Phantasmagoria rather than those of stage melodrama. The invocation of "Time" as a powerful enchanter who has the power to reverse-engineer history references a figure like Robertson, whose showmanship was associated with the power to resurrect the pre-revolutionary historical past. If this view of the procession of the tumbrils signals the breakdown of monarchic succession and the disruptive nature of revolutionary history, it also offers another model of history in the metamorphic visual flow of the Phantasmagoria's images, which renders juxtaposed forms—like the two versions of the flower in figures 3.3 and 3.4—as an unbroken sequence through the illusion of continuity. This passage invites the reader to contemplate revolutionary history as a state of spectral and metamorphic change.

The mid-century magic lantern, with its crude slipping slides and rapidly changing image sequences, was not capable of the kinds of continuity illusions John refers to when she references "photographic illusions shown in rapid succession." This is the optical principle known as "persistence of vision" that tricks the eye into conjoining rapidly changing images into an unbroken visual sequence, and it predates photography. As I will explore more fully in Chapter Four, the theory of persistence of vision had its origin in the 1820s and 1830s in a series of experimental optical toys.[246] In the late 1850s, while Dickens was writing *A Tale of Two Cities*, the market for optical toys based on the principle of persistence of vision had grown, but none were capable of blending persistence of vision with projection. Persistence of vision toys primarily fell into the category of what Erkki Huhtamo has called "peep media," requiring the viewer to peer

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[246] Laurent Mannoni, *The Great Art of Light and Shadow: Archaeology of the Cinema*, trans. Richard Crangle (Exeter: University of Exeter Press, 2000), 201.

into an apparatus through an aperture in order to view the moving image.[247] For example, the zoetrope was a popular mid-nineteenth century persistence of vision toy composed of a spinning circular drum interspersed with apertures. Strips of paper illustrated with a sequence of forms in progressive stages of motion are placed inside the drum. When it is spun, a small number of viewers can peer through the apertures to see the illustrated forms as an animated sequence.

However, patents from the 1860s show that optical inventors sought to hybridize persistence of vision devices with the magic lantern show in order to project moving images, and that the representation of historical and temporal transformation was among their aspirations for the new technology. In 1864, the French inventor Louis-Arthur Ducos du Hauron patented a device for photographic reproduction that would register "all the transformations which it undergoes during the predetermined time" and an adapted magic lantern that would project such moving images.[248] He claimed these projections would: "condense into a few moments a scene which in reality took place over a considerable period of time," slow transformations down "whose speed sometimes makes them impossible to see"; and "reverse the order in which a scene or phenomenon takes place."[249] Ducos du Hauron also argued that this device would be particularly appropriate for reproducing "the passing of a procession" in full motion.[250] This mid-Victorian fantasy of fast-forward, slow motion, and rewind reveals how aware pre-cinematic optical inventors were of the possible connections between projected moving images and new modes of visualizing change in time. Moving image projections might not only capture what Walter Benjamin called the optical

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[247] Erkki Huhtamo, "Towards a History of Peep Practice," in *A Companion to Early Cinema*, ed. André Gaudreault, Nicolas Dulac and Santiago Hidalgo (Malden, MA: Wiley-Blackwell, 2012), 32-51.
[248] Mannoni, *The Great Art of Light and Shadow,* 257.
[249] Mannoni, 259.
[250] Mannoni, 257.

unconscious, but also something like a historical unconscious: the ineffable processes of temporal change.

A second processional scene midway through the novel blends lantern imagery with a modern awareness of persistence of vision illusions to depict historical transformation as an optical spectacle. In a pivotal chapter early in the novel that dramatizes the seething class tensions between the aristocracy and the working poor, the aristocrat Monsieur le Marquis kills a peasant boy with his carriage. His callous treatment of the boy's death ends with him cavalierly driving on:

> He was driven on, and other carriages came whirling by in quick succession; the Minister, the State-Projector, the Farmer-General, the Doctor, the Lawyer, the Ecclesiastic, the Grand Opera, the Comedy, the whole Fancy Ball in a bright continuous flow, came whirling by. The rats had crept out of their holes to look on, and they remained looking on for hours; soldiers and police passing between them and the spectacle, and making a barrier behind which they slunk, and through which they peeped. […] The water of the fountain ran, the swift river ran, the day ran into evening, so much life in the city ran into death according to rule, time and tide waited for no man, the rats were sleeping close together in their dark holes again, the Fancy Ball was lighted up at supper, all things ran their course.

In this passage, the "bright continuous flow" of the aristocratic procession is rendered as an optical "spectacle" of moving images watched by a crowd of peasants, soldiers, and police. Rather than the Phantasmagoria, the "bright continuous flow" evokes panoramic magic lantern slides, a type of lantern slide popular throughout the nineteenth century and often adapted for small format toy lanterns that could be purchased for children's use at home. Horizontal in format, panoramic slides are moved slowly across the lantern's light source and most commonly feature a succession of images such as a procession of carriages (fig. 3.7), a parade, or a series of figures chasing one another.[251] When projected, panoramic procession slides would render a series of carriages as a "bright continuous flow" across the screen.

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[251] Charles Musser, *The Emergence of Cinema: The American Screen to 1907* (New York: Charles Scribner's Sons, 1990), 42.

The "peeping" of peasants also evokes the mode of spectatorship associated with persistence of vision toys. The "barrier" through which the peasants "peep" evokes the circular drum of the zoetrope, a barrier spaced out with apertures for peeping at an animated spectacle. In this reading, the "bright continuous flow" is located not in the carriages themselves, but in the interface between the carriages and the perception of the viewers who watch them drive by. The transformation of the carriages into a "flow" registers the speed of the procession and the way the viewer perceives a rapid sequence of images as a visual stream. This dematerializing procedure of carriages into flow is reflected in the typography: the stylized eighteenth-century capitalizations that identify the carriages metonymically by their owners—"the Minister, the State-Projector, the Farmer-General, the Doctor…"—are all melted down into a whirl and flow of description. The contours of the Fancy Ball and all its titled aristocrats and gentry seem to dissolve as they speed by, as though the very boundaries delineating them were lost.

Figure 3.7: Detail from Panoramic Magic Lantern Slide ("Travelers in Paris."). Courtesy of the National Science and Media Museum / Science and Society Picture Library, Bradford, UK.

If the "bright continuous flow" is an optical and phantasmagorical spectacle, it is also metonymic of historical revolution. The "quick succession" of carriages that creates the "flow" references France's hereditary monarchy and the republic that will quickly succeed the line of Bourbon kings. Thus, the succession of images that evokes the Phantasmagoria and persistence of vision technologies is used to foreshadow historical and political succession. Aptly, the typography mimics the succession of upper-case aristocratic carriages ("the Minister, the State-Projector, the Farmer-General") by the lower-case peasants, described as "rats," who creep, look, slink, and peep as the "spectacle" passes them by. It is a typographic "succession" of the lower-cased lower-classes to the mantle of aristocratic rule as well as a typographic decapitation, punning on the imminent guillotining of the nobles. The doubling of the flow of the carriages with the flow of water in "the running of the water and the rolling of the Fancy Ball" sets off a series of images of temporal change that flow from one to another in Dickens's characteristic list-like sequence—the water runs, the river runs, life runs into death, time and tide waits for no man. By the end of the passage, the "bright continuous flow" not only figures historical transformation, but also time itself.

The shift in metonymy, from revolution to time, is symptomatic of the novel's inconsistency in thinking about historical causality. On one hand, the "flow" of carriages seems to offer a view of how the structural forces underlying the present—class inequality and economic violence—are related to the past and make future outcomes inevitable, by representing revolution as an impending metamorphosis of the present. The "bright continuous flow" could signal the interpenetration of structural forces and singular events, and of history and the present. But the end of the passage, which connects the flow of carriages to that of "time and tide," resolves the foreshadowing of revolution into everyday temporal transformations. Dickens strips revolution of

its historical specificity, zooming out from the scene of the crime to situate it within a natural order of flow and flux.

Jameson has argued that realism is structurally unsuited to the task of representing revolution. Because of its commitment to the integrity of the present, realism must necessarily avoid recognition of structural social change that might undermine "those materials of the present which are the building blocks of narrative realism." From the revolutionary perspective, Jameson continues, those materials are "mere appearances or epiphenomena, transitory moments of history, a sham calm before the storm…"[252] What realism cannot recognize, he concludes, is "the ontology of the present as a swiftly running stream."[253] *A Tale of Two Cities* gives us a model of what realism looks like when it commits to such an ontology of the present. In the figure of the "bright continuous flow," Dickens is precisely interested in what Jameson argues realism must exclude— the ontology of the present as a "swiftly running stream" of visual images, a "bright continuous flow" that links the present moment to the past and to the transformed future that it will become. As Jameson predicts, this gives a sense of the present moment as strangely weightless and transitory, as "mere appearance." With *A Tale of Two Cities*, Dickens wants to show how, from a historical perspective, the present moment is metamorphic and spectral, and that persons and things within history are unstable and immaterial.

However, Dickens's commitment to the ontology of the present is precisely what distinguishes his approach to representing history from Jameson's or Lukàcs's theories of historical fiction. As the image of the "bright continuous flow" demonstrates, his portrayal of the present as epiphenomenal or "mere appearance" is not in service of analyzing the latent structural

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[252] Jameson, *Antinomies of Realism,* 145.
[253] Jameson, 146.

forces that underly the present or to make visible the process of historical causality that leads to the outbreak of revolution. Instead, Dickens is interested in the perceptual experience of history as perpetual flow and endless transformation. While for Marxist theorists such as Jameson and Lukàcs the real of history is expressed dialectically in class conflict, for Dickens the real is the historical perspective that recognizes the present as ghostly—stripped of its particularity, one spectral form within an endless metamorphic flow. In this sense, in spite of its explicit content, *A Tale of Two Cities* is not interested in representing revolution as such. Instead, the novel uses the scene of the French Revolution as an opportunity to explore the processual and phenomenological nature of historical change. Like *The Moonstone* and its representation of empire, *A Tale of Two Cities* turns to figures of technological optical illusion in order to present political reality—here the reality of historical revolution—as a virtual spectacle.

CHAPTER FOUR
Persistence of Character: Moving Images in *The Mayor of Casterbridge*

All of the characters in *The Mayor of Casterbridge* move in circles. Michael Henchard, the mayor of the title, compulsively repeats the same mistakes in an endless cycle of self-destruction. This behavioral and psychic pattern is given dramatic spatial expression in the novel's final chapters when Henchard's "centrifugal" desire to leave Casterbridge is counteracted by his "centripetal" desire to see his daughter and leaves him "gradually, almost unconsciously" walking in circles around his hometown.[254] Donald Farfrae has already begun his journey to Bristol, where he will take a boat to America, when he turns around and "retrace[s]" his steps to return to Casterbridge (68). Susan Henchard walks away from her husband, leaving him drunk in the furmity-tent at the Weyden Priors fair, only to circle back eighteen years later to the same spot to find him. Characters circle through the novel, but circularity also seems to express something about the structure of character. In one of the most striking poetic moments in the novel, Elizabeth-Jane's consciousness "[spins] in her…like a top" (123-124). The essence of psychic life, what underlies and gives shape to character, is spinning.

This chapter argues for the influence of pre-cinematic moving image toys on Thomas Hardy's approach to character in *The Mayor of Casterbridge*. Moving image toys are a genre of optical device designed to demonstrate the nineteenth-century theory called principle of persistence of vision. Nineteenth-century physicists believed that the because the spectator's visual perception of an object continues momentarily after that object disappears, the eye will conjoin

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[254] Thomas Hardy, *The Mayor of Casterbridge* (New York: Modern Library, 2002), 328. All subsequent references to this edition will be in parentheses.

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discontinuous visual impressions into a fluid sequence and produce an illusion of motion.[255] Before the advent of cinema in the final decade of the nineteenth century, most moving image apparatuses were spinning toys—disks, drums, or wheels printed with twelve or sixteen images representing phases of action. When spun, these toys transformed multiple discontinuous images into a single image. Victorian moving images were not linear, developmental, or narrative, but circular and "based essentially on *rotation, repetition and brevity*."[256] I argue that *The Mayor of Casterbridge*'s representation of character turns on a motif of technological moving images in two ways. First, Hardy references spinning toys like the phenakistoscope and zoetrope when he portrays his characters compulsively moving in circles and spinning in place. These optical toys, and what I will characterize as their discourses on fate, demonic possession, and remote control, allow Hardy to render characters motivated by unconscious desires and the compulsion to repeat. Second, Hardy uses the framework of persistence of vision, and the way the eye experiences the discontinuous static images printed on a phenakistoscope disk as a single virtual image in motion, to suggest that character is a perceptual illusion created at the interface of the text and the reader.

As a fin-de-siècle novelist, Hardy is undeniably a complex and transitional figure in the history of realism and optical culture that I have traced in this dissertation. Unlike Elizabeth Gaskell, Wilkie Collins, and Charles Dickens, Hardy lived to see the advent of cinema and its global spread as an art form. Several of his novels were adapted for film during his lifetime, including *The Mayor of Casterbridge*. Although Hardy published his last novel in 1897, only two years after the first projection of cinematic images, the historical proximity of his novels to cinema

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[255] The theory of persistence of vision was debunked as an explanation for moving images in the early twentieth century.

[256] Nicolas Dulac and André Gaudreault, "Circularity and Repetition at the Heart of the Attraction: Optical Toys and the Emergence of a New Cultural Series," in *The Cinema of Attractions Reloaded*, ed. Wanda Strauven (Amsterdam University Press, 2006), 228.

and his lucid, vibrant visual descriptions have led many scholars to argue that Hardy's fiction anticipates the visual vocabulary of cinema. Variations of this argument had been made as early as 1922, when Joseph Warren Beach wrote that *The Mayor of Casterbridge* was more "movie" than book because of its reliance on the power of visual images to carry the narrative.[257] More recently, scholars such as David Lodge, Roger Webster, and Joan Grundy have argued that Hardy's prose style anticipates cinematographic techniques like the long-shot, close-up, wide angle, and zoom, as well as demonstrated how his visual descriptions can be broken down into a series of shots.[258] For Lodge, Hardy creates a "visualized world" by using "verbal description as a director uses the lens of his camera, to select, highlight, distort, and enhance."[259]

I argue that Hardy's late fiction is more invested in a pre-cinematic model of moving images, one that was displaced by the advent of cinema and is overlooked in much criticism on early film culture. As we saw in the previous chapter, Dickens makes references to speculative moving image technologies in *A Tale of Two Cities* in order to represent historical unfolding. However, the device patented by Louis-Arthur Ducos du Hauron in the 1860s that sought to "condense into a few moments a scene which in reality took place over a considerable period of time" was an outlier among pre-cinematic moving image devices.[260] Early moving image

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[257] Joseph Warren Beach, *Technique of Thomas Hardy*, quoted in Paul J. Niemeyer, "Hardy and Cinema: A Plethoric Growth in Knowledge," *The Ashgate Research Companion to Thomas Hardy*, ed. Rosemarie Morgan (Surrey: Ashgate Publishing, 2010), 316.

[258] David Lodge, "Hardy and Cinematographic Form," *NOVEL: A Forum on Fiction*, Vol. 7, No. 3 (Spring 1974): 246-254; Roger Webster, "From Painting to Cinema: Visual Elements in Hardy's Fiction," *Thomas Hardy on Screen*, ed. T.R. Wright (Cambridge: Cambridge University Press, 2005), 315-328; Joan Grundy, *Hardy and the Sister Arts* (London: Macmillan Press, 1979), 106-133.

[259] Lodge, "Hardy and Cinematographic Form," 249.

[260] Laurent Mannoni, *The Great Art of Light and Shadow: Archaeology of the Cinema*, trans. Richard Crangle (Exeter: University of Exeter Press, 2000), 259. For a discussion of this patent, see Chapter 3.

technology was not a vehicle of storytelling or a means of representing historical causality. Instead, it sought to create an illusion of motion freed from the constraints of narrative. Toys like the phenakistoscope and zoetrope created images that moved in place, repeating their visual transformations over and over again in what André Gaudreault and Nicolas Dulac call an "endless loop." Rather than viewing Hardy as a "cinematic" novelist who tells stories in images, I demonstrate Hardy's investment in a now obscure pre-cinematic moving image culture to tell stories through motifs of circularity and repetition.

Through this argument, I also seek to make visible the cultural significance of circular and spinning moving image devices in the realist literary imagination. The case of *The Mayor of Casterbridge* shows how Hardy turns to the visual effects of nineteenth-century moving image toys like the phenakistoscope, and the discourses surrounding them, in order to conceptualize unconscious motivation, which he defines as the compulsion to act against one's knowledge or beliefs. "I often think of people moving under enchantment. or somnambulism," Hardy wrote in his notebook in 1887, the year after *The Mayor of Casterbridge* was published. "The enchantment, mesmerism, or what not, works to make a person, a people, &c., do one set of things while believing another."[261] While Hardy literally animates this notion of "do[ing] one set of things while believing another" through somnambulism in *Tess of the D'Urbervilles*, *The Mayor of Casterbridge* represents this same problem by imagining its protagonist as a figure on a phenakistoscope that is doomed to repeat the same actions again and again. Hardy's characters move through time in a series of circular repetitions that express unconsciously motivated wishes and desires. This chapter both proposes a new framework for reading Hardy's experiments in

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[261] Thomas Hardy, *Thomas Hardy's 'Poetical Matter' Notebook*, ed. Pamela Dalziel and Michael Millgate (Oxford: Oxford University Press, 2009), 15.

representing character through the media imaginary of the phenakistoscope and related moving image toys, and offers a reading of the discursive association between moving image toys and the unconscious in nineteenth-century culture.

Roundabout Inventiveness: Thomas Hardy's Moving Images

Optical technology may seem like an unusual framework for thinking about Hardy's narrative practices. Unlike the work of Wilkie Collins and Charles Dickens, which betrays their authors' enthusiasm for modern urban life and popular spectacle, Hardy's novels have been viewed as "an almost Luddite rejection of the forces of urbanization and mechanization."[262] While optical technology makes frequent appearances in his work, it is often depicted as an invasive force that threatens to corrupt the integrity of pre-modern folkways. In *The Woodlanders*, the novel Hardy wrote immediately after *The Mayor of Casterbridge*, the rakish doctor Fitzpiers first appears in the novel as "one solitary point of light, which blinked" from a window and which changes color from blue to violet to red.[263] Grace Melbury, who sees the blinking light from her bedroom window, is amazed by this "marvel" in as remote and rural a place as Little Hintock:

> Almost every diurnal and nocturnal effect in that woodland place had hitherto been the direct result of the regular terrestrial roll which produced the season's changes; but here was something dissociated from these normal sequences, and foreign to local knowledge.[264]

Given the particular colors that blink outside his window, Fitzpiers may be conducting an experiment on the visible spectrum. The visibility of the artificial light across the distance of the town, however, and its projection against trees and sky, implies that Fitzpiers is using a magic

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[262] John Plotz, "Motion Slickness: Spectacle and Circulation in Thomas Hardy's 'On the Western Circuit,'" *Studies in Short Fiction*, Vol. 33 (1996), 370.

[263] Thomas Hardy, *The Woodlanders* (Oxford: Oxford World's Classics, 2005), 44.

[264] Hardy, *Woodlanders*, 44.

lantern. This unexplained optical phenomenon marks the outsider Fitzpiers as suspect and potentially sinister, an implication that is borne out by the plot. Like his technological light, he is "foreign to local knowledge." His blinking light is an unnatural force, disrupting the natural cycles of days and seasons—the existential and perceptual conditions of everyday life.

Despite Hardy's depiction of optical technology as an object of antipathy and mistrust, his writing is deeply informed by it. Born in 1840, Hardy was a product of the popular optical culture that an earlier generation of novelists like Gaskell, Collins, and Dickens explored through fiction. He read about optics as a child through the midcentury magazine *The Popular Educator* and John M. Moffat's *The Boy's Book of Science*, which covered topics including the behavior of light, optical illusions, and optical instruments.[265] Additionally, Hardy's library at Max Gate in Dorchester included volumes on the microscope and the science of apparitions.[266] Since both were published in the 1850s, it is likely that these subjects formed a part of Hardy's reading and education as a teenager and young adult. While the other novelists I have discussed in this dissertation were primarily interested in optics as the source of visual spectacle, Hardy had a lively appreciation for the science itself. His novel *Two on a Tower*, about an unhappily married woman who falls in love with an astronomer, includes scenes of stargazing through telescopes and a detailed account of astronomical theories of outer space. As Anna Henchman has demonstrated, the metaphors of stargazing that run through Hardy's fiction showcase a deep knowledge of the challenges of understanding the universe. For instance, Hardy specifically refers to the optical distortions that make astronomical study difficult, such as the fact that human vision cannot judge

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[265] Anna Henchman, *The Starry Sky Within: Astronomy and the Reach of the Mind in Victorian Literature* (Oxford: Oxford University Press, 2014), 21, 131.

[266] See Michael Millgate, "Thomas Hardy's Library at Max Gate: Catalogue of an Attempted Reconstruction," University of Toronto Library, September 2014, http://hardy.library.utoronto.ca/.

distance through stereoscopic vision beyond the range of two hundred yards.[267] Furthermore, Hardy uses such scientific issues to analogize perceptual and epistemological problems. Henchman argues, for example, that the fallacious organization of vision with the viewer at the center of the universe comes to represent the problem of knowing other minds.[268] Since astronomy was a branch of optics in nineteenth-century science, Hardy's enthusiasm for astronomy would have provided him with a strong working understanding of the physiology of vision and the physics of light.

Hardy came of age with an established optical culture that was not only diffused in educational tracts, household toys, and popular spectacles, but also through the literary imagination. In *Jude the Obscure*, Christminster is represented as a virtual image focalized through Jude's perception. Most famously, Jude is "looking at the ground as though the future [of his life at Christminster] were thrown thereon by a magic lantern" when he is smacked in the ear with a pig-heart hurled by Arabella, his future wife.[269] As we saw in the previous chapter, the notion of the magic lantern projection as a crystal ball that can predict the future was a trope in Victorian culture. However, unlike in Dickens's historical projections, Hardy is not comparing the lantern projection to a prophecy of the future, but rather, the mind to a magic lantern that projects fantasies of the future. Through this analogy, Hardy is drawing on a long history of optical toys as literary figures for imagination, perception, and memory.[270] Throughout the novel, Hardy portrays Christminster through Jude's gaze as though optical technology stood in for the mediating work of his fantasy and desire. For instance, the city first appears to Jude as an optical illusion. In the

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[267] Henchman, *The Starry Sky Within*, 135.
[268] Henchman, 135.
[269] Thomas Hardy, *Jude the Obscure* (New York: Penguin Books, 1998), 38.
[270] John Plunkett, "Optical Recreations and Victorian Literature," *Literature and Visual Media*, Vol. 58 (2005), 10-11.

distance, Jude sees "points of light like topaz" that gleam until "the topaz points showed themselves to be the vanes, windows, wet roof slates, and other shining spots upon the spires, domes, freestone-work, and varied outlines that were faintly revealed."[271] This image evokes the *vue d'optique*, a type of colored engraving that could metamorphose from day-light scenes to night views illuminated by "points of light" such as bright windows or street lamps when placed in a peepshow box and backlit with candles.[272] Later, Jude climbs atop a tower in Christminster to see the city as a "panorama… From the roof of the great library…to the varied spires, halls, gables, streets, chapels, gardens, quadrangles."[273] Hardy's use of optical technology in this novel shows him participating in an existing optical poetics.

Hardy's allusions to moving image toys, on the other hand, are more subtly integrated into his fiction. During Hardy's final decade of novelistic production, from *The Mayor of Casterbridge* in 1886 to *The Well-Beloved* in 1897, the project of creating the illusion of motion was one of intense public inquiry and investment. These decades saw the emergence of a plurality of moving image apparatuses, from simple handheld optical toys like flipbooks to complex machines for projecting images such as Emil Reynaud's "Théâtre Optique" or Eadweard Muybridge's Zoopraxiscope. Pre-cinematic moving image devices entertained the public while allowing them to participate in the flush and excitement of technological experimentation. Emerging from the laboratories of physicists studying how the eye perceives motion, these toys were also pedagogical. They derived from the seventeenth-and-eighteenth-century tradition of "philosophical toys," or

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[271] Hardy, *Jude the Obscure*, 21.

[272] Barbara Maria Stafford and Frances Terpak, *Devices of Wonder: From the World in a Box to Images on a Screen* (Los Angeles: Getty Research Institute, 2001), 349-351. In 1849, Paul Séguin invented the *polyorama panoptique*, a peep box inside of which spectators could view small-format metamorphosing prints similar to *vues d'optique*s. Many of these prints also used cut-outs to achieve "points of light" in night views.

[273] Hardy, *Jude the Obscure*, 116.

toys that demonstrated scientific principles. Moving image toys sought to demonstrate the nineteenth-century optical theory of persistence of vision: the way the eye retains a visual impression of an object a split-second after the stimulus has passed, enabling it to perceive rapidly changing images as a continuous visual flow.

Unlike magic lantern shows, which attempted to create an illusion of motion through dissolving views and trick slides, the major persistence of vision technologies of the nineteenth century did not emerge from the world of entertainment. Nor were these technologies born from the hybrid culture of scientific entertainment embodied in commercial galleries like the Royal Polytechnic Institution, which I discuss in Chapter One. They arrived instead from the laboratories of physicists who turned to simple devices to illustrate their empirical discoveries about physiological optics and the illusion of motion. In the 1820s and 1830s, physicists working on optics turned their attention to retinal afterimages: the way light impressions on the retina are retained after the image disappears and are fused or blended when perceived in quick succession. The phenomena was not in itself a new discovery. In *On Dreams*, Aristotle argued that dreams were disturbances in sleep caused by visual impressions retained in the eyes from waking experiences, and Isaac Newton studied the impressions of light on his own eyes around 1691 in a set of experiments that eventually damaged his retina.[274] What distinguished the modern approach to retinal afterimages was the attempt to calculate their duration. In his 1829 doctoral dissertation at the University of Liege, titled "Dissertation on Some Properties of the Impressions Produced by Light on the Eye," the young Belgian physicist Joseph Plateau fixed the length of a light impression on the eye at roughly one-third of a second, with slightly different durations for impressions of different colors. This meant that if objects or images were presented to the eye every one-third of

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[274] Mannoni, *The Great Art of Light and Shadow*, 202.

a second, Plateau wrote, "the impressions they produce on the retina will blend together with confusion and one will believe that a single object is gradually changing form and position."[275] To describe this illusion of a single object changing form, Plateau adopted a term used by eighteenth-century physicists: "persistence of vision." And, to illustrate it, he constructed the phenakistoscope.

Figure 4.1: Phenakistoscope Disk Designed by Joseph Plateau. Courtesy of the National Science & Media Museum / Science & Society Picture Library, Bradford, UK.

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[275] Joseph Plateau, *Dissertation sur quelques propriétés des impressions*, thesis submitted at Liège, May 1829, quoted in Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, MA: The MIT Press, 1992), 109.

The phenakistoscope—a neologism composed of Greek roots that literally means "deceptive view"—is an optical toy composed of a large spinning disk mounted on a handle. A sequence of figures, typically either twelve or sixteen, are arranged radially around the disk interspersed by small apertures. When the spectator holds the phenakistoscope up to her eye in front of a mirror, gazing through an aperture, and spins it, she perceives this sequence of figures reflected in the mirror as an animated flow. Plateau's original disk, conceived in December of 1832, depicted a ballet dancer drawn in sixteen different poses (fig. 4.1). When the disk is spun, the eye sees the dancer turn *en pointe* with lifted arm and leg. Because of the way the apparatus is constructed, the eye is not limited to viewing a single twirling dancer at a time; rather, as the disk spins, she is likely to see at least three twirling dancers in a row. As Plateau described it in his announcement of his new invention in January 1833, "When one subjects this disc to the experiment in question, one sees with surprise, and the illusion is complete, all these little dancers turning round, with the direction of their pirouette depending on the speed and direction of the rotation of the disc."[276]

The phenakistoscope was not only an entertainment device, but also a pedagogical instrument designed to demonstrate an optical principle. A spectator did not require an understanding of the theory of persistence of vision to play with the phenakistoscope, but playing necessarily entailed an encounter with the theory. Advertised as an "Optical Delusion" or a "representation of a singular optical illusion," the toy taught spectators to understand how an illusion of motion is created from the way the eye perceives rapidly changing forms. When Plateau writes in his remarks on the phenakistoscope that "the illusion" of the dancer turning around "is

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[276] Plateau, "Sur un nouveau genre d'illusions d'optique," quoted in Mannoni, *Great Art of Light and Shadow*, 216.

complete," what he means is that the illusion is completed by the spectator who manipulates "the speed and direction of the rotation of the disc" by spinning it with her fingers and optically perceives the resulting illusion. Through what Tom Gunning has called "the coordination of hand and eye" in pre-cinematic devices, the viewer has both manual and optical agency in the movement of the dancers.[277] The phenakistoscope coordinates the hand that spins the disk with the eye that perceives the illusion of motion to center the viewing subject as an active participant in the creation of the moving images. In this sense, the phenakistoscope deconstructs motion by allowing the viewer to see how a single moving image is composed from a series of multiple static images. Instead of tricking the viewer into believing they are seeing a picture move, the phenakistoscope is designed to simultaneously create an illusion, make the viewer aware that they are witnessing an illusion, and explain how the illusion is created. The viewer selects a disk from her folio, which she can scrutinize at leisure, screws it into the handle of the phenakistoscope, and then spins it to see how her visual experience of the disk transforms when the disk is set in motion. The viewer not only manually composes the toy, putting the pieces together, but she understands her perception to be part of the composition of the illusion. The illusion of motion is self-explaining and self-deconstructing.

Both the model of the spinning toy and its play-based optical pedagogy would remain elements of moving image toys throughout the nineteenth century. The zoetrope, patented by the American William Ensign Lincoln in 1865, was composed of a spinning drum, rather than a spinning disk, interspersed with apertures. A paper strip of images of sequential motion could be inserted inside of the drum to form a circle. When the apparatus is spun, multiple viewers can peer

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[277] Tom Gunning, "Hand and Eye: Excavating a New Technology of the Image in the Victorian Era," *Victorian Studies*, Vol. 54, No. 3 (Spring 2012): 495-516.

into the drum through the apertures to see the strip of images animated as a visual flow. A more refined version of the zoetrope called the praxinoscope, invented by Charles-Émile Reynaud, offered greater visual clarity and luminosity by introducing a prism of mirrors at the center of the apparatus. Instead of gazing through apertures, the viewer sees the strip of images reflected in the central mirrors. The 1880s and 1890s saw a rapid increase in the variety of moving image toys and spectacles in circulation. The Kinetoscope and Mutoscope, nickel-slot machines with peepholes through which viewers could see tiny films created by rapidly moving photographs, began to show up in urban centers in Britain and the United States. While these devices operated on the flipbook principle, and therefore held the potential for conveying a short but linear narrative, other late-nineteenth-century moving image devices retained the circular model of the phenakistoscope. In 1887, the German chronophotographer Ottomar Anshütz debuted a "Schnellseher," or "quick-viewer," a device for viewing moving photographic images that was capable of unprecedented clarity and visual detail. A large picture disk, about five feet in diameter, mounted on a freestanding iron base, it held 24 glass transparencies that were illuminated as they spun by synchronized sparks from a Geissler tube behind the glass plate that was set off by an electrical circuit.[278] The *Philadelphia Inquirer* wrote about Anshütz' device as a "stroboscopic disk," another name used for the phenakistoscope in the 1830s and 1840s. Even as instantaneous series photography was making it possible to create short narratives or vignettes out of moving images, the circular disk and its endless loop of images remained a paradigmatic form of visual attraction that shaped the course of late-nineteenth-century moving image culture.

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[278] Deac Rossell, *Living Pictures: The Origins of the Movies* (Albany: State University of New York Press, 1998), 44.

Hardy's fiction of the 1880s and 1890s bears traces of the circular apparatus and endless loops of moving image toys. The most explicit example of Hardy's allusions to moving image devices is "On the Western Circuit," a short story published in 1891. As its title suggests, "On the Western Circuit" is about circuits, circuses, and circling—the judicial circuit that brings the judge Charles Bradford Raye through the western country on business and gives the story its name, as well as the steam-circus, an impressive carousel that forms the centerpiece of the story.[279] While visiting the town of Melchester, a stop on his western circuit, Raye follows the echoing sounds of a nearby fair filled with mechanical rides, including "swings, see-saws, flying-leaps," and "three steam roundabouts," the largest of which he stops in front of to watch its brilliant and musical revolutions:

> The musical instrument around which and to whose tones the riders revolved, directed its trumpet-mouths of brass upon the young man, and the long plate-glass mirrors set at angles, which revolved with the machine, flashed the gyrating personages and hobby-horses kaleidoscopically into his eyes.[280]

The roundabout is a perception machine that "direct[s]" its technological sounds and "flash[es]" its virtual images towards the crowd. Among the children and adults riding the steam-circus, Raye spots the "prettiest girl," Anna, and, through a series of misrecognitions and perceptual mistakes, he falls in love with her and marries her. Anna is a paid companion to the unhappily married Edith Harnham, and when Raye begins a correspondence with Anna, who is illiterate, Edith begins to write the letters for her. In a variation on the Cyrano de Bergerac story, the woman Raye falls in love with is a synthesis of the pretty Anna and the charmingly expressive Edith, who pours out her own heart—and desire for Raye—in her letters. The story ends with Raye's revelation that he has

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[279] I am indebted to John Plotz for suggesting that I look at this story.
[280] Thomas Hardy, "On the Western Circuit," *The Distracted Preacher and Other Tales*, ed. Susan Hill (New York: Penguin Books, 1979), 245.

mistakenly married an uncultured woman who cannot even form the letters to write a notice of their marriage to his sister.

The description of the steam-circus is powerfully realized, a sensory, uncanny marvel composed out of layered references to nineteenth-century moving image illusions and apparatuses. "By some contrivance," the narrator describes, "there was imparted to each of the hobby-horses a motion which was really the triumph and perfection of roundabout inventiveness – a galloping rise and fall, so timed that, of each pair of steed, one was on the spring while the other was on the pitch."[281] The "roundabout inventiveness" that attributes an illusion of motion to the hobby-horses on the ride stands in for the invention of spinning machines that create an optical illusion of motion. In an essay on the logic of spectacle and circulation in "On the Western Circuit," John Plotz compares Hardy's depiction of the steam-circus to a phenakistoscope. "Hardy intended to convey the idea of rushing pictures forming a continuous gestalt," Plotz writes, citing the commercial and voyeuristic potential of both the steam-circus and the phenakistoscope.[282] Although the phenakistoscope is clearly the paradigmatic spinning toy of the nineteenth century, the steam-circus most resembles Reynaud's praxinoscope, which is shaped like a miniature carousel. The praxinoscope reveals its images to spectators through angled mirrors at its center, a feature that Hardy also attributes to his roundabout: Raye watches as the mirrors "flashed the gyrating personages and hobby-horses kaleidoscopically into his eyes," and Anna sees herself "countermoving in the revolving mirrors on her right hand."

Hardy may have been thinking more specifically about a range of late-nineteenth-century spinning toys. In 1879, Reynaud released a new model of his device that he called the Praxinoscope

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[281] Hardy, "Western Circuit," 245-246.
[282] John Plotz, "Motion Slickness: Spectacle and Circulation in Thomas Hardy's 'On the Western Circuit,'" *Studies in Short Fiction*, Vol. 33 (1996), 376.

Theatre (fig. 4.2), which came in a box that could be unpacked into a model theater with a tiny proscenium. The spectator peers through two staggered peepholes to view the proscenium and the spinning mirrors behind it that reflects a moving image. The Praxinoscope Theatre was a small toy for private enjoyment in the home that allowed spectators to act out attendance at a public, urban spectacle, with the eye standing in for the body in a crowd. By coding a glance into a spinning praxinoscope as a special occasion, a day out on the town, the Praxinoscope Theatre also turns itself into what Hardy calls a "holiday-game" of voyeurism, spectacle, and *flânerie*. Around the time that Hardy published "On the Western Circuit," the German manufacturer Ernst Planck released a steam-powered praxinoscope he called the Kinematofor. Its tiny steam engine powers the drum of the praxinoscope through a wheel pulley mechanism that evokes the combination of industrial power and visual pleasure that Hardy brings together in his "pleasure machine" (247).

Figure 4.2: Charles-Émile Reynaud's Praxinoscope Theatre. Courtesy of the Bill Douglas Cinema Museum, University of Exeter.

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At the same time, Hardy's roundabout evokes the highly-publicized experiments in chronophotography conducted by Eadweard Muybridge in the 1870s. Muybridge's serial photographs of galloping horses definitively proved that, at certain moments, all four feet of the horse are in the air at the same time. Muybridge was not only interested in decomposing motion into static images, but in recomposing it to create a lifelike illusion of motion. In 1879, W.B. Tegetmeier copyrighted and sold a zoetrope band in England that reproduced Muybridge's photographs of horses.[283] Soon after, Muybridge constructed his own instrument to transform his chronophotographs into moving images, one that could be used in the lecture tours he undertook in the early 1880s to present to the public his photographic advancements and scientific findings into the nature of motion. He called his patent the Zoopraxiscope. It consisted of a sixteen-inch, rotating phenakistoscope disk made of glass, onto which he painted the phases of motion captured by his chronophotographs of animal locomotion, and a magic lantern that projected the resulting moving images onto a screen. The *London Illustrated News* called it "a magic lantern run mad," but it could equally be described as a phenakistoscope rationalized for public scientific demonstrations.[284] When Hardy describes the "motion" attributed to the hobby-horses as "really the triumph and perfection of roundabout inventiveness," he seems to reference the scientific deconstruction and illusionistic reconstruction of the galloping horse that was iconic of moving image culture in the decade before the advent of cinema. The hobby-horses' "galloping rise and fall, so timed that, of each pair of steeds, one was on the spring while the other was on the pitch," echoes the way the Zoopraxiscope deconstructed a horse's motion into distinct phases in order to project the virtual image of a galloping horse.

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[283] Rossell, *Living Pictures*, 34.
[284] Rossell, 34.

Through the steam-circus, Hardy narrates a perceptual illusion modeled on persistence of vision. Raye constructs a fantasy lover created by a synthesis of two women, Anna and Edith, but this composite creation is prefigured by him spectating at Anna on the steam-circus:

> It was not that one with the light frock and light hat whom he had been at first attracted by; no, it was the one with the brown cape, crimson skirt, light gloves and—no, not even she, but the one behind her; she with the black skirt, grey jacket, black and white hat and white cotton gloves. Unmistakably that was the prettiest girl.[285]

Anna is not merely identified among the other girls on the ride, from whom she is nearly indistinguishable; she seems also, like the moving figures on a phenakistoscope or praxinoscope, to be perceptually composed of many others. Plotz argues that what Raye is seeing here "is the fact of *difference* itself…out of which one girl must become, by sheer force of contrast, the 'prettiest'."[286] However, given the coding of the steam-circus as a moving image toy, I would argue that what Raye is seeing is not difference, but an illusion of continuity. Anna is not a unique or visually defined image within a larger sequence, but a living picture created perceptually out of the visual sequence from which she derives through the illusion of persistence of vision. Raye is Pygmalion, a man who falls in love with an image he has created. In this version of the Pygmalion myth, his beloved is a virtual moving image both composed and brought to life through the simple act of looking. Looking is the source and fulfillment of Raye's desire. When he hands over the money for her to "whirl on again" for a third time, he is like the anonymous urban spectator at a Kinetoscope placing his coins through the slot to keep the images going.

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285 Hardy, "Western Circuit," 246.
286 Plotz, "Motion Slickness," 377.

The Endless Loop: The Phenakistoscope and the Moving Image Imaginary

"On the Western Circuit" raises questions about character through the conceit of persistence of vision. The story positions Anna as a fantasy composed not only through the literary trick played by Edith, who ghost writes Anna's letters, but through Raye's ocular perception. Through the hulking figure of the roundabout and its "kaleidoscopic" circling, Anna becomes a virtual entity rendered through the illusion of persistence of vision. At the same time, the story mobilizes the spinning of the steam-circus as a trope for compulsion and unconscious motivation. It suggests a world in which everyone is spun by forces that seem to be outside their control, but that actually come from within, from Raye's choice to marry Anna against his better judgment to Edith's compulsion to write Anna's letters for her. The circuits and circuity of the story come to stand for the way characters are motivated by forces they can neither understand nor fully recognize, as if moved by machinery. "On the Western Circuit" seems to present itself as a didactic tale about technological optical illusion as a figure for perceptual error that leads to the breakdown of social mores. However, Hardy's use of persistence of vision and moving image toys is ultimately more complex. These devices allow him to develop a modern sense of character as menaced by unconscious wishes, impulses, and desires. Both here and in *The Mayor of Casterbridge*, moving image toys help Hardy think about a literary problem: how to represent character as something in excess of consciousness and as existing outside the domain of positive knowledge.

Before we turn to how Hardy conceptualizes character through the visual effects of moving image toys in *The Mayor of Casterbridge*, we must look more closely at the discourses surrounding these devices. Both in "On the Western Circuit" and *Mayor*, Hardy is engaged not only with the way these toys animate the illusion of persistence of vision, but also with a broader media

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imaginary that is associated with and expressed by these technologies. Toys like the phenakistoscope animated discourses of circularity, repetition, mechanization, fate, possession, and remote control that we will see recur in *The Mayor of Casterbridge.* Although I will consider a range of devices, I focus on the phenakistoscope because its procedural logic of repeating loops established a dominant conceit of nineteenth-century moving image culture. "The phenakistoscope's very design," write Dulac and Gaudreault of the disk-like apparatus, "meant that its series of images was hostage to both circularity and repetition…images condemned to turn endlessly, to perpetual movement, to the eternal return of the same."[287] Key to this effect is the phenakistoscope's refusal of a developmental or narrative logic. The phenakistoscope depicts figures returning inexorably to the same spot to start over again. In this sense, it seems to represent "a world which annihilated any hint of temporal progression… [an] a-historical temporality within which beings and things could turn about for ever, without any threshold marking the beginning or end of their wild journey."[288] The a-historicity of the phenakistoscope is paradigmatic of early moving image technologies, which offered a Sisyphean model of motion stripped of progression or meaningful change, motion that produces stasis.

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[287] Dulac and Gaudreault, "Circularity and Repetition," 230.
[288] Dulac and Gaudreault, 232.

Figure 4.3: Phenakistoscope Disk Depicting Woman Beating Man with Bat. Courtesy of the National Science & Media Museum / Science & Society Picture Library, Bradford, UK.

The idea of spinning in place was explicitly thematized in phenakistoscope disks. One disk created by the London manufacturers Ackermann & Co. represented nine stages of a woman grabbing a man by his coattails and beating him over the head with a paddle (fig. 4.3). Below this

sequence of images is a smaller set of images of a squirrel caught in a wheel. The squirrel that runs in place is a figure for the entire apparatus, but in the larger pictorial context of the disk, it also comments on the image of the woman and man by suggesting that they are locked in a similarly circular, inexorable dynamic of endless action. The Ackermann & Co. disk exemplifies Dulac and Gaudreault's essential insight that the figures in phenakistoscope disks are "hostage[s]" to circularity and repetition, "acted-upon subjects" rather than "acting-out subjects."[289] The man and woman are radically constrained by the disk's circularity. It is as though the apparatus acts upon the figures by forcing them into endless, irresolvable conflict. However, there is another way of reading this disk not as a pictorial exemplification of the mechanics of the phenakistoscope, but as a harnessing of the phenakistoscope's mechanics to comment on sadism and compulsion. The man and woman in the disk, who are perhaps husband and wife, repeatedly act out a violent dynamic. The circularity and repetition of the phenakistoscope expresses their entrapment within an internal compulsion to repeat.

The circularity and repetition of the phenakistoscope's moving images became a thematic component of phenakistoscope disks in other ways. Phenakistoscope disks emphasized their relationship to machine-like perpetual motion. Many of the disks published between 1833 and 1840 featured the laboring human form, pumping water, chopping wood, juggling balls, and performing acrobatic or contortionist tricks. While many of these disks can also be read as representing acts of recreation or leisure, such as men playing leapfrog, playfulness takes on a different valence in the context of the spun disk's endless loop. Even Plateau's dancer, an emblem of beauty and formal grace, can be read as a man who has become a machine. When in motion, his pirouette becomes a form of automaticity, like a mechanical dancer inside of a music box. The

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[289] Dulac and Gaudreault, "Circularity and Repetition," 232.

coding of animated figures as automata associates spinning a phenakistoscope disk with operating machinery. Perhaps predictably, given this context, some disks simply depicted machinery itself. Designs of interlocking wheels that appear to turn when the disk is spun referenced the wheel-like form of the phenakistoscope disk. A folio of phenakistoscope disks made by W. Soffe in London between 1833 and 1843 includes a disk depicting a man chopping wood with a hammer and another of a machine for sawing wood composed of wheels and pulleys. This doubling emphasizes the formal equivalence between the laboring body and the machine in phenakistoscope design.

The spinning of the phenakistoscope was not only associated with industrial wheels and mechanization but was also with notions of destiny and fate. These connotations carried through in the naming of subsequent moving image toys and spectacles. William George Horner published his initial plan for an apparatus he called the Daedaleum in *The London and Edinburgh Philosophical Magazine and Journal of Science* in 1834, just a year after the phenakistoscope hit the market. The design was picked up and re-imagined in the 1860s when it was patented and sold in Britain and the United States as the Zoetrope. Zoetrope combines the Greek roots for "life" and "turning" to signify "wheel of life." Zoetropes were advertised, sold and discussed as Wheels of Life; one composer even wrote a polka called "The Wheel of Life," the sheet music for which features a dinner party assembled in the drawing room to view the spinning of a zoetrope. In 1869, a Glaswegian inventor named Thomas Ross filed a patent for an animated magic lantern slide based on the phenakistoscope that he also called "Wheel of Life."[290] Described by the optical inventor Jules Duboscq as a "projection Phenakisticope" [sic], it quickly became one of the most popular parts of late-nineteenth-century magic lantern shows.[291]

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[290] Mannoni, *Great Art of Light and Shadow*, 232.
[291] Mannoni, 233.

The popularity of the name Wheel of Life suggests that moving image toys held existential connotations precisely because of the way they spun. They were coded as wheels of fortune, the symbolic wheel spun by the Roman goddess Fortuna that determines one's fate at random. In medieval visual culture, beginning at the turn of the twelfth century, the wheel of fortune was often represented upright with people fixed to it, either riding the wheel to the top or crushed beneath it at the bottom.[292] Fortuna sometimes turned the wheel with a crank, "rotating" the fortunes of men.[293] In nineteenth-century England, the wheel of fortune was a popular trope for the rise and fall of economic fortunes under capitalism; Fortuna and her wheel appear in Hablot Knight Browne's wrapper illustrations for two of Dickens's novels.[294] Spinning a phenakistoscope or zoetrope allowed spectators to play at controlling and determining the fate of the figures printed on the disks or illustrated strips.

The moniker "Wheel of Life" also registers the association between spinning a moving image toy and bringing pictures to life. The zoetrope is a wheel of life because it is a vehicle of animation, turning static images into moving images. The discursive connection between visual and metaphysical animation—making pictures move and making pictures live—is exemplified by Horner's decision to name his blueprint for what would become the zoetrope after Daedalus, the mythic craftsman who carved statues that were so lifelike they could move by themselves. Horner wrote that his Daedaleum would imitate "the practice which the celebrated artist of antiquity was fabled to have invented, of creating figures of men and animals endued with motion."[295] By this

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[292] Charles M. Radding, "Fortune and her Wheel: The Meaning of a Medieval Symbol," *Mediaevistik*, Vol. 5 (1992), 127.

[293] Radding, 127.

[294] Elizabeth Campbell, "Minding the Wheel: Representations of Women's Time in Victorian Narrative," *Rocky Mountain Review of Language and Literature*, Vol. 48, No. 1 (1994), 46-47.

[295] W.G. Horner, "On the Properties of the *Daedaleum*, a New Instrument of Optical Illusion," *The London Edinburgh Philosophical Magazine and Journal of Science* (January 1834), 37.

logic, moving image toys turn their users into Daedalus: the spinner brings pictures to life by making them move. At the same time, with their imagery of laboring bodies and machines, phenakistoscope disks also imagine the relationship between the spinner and the animated figures as one of remote control akin to the relation between capitalist and workers, or factory owner and machines. By spinning the disk, the spectator commands a man to endless wood chopping or water pumping.

These discourses of compulsion, mechanization, fate, animation, and remote control come together in a phenakistoscope disk made around 1840 (fig. 4.4). Visually layered, the disk is divided into three rings that represent distinct pictorial planes. In the outer ring, a man spins a top by means of a string coiled around its axis. When pulled quickly, the string sets the top in motion. However, the top is also personified as a man and, as he spins, he seems to quake in horror at his own powerlessness, his eyes tilted upwards to the face of his tormenter. The middle ring shows a devil turning cartwheels around the final, inner ring, which is designed as a wheel with alternating green and purple spokes. The three tiers of the image clearly reference the phenakistoscope as a spinning toy, a fusion of the spinning top and the wheel. However, the design transcends mere self-referentiality to conceptualize the phenakistoscope as simultaneously an apparatus of animation, one capable of bringing objects and images to life, and as an apparatus of remote control over a laboring body. The uncanny personification of the top turns the act of spinning into a sadistic form of play that functions through the remote control of another living being. Like the man who spins the top, the viewer who spins the phenakistoscope animates living figures—the figures depicting on the disk—by manipulating them into states of motion.

Figure 4.4: Phenakistoscope Disk Depicting Man and Spinning Top. Courtesy of the National Science & Media Museum / Science & Society Picture Library, Bradford, UK.

In this tongue-in-cheek representation, to play with a phenakistoscope is to possess and exercise devilish control over the life and destiny of an otherwise powerless subject. Devil imagery appears in multiple phenakistoscope disks from this period, as well as in moving image toys throughout the nineteenth century. In this disk, the presence of the devil subjects the thematic of

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remote control to overdetermination. The top is remotely controlled by the man who spins it, and by the machinations of the devil who has perhaps possessed the man to perform this action. The presence of the devils also turns the image into a pun conjoining the two meanings of manipulation: to work dexterously with one's hands, as in the spinning of the top or the disk, and to exercise devious influence over another, as in the work of the devil.

"Turn and Turn About": Circularity and Repetition in *The Mayor of Casterbridge*

In these final sections of the chapter, we will see how the visual effects and discourses of the phenakistoscope and related moving image toys play out thematically in *The Mayor of Casterbridge*'s representation of character. No single image in *The Mayor of Casterbridge* alludes to persistence of vision or moving image toys as explicitly as the roundabout in "On the Western Circuit." However, the motif of persistence of vision is present throughout the novel through images of circling, circuits, spinning, and continuity illusions. I focus on two models of character that I argue are established through a motif of circling and spinning. First, through the protagonist Michael Henchard, Hardy develops an account of something like the death drive. Henchard is a man who spins in place, governed by motives that he does not understand that drive him towards self-destructively repetitive behavior. The phenakistoscope, with its discourses of mechanization and demonic possession that underly the visual effect of endless repetition, provides Hardy with a framework for thinking through the concept of unconscious motivation that manifests in self-destructive repetition. Second, through the character of Elizabeth-Jane, Hardy models character as radically fragmented, unstable, and incoherent. Elizabeth-Jane's association with persistence of vision illusions, like a spinning top, implies that character does not have formal coherence. Instead, character is a perceptual illusion created by the fictional text and assembled by the reader out of discontinuous fragments. In each case, Hardy capitalizes on the formal and procedural logic of the

phenakistoscope, the virtuality of its moving images, and the discourses surrounding its use to develop his account of character.

Circularity is the structuring formal principle of *The Mayor of Casterbridge*. In the opening chapters of the novel, a man and a woman with a baby in her arms walk the dusty highroad into the village of Weyden-Priors—and into the novel—in search of work. They stop for furmity laced with rum at the annual Weyden-Priors town fair. In a fit of drunken rage, Michael Henchard, the man, auctions his wife Susan and their daughter Elizabeth-Jane to a new husband. He wakes up the next morning to discover them gone, and vows not to touch a drop of liquor for twenty-one years, "being a year for every year that I have lived" (18). The following chapter jumps forward in time while returning to the scene of the novel's opening, ostensibly eighteen years to the day: "the highroad into the village of Weyden-Priors," which "was again carpeted with dust" (20). Susan and her grown daughter walk the same path, in search of Henchard, on another Fair Day in which the fields are dotted with tents and market stalls. After asking the same furmity-woman whether she remembers "the sale of a wife by her husband in your tent eighteen years ago today," she and Elizabeth-Jane eventually find Henchard in the town of Casterbridge. Michael has kept to his vow and sublimated his inner drunkard, by which means he has risen to the distinguished position of mayor of the town. While the return of his wife and child threatens to shatter the image of authority and upstanding citizenship that he has cultivated, the arrival of Donald Farfrae, a corn trader possessed of modern technological methods, imperils his business and stature in the town. The rest of the novel tracks another slow, relentless circle back to its beginning, as Henchard's panic over the revelation of his secrets leads him to lose his status, home, and livelihood only to return to Weyden-Priors, once again a laborer in search of a job.

Although *The Mayor of Casterbridge* takes place during a span of almost twenty-five years, it attends to the linear historical transformations that occur over this period only incidentally. Instead, it focuses on circling or spiraling transformations. Henchard rises from hay-trusser to mayor and back to hay-trusser again, undergoing a metamorphosis from a poor working man in "short jacket of brown corduroy" and "fustian waistcoat" (3) to a landowner in "old-fashioned evening suit" (35) and back to "the working clothes of his young manhood" (321). Repetitions in the narrative, such as Susan and Elizabeth-Jane's return to Weyden-Priors, are often positioned as anniversaries so that they not only emphasize the linear passage of time, but also cyclical return. It is important to note that the structure of the novel is not a single circle, but a series of recursive, repeating, and sometimes intersecting circles. This formal pattern within the narrative structure is connected to the novel's thematic exploration of Henchard's relentlessly self-destructive behavior—what Hardy called, in a note drafted a couple of years before he began writing the novel, "human automatism, or impulsion…human action in spite of human knowledge."[296] Henchard's unconscious actions are animated by what Freud calls "the compulsion to repeat": the psychic phenomenon whereby a person repeats an event or its circumstances again and again.[297] While Henchard seeks to hide the original sin of his young life, the selling of his wife, by disciplining himself through temperance and hard work, he also compulsively recreates this scene. He re-marries his wife Susan, symbolically "[buying] her back again" with five guineas (72-73), but only at the expense of recreating the original scene of abandonment by leaving his lover Lucetta after promises of marriage. He disabuses Elizabeth-Jane of her belief that Newson is her father in an

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[296] Florence Emily Hardy, *The Life of Thomas Hardy*, quoted in Lawrence J. Starzyk, "Hardy's *Mayor*: The Antitraditional Basis of Tragedy," *Studies in the Novel*, Vol. 4, No. 4 (Winter 1972), 593.
[297] Sigmund Freud, *Beyond the Pleasure Principle*, trans. James Strachey (New York: W.W. Norton and Company, 1961), 21.

effort to reclaim her as his daughter, only to reject her, push her out of the home, and defy her loyalty until she despairs that she "ought to forget him" (324).

Henchard's choice to hire Donald Farfrae, his first decisive action that the reader sees him undertake after the sale of his wife and his vow to abstain from drink eighteen years earlier, is perhaps the strongest exemplification of Henchard's compulsion to repeat. Farfrae is a Scottish corn trader who becomes Henchard's business manager and then rival. He displaces Henchard first as Lucetta's husband and then as Elizabeth-Jane's, strips him of his home and business, and supplants him as the mayor of Casterbridge. Henchard is initially fascinated with Farfrae because he seems to fulfill Henchard's wish to not only hide, but erase his impulsive selling of his wife and child. He pleads with Farfrae to stay on as his business manager after Farfrae offers him a method for turning Henchard's corrupted wheat, which had led to a bread shortage across Casterbridge, wholesome for baking again. The machine is an almost fantastical figure for Henchard's obsession with repairing and making wholesome his corrupted past. However, rather than enabling Henchard to repair the past, Farfrae becomes the primary medium through which Henchard recreates it. Henchard invites the means of his own obsolescence by inviting Farfrae's modern, technological, and rationalist methods into his business, and creates in Farfrae a symbolic double and rival by confiding in him the truth about his past. Moreover, Henchard's paranoid fantasies that Farfrae will destroy his economic stability and social position through exposure of his secrets are partially fulfilled through his own actions in rejecting Farfrae as a business partner and son-in-law.

In this sense, Henchard is like the subject Freud describes as having "a *passive* experience, over which he has no influence, but in which he meets with a repetition of the same fatality."[298] His attempts to escape, destroy, hide, or erase his past ultimately succeed only in recreating the

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[298] Freud, *Beyond the Pleasure Principle*, 24.

past, a pattern that is expressed formally and thematically through a series of cyclical returns. Because his motivations are unconscious, they present to Henchard as being, in Freud's terms, "pursued by a malignant fate or possessed by some 'daemonic' power."[299] Henchard precisely engages the fantasy that he is at the mercy of "the scheme of some sinister intelligence bent on punishing him" and explains his own sinister motives as the work of the devil (131). "Why should I still be subject to these visitations of the devil," he asks himself, "when I try so hard to keep him away?" (315).

Hardy turns to the circularity and repetition of moving image toys like the phenakistoscope, and its discourses of possession and remote control, to both express and explore the phenomenon of unconscious motivation. Henchard both imagines and produces himself as an "acted-upon" figure in a phenakistoscope whose attempts to transform himself, to progress or develop, endlessly melt away into recursive circularity. Like the figures on a phenakistoscope disk, Henchard is frequently pictured as moving in circles. Towards the end of the novel, when he is considering emigrating to America, he comments to Farfrae on what he perceives as their reversals of fortune:

> "I am going where you were going a few years ago, when I prevented you and got you to bide here. 'Tis turn and turn about, isn't it! Do ye mind how we stood like this in the Chalk Walk when I persuaded 'ee to stay? You then stood without a chattel to your name, and I was the master of the house in Corn Street. But now I stand without a stick or a rag, and the master of that house is you."
> "Yes, yes; that's so! It's the way o' the warrld," said Farfrae. (233)

This is a complex and multivalent image of circularity. The meeting between Henchard and Farfrae is set up as a circular return to an earlier moment in the narrative, when Farfrae plans to leave Casterbridge for America and Henchard persuades him at the last moment to stay. Farfrae even seeks to convince Henchard to "listen to me…just as I listened to you. Don't go. Stay at home"

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[299] Freud, *Beyond the Pleasure Principle*, 23.

(233). At the same time, in the passage itself, Henchard invokes a spinning wheel to suggest that he and Farfrae have exchanged positions in a circular reversal. Henchard seems to allude here to the mythic wheel of fortune. Through the "turn[ing]" of the wheel that "turn[s them] about," the penniless vagabond has become the master and the master the penniless vagabond. Farfrae's agreement that "turn and turn about" is "the way o' the warrld" validates the wheel of fortune reference by suggesting that fortune is random and unpredictable. The person who is at the top of the wheel at one moment may be at the bottom at the next.

The device that Henchard describes sounds equally like a moving image toy. As we have seen, discourses of fate, randomness, and remote control were mapped onto nineteenth-century moving image devices like the phenakistoscope and zoetrope. As "wheels of life," these devices were also coded as wheels of fortune, like the one that Henchard seems to reference in the passage above. The image of the wheel allows Henchard to displace the consequences of his own actions onto forces beyond his control. He imagines himself like the spinning top in the phenakistoscope disk (fig. 4) who is "turn[ed] and turn[ed] about" by nefarious forces. More importantly, however, the broader context of this passage belies the notion that Henchard and Farfrae have simply exchanged places. Henchard has constructed Farfrae as a double, and in remarking that "You then stood without a chattel to your name …and [now] the master of the house is you," Henchard is also positioning Farfrae as other iterations of himself: both as the wandering laborer of the novel's opening pages and the mayor of eighteen years later. "Up and down! I'm used to it," he tells Farfrae, as though he were fated to spin in circles, endlessly returning to the same spot. Henchard employs the rhetoric of a simple of reversal of fortune, imagining himself at the mercy of an outside force such as fate, but what he perceives is recursiveness brought on by inner compulsion.

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Henchard's idea of himself as a man spun by forces outside of his control and fated to move in circles is reinforced by a later passage. After returning to visit Weyden-Priors "as an act of penance" in the final chapters of the novel, Henchard means to travel further from Casterbridge to begin his life again. He cannot let go, however, of "the quarter of the horizon" where his daughter lives.

> Out of this it happened that the centrifugal tendency imparted by weariness of the world was counteracted by the centripetal influence of his love for his stepdaughter. As a consequence, instead of following a straight course yet further away from Casterbridge, Henchard gradually, almost unconsciously, deflected from that right line of his first intention; till, by degrees, his wandering, like that of the Canadian woodsman, became part of a circle of which Casterbridge formed the center. (328)

This passage marks the end of a narrative circle, as Henchard has once again assumed the cast-off identity of hay-trusser and returned to the place where the novel began—even "the road by which his wife and himself had entered" not only the village, but the novel (327). He consciously replays the scene of his "crime" in his mind: "'Then we saw the tent… Here we sat down… She said her last words to me before going off with him" (327). Rather than simply indicating that the narrative is shaped as a circle, however, the passage suggests that Henchard's life is characterized by circling in place. His ambivalence, warring impulses, and contradictory desires have literally trapped him into moving in circles. Although Hardy's allusion to the Canadian woodsman is unsourced, it is significant that Canada intervenes in this hyper-local geographical depiction of Henchard's circular path through Wessex. While Susan, Elizabeth-Jane, and Newson have all traveled to Canada and back again, circling across the ocean and between continents, Henchard travels in circles because he is psychically trapped between his desire for the vast anonymous elsewhere of America and the inexorable pull towards Casterbridge.[300] However, the geographical stakes of

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[300] Genevieve Abravanel, "Hardy's Transatlantic Wessex: Constructing the Local in *The Mayor of Casterbridge*," *NOVEL: A Forum on Fiction*, Vol. 39, No. 1 (Fall 2005), 102.

Henchard's circling are less significant here than their psychic and existential implications. Henchard's "weariness of the world," his desire for death, is counteracted by a desire of life embodied in his love for Elizabeth-Jane. Rather than movement through time or space, this passage expresses an almost atemporal, static circularity that endlessly returns to where it began—a state of limbo that Henchard later describes as "liv[ing] on against my will!" (329). The image of Henchard spinning around a fixed center like a figure on a phenakistoscope disk expresses the novel's exploration of repetition compulsion and its source in unconscious motivation. Henchard is trapped in a state of perpetual motion but unable to go anywhere, the embodiment of the "endless loop."

The Spinning Top of Consciousness: Persistence of Character

Hardy mobilizes a second model of character through the spinning of moving image toys through Elizabeth-Jane. The novel plays a perceptual trick on the reader by splitting her in pieces. The first chapter of the novel opens with "a young man and woman, the latter carrying a child" walking into Weyden-Priors; the course of the narrative reveals them to be Henchard, Susan, and their baby Elizabeth-Jane. Chapter Three opens with a parallel scene that takes place about eighteen years later: "Where the Henchard family of three had once walked along, two persons not unconnected with that family walked now" (20). The narrator remarks that "one of the two who walked the road was she who had figured as the wife of Henchard on the previous occasion," while the other could be confirmed "by a glance" as "Susan Henchard's grown-up daughter," Elizabeth-Jane. However, about a third of the way into the novel, once Susan has died and Elizabeth-Jane is ensconced in Henchard's home living as his daughter, the reader and Henchard learn that "Elizabeth-Jane is not your Elizabeth-Jane," but a second daughter born to Newsom and christened with the same name after the first died in infancy (130). This revelation is not simply, as some

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critics have proposed, a melodramatic plot twist so placed to sustain the interest, and subscription dollars, of readers.[301] It also forms the basis of the novel's meta-narrative exploration of character as a realist literary device. By tricking the reader into reading Elizabeth-Jane into a single character before splitting her in two, Hardy both exposes and deconstructs the technical effects through which his novel creates an illusion of continuity in time. He also draws attention to how characters are constituted phenomenologically, at the interface of the text and the reader's imagination.

Hardy analogizes this readerly process through the framework of persistence of vision. Just as the eye experiences the discontinuous static images printed on a phenakistoscope disk as a single virtual image of motion, Hardy suggests that character is a perceptual illusion created at the interface of the text and the reader. Shortly before Elizabeth-Jane's true parentage is revealed and the reader learns about the trick that the novel has played with her character, Elizabeth-Jane sits up with her dying mother. Exhausted and near sleep, she wonders

> Why she was born, why sitting in a room, and blinking at the candle; why things around her had taken the shape they wore in preference to every other possible shape. Why they stared at her so helplessly, as if waiting for the touch of some wand that should release them from territorial constraint; what that chaos called consciousness, which spun in her that moment like a top, tended to, and began in. Her eyes fell together; she was awake, yet she was asleep.

In two parallel thoughts suspended together with a semicolon, Elizabeth-Jane displaces onto the objects around her the helpless[ness] of her dying mother waiting to be "release[d] from territorial constraint" and displaces her own consciousness onto a spinning top. While she imagines her mother's spirit released from earthly form, her own consciousness becomes embodied as one of the "things" around her with their arbitrary "shape[s]." The specific shape of the spinning top, however, is significant for the novel's broader exploration of consciousness.

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[301] J.M. Stewart, Introduction to *The Mayor of Casterbridge,* by Thomas Hardy (New York: Modern Library, 2002), xi-xii.

The metaphor of consciousness as a spinning top derives from Thomas Carlyle's *Sartor Resartus*. The narrator of that novel remarks on the eyes of the hero, Professor Teufelsdröckh, which look "so still and dreamy," and posits that "their stillness was but the rest of infinite motion, the *sleep* of a spinning-top."[302] Carlyle's novel was published in 1833, the same year that the phenakistoscope was released on the market, and the metaphor of eyes as spinning tops rests on a persistence of vision illusion: the way the motion of a rapidly spinning top appears paradoxically still. Rather than the phenakistoscope, however, the toy that Carlyle seems to be referencing here is the thaumatrope. Invented in the early 1820s, the thaumatrope is a paper disk or card with different pictures on either side suspended between two pieces of thread.[303] When both threads are spun simultaneously by the thumb and forefinger, the card rotates rapidly and the eye sees the two images fused into one. Although the device moves, the eye synthesizes the rotating pictures into a single, static, virtual image. Carlyle's comparison between the stillness of a spinning top and the human eye is therefore layered. As John Ayrton Paris, the thaumatrope's most vigorous popularizer, wrote in 1827, the trick of this device lay in the eye itself—its tendency to fallacy and capacity to see illusions.[304] Carlyle compares the eyes of his protagonist, and their ability to penetrate into the true nature of things, to an optical illusion that exposes the incoherence of vision.

This line of Carlyle's was a favorite of Hardy's and occurs elsewhere in his fictional oeuvre. In *Jude the Obscure*, Jude defends the silence and stillness of Christminster as "the stillness of infinite motion—the sleep of the spinning-top, to borrow the simile of a well-known writer."[305] Compared to this straightforward allusion, the passage from *The Mayor of Casterbridge* is more

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[302] Thomas Carlyle, *Sartor Resartus* (Oxford: Oxford University Press, 2008), 13.
[303] For an account of the origins of the thaumatrope, see Gunning, "Hand and Eye," 500-501.
[304] Gunning, "Hand and Eye," 501.
[305] Hardy, *Jude the Obscure*, 112.

of a deconstruction and reimagining of "the sleep of the spinning-top." Elizabeth-Jane's consciousness is like a spinning-top as she is slipping out of consciousness: "she was awake, yet she was asleep."[306] Unlike the allusion in *Jude*, Hardy explicitly takes up the connotations of persistence of vision in the original passage. The spinning illusion registers the way the novel encourages the reader to merge discontinuous forms into single characters that cohere across time. It points, in other words, to the illusion of a character's coherence or depth. In this sense, Hardy also responds to the original usage of the analogy by Carlyle to describe depth of character. In *Sartor Resartus*, the lucidity and stillness of the hero's eyes belies the vitality of his mind.

In *The Mayor of Casterbridge*, however, the spinning-top of consciousness registers the fundamental incoherence and fragmentation of character. Elizabeth-Jane wonders "what that chaos of consciousness…tended to, and began in." The first of these questions—where her consciousness is tending towards—answers itself through the image of the spinning-top and the broader motif of the phenakistoscope throughout the novel. Consciousness has no teleology; it spins in place, and in Henchard's case, threatens to trap individuals into spinning in circles. The question of where Elizabeth-Jane's consciousness began, however, is more complex. I would argue that it reflects the broader arc of the paternity plotline in two ways. First, it registers the uncertainty about Elizabeth-Jane's birth and parentage—the question not only of "why she was born" but of who conceived her. Secondly, it is meta-narrative and points to her consciousness as a literary illusion generated by the text. It prefigures the revelation that she is indeed Newson's daughter, and draws attention to the work of the reader in stabilizing and cohering character out of disparate parts. In

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[306] The allusion also has salience for Hardy's broader depiction of Elizabeth-Jane as a visionary or seer. While Professor Teufelsdröckh is "a man devoted to higher Philosophies" who sees "into the mystery of the Universe," Elizabeth-Jane has a "seer's spirit" (176), is possessed with "microscopic" perception (342), and "sought further into things than other girls" (27). Carlyle, *Sartor Resartus*, 12-13.

the popular imagination, the spinner of the phenakistoscope is responsible for the existence, animation, and fate of the figures on the disk. As we saw in the example of the phenakistoscope disk of the devils and spinning top, spinning a phenakistoscope was imagined as an act of giving life to otherwise static, discontinuous forms. Through the simile of the spinning-top, the novel demands inquiry into what role the reader might have in the spinning of a character's consciousness—in bringing that character to life.

Hardy's self-consciousness about character as a perceptual illusion created at the intersection of the text and the reader ties him to the other realist novelists I have discussed in this dissertation. The motif of spinning in *The Mayor of Casterbridge* recalls the scenes of magic in *Cranford*. Both turn to specific forms of optical spectatorship as a framework through which to make the claim that the sense of realism is partially generated out of the reader's perceptual experience. For both Hardy and Gaskell, literary reality effects are not solely created formally or technically within the text; they are virtual effects mobilized through the act of reading. However, *The Mayor of Casterbridge* also registers an important shift between midcentury and fin-du-siècle modes of virtual realism. In *Cranford*, optical spectatorship offers a model for how literary realism can produce a coherent fictional illusion. Just as spectatorship based in disbelief allows spectators to take pleasure in seeing apparitions, realist fiction seeks to generate an apparitional reality for readers by involving them in the process of its creation. The reader's complicity is essential to the construction of an illusion. *The Mayor of Casterbridge*, on the other hand, foregrounds the reader's role in the construction of an illusion not in the service of illusionistic coherence, but in order to expose and deconstruct fictional illusions. By engaging the reader in deconstructing the illusion of character, Hardy thematizes the dissolution of the realist project of illusionistic coherence. In this sense, *The Mayor of Casterbridge* theorizes the collapse of Victorian virtual realism.

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