Cyber-Narrative in Opera: Three Case Studies

Naomi Barrettara

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This manuscript has been read and accepted for the Graduate Faculty in Music in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.
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By

Naomi Barretta

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ABSTRACT
Cyber-Narrative in Opera: Three Case Studies

by

Naomi Barrettara

Advisor: Anne Stone

This dissertation looks at three newly composed operas that feature what I call cyber-narratives: a work in which the story itself is inextricably linked with digital technologies, such that the characters utilize, interact with, or are affected by digital technologies to such a pervasive extent that the impact of said technologies is thematized within the work. Through an analysis of chat rooms and real-time text communication in Nico Muhly’s *Two Boys* (2011), artificial intelligence in Søren Nils Eichberg’s *Glare* (2014), and mind uploading and digital immortality in Tod Machover’s *Death and the Powers* (2010), a nexus of ideologies surrounding voice, the body, gender, digital anthropology, and cyber-culture are revealed. I consider the interpretive possibilities that emerge when analyzing voice and musical elements in conjunction with cultural references within the libretti, visual design choices in the productions, and directorial decisions in the evolution of each work. I theorize the expressive power of the operatic medium in dramatizing and personifying new forms of technology, while simultaneously exposing how these technologically oriented narratives reinforce and rely upon operatic tropes of the past. Recurring themes of misogyny and objectification of women across all three works are addressed, as is the framing of digital technology as a mechanism of dehumanization. This analysis also focuses on the unique sung and embodied aspect of opera, and how the human voice shapes concepts of identity, agency, and individuality in the digital
age. All three case studies demonstrate how opera gives the cyber-narrative every possible mode of expression to explore the complexities and anxieties of human-machine relationships in the digital era, as all three operas question how the thematized technologies may come to re-define our perception and experience of humanity itself.
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INTRODUCTION

February and March of 2018 were historic months for Silicon Valley, as two auspicious announcements and one ominous tragedy brought an unprecedented amount of news coverage and media attention to the most powerful companies in digital technology at the time. In February 2018, the instant messaging application WhatsApp (acquired by Facebook in 2014) officially surpassed 1.5 billion users, making it the world’s most popular instant messaging platform to date.\(^1\) In early March of 2018, one of Silicon Valley’s most successful startup incubators, Y Combinator, featured a new project called Netcome in their bi-annual demo day, where a by-invite-only audience of potential investors were introduced to Netcome as the first company to promise complete computer simulation of the human brain, disembodying and preserving all the necessary information needed to re-create consciousness at a future date, with the caveat that the subject undergo elective euthanasia in order to capture and preserve the brain’s data in digital form.\(^2\) Finally, on March 18th, 2018, 49-year-old Elaine Hertzberg became the first pedestrian to be struck and killed by an autonomous, self-driving car.\(^3\) The software running on the car was created by multinational transportation network company Uber, and was

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met with a media firestorm of safety allegations and questions regarding who was ethically and legally responsible for the actions and mistakes made by AI software and products. No legal precedent was set as a result of the incident, with parties reaching a settlement outside of court.4 These three incidents reflect the present-day realities of three different genres of digital technology: real-time text-based communication, whole brain emulation (or mind uploading), and artificial intelligence. While the technological developments of Silicon Valley seem far removed from the operatic art form, all three genres of digital technology have been featured in the narratives of newly composed operas, commissioned and premiered by major opera companies within the past decade: Nico Muhly’s Two Boys (2011), Søren Nils Eichberg’s Glare (2014), and Tod Machover’s Death and the Powers (2010).

Opera as an art form tends to keep its finger on the pulse of cultural interests, with the evolution of musical style and dramatic elements of a work reflecting aesthetic tastes, cultural proclivities, and social anxieties of the moment. This dissertation proposes that in a historical moment defined by rapid social, economic, and cultural changes brought on by the “digital revolution,” combined with the ubiquity of the Internet and networked devices, a new sub-genre of opera has emerged as the locus of questioning, reflecting upon, and working through anxieties surrounding the relationship between humans and machines in the digital era; I call this sub-genre the “cyber-narrative” opera.

Although musicology as a discipline is full of rich studies on voice, materiality, the history of recording technologies, the impact of new recording formats on musical aesthetics, and the use of new technologies in opera production, the question of how digital technologies are

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represented and expressed artistically through the operatic medium has gone relatively unexamined, and theories of digital anthropology, or the analysis of the relationship between man and machine in the digital era have yet to be connected in a formal sense with the analysis of operatic narratives. This dissertation aims to pioneer an analysis of the cyber-narrative in newly composed operatic works, highlighting three different digital technologies through the analysis of three different operas. When conceived as an emerging sub-genre in the nascent stages of development, *Two Boys*, *Glare*, and *Death and the Powers* succeed in taking up digital technology as a central topic, and participate in an operatic historicizing of cultural anxieties surrounding the widespread use of the Internet, rapid advancements in the field of artificial intelligence, and not-so-distant imagined futures of artificial sentience and transhumanism.

Each genre of technology examined in this dissertation connects to different strands of digital anthropology and philosophy scholarship, revealing issues unique to each type of cyber-narrative as it interacts with the constructs of the operatic medium. With opera being an embodied medium that privileges the voice, and digital technology expanding the possibilities and boundaries of disembodied identity, communication, artificial sentience, and hypothesized virtual existence, the operatic art form itself offers such narratives a multi-media format to explore and exploit audience assumptions about voice, body, liveness, identity, and agency of the characters and personas on stage.

It can be argued that the emergence of the cyber-narrative sub-genre is due in part to a growing desire to make opera appeal to younger audiences. The present day opera industry is generally in pursuit of attracting an elusive “young audience,” driven by the financial imperative
to cultivate a new generation of donors, patrons, and audience members. From this perspective, one could easily dismiss the cyber-narrative opera as a marketing ploy, or gimmicky attempt to make opera “cool” and “hip.” However, the growing recurrence of the cyber-narrative on the opera stage signals a need for deeper analysis to better understand how larger issues involving the relationship between humans and technology in the digital era are being expressed and explored through artistic mediums. Musical works exploring themes of human interaction with technology can be viewed as simultaneously reflective of their historical moment, and influential in molding audience perspectives on how user experiences with emerging technologies can be understood and conceptualized. As composers attempt to express and personify digital technologies through the staged operatic medium, they are creating and shaping audience understanding of aural cues, sound metaphors, and artistic representations of technologies that are inherently soundless. By integrating these musical expressions of technology within a dramatic stage work, opera participates in a process of storytelling where interpretive binaries of good and evil, danger and safety, reality and fantasy, biological and artificial, physical and intangible, human and dehumanized are often present, and the way in which operatic narratives present said binaries are never socially, culturally, ethically, or interpretively neutral. How is the technology represented in each opera connected with the larger cultural narrative at play within the work? How does the representation and framing of each technology within the opera connect with larger philosophical issues and anxieties about the relationship between humans and machines? How do the unique aspects of opera as an embodied, sung, and staged medium reveal audience assumptions about voice and agency within the narrative? How do the new possibilities

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5 A desire to create a new operatic work that would appeal to a younger generation was one of the primary goals behind the commissioning of Death and the Powers. See Peter Alexander Torpey, “Disembodied Performance: Abstraction of Representation in Live Theater” (Masters Thesis, Massachusetts Institute of Technology, 2009), 56.
and ways of being made possible by the thematized digital technologies interact with operatic tropes and conventions? What does opera as a medium offer these three different cyber-narratives? These are the broad questions this dissertation will pursue.

**Defining the Cyber-Narrative**

The term “cyber” in its adjective form describes a noun’s connection to digital computing technology and networked information systems (such as the Internet). The term is often used to indicate a connection to virtual reality and online communication, and is most commonly associated with the term “cyberspace” in defining a metaphorical environment or locale in which communication and computing processes occur over networked devices. The cyber-narrative opera defines an operatic work in which the story itself is inextricably linked with digital technologies, such that the characters utilize, interact with, or are affected by digital technologies to such a pervasive extent that the impact of digital technologies is thematized and foregrounded within the work. In the three case studies examined in this dissertation, analyzing three different types of cyber-narrative within three different operatic works, the impact upon and role of emerging technology on human behavior, relationships, and perceptions of the world are explored. These works do not necessarily rely on digital or cyber technology in order to be produced, performed, experienced, or consumed. The distinguishing factor is that the story itself,

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6 The term “cyber-narrative” is not commonly used in academic writing, with only one book-length study applying it as a guiding principal of the research: Janet Horowitz Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (New York: Free Press, 1997). In this study, Murray uses the term “cyber-narrative” to describe what is now commonly considered “interactive digital narrative,” referring to new and imagined ways of experiencing narrative storytelling within digital technologies (such as online gaming, holographic environments, and virtual reality.)
being told through a traditional operatic framework of a theatrical work involving music, sung text, and visual components, involves digital technology as a fundamental part of the narrative.

The first opera examined is Nico Muhly’s *Two Boys* (2011), in which the cyber-narrative of the story thematizes the Internet, chat rooms, and disembodied text communication. Set in the early 2000s, the time period of the story coincides with a crucial historical moment in the development of Internet technology, when products and services offered gratis to users in exchange for corporate data mining and advertising purposes were in the earliest stages of development. With the rapid adoption of real-time interactive platforms (such as chat-rooms and online gaming), as well as the early iterations of technological platforms designed to encourage user-generated content (such as blogs and nascent forms of social media), the conceptualization and performance of identity in virtual environments became the primary focus in the emerging field of digital anthropology. From Sherry Turkle’s *Life on Screen: Identity in the Age of the Internet* (1995), theorizing the impetus behind and impact of intentional misrepresentation of identity in online environments, to Nathan Jurgenson’s influential refute of Turkle’s concept of a “second self” or “digital dualism” as a conceptual fallacy, scholars have worked to theorize identity assemblage in connection with rapidly changing possibilities of identity performance in the digital age.\(^7\) The concept of enmeshment between “online” and “offline” experiences, and the dynamics of identity assemblage online connect directly with my reading of how voice is used

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and manipulated throughout *Two Boys* as a marker of identity. Despite scholarly critiques and theories of digital identity existing from the earliest days of public Internet access, it was not until 2014 that a book-length study examining the *representation* of Internet technology within an artistic medium would be published, focusing primarily on film: Aaron Tucker’s *Interfacing with the Internet in Popular Cinema*.8 Connecting various visual metaphors and literal descriptions of the Internet, as well as character behaviors and narrative elements in films created between 1992 and 2013 to media theory, philosophy, public policy, and theories of embodiment, infection, dreaming, place, and space, Tucker historicizes evolving anxieties and fears of the Internet dramatized on film within the cultural time of their creation. As my analysis will demonstrate, Tucker’s account of cultural fear of the Internet as a haven for sexual deviancy is directly applicable to the cautionary tale of *Two Boys*, as are ancillary discussions of place, space, and embodiment in visually representing online experiences. Written shortly after Tucker’s publication, and following the world premiere of *Two Boys*, Mary Aiken’s writing on “the cyber effect” provides a psychological analysis of behavioral tendencies in online spaces that helps to contextualize the cautionary tale of *Two Boys* within a broader understanding of human behavior.9

The second case study of this dissertation analyzes an opera called *Glare*, composed by Søren Nils Eichberg, with a libretto by poet Hannah Dübgen, featuring a cyber-narrative focused on artificial intelligence. In this work, fear of AI technology becoming so sophisticated that one cannot tell the difference between a biological human and an artificially sentient humanoid forms the core of the story. Within the opera, the character suspected of being an android (Lea) is

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gendered as female, the girlfriend of the male protagonist (Alex), who begins to suspect that Lea’s perfection is a sign of her artificiality. As such, examining *Glare* through the lens of feminist theory and criticism on the history of the artificial woman, from the Pygmalion myth to automatons, robots, cyborgs and androids, is crucial in the interpretation of *Glare*’s cyber-narrative theme. Donna Haraway’s 1985 publication *A Cyborg Manifesto* is considered a starting point in establishing an analysis of AI technology from a feminist perspective, in which she advocated for cyborg and AI technology as having the potential to eliminate gender binaries and biases.\textsuperscript{10} Analysis of narratives revolving around male attempts to create the ideal artificial woman by Laura Mulvey, Julia Wosk, and Kara Reilly exemplify how the positive potential Haraway saw in digital technology to break down boundaries of difference has been largely unrealized; instead, these critiques argue that the evolution of the artificial woman in cultural narratives consistently reinforces the objectification of the female body, the woman as fetishized pleasure object, and the demonization and dehumanization of women through technology.\textsuperscript{11} In addition to feminist theory, the AI cyber-narrative of *Glare* is connected to philosophies of post-humanism and various strands of AI ethics, as the relationship between humans and machines is challenged and re-defined within the constructs of imagined artificial sentience. Katherine Hayles’ *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* was influential in establishing the idea of the “post-human” as a site of critical inquiry, as well as being one of the earliest studies to interrogate the definition of humanity within the context of


digital technological developments, such as cybernetics, virtuality, and AI. The exploration of robot and AI ethics is also deeply embedded in AI cyber-narratives across more than half a century of pop-culture storytelling, beginning with Isaac Asimov’s introduction of the laws of robotics within non-fiction narratives of the 1950s. Philosophical writing on the ethical development of AI have since proliferated, with scholars such as Nick Bostrom arguing for holding humans accountable and responsible for establishing moral rights for sentient AI. On a broad scale, Meredith Broussard’s recent study of AI technologies clearly delineates definitions of AI within the current digital technological landscape, outlining the tension between what is presently possible with AI technology versus how AI is represented (and misrepresented) through popular culture.

The final opera examined is Tod Machover’s *Death and the Powers*, which foregrounds an imagined technology of uploading the human brain to a computer, allowing for human consciousness to “live” and exist within a digital computer system, completely detached from the confines of the biological human body. Commonly referred to as “mind-uploading,” this concept is linked with technological pursuit of “digital immortality,” which would theoretically allow humans to “live” forever as digital data, and experience consciousness and agency within virtual reality, or through some other form of digital computing software. With the main character

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13 Asimov’s laws of robotics were first published as part of his short story Runaround, which appeared as a “novelette” in a 1942 magazine (see Isaac Asimov, “Runaround,” *Astounding Science Fiction*, March 1942.) Although created as a set of completely fictional rules for a completely fictional world, Asimov’s laws were very influential in connecting robotics with ethics.
successfully transferring his consciousness out of his ailing physical body and uploading it into a
digital computer system, the concept of transhumanism (the transformation of the human
condition through new technology), and the tension between physicality and virtuality is
explored throughout the opera’s plot. Here, debates in the field of transhumanism connect to
the interpretation of the work’s cyber-narrative, as there is much disagreement amongst scientists
and philosophers as to whether or not disembodied human consciousness is possible or desirable
in the evolution of humankind. On one side of the debate, scholars such as Ray Kurzweil propose
a utopic and optimistic vision of a transhumanist future, in which the experience of humanity is
radically transformed by technology, leading to some form of “better” future for all; the
unknown dimensions of a disembodied existence, as well as the inevitably tumultuous path of
technological and social evolution in pursuit of a transhumanist reality are either never
addressed, or framed as “worth the risk” for the betterment and enhancement of humankind.

Taking a more cautious (yet still optimistic) approach, philosophers such as Nick Bostrom
support the advancement of technologies toward transhumanist goals, provided they are pursued
within a framework of ethical boundaries that acknowledge unknown dangers, and work to
expand the definition of humanity within new technological ways of being. On the opposite
end of the debate, writers such as Michael Hauskeller have argued that the utopic transhumanist
philosophy completely disregards how deeply embedded the human experience of existence is

16 The terms “transhumanism” and “the singularity” (or “the technological singularity”) are closely linked, and often
used interchangeably in common parlance. However, their meanings are distinct, with transhumanism broadly
referring to the enhancement and transformation of the human condition through new technologies, and the
singularity referring to a particular moment in history in which fundamental changes to the human condition via new
technologies are irreversible, bringing about a new era of human civilization. For more on the definition of
transhumanism, see Max More, “The Philosophy of Transhumanism,” in The Transhumanist Reader: Classical and
Contemporary Essays on the Science, Technology, and Philosophy of the Human Future, edited by Max More and
Natasha Vita-More (Chichester, West Sussex, UK: Wiley-Blackwell, 2013), 3–17; For more on the definition of the
singularity, see Verner Vinge, “Technological Singularity,” in The Transhumanist Reader, 365–375.
with the biological body, and how advocates of technological transhumanism ignore the social
risks and scientific shortcomings in our current understanding of possible transhumanist
futures.\footnote{19} Similarly, Jennifer Rhee has argued that scholars championing the pursuit of
transhumanist and artificial intelligence technologies tend to ignore the reliance of digital
technologies on physical infrastructure and human labor.\footnote{20} Running parallel to the tension
between physicality and virtuality in the transhumanist narrative of \textit{Death and the Powers} is the
foregrounding of technological gender biases, as well as the sexualization of the female. Here,
feminist criticism of technological tropes by Julia Wosk are also applicable, as well as recent
scholarship on entrenched gender biases within the current digital technology industry, ranging
from gender bias in data-driven app algorithms to the male-dominated narratives of technological
innovation.\footnote{21}

Although this dissertation is the first musicological study to apply the term “cyber-
narrative” to operatic works, the cyber-narrative is not a new construct in the broader context of
storytelling, with a rich history of film, television, and literary works historicizing and
hypothesizing uses of digital technologies as they evolve and change.\footnote{22} The cyber-narrative also

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\begin{enumerate}
\item \textit{Mythologies of Transhumanism} (Cham: Springer International Publishing, 2016); See also
David Livingston, \textit{Transhumanism: The History of a Dangerous Idea} (Sabilillah Publications, 2015); Richard A. L.
Jones, \textit{Against Transhumanism: The Delusion of Technological Transcendence} (Self-published, 2016),
h\url{http://www.softmachines.org/wordpress/wpcontent/uploads/2016/01/Against_Transhumanism_1.0.pdf}.\footnote{19}
\item Jennifer Rhee, \textit{The Robotic Imaginary: The Human and the Price of Dehumanized Labor} (Minneapolis:
University of Minnesota Press, 2018).\footnote{20}
\item Adrienne Mayer, \textit{Gods and Robots: Myths, Machines and Ancient Dreams of Technology} (Princeton:
Princeton University Press, 2018); For an analysis of robots, machines, and technological invention in ancient myths and historical literature, see
Andrew Maynard, \textit{Films from the Future: The Technology and Morality of Sci-Fi Movies} (Coral Gables, FL: Mango
Publishing, 2018); For an analysis of films that narrativize Internet use, see Tucker, \textit{Interfacing with the Internet in
Popular Cinema}; For an analysis of how robots are depicted and narrativized across literature, film, and popular
culture, see Gregory Jerome Hampton, \textit{Imagining Slaves and Robots in Literature, Film, and Popular Culture:
Reinventing Yesterday's Slave with Tomorrow's Robot} (Lanham, MA: Lexington Books, 2015).\footnote{22}
\end{enumerate}
participates in dramatizing the often-fraught relationship between humans and machines from various perspectives; it can be both broad and varied in the technologies it depicts, prophesying both utopic and dystopian scenarios in imagined technological futures. For the purposes of this dissertation, the cyber-narrative is distinct from the broader category of science fiction in that the technologies explored are either representative of what already exists and is known to be possible, or are rooted in nascent technological developments that can be realistically expounded upon toward more advanced, but not-so-hard-to-imagine technologies of the future. For example, whereas narrow definitions of artificial intelligence and machine learning are already becoming deeply embedded in the technological landscape of the present time, technologies connected to time travel, Star-Trek-style space exploration, human colonization of other planets, and interaction with extraterrestrial life are still distant futures and other-worldly fantasies. Furthermore, science fiction tends to deal with a broad array of completely fictional technologies, whereas the cyber-narrative focuses specifically on technology rooted in digital computing software and hardware of the known world.

Musicological Context

While there is little musicological scholarship specifically examining digital technologies as a theme within classical music and operatic works, there are studies of emerging technologies of the past represented within operatic stage works, specifically within the sub-genre of Zeitoper, that stand as an example of the analytical approach taken in my own research. In her 2007 dissertation titled “Music and the Technological Imagination in the Weimar Republic: Media, Machines, and the New Objectivity,” Erica Jill Scheinberg examined a series of works by composers of the time period that “depict, reflect, and otherwise incorporate the media and
machines characteristic of urban life and mass culture in the 1920s.” Her analytical approach included examining theoretical writings that demonstrate a larger cultural interest in the connection between music and the machine in the Weimar era, and mapping the theoretical writings to specific pieces composed during this period, exploring the changing perspectives on human subjectivity and “the recurring encounter of man and machine during the early twentieth century.”

Scheinberg’s work built upon that of Hans-Joachim Braun, whose research focused specifically on the depiction of trains and airplanes in the Zeitoper canon.

In addition to the Zeitoper scholarship, the confluence of technological development as a source of creative inspiration or influence in the compositional and performance process has become a topos of increasing interest in musicological scholarship over the past two decades. The focus of this research ranges from the technology of instrument construction, to evolving ideas of aesthetics, to the analysis of specific works related to technologies of their time. Examples of such analysis include Benjamin Steege’s study of Janáček and the Chronoscope, Annette Richard’s analysis of Mozart’s K.608, intended to be played by mechanical clocks, and an article by Francesca Brittan entitled “On Microscopic Hearing: Fairy Magic, Natural Science, and the Scherzo fantastique.” All three examples cited above explore how a specific technological marvel stimulated the composer under study, with the resulting musical work analyzed as a conduit through which perceptions, ideas, limitations, and new possibilities

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presented by the introduction of a new technology into the composer’s environment are worked out and explored. For this study of Muhly’s *Two Boys*, Søren Nils Eichberg’s *Glare*, and Tod Machover’s *Death and the Powers*, a similar critical approach to that of Scheinberg, Steege, Richards and Brittan is employed, in an effort to construct an analysis that connects historical, sociological, contextual, philosophical, technological, and musical elements of the work.

This analysis also focuses on the unique sung aspect of the operatic medium, and how voice plays a fundamental role in the interpretation of technological themes. Drawing from the varied and growing field of voice studies, this dissertation explores how the voice is employed within the dramatic, ideological, and musical-theatrical contours of each work. Voice scholarship has evolved significantly over the past three decades, as interrogating the ways in which voice as both a sonic/material phenomenon and culturally elaborated metaphor connects with musicological analysis has become an increasingly popular field of research. In a 2015 colloquy published in the *Journal of the American Musicological Society*, Martha Feldman described musicology’s current preoccupation with voice, and traced the evolution of voice scholarship from the 1980s through to the time of writing. In Feldman’s chronology, the 1980s are described as a time when the musicological foundations of voice studies were laid, with seminal works such as Catherine Clément’s *Opera, or The Undoing of Women* (1988), Susan McClary’s *Feminine Endings* (1991), and Philip Brett, Elizabeth Wood, and Gary C. Thomas’s edited collection *Queering the Pitch* (1993) turning a critical, feminist, and queer-studies lens on issues of the body and gender.28 Discussion of the body quickly became linked to opera studies, in which the primacy of voice led to a proliferation of analysis in which the confluence of voice, body, and gender became a focal point of research throughout the 1990s. From Carolyn Abbate’s

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work *Unsung Voices: Opera and Musical Narrative in the Nineteenth Century* (1991), to Wayne Koestenbaum’s *The Queen’s Throat* (1993), Sam Abel’s *Opera in the Flesh* (1996) and Michel Poizat’s *The Angel’s Cry: Beyond the Pleasure Principle in Opera* (1992), questioning the way in which the operatic voice functioned as a site of expression, communication, identity, metaphor, and desire opened a space for voice studies to expand into the realm of “narrative voice, gendered envoicings, voice desires, and vocal divas and fans.”

Poizat’s study in particular is noted for pioneering the study of voice as a phenomenon detached from the human body, laying the groundwork for further studies of disembodied voices, and voices that transcend the conventional human body in a variety of forms. With voice studies now open to questioning the materiality of voice, the identity or “who” of voice, the socio-political contextualization of voice and voices, and the relationship between voice and its many intermediaries, research has continued to proliferate since the JAMS colloquy in analyzing the unique aspects of voice across a limitless plane of musical genres, styles and trends.

Analysis of the voice in relation to technological intermediaries has also begun to make its way into the realm of voice studies, most notably in Miriama Young’s *Singing the Voice Electric* (2015) and Karen Henson’s edited volume *Technology and the Diva: Sopranos, Opera, Electric*.  

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29 Ibid., 655–656.  
and Media from Romanticism to the Digital Age (2016). Young’s cross-genre analysis focuses on the shifting relationship between sonic artifacts of the physical body within recordings of disembodied voices in digital mediums, examining a variety of issues that include the temporal dislocation of the voice from the body, the manipulation of vocal glitches in post-processed recordings, machine replication of the voice, and transformation of the voice via sampling and splicing. Technology and the Diva focuses on how cultural perceptions of operatic singing voice and the evolution of diva fandom throughout opera history is intricately tied to various mediating technologies, from the opera house itself, through print advertising of various kinds, photography, and evolving recording technologies of the past century. Both studies connect with the material turn in musicology, linking the concept of “technicity—technique and tool use” to the study of music making in various forms.

This dissertation fills a gap in the musicological literature between the study of technology as a mediating force in how music and musical performance is conceptualized, produced, interpreted, and consumed, and anthropological and philosophical study of the relationship between humans and technology in the digital era. Analysis of the cyber-narrative opera directly connects these two fields of scholarship, while also revealing how various operatic and technological and tropes are reimagined, reinforced, and perpetuated throughout each work.

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Technological Terminology and Timeline

The true story behind *Two Boys* occurred in the summer of 2003 in Manchester, England. Muhly and librettist Craig Lucas transplant the story further back in time, setting it in “2001, before widespread use of the Internet.”\(^{34}\) Identity and representation of the self in the digital sphere has only grown more complex and nuanced since the time in which *Two Boys* is set, and the social anxieties surrounding Internet technology have not ceased to exist; on the contrary, they have continued to evolve and become more complex as the capabilities of these technologies continue to expand. Similar to the rapid developments seen over the past two and a half decades in Internet technology, technological developments in the field of artificial intelligence have become increasingly pervasive in consumer products; and as the opening anecdote about Netcome exemplifies, whole brain emulation is being promised as a possible option within the current technological landscape, and is no longer perceived by scientists and developers as a fiction of the distant future. Therefore, with the cyber-narrative operas analyzed in this dissertation being very “of their time” in the technology depicted and thematized, it is important to situate the technologies discussed within the historical context of their development, and define relevant terminology.

The year the source material story of *Two Boys* occurred falls at a transition point between Web 1.0 and Web 2.0, terminology utilized by Internet historians to describe an amalgam of technological developments that brought forth a new type of interaction between the Internet and its users in the early 2000s. This technological change meant that webpages were no longer restricted to static content. Web 2.0 technologies allowed websites to become more

interactive, and integrated multiple forms of media, capabilities, and services into the offerings of a single web-service. Facebook is an example of a platform made possible by Web 2.0 technology, where users can generate content within the website, curate their own profiles and spaces, and utilize several different types of integrated communication styles (such as private messages that function like email, public posts that function like blog posts, static informational pages for sharing profile information, photo sharing with textual commentary capabilities attached, and sharing media and content from other websites within a “news feed.”). In the tail end of the Web 1.0 era (circa 1995 to 2003), chat clients and instant-messaging services restricted to real-time text communication dominated the landscape as the core technology for social interaction online. This is the technology reflected in the time and place of Two Boys, when the new capabilities of Web 2.0 technology were not yet fully formed, but beginning to change what was possible in online interactions (such as using webcams within chat rooms).  

By the time Two Boys made its world premiere in 2011, Web 2.0 technology had completely changed the technological landscape, and the rapid adoption of integrated social media networks had amplified social anxieties surrounding the long-term effects of pervasive Internet use, as well as generational divides between “digital natives” and “digital immigrants.” The rise in popularity of social media networks also led to a decline in popularity of chat clients and instant messaging services that did not integrate with or adapt to the trend of user personalization and media sharing. Therefore, by the time Two Boys made its world premiere, audience members would have had their first interactions with the Internet in the era of web 1.0 technology (with

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chat room services being a nostalgic memory of teenage years for audiences members between 20 and 30 years old), and Web 2.0 technologies, such as social media networks and integrated technologies (such as smartphones) playing a defining role in the perception of current technological and social norms.

With Internet connectivity now having reached a state of ubiquity in the developed world, the development of artificial intelligence technology has defined the next wave of technological innovation currently underway. Although the concept of artificial sentience as it is narrativized in Glare represents a very advanced form of AI, the idea of a programmable computing machine (the computer) being able to exhibit intelligent behavior indistinguishable from that of a human was established through the work of Alan Turing in the 1950s.37 The now-famous “Turing test” is considered fundamental in establishing the fields of artificial intelligence philosophy and machine learning. From the early 2000s onward, narrow applications of AI, “a mathematical method of prediction,” have become reality, and are utilized as a core technological component in digital products that produces an output based on the analysis of patterns and probabilities derived from inputted data sets.38 Audiences at the Glare world premiere in 2014 would have been familiar with the concept of predictive Google searches, digital speech recognition, and the idea of self-driving cars, all of which rely on artificial intelligence software and hardware to pull in data, analyze it, and through complex computation, turn out some form of machine behavior that imitates human decision making.

Meredith Broussard’s definition of general AI includes the imagined future of disembodied consciousness “living” inside a computer, or whole brain emulation, which

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37 Turing first proposed this test in the following publication: Alan M. Turing, “Computing Machinery and Intelligence,” Mind 59 (October, 1950): 433–460.
represents a through-line from AI technologies explored in *Glare* with transhumanist

technologies depicted in *Death and the Powers*.\textsuperscript{39} Terminology such as “virtuality” (the concept
of being on, or being simulated by a computer) has become an important conceptual element of
imagined existence within a disembodied, digital framework; similar to the concept of the
“holodeck” in Star Trek, virtual existence is often depicted in pop culture as a digital space in
which experiences of the physical world are recreated within a simulated environment. Since the
earliest development of computers in the 1950s, scientists have hypothesized how networks of
electrical neurons in the human brain could be emulated and mapped by digital technology.\textsuperscript{40}
From the 1960s onward, the topos of disembodied mind uploading has become a mainstay of
science fiction literature, film and television, with a current example being the critically
acclaimed episode “San Junipero” from the 2016 season of *Black Mirror*.\textsuperscript{41} Despite earlier
hypotheses of how whole brain emulation might be technologically possible, it was not until
1990 that any one theory rose to popularity, when Hans Moravec proposed that mind uploading
would be made possible within the next 50 years through the replication of neural networks with
computer software.\textsuperscript{42} Since this time, scientists and software developers have pursued whole
brain emulation technology, with advances made in brain scanning, neural system modeling, and

\textsuperscript{39} Ibid.

\textsuperscript{40} Before the development of computers, two pioneers in neuroscience laid the foundation for the understanding of
neurons containing electrical impulses: Camillo Golgi (1843–1926) and Santiago Ramón y Cajal (1852–1934). Both
men won the 1906 Nobel Prize in Physiology or Medicine (it was a joint win) for their respective theories of the
reticular hypothesis and neuron doctrine. For more on the history of neurons and electrical synapses, see David E.
Neurobiology (New York: W.W. Norton & Company, 2016); After the development of computers, scientists began
to imagine how the mathematical mapping of neuron networks could connect with mathematical models of
computing and the creation of artificial intelligence. For the first scientific publication to hypothesize a
mathematical model for the biological neuron, see J. Lettvin et al., “What the Frog’s Eye Tells the Frog’s Brain,”

\textsuperscript{41} *Black Mirror*, season 3, episode 4, “San Junipero,” directed by Owen Harris, written by Charlie Brooker, featuring
Gugu Mbatha-Raw and Mackenzie Davis, aired October 21, 2016, on NetFlix,

\textsuperscript{42} Hans Moravec, *Mind Children: The Future of Robot and Human Intelligence* (Cambridge: Harvard Univ. Press,
1995).
simulation techniques hoping to achieve the same goal as the main character in *Death and the Powers*: completely disembodied human consciousness resulting in digital immortality.43

**Common Themes**

The cyber-narrative operas examined in this study reveal a nexus of ideologies surrounding voice, the body, gender, and technology that foregrounds the expressive power of the operatic medium in thematizing digital technology, while simultaneously exposing how these technologically-oriented narratives reinforce and rely upon operatic tropes of the past. This nexus also reveals a series of tensions between opera and technology on a broad scale. There is a tension between opera as an embodied medium and the use of digital technology as a fundamentally disembodied experience. There is a tension between the privileging of acoustic instruments and the unmediated singing voice perceived as the “essence” of the art form, and the perceived necessity of utilizing technologically mediated performance forces in telling a technologically oriented narrative. There is also a larger tension between the foregrounding of new technologies within operatic narrative and opera’s historically technophobic history.44 The cyber-narrative operas under study also dramatize various ethical issues connected to each of the thematized technologies, with each opera ultimately framed as a cautionary tale.

In addition to the large-scale tensions running through all three works, there are also several common themes that emerge from the analysis of each work. First, there is a troubling

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43 For an in-depth analysis on the state of whole brain emulation technology, including current conceptions of the technology, existing technological capabilities, and issues that are still in need of significant technological development, see Anders Sandberg and Nick Bostrom, *Whole Brain Emulation: A Roadmap, Technical Report #2008-3*, Future of Humanity Institute, Oxford University, 2008, www.fhi.ox.ac.uk/reports/2008-3.pdf.

recurring connection between the “cutting-edge” technology within these cyber-narrative works and recurring themes of misogyny and objectification of the female within the narratives. That operatic narratives have historically exhibited violence against women and reinforced tropes of the female as threatening, expendable, weak, diminished, and objectified is nothing new, and as this dissertation reveals, these cyber-narrative operas participate in perpetuating this legacy.

While only one out of three works is violently misogynist, there is a consistent privileging of the male perspective across all three operas at multiple levels, from composers who identify as male, to creative/production teams comprised primarily of individuals who identify as male, and through primary characters within each plot who are gendered as male. Part of this is symptomatic of rampant issues of inequality and gender bias in high-level administrative positions and creative leadership in the opera industry. Similar to the opera industry, the technology industry also struggles against a history of misogyny, gender inequality, and social bias against women in tech. While great strides have been made to draw attention to this and provide greater support for women pursuing technological fields, the history of technological innovation in North America has consistently praised and rewarded men as the intellectual masterminds behind new technological developments, while the crucial contributions of women to the field go unrecognized and unrewarded. It is no surprise that the billionaire inventor in Machover’s opera is gendered male, that the objectified possible-android in Eichberg’s opera is gendered female, and that the two digital natives in Two Boys are gendered male, starkly juxtaposed against a female-gendered technical Luddite. These choices both evolve from and

45 It is important to note that gender bias against women and lack of diversity in the opera industry has not gone unacknowledged, with organizations such as Opera America and The Women’s Opera Network working to raise awareness of these issues, and encourage equality and diversity in the administrate and creative labor of opera. For a list of the most recent research and commentary on gender inequality in the opera industry, see “Suggested Reading and Resources,” and “Research and Data,” The Women’s Opera Network, Opera America, accessed June 30, 2019, https://operaamerica.org/content/about/won.aspx.
perpetuate gender stereotypes in how males and females are socialized in regards to technology. I hope that this dissertation plays some part, however small, in drawing awareness to inequalities and harmful stereotypes being perpetuated through these works.

Finally, in all three works, there is the element of the unresolved ending. In *Two Boys*, it is unclear if Jake lives or dies, and Brian’s fate as an attempted murderer is left unaddressed. In *Glare*, the question of Lea’s realness is left ambiguous, and it is unclear if Alex is ever held accountable for Lea’s murder. In *Death and the Powers*, it is unclear based on the libretto and music alone if Miranda joins her family in the system, and the extinction of humanity, as well as the failure of Simon’s “system” within the robot chorus framing the work is never explained. The tendency towards the unresolved operatic ending reflects the current zeitgeist of constant technological change in the digital era. The more complex technology becomes, and the more enmeshed it becomes in our daily lives, the more difficult it is to both judge and prophesy the long-term impact of digital technologies on humankind. But yet, all three operas are cautionary tales. They caution us about technology while simultaneously reveling in our complex relationship with it. In this way, these cyber-narrative operas encourage audiences to engage with a myriad of questions relating to human-machine relationships in the digital era, and suggest that the technologies we create may come to re DEFINE our perception and experience of humanity itself.
In October 2013, an article titled “Finally, an Art form that Gets the Internet: Opera” appeared in The Atlantic, reviewing The Metropolitan Opera premiere of Nico Muhly’s Two Boys.¹ The article praised the work for effectively expressing through sound the “digital headache” that is the Internet and for the use of staging and digital projections to communicate experiences of eroded space between digital and physical existence. In a time period where “falling in love, going to war and filling out tax forms looks the same… it looks like typing,”² Muhly’s opera stands as one of the first examples of an operatic work to normalize Internet technology as a communication platform and “setting” within its narrative.³ Based on a true story, the opera is framed as an attempted murder investigation in a flashback plot structure, dramatizing a series of relationships forged in Internet chat rooms that eventually lead to an in-person murder attempt. The detective assigned to the case must examine chat room transcripts to find evidence of the testimony given by the perpetrator, and in the process, unravels an elaborate

³ Two Boys is not the first opera in the history of the art form to incorporate the Internet as a technology into its storyline; however, it is the first opera to thematize Internet technology within its narrative to be produced by a level one opera company (with the “level one” category described by Opera America as a company with an operating budget over $10 million), and it is the first opera thematizing Internet technology to gain international attention and widespread press coverage across North America and Europe. The world premiere of Two Boys was at the English National Opera in 2011, and it made its North American premiere at The Metropolitan Opera in 2013. There are two other works known to this author to thematize the Internet within an operatic narrative that pre-date Two Boys: Honoria in Ciberspazio (1995) by George Oldziey, and Alternate Visions (2007) by John Oliver. The first full performance of Honoria in Ciberspazio, dramatizing a series of characters “looking for love in cyberspace” occurred via webcast in 1995, with several excerpt performances from the work following in various live and webcast performances between 1996–1999. For more information, see Honoria in Ciberspazio (website), accessed January 15, 2018, http://cyberopera.net/. John Oliver’s Alternate Visions had its world premiere in 2007 in Québec, Canada, produced by the Montréal opera company Chant Libres. Similar to Honoria in Ciberspazio, the narrative focuses on two individuals who form a romantic relationship online, and attempt (but ultimately fail) to meet in person, leading to the end of the relationship. For more information, see Alternate Visions (website), Chant Libres, last modified December 4, 2017, http://www.chantslibres.org/en/productions/altvisions/.
web of fabricated identities and online relationships created by the victim in order to orchestrate his own death. By integrating Internet technology as a fundamental part of an operatic narrative, *Two Boys* also thematizes cultural issues and anxieties surrounding Internet use in the early years of the 21st century: namely, that the disembodied nature of Internet communication and experiences leaves users vulnerable to destructive and manipulative forces of various kinds. In this way, *Two Boys* exemplifies negative social commentaries on digital technology as a threat to humanity, which consistently arise across all three cyber-narrative operas analyzed in this study. Furthermore, the predominantly foreboding and cautionary tone of the work as a whole reflects a broader relationship between opera and technology that is fraught with tension, with technology viewed as a threat to the essence of an art form founded in “live and technologically unmediated song.”

Common uses of Internet technology today require a disembodied element of identity to arise; just as pen and paper facilitate the act of letter writing, networked computers facilitate human communication and interaction “online.” Disembodied communication is not a new concept on the opera stage, but introducing Internet technology into the narrative shifts the always potentially disastrous outcomes of this age-old trope into a new paradigm; the Internet makes communication over vast distances feel instantaneous, and allows for multiple disembodied communications to be possible. By removing the physical limitations of geographical distance and the embodied identity of in-person interactions, the Internet greatly expands the possibilities for miscommunication and the manipulation of identity. The speed at which information is exchanged, and the multiplicities of falsified information that a single individual can control are compounded a thousand-fold from previous technologies. *Two Boys*

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stands as an example of how the operatic art form, though centuries old, has a unique set of resources that can be harnessed to effectively represent this new technology, as well as the human experience of disembodied communication in the digital age. In Two Boys, the embodiment through voice of a fundamentally disembodied medium allows for the opera to play with and reveal assumptions about voice and identity made by the audience, while simultaneously exploring fears and social anxieties connected with Internet use. The opera acts as cautionary tale in that the heightened feelings of freedom, belonging, and authenticity experienced by the main character Brian and made possible by his disembodied virtual self leave him vulnerable to deception, manipulation, disinhibited behavior, sexual deviancy and abuse. Two Boys succeeds in dramatizing an operatic narrative with eroded boundaries between physical and digital experience. Through the libretto, Internet technology itself is framed as both utopic in the possibilities it offers and a force of dehumanization that destroys user agency, rationality, risk assessment, morality, and empathy. Through text setting, casting (including voice type choices for “real” versus “online” representation of characters), staging, scenic design, and the recall of musical material within an interconnected flashback plot structure, voice, identity and agency become an essential element of the drama. By exploiting the relationship between opera as an embodied medium, and Internet technology's tendency to create disembodied experiences, the opera reveals the corruptible nature of identity assemblage in the digital age, and participates in the historicizing of a cultural moment fraught with anxieties surrounding widespread Internet use.
The Construction of Embodiment and Disembodiment in *Two Boys*

In Muhly’s *Two Boys*, each of the characters who communicate in online chat rooms, regardless of whether they are ultimately “real” people or “fabricated” identities, is represented simultaneously by a singer physically present on stage, as well as through avatar depictions and chat room dialogues projected onto the set. In other words, the characters are embodied through the singer, while also simultaneously disembodied through their digital representation. When the score indicates that a character “appears” in a chat room, the singer portraying that character also physically appears on stage, while his or her avatar “appears” online. For example, coinciding with the moment that Brian and Rebecca first meet in a chat room (act 1, scene 4), a note is included in the score indicating a corresponding visual component for the scene. Above m. 367 it reads: “mindful16’s [Rebecca’s] thumbnail photo appears; a beautiful, composed teenage girl. Brian’s photo shows a muddy, sweaty, grinning boy in a football jersey.”⁵ As documented in production photos of analogous scenes (see figures 1.1 and 1.2), while the characters interact with one another, video projections onto the set display the libretto of chat room dialogue in real time, while the singing bodies of each character attach an audible voice and physical body to the active personas in the digital, text-based exchange.

In order to make the technological naivety of the characters more believable to digitally literate audiences, the opera is set in 2001, two years earlier than the real-life incident, in a time

Figure 1.1: Performance Photo from Act 1 Scene 6 of Nico Muhly’s *Two Boys* at the English National Opera, 2011. Susan Bickley singing Detective Strawson (left), Mary Bevan singing Rebecca (center), and Nicky Spence singing Brian (right). Photo by Richard Hubert-Smith. Reprinted, courtesy of ENO.
Figure 1.2: Performance Photo from Act 1, Scene 12 of Nico Muhly’s *Two Boys* at The Metropolitan Opera, 2013. Alice Coote singing Detective Strawson (left), Jennifer Zetlan singing Rebecca (center), and Paul Appleby singing Brian (right). Photo by Ken Howard. Re-printed, by permission, from Ken Howard.
described as “before widespread use of the internet.” Brian is the primary suspect in an attempted murder case, and Detective Anne Strawson attempts to piece together the persons involved and series of events leading up to the crime. The dramatic crux of the opera relies on a process of revelation in the final scenes, as Detective Strawson discovers that all of the people Brian had been communicating with online were identities fabricated by Jake, the murder victim (there are three fabricated identities within the opera, pared down from fifteen in the original source material). In effect, Jake attempts to orchestrate his own death, using the invented personas and a fictitious brain cancer diagnosis to trap and manipulate Brian into attempting murder. The reveal of each fabricated identity comes as a shock to both Detective Strawson and the audience, all of whom have been led to believe that the people Brian was communicating with online were “actual.” Brian himself is unaware that he has been “catfished,” and is devastated when Detective Strawson reveals the truth (for a detailed plot synopsis, see appendix 1).

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7 Following the actual incident, the perpetrator was ultimately charged with attempted murder, as the victim survived the inflicted stab wounds. In Muhly’s opera, it is never revealed if the victim (Jake) survives the stabbing, and the audience is led to believe that he is in critical condition when the curtain falls. For details of the investigation and charges laid in the actual incident, see Bachrach, “U Want Me 2 Kill Him?”

8 Note that use of the word “actual” instead of “real” in this context is intentional on my part, to make clear that “actual” refers to something that exists in physical reality, whereas “virtual” and “digital” refers to something that exists in “cyberspace,” or in an online, in a virtual space. An online identity, persona, or avatar that does not exists as a unique individual in actual reality can still be perceived and experienced as “real” to users.

9 The term “catfish” is used in common Internet parlance to indicate when a person creates a false identity online in order to deceive someone they are communicating with. The term was coined and popularized by the documentary television series Catfish, directed by Henry Joost and Ariel Schulman. (New York City: Supermarché, and Los Angeles: Hit The Ground Running Films, 2010), DVD.
The shock factor and dramatic crux of the opera plot line relies on the manipulation of assumptions connected with voice, the body, and identity. As Feldman describes:

Voice, located “uniquely inside and outside our bodies,” is inscribed within us and legible outside of us. Voice guarantees humanness at the same time as it calls into question, delineates the human as it challenges it. Voice, it seems, may reveal us, but it’s easily, all too easily, also manipulated by us and mistaken by others for things it is not.\(^{10}\)

It is only retrospectively that the audience can look back on the events that have transpired with the understanding that the voice, and the embodiment of voices through singer bodies, was not a guarantee of actual humanness. Just as Brian was deceived into thinking multiple aliases were actual people, the audience is also deceived by the assumption that the connection between voice, body, and avatar presented to them represents an actual person.

The dramaturgical strategy of simultaneously representing the fabricated identities in the story through singer bodies and digital projections was an intentional choice made early in the design process in order to continually render the characters as “real” as possible to the audience.

In an interview about the production, the video projection designers explain:

It’s very important that the seeming reality of the situation is shown physically onstage. Brian genuinely believes he’s having these interactions with these characters… We wanted to keep reminding people that there is something really banal about the experience of having a conversation online. It’s about letters appearing on a screen, but yet from out of that, it’s as much about imagination as it is about anything else.\(^{11}\)

In an interview with BuzzFeed, the composer described how he and librettist Craig Lucas made decisions about how characters would be represented on stage. He stated:

One thing that Craig and I did really early on in the process was decide on some rules. And the rules are that you see characters as they want to be seen. What that means is that, if someone's like, "I'm a 16-year-old girl" online, you see a human 16-year-old girl actress portraying that. If a person is chatting with someone, they see that person as they

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\(^{11}\) Meyer, “Finally, an Art form that Gets the Internet: Opera.”
Imagine them to appear on the stage as a physical, real person... It's simultaneously more literal and less literal.\textsuperscript{12}

Recorded voiceover effects, digitally disembodied and/or amplified voices, holograms, and 3D animations, all commonly found in the special effects of film and live theatre to represent imaginary characters and elements, are obviously absent from the production style of Two Boys. The great con of the opera is that you (as an audience member) are led to believe that all of the characters are actual, just as Brian perceived them as both actual and real, for as long as possible.

**Disguise and Identity Play across the History of Opera**

In an interview published a few weeks before The Metropolitan Opera premiere of Two Boys, Muhly suggested that the element of fabricated identities employed throughout the opera is connected to a tradition of disguise and deceit on the opera stage, while simultaneously reformatted within a new realm of possibilities provided by internet technology. In discussion with David Graver, Muhly stated:

For me, opera is always about people using disguise and deceit to get something emotional, political, or sexual. Or all three. Historically, you'd have disguises, right? But now, we have this whole other delivery system [the Internet] for the same drug.\textsuperscript{13}

Elements of disguise and mistaken identity are well-worn tropes in the history of drama and theater, and have been a mainstay of the opera stage since the earliest formations of the art


form. As Emily Wilbourne has analyzed, the conventions and traditions of 17th-century commedia dell’arte performance practice heavily relied on plot elements of cross-dressing and identity play, regardless of whether the overall tone of the story or scenario was comic or serious, and regardless of theatrical format (such as commedia, tragicommedia, opera regia, and intermedi). Styles of acting, gesture, song, dance, music making, and visual spectacle in commedia dell’arte performance informed operatic storytelling from the very beginning, thus the identity play so consistently present in commedia dell’arte prototypes carried over into opera as well. As Domnica Radulescu maps out in her study of commedia dell’arte actress Caterina Biancolelli (1665-1716), the creation and evolution of the Columbina character added new complexity to popular use of female disguise within plotlines as a path toward marriage:

[Columbina’s cross-dressing] ...destabilizes and reconstructs the feminine gender in fluid and revolutionary ways that, if exemplified in society, would give women more power and freedom… She [Columbina] teaches women how to succeed in a man's world, to take justice into their own hands, and, by means of trickery, to obtain what otherwise is barred to them.

Shortly after Caterina Biancolelli’s death, the operas of George Frideric Handel written for rival sopranos Francesca Cuzzoni and Faustina Bordoni featured elements of cross-dressing and disguise that foregrounded issues of identity and gender within the plot. As Wendy Heller and others have examined, the trend of female characters cross-dressed as men, musically and dramatically subverting the “normal” expectations of their respective genders, extends beyond Handel and can be found throughout seventeenth century opera, through to the time of Rossini.

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14 Emily Wilbourne, Seventeenth-Century Opera and the Sound of the Commedia Dell’arte (Chicago: The University of Chicago Press, 2016), loc. 883 of 6410, Kindle.
15 Ibid., loc. 2716 – 2743, Kindle.
18 Wendy Heller, Emblems of Eloquence: Opera and Women’s Voices in Seventeenth-Century Venice (Berkeley: University of California Press, 2003); and Margaret Reynolds, “Ruggiero’s Deceptions, Cherubino’s Distractions,” in
Plot devices and character types reliant on identity play continue after Handel with the rise of opera buffa in eighteenth-century Vienna, with the trickery of “manipulative minxes” often employed in the pursuit of a socially advantageous marriage (the character of Despina in Mozart’s *Cosi fan tutte* is the most well-known example, even though her participation in the plot of trickery and disguise is motivated by a monetary bribe and not the prospect of marriage).\(^{19}\) While the use of disguise is often dismissed as a mere contrivance of comedic plot lines, Jessica Waldoff’s analysis of Mozart’s operas (buffa, seria, and everything in between), reveal how the use of disguise, in conjunction with dramatic moments of recognition and reveal, plays an important role in the psychological development of characters and the “well-worked-out plot” of Mozart’s operatic output.\(^{20}\) While nineteenth-century opera experienced a dearth of disguise roles from Rossini onward, works featuring female singers cast as male characters reemerged in the early twentieth century through three different roles by Richard Strauss: the role of Octavian in *Der Rosenkavalier* (1911), the role of the Composer in *Ariadne auf Naxos* (1912), and the role of Zdenka/Zdenko in *Arabella* (1933).\(^{21}\) As the above cited studies of disguise and en travesti roles in the history of opera suggest, playing with mistaken identities and cross-dressing within operatic narrative was historically employed to allow characters access to information, social situations, or physical spaces that were otherwise inaccessible to them because of their “real” gender or social class. Throughout opera’s vast history of castrati roles (commonly performed by female singers today), en travesti roles, and disguise roles, female singers in cross-dressed constructions of character “contribute to that peculiar alchemy where sex

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\(^{21}\) Reynolds, “Ruggiero’s Deceptions, Cherubino’s Distractions,” 142.
and tease and gender play mix.”\textsuperscript{22} Furthermore, the structure of disguise plots first influenced by the commedia dell’arte establish the tradition of a knowing audience; the success of humor and entertaining imbroglio often relies on the audience being fully aware of a character cross-dressed or disguised as someone else, while the other characters within the drama remain blind to the deceit.

As I will explore in remainder of this chapter, the use of disguise, gender play, and fabricated identities in \textit{Two Boys} both intersects with and departs from the traditions of said tropes throughout opera history in several ways. The first point of departure is that the motivation for disguise within the narrative is not connected to the pursuit of marriage, nor is it employed by a female character as a means of gaining power and access to an otherwise inaccessible realm; instead, multiple disguises are employed in tandem as a mechanism of emotional manipulation, in an effort to bring about self-destruction. Second, the gender play in \textit{Two Boys} is not restricted to a single gender; aided by the disembodied communication method of a chat room, Jake assumes both male and female identities. Furthermore, there is no cross-dressing of the singer Jake’s physical body. His behavior of assuming an alternate identity is never expressed in the traditional mold of operatic disguise that a character like Cherubino utilizes, in which the singing voice and body remains the same while the disguise is suggested and achieved through changes in costuming and acting. While the consistency of vocal timbre is historically used as an important element of recognition (such as Figaro recognizing Susanna, disguised as the Countess, by the sound of her voice in \textit{Le nozze di Figaro}), in \textit{Two Boys}, the physical body and vocal timbre of the corporeal, “real” person behind each disguise does not remain consistent in the expression of each fabricated identity. The process and manifestation of

\textsuperscript{22} Ibid., 133.
disguise itself is disembodied from Jake, and embodied through a series of individual singers. In this way, the process of disguise in Two Boys departs from operatic tradition, inspired by the complete disembodiment of real-time text-based communication technology and common practices of identity formation and performance in online spaces.

**From Fabricated to “Real”: Detective Strawson “Sees” for the First Time**

Throughout the first act of the opera, flashbacks of Brian’s chat room interactions with Rebecca, Jake, Peter, and Fiona occur as Brian attempts to express his side of the story. Detective Strawson is skeptical, believing that he is guilty. In the final scene of the act 1 (scene 16), Detective Strawson receives printed transcripts of Brian’s chat room encounters, and is amazed to find evidence of all the conversations Brian has described. Bringing the entire first act to a close, this scene uses embodiment and voice to musically dramatize a crucial evolution of understanding for Detective Strawson.

As the Detective begins reading the chat room transcripts, she sings quoted lines from chat conversations, extracted from previous scenes the audience has already witnessed. The quoted lines of chat text are paired with the singing voice of each character, recalling the original musical setting of the text, and dramatically citing Brian’s first encounters with the characters. Detective Strawson’s vocal pairing with each character is harmonically dissonant yet in rhythmic unison with the recalled fragment. As she “discovers” each character in the transcripts, her envoicing of their chat text is linked with the physical body and singing voice associated with each role. At the beginning of this sequence of chat room discoveries, a note in the score (m. 1757) indicates that the singing bodies of the characters Brian has mentioned are to appear on
stage one by one, presumably in tandem with Detective Strawson singing their lines of chat text (see example 1.1).

Although the audience hears the voice of the Detective paired with a sequence of voices already familiar to us, in the context of the drama, we assume Detective Strawson is deaf to the voice of the characters she is discovering, and initially blind to the appearance of their physical bodies on stage. Their embodiment and voice re-dramatizes for the audience their existence within the online world as Brian described. As Detective Strawson herself vocalizes the lines of chat room text on the pages in front of her and envoices the personas of each character, she renders their existence as “real” in her evolving understanding of the situation. After finding evidence of Rebecca, Brian, Fiona, and Jake, and giving a voice to their text as they simultaneously appear on stage, the physical embodiment of each character becomes an affirmation of their “actualness;” A note in the score above m. 1786 states: “Anne [Detective Strawson] looks up and sees the characters for the first time.” Even though this note refers to a physical component of the acting and does not correspond to any significant musical shift, the Detective’s ability to “see” the characters dramatically represents the moment she imagines the physicality of the personas present in the text she is analyzing, and by realizing their physical form, decides, at least for the moment, that they are “real;” this realization furthers the opera’s overall ploy to convince the audience that the characters that are “real” to Brian “actually” exist.

The ensemble of chat room characters continues singing fragmented lines of recalled text in an overlapping collage of sound, and the pairing of Detective Strawson’s vocal line with various fragments of each character’s text continues.

23 Muhly, Two Boys (Vocal Score), 195.
Example 1.1: Detective Strawson’s vocal pairing with each chat room identity. Nico Muhly, *Two Boys*, act 1, scene 16, mm. 1751–1771.  

Recalling Act I, Scene 12: Brian's first interaction with Fiona

Is this Fiona?

Save yourself.

What do you think happens?
to missing persons?
where do you think
they go?
they go?
Stay away from those two
My reading of the scene thus far proposes that the process of voicing each character in the chat transcripts and the embodiment of said characters on stage expresses a fundamental shift in Detective Strawson’s perception of their existence from “fabricated” to “actual.” However, the irony of this scene is that while Detective Strawson comes to the initial conclusion that chat personas are all “real” people, she is simultaneously enacting the process of a single voice (her own) inhabiting or expressing multiple personas; she is enacting the truth of the situation while confirming for herself and the audience an alternate conclusion. Moreover, pairing Detective Strawson’s single voice with the several individualized voices of the chat room characters reminds the listener that voice functions as a marker of identity.25

In m. 1773, the chorus enters with freely overlapping phrases, and the increasingly dense mass of voices begins to subsume the individual voices established at the beginning of the scene. As is the case throughout the opera, the chorus represents the “denizens of the Internet;” here again the human voice is used as a marker of identity, with the chorus poetically representing the multitude of individuals experiencing the Internet in different ways at the same time. As the musical texture grows more dense, it becomes more and more difficult to distinguish individual characters within the cloud of sound, until Detective Strawson closes her notes and sets the transcripts aside, at which point the ensemble of voices ceases (m. 1803). Over the course of the previous 57 bars, Rebecca, Fiona, and Jake went from fabricated identities without voice or body to “actual” people in the eyes of the Detective. Summarizing and affirming this evolution of perspective, the scene ends with Detective Strawson singing “It’s impossible. Yet there it is. From preposterous to real. Oh, my god.” (mm. 1803–1816).

The Body and Voice may Deceive while Music and Text Reveal

While the shock factor of the reveal moment in the plot is partially achieved by using audience assumptions of voice and body as a deceptive agent, there are subtle moments throughout the score that can be interpreted as musical and textual clues, foreshadowing the truth of the situation. The most obvious hint that the online version of Jake that Brian first encounters may not be an accurate representation of the actual Jake relies on connecting Rebecca’s first description of her younger brother with Brian’s first online interaction with Jake. In act 1, scene 6, Rebecca first mentions her brother in the following phrase:

i’m in trouble
me and my little brother
jake
he’s only 13 but he’s kind of a genius
like he caan [sic] do anything with computers literally
hack into government files you name it

Several scenes later, in act 1 scene 14, Jake and Brian meet online for the first time. Jake’s avatar appears in the stage set projections of the chat room for the first time, and his singing body appears on stage for the first time. A note in the score at the beginning of the scene (m. 1609) indicates that the Jake that appears on stage in this scene is to be “a tall, well-developed, good looking boy… who appears older than 15.” Furthermore, the singer is a baritone, a voice type rarely (if ever) associated with adolescence. The combination of the baritone voice and more mature appearance of Jake in this moment are at odds with Rebecca’s earlier description of him. For anyone looking at the score, it is clearly indicated that this is the “idealized version of Jake,” but the audience is never given any overt indication of this in the drama that unfolds, or in the

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27 See Muhly, Two Boys (Vocal Score), 172.
program notes. On the contrary, the structure of the scene diverts attention away from this discrepancy. This initial appearance of the idealized Jake does not involve any real interaction between the two boys; it is structured as a flashback monologue of the moment Jake told Brian that Rebecca (who, by that time, Brian considered to be his girlfriend) had been murdered. The scene then cuts back to “reality” with an interruption from Detective Strawson, accusing Brian of lying. In his defense, Brian aggressively asserts that what he is telling her “IS real” (m. 1690), and she should look at the chat transcripts as proof to corroborate his story.

When Brian and Jake finally meet in person, the baritone body and vocal representation of Jake’s character is replaced from that point onward with the “real Jake,” a boy soprano who is supposed to visually match Rebecca’s first description of him as 13 years old. This scene also features one of the subtler musical clues that Jake may have fabricated Rebecca’s online identity. When Rebecca is reportedly murdered (gruesomely described by the baritone, “idealized Jake” in act 1, scene 14), mutual grief over her loss forms an important emotional bond between the two boys. When Jake attempts to comfort Brian, his line “I loved her, too…” is followed by a four bar oboe solo that winds chromatically upwards, leading to his next phrase, with Jake singing “I’m still here. Jake’s here. And I’ll stay.” (see example 1.2).28 This oboe moment echoes the only other prominent use of oboe up to that point, in act 1 scene 6, the second time Brian and Rebecca communicate in a private chat room. In act 1 scene 6, the oboe underscores the first time Brian asks if they can meet in person (see example 1.3).29 This timbre reminiscence, though subtle, harkens back to Rebecca and Brian’s first interactions. Jake’s phrase following the oboe echo can be read as an admission of his role in fabricating Rebecca’s identity; she is still there,

28 Ibid., 250–251.
29 Ibid., 66–68.
Example 1.4: Jake sings of “keeping Rebecca alive.” Nico Muhly, Two Boys, act 2, scene 3, mm. 590–597.

because Jake is still there, and he created her. Or, rather, Brian’s perception of Rebecca is a part of Jake’s identity—he is Rebecca.

Although Brian shows no signs of understanding this, Jake makes one last statement connected with this moment of subtle revelation, singing “we’ll keep her alive, you and me” (see example 1.4). The recall of musical material from the opening in this moment is retrospectively

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30 Ibid., 252.
at odds with Jake’s comforting words, as the opening bars lead into Brian’s first line, singing “Help! Help! My friend has been stabbed!”

**Truth Revealed: Anne sees what Brian Cannot**

It is in act 2, scene 10, that Detective Strawson discovers the textual hint that ultimately leads her to the truth of the situation. In all of the chat transcripts, every person except Brian misspells the word “maybe” as “mybe,” suggesting that a single person is controlling the personas of Jake, Fiona, Rebecca, and Peter. This realization occurs at the end of the act 2 scene 9, leading directly into scene 10 where Detective Strawson begins pouring over the chat transcripts to confirm her suspicion. As she goes through the transcripts, circling all the occurrences of the word “mybe” (as directed in score, m. 906), she sings fragments of text from the chat conversations as she reads. Her vocal line is once again doubled by each of the characters as the original musical moment is recalled, with individual voices and bodies of the singers once again used as markers of what was perceived by Brian (and Detective Strawson, up to that point) to be an actual person, and a unique character identity (see example 1.5).

With her suspicion confirmed, the Detective encourages Brian to continue telling her about the conversation with Fiona that led to his involvement with the murder. This moves us into act 2 scene 11, where the flashback effect reveals a chat conversation where Fiona gives Brian explicit instructions for how he is to carry out Jake’s murder. At the beginning of this interaction, there is a note in the score indicating “The Boy [meaning the real Jake, sung by the
Example 1.5: Detective Anne Strawson’s vocal line doubled by the voices of each persona in Brian’s chat room transcripts. Nico Muhly, *Two Boys*, act 2, scene 10, mm 911–933.
Anne sees that what she suspects may be possible.

maybe she was unconscious and didn't feel anything

Prove to me that you're trustworthy and we'll spare

Prove to me that you're trustworthy and we'll spare
boy soprano] appears behind Fiona.” (m. 978).\footnote{Ibid., 297.} Several bars later, as Fiona and Brian begin to converse, it is stated that “Anne envisions what must in fact have happened.” (m. 985).\footnote{Ibid.} As Fiona begins to sing, giving Brian instructions on what type of knife to buy, how he is to dress, and what he is to say, her voice is doubled by Jake. In a structure similar to scenes in which Anne’s vocal line doubled that of the characters she was recalling in chat transcripts, Jake and Fiona’s vocal lines are locked into a rhythmic unity, with Fiona’s pitches set harmonically...
beneath Jake’s melody. Gradually, Jake’s voice replaces Fiona’s completely; he continues to sing
the text Fiona types to Brian. A stage direction indicates this gradual transition between the
voices in m. 992, and the transition is complete by m.1022, when there is no more notated music
for Fiona and her role is overtaken completely by Jake.

The gradual erasure of Fiona’s voice in this scene reveals her fabricated nature, and Jake’s
voice replacing hers identifies him as the real person behind the contrived persona. Fiona’s body
remains on stage, her avatar and chat text remain projected onto the set, but it is her voice that is
taken over by another. In this way, the voice is established as the ultimate marker of identity,
with Jake’s voice becoming the primary agent through which his ownership of her identity is
expressed. What differentiates this scene from anything that has come before it is that the bodies
and voices on stage are no longer representing Brian’s perception of the world; In this moment,
Brian is deaf to Jake’s vocal takeover of Fiona. It is a moment of poignant dramatic irony, as the
audience is hearing and seeing precisely what Brian cannot. It is also a striking reminder that the
audible voice, a sign of humanness and a powerful component of identity assemblage in the
physical world, was never available to Brian in the first place; it is never available to anyone in
purely text based communication, but voice all too easily becomes an imagined component in
constructing and understanding a perceived reality. As Amanda Weidman has theorized:

Attending to different textual and performed techniques of voicing, with their implications
of particular modes of circulation and reception, originality, and preproduction, allows us
to explore how the assumption of attribution of voices complicates the often assumed
equation of voice, representation, and agency.33

For Brian, there is an assumed equation of the voice he imagines with identity and agency. For
Jake, the technique of vocal takeover is an assertion of his authority and control over Fiona’s
identity and agency. For the audience, this scene is an important dramatization of how the

operatic medium, with its singing voices and bodies acting on stage, complicates the equation of voice and embodied representation in the expression of digitally constructed and circulated modes of identity. Harkening back to Martha Feldman’s writing, this scene is a culmination of how, in the context of this cyber-narrative opera, voice “it seems, may reveal us, but it’s easily, all too easily, also manipulated by us and mistaken by others for things it is not.”

Baritone vs. Boy Soprano: The Meaning of a Voice Type

Since we now know that the character of Jake as we first encounter him is not a reflection of reality, but rather a depiction of the character as Brian perceives or imagines him, we are faced with a rather operatic question: what extra-musical meaning is achieved in juxtaposing “idealized Jake” as a baritone, and “real Jake” as a boy soprano? The writing of Catherine Clément suggests that opera can “communicate social meaning musically by exploiting an established hierarchy of voice types and dramatic associations.” Clément also introduces the concept of a “society of voices” that is brought to life in each work, where voices become the primary vehicle through which the drama is enacted and character subjectivity is determined. For Clément, baritones generally represent “organized opposition… older, more prudent, they hide their rebellion and calculate their plots. Their voices have reached the ideal maturity of European men: not too young, not too old.” Within the context of Two Boys, casting “idealized Jake” as a baritone subliminally and retrospectively reinforces the devious nature of “real Jake” as a calculating, manipulative mastermind. John Clayton Seesholtz has suggested that Verdi’s use

and favoritism toward the baritone voice can be interpreted as a “call to the average human male and our innate ability to consciously or subconsciously relate to the sound of the common man.”\footnote{Ibid., 521–522.} Within this perspective of the baritone voice, “idealized Jake” can be seen as so indeterminate in persona that Brian’s imagined version ascribes to him the voice of the every man; a voice he is subconsciously drawn to as recognizable, despite his complete lack of knowledge. For K. Mitchells, the voice itself acts as an “auditory mask,” which, “through its distinctive tone quality provides an impersonation of the operatic character.”\footnote{K. Mitchells, “Operatic Characters and Voice Type,” \textit{Proceedings of the Royal Musical Association}, 97 (1970-71): 4.} She asserts that this high-middle-low spectrum established by the male voices of tenor-baritone-bass can reflect the age of a character (mapping to young-middle-old), as well as maturity and intellect (immature-mature-the most mature, respectively). Mitchell also suggests that “the contrasting tone qualities of high and low voices serve to characterize moral differences as well as temperamental. A good character is usually adorned by the brightness of a high voice whilst an evil character is afflicted with the darkness of a low voice. Many personality contrasts between tenor and baritone roles involve an antagonism in their moral stance.”\footnote{Ibid., 52.} By the logic of Mitchell’s analysis, that Brian imagines Jake as a baritone suggests that Brian imagines Jake as older than him, more mature, or intellectually superior, but also a voice that subliminally expresses a moral darkness in Jake of which Brian may or may not be aware.

Notations in the score indicate that the baritone version of Jake is to adhere to a specific physical look: “A tall, well-developed, and good-looking boy appears on stage. This is idealized Jake, who looks older than 15.”\footnote{Muhly, \textit{Two Boys} (Vocal Score), 172.} In contrast, the description of Brian’s profile picture calls for a
greater sense of realism: “Brian’s photo shows a muddy, sweaty, grinning boy in a football jersey.” That the score refers to baritone Jake as “idealized” suggests that singer and character as a whole (encompassing voice, physical appearance, and profile picture) all contribute to an imagined, glorified fantasy of Jake from Brian’s perspective, a projection or rendering of an idealized “other.” That Jake’s actual body and voice type is revealed to be that of a boy soprano places him outside of the tenor-baritone-bass paradigm, but still within reach of the social connotations of voice type. Casting the representation of real Jake as a boy soprano firmly establishes him as younger and less developed (both physically and vocally) in comparison to Brian the tenor, and starkly contrasts the juxtaposition between Jake’s real self and Brian’s imagined baritone personification of him. The two versions of Jake are not only delineated by vocal timbre and range, but they are also separated by physiology; idealized Jake is cast in a voice type that the real Jake cannot possibly be. As a boy soprano, his character has not experienced the physical changes of puberty that would make it possible for real Jake to be tenor, baritone, or bass. The high-pitched, bright timbre of a child’s voice, in addition to a limited strength of resonance and lack of coloration connect with social conceptions and representation.

41 Ibid., 38.  
42 There are numerous articles examining “social media envy,” describing how users experience increased feelings of depression, sadness, envy, and inadequacy when browsing social media, as they constantly compare their own lives with the portrayed lives and personas of those with whom they are digitally connected. Studies of social media envy have also coincided with research on how the majority of social media users regularly “lie” or stretch the truth in order to project a hyper-idealized version of reality, editing and curating their online identities to display an “ideal self.” In Two Boys, we are presented with a twist on the concept of “social media envy,” as there is an assumed projection of the ideal “other;” the baritone embodiment of Jake brings forth an idealized construction of that character’s identity from the perspective of Brian. For one of the earliest studies specifically examining the connection between envy and social media use, see: Hanna Krasnova, Helena Wenninger, Thomas Widjaja, and Peter Buxmann, “Envy on Facebook: A Hidden Threat to Users’ Life Satisfaction?” Wirtschaftsinformatik Proceedings 2013 92 (2013): 1477–1491. For The New Yorker article credited with coining the term “spiral of envy,” see Maria Konnikova, “How Facebook Makes us Unhappy” The New Yorker, September 10, 2013, http://www.newyorker.com/tech/elements/how-facebook-makes-us-unhappy; For a recent video campaign connecting social media envy with online portrayals of the ideal self, see “Are You Living an Insta Lie?” produced by Ditch the Label and boohoo.com, February 20, 2017, accessed January 15, 2018, https://www.youtube.com/watch?v=0EFH bruKEmw. Note that the video description of this work on YouTube specifically stated the definition of “insta lie” in saying “Insta Lie (verb): an intentionally false representation of real life on social media.”
of goodness and purity. The very words used to describe the boy soprano sound in reviews of Andrew Pulver’s performance in the Two Boys Met premiere—“pure,” “angelic,” and “pristine”—are laden with moral connotations of innocence. The description of Jake’s character given by his mother reaffirms the portrayal of him as a “good kid,” consistent with the trope of childhood innocence. In act 1, scene 2, Jake’s mother sings: “You have to understand, he’s a great kid... He helps me around the house, he never needs to be told to do his schoolwork... He sings in the choir!... He’s a dream come true!” The social connotations of a childlike voice symbolize innocence, asexuality, and purity, working in tandem with the flashback structure of the work and the embodiment and voicing of Jake’s numerous fabricated identities to heighten the impact of the opera’s dramatic reveal; the reality of Jake’s sociopathic manipulations are at odds with traditional symbolic interpretations of his boy soprano voice. Yet, the web of lies and false personas he created, the orchestration of his own murder, and his sexualized encounter with Brian (described in act 2, scene 4) reveal that he is neither innocent, nor naïve.


45 Muhly, Two Boys, Audio Recording Digital Booklet, 9.
The Opera as “Cautionary Tale” and The Dark Side of the Internet

Jake’s deceitful machinations, self-destructive behavior, and sexual interactions online also form the foundation of the opera as a “cautionary tale about the dark side of the Internet,” a catch phrase used throughout both marketing campaigns for Two Boys at the English National Opera and The Metropolitan Opera.46 The provocative slogan implies that Internet technology itself contains some kind of inherently harmful quality that lurks below the surface, rendering users constantly susceptible to its unmitigated power of destruction. Nico Muhly has repeatedly noted that the opera is “not really about the Internet,” but that the Internet just happens to be the place in which the drama is set; in an interview, he described this perspective in saying, “I like to say that “Two Boys” isn't really “about” the internet, but uses the online medium to tell a very old story.”47 For Muhly, Internet technology functions as a neutral mediator of human behavior within the opera; the Internet becomes a tool that characters use to act upon various tendencies and curiosities, or the location in which various desires are acted upon.48 But when a technology is central to an opera’s plot, when production elements of the work continually draw attention to


47 Graver, “Interview: Nico Muhly.”

48 The perspective that the Internet functions as a neutral space or mediator for human behavior (be it good or bad, constructive or destructive), is a fundamental premise in the work of cyberpsychologist Mary Aiken. See Mary Aiken, The Cyber Effect: A Pioneering Cyberpsychologist Explains How Human Behavior Changes Online (New York: Spiegal & Grau, 2016), 12.
the technology, and when press and marketing for the opera frame the entire work as a cautionary tale for the Internet age, then the opera is going to be about the Internet, regardless of the composer’s intentions or ideology. Because the technology is foregrounded so prominently, the Internet itself becomes an active agent or force of destruction within the story of Two Boys, functioning as a catalyst for sexualized encounters, and haven for obscene behavior. Furthermore, the Internet is framed within the work as a place in which users experience a false sense of freedom, with a cost of entry that demands sacrificing one’s humanity. Amanda Weidman has argued that “voice is a crucial site where the realms of the cultural and sociopolitical link to the level of the individual, a site where shared discourses and values, affect, and aesthetics are made manifest in and contested through embodied practice.”49 By placing a cyber-narrative that deals with both identity assemblage on the Internet and social anxieties surrounding the corruptive power of the Internet within an operatic framework, the singing voice and singing body become the conduits through which social and cultural fears of the Internet as haven and catalyst for sexual deviancy are manifested as real; a tautological loop is formed in this opera, as the dehumanized online user is re-humanized with the singing voice. Once re-humanized, the singing voice as a marker of identity is then manipulated and undermined, revealing a “true self” that becomes corrupted and dehumanized in the online space.

The realization of Jakes multiple online identities and the revelation of his attempt at self-destruction via the manipulation of Brian fit into the longer history of recognition scenes in opera as outlined by Jessica Waldorf. In Waldorf’s analysis of Mozart’s operatic output, she states:

The conclusions of these operas, whether buffa or seria, whether Italian or German, culminate in a moral, philosophical, or other “truth” that recognition brings, not merely for an individual protagonist or group of characters but for the whole stage and the larger world it represents.50

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50 Waldoff, Recognition in Mozart’s Operas, 3.
In the context of Waldorf’s study, the concept of recognition is not always linked to a dramatic reversal of identity play; however, disguise, deception, and a revelation of true identity is often linked to a moment of destruction within the plot, and is one of the most potent dramatic formulas for the Aristotelian movement “from ignorance to knowledge” that is played out over and over again throughout the opera canon.\(^{51}\) In *Two Boys*, a moment of recognition occurs when the multiple characters presented on stage by individual singing bodies are revealed to be representations of fabricated identities. This moment relies on the character of Detective Strawson and the audience “reach[ing] back in memory and recall[ing] something with new understanding.”\(^{52}\) After doing so, the technology Jake used to achieve his manipulation of Brian is reframed, with the destructive power of the Internet revealed as truth.

**“You Could Get Lost”: Dehumanization and “Ghosts in Machines”**

In act 2, scene 2, Detective Strawson places a laptop in front of Brian, and sings, “Show me. I want to see.” (mm. 185–187). She is essentially asking Brian to show her the Internet, a place or thing that is completely foreign to her but crucial to her understanding of the case, since it is the nexus of all the experiences, interactions, and relationships Brian has described. Brian lifts the lid of his laptop, begins to type, and Anne exclaims in wonder, “It is real… People of all kinds… you could get lost, couldn’t you?” Brian replies with a noncommittal “I guess” before the Detective makes him continue telling his side of the story (mm. 198–207). On the surface, the Detective’s comment about “losing oneself online” can be linked to the well-studied

\(^{51}\) Ibid., 3, 5-6, and 312.

\(^{52}\) Ibid., 6.
phenomenon of the “time distortion effect,” which is the by-product of an environment with little to no traditional temporal cues.\(^5\) In relation to Internet use, the time distortion effect is equated with losing one’s sense of familial ties, losing the ability to recognize a potentially dangerous manipulation of trust, and ultimately losing all sense of humanity.\(^5\)

Toward the end of act 1, the first two aria-like moments in the opera occur, the first featuring Detective Anne Strawson and the second featuring Brian. Both moments reveal fundamentally opposed perspectives on Internet technology held by each character. Detective Anne Strawson’s aria occurs in act 1 scene 10, as she describes to her mother her frustrations with the investigation she has been tasked with (see example 1.6):

Example 1.6: Nico Muhly, *Two Boys*, act 1, scene 10, libretto excerpt\(^5\)

ANNE:
It’s a horror, top to tail. It’s all a show. When they’re not at the shopping centre stabbing each other, they’re glued to their screens behind locked doors, chattering in a made-up language. Everything’s ironic!
They’ve killed off beauty. There’s no tenderness.
There’s nothing. There’s nothing. Ghosts in machines.
Ghosts in machines. Ghosts in machines. That’s all they have.
Nothing. Vapors! The poor…. The poor lost…I gave him away, into this, and now I see the worst of it.
Mother, that’s all they have. That’s their world.

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\(^5\) The time distortion effect is described by Mary Aiken as follows: “Most of us have felt “lost” in cyberspace and realized—as if waking from a dream—that we’ve burned dinner, run late for an appointment, or forgotten to turn off the sprinklers. This is due to the fact that, in the real world, most people have learned to keep track of time effectively. Online, though, there’s a time distortion effect.” See Aiken, *The Cyber Effect*, 9.

\(^5\) Aaron Tucker’s extensive analysis of films from the mid-2000s onward also demonstrates that a fear that users will “loose themselves” in a technology, lose their sense of familial ties, and be unable to recognize potentially dangerous manipulations of their trust by anonymous users is also a theme of fear that permeates film narratives with naturalized Internet technology in the story line. See Aaron Tucker, *Interfacing with the Internet in Popular Cinema* (New York: Palgrave MacMillan, 2014), 191–218.

\(^5\) All printed libretto examples are taken from Nico Muhly, *Two Boys*, Audio Recording Digital Booklet: 8–22. All spellings, acronyms, [sic] markings, line spacing and punctuation markings are original to the source.
Underneath Anne’s vocal line is an orchestration of drawn out, prolonged pitches in the high strings over a subtle ostinato, forming a shifting pillow of ambient sound that underpins her musings. Emerging from this texture, the phrase “ghosts in machines” stands out, stated three times in a rising sequence in the vocal line and drawn out through an expressive melisma on the third utterance. After each statement, an orchestral flourish punctuates the phrase (mm. 1049–1052).

The phrase “the ghost in the machine” was introduced in 1949 by philosopher Gilbert Ryle as a rejection of the concept that the body and the mind are separate entities, and that the mind can continue on after the death of the body. Since the widespread use of Internet technology, the concept of merging a disembodied mind into a computer system has become regarded as the next frontier of technological innovation, and a widely debated concept among technological and philosophical scholars. By labeling Brian, and tech savvy teens in general as “ghosts in machines,” Detective Strawson is conjuring several surface level metaphors. There is an immediate assumption that those connected with Internet technology have lost touch with reality, sacrificing their connection with the physical world. There is also an assumption by Detective Strawson that the disembodied state necessitated in digitally based communication is

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57 For leading publications contributing to the debate on mind uploading, transhumanism, and theories of singularity, see Nicholas Agar, *Humanity’s End: Why We Should Reject Radical Enhancement* (Denver, Co: Bradford Books, 2013); Michael Hauskeller, *Mythologies of Transhumanism* (Cham: Springer International Publishing Imprint : Palgrave Macmillan, 2016); Ray Kurzweil, *The Singularity Is near: When Humans Transcend Biology* (New York: Viking, 2005); and Murray Shanahan, *The Technological Singularity*, The MIT Press Essential Knowledge Series (Cambridge, Massachusetts: The MIT Press, 2015). The concept of technological transhumanism and technological singularity (the merging of the human mind and/or consciousness with a computerized machine, leaving the physical body behind, and bringing forth a new, post-human state of existence) is the main theme of Tod Machover’s 2010 opera *Death and the Powers*, explored in chapter 3 of this dissertation. Søren Nils Eichberg’s *Glare* (2014) is also a newly composed operatic work exploring the theme of artificial intelligence and relationships in the digital age (a tangentially related topic to transhumanism and disembodiment), and is analyzed in chapter 2 of this dissertation.
mutually constitutive with a dehumanized state. What Ryle identified as a philosophical dogma suggesting the mind can exist separately from the body was never equated with that mind’s loss of human empathy, morality, emotion, or feeling. Yet Detective Strawson’s use of the phrase “ghosts in machines” is couched in a narrative suggesting that those who indulge in online communication become “vapors,” “nothing,” and “lost” individuals who sacrifice their agency and trade the physical world for participation in digital space.

In the next scene, Brian’s aria presents a completely different perspective on his use of Internet technology, asserting his agency in his online communications, presenting a fluidity or enmeshment of his identity between his online and offline life, and an attempt to express the intense feeling of freedom and authenticity that attracts him to online communication and relationships. He sings (see example 1.7):

Example 1.7: Nico Muhly, Two Boys, act 1, scene 11, Libretto excerpt

BRIAN:
I’m only sixteen! Look…I get up, I go to school and go to football and come home and do my homework, I watch TV, I eat dinner, and then… and then…then… (Indicates laptop.) In there…there is a world…a real place…better than! Because it’s real! There are people in there, people of all kinds! And my parents can’t see, my teachers can’t see and you can’t see it. But it’s real…and my parents can’t see, my teachers can’t see and you can’t see it.

As the aria opens, high strings dominate the orchestral accompaniment, spelling prolonged chords that shift slowly underneath Brain’s vocal line. The harmonies in the accompaniment are tonally ambiguous, shifting through pitch clusters with no audible trajectory, as Brian’s vocal line meanders through a pseudo-A♭ major framework that avoids any sense of tonal affirmation.
The accompaniment begins to subtly pulse with rhythmic syncopation the moment Brian points to his laptop (m. 1177), with the entire musical texture changing noticeably on the word “people” (m. 1196). The time signature changes, and a rhythmic ostinato of quarter notes begin. The harmony in both orchestra and vocal line shifts into a clearly defined C major framework, with the tonic affirmed in multiple voices. This musical shift draws attention to Brian’s focus on two main elements in the aria’s narrative, and in turn, his perspective on a life lived partially in cyberspace: first and foremost, that the relationships he has forged online are with “real people,” and “people of all kinds,” and secondly, that his activities in cyberspace lie outside the reach of prying adults. It is a space where he believes his privacy is maintained, feeling a sense of freedom in the seeming lack of constraint and oversight wielded by authority figures. Where Detective Anne Strawson sees only “ghosts in machines,” devoid of humanity, Brian perceives his experiences online as a form of hyper-humanity, an experience of relationships, interaction, and exploration that is “better than” because of the feeling of freedom, authenticity, and individual agency he experiences through communication in the online medium.

The Internet as a Gateway to Sexual Deviancy

That multiple forms of overtly sexual interactions are communicated as sung text within the opera literally gives voice to desires and predilections that are presented within the opera as inappropriate, predatory, non-normative, excessive, or socially taboo. As Weidman has noted, “The concept of voicing may help break down the dichotomy often drawn between ‘having a voice’ and being silent or silenced… including voices that sing rather than speak.”58 Similarly,

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58 Weidman, “Anthropology and Voice,” 43.
the experience of online disembodied real-time communication elicits hyper-personal interactions and a disinhibiting effect that emboldens users to communicate desires that are otherwise silenced, repressed, or inhibited in their physical life. In *Two Boys*, the singing voices of the chorus render the bodiless and faceless masses of the Internet denizens as real, just as Jake’s fabricated identities are rendered as real for the audience through the singing voices and bodies of the main cast. The voice and the online sphere parallel one another as possible expressive mediums for that which cannot or should not be said. As such, the embodied singing voice and the chat-room constructs of the narrative work in tandem to humanize and communicate a sense of both sexual freedom and sexual danger that awaits those who enter the digital sphere.

What Brian does not realize or express in his optimistic aria is that the freedom he values so highly in the online world leaves him susceptible to the Internet as an unmitigated source of sexual obscenities. Presenting the Internet as a gateway and haven for sexual and behavioral deviancy is an anxiety that underscores the entirety of the *Two Boys* narrative and libretto. Fear of the Internet as a catalyst for sexualized encounters is fueled by three main sources within the opera. The first is Brian’s overtly sexual interactions with Rebecca in act 1, scene 4.

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59 In Aaron Tucker’s analysis of the Internet on film, fear of the Internet as a source of unregulated sexual deviancy and obscenity is highlighted as a dominant theme within a broader historical context of depictions of the Internet on film and in the media, connected strongly with social reactions to early widespread home Internet use. One of the earliest fears connected with Internet use to make its way into public rhetoric was the Internet as an unmitigated source of pornography. In the United States, public fear of unprecedented access to pornography via the Internet led to the creation of the Communications Decency Act in 1996. Framing access to obscenity via the Internet as an “epidemic,” the rhetoric of this period treated users as already “tainted, infected by mere contact with cyberspace.” Furthermore, the technology itself became viewed as a scapegoat for the actions of users; The Internet was the invading force, “infecting the private home and body with an invisible wave of perversion.” By the onset of the Web 2.0 era, circa 2000, the Communications Decency Act had been rescinded, much of the previously influential scholarship suggesting the Internet functioned primarily as a heterotopia of sexual deviancy had been refuted, and Tucker posits that the excess of information on the Internet, once feared for its destructive nature, becomes a tantalizing force behind public recognition of user agency in cyberspace. Psychological and sociological scholarship from the early 2000s onward also began to shift focus, recognizing early biases in demonizing the technology itself and focusing more on understanding the root causes behind both healthy and unhealthy online behaviors. See Aaron Tucker, *Interfacing with the Internet in Popular Cinema* (New York: Palgrave MacMillan, 2014), 30-31, 48.
exemplifying an accelerated and exaggerated sense of intimacy that would be considered rash and inappropriate in the physical world. The second source of sexualized framing of the Internet occurs in text sung by the chorus in act 1, scenes 6 and 12, representing the Internet at large as a primarily sexualized place. The third and final example occurs in act 2, scene 3, where Brian’s interactions with “Peter_69” (the persona of a perverse gardener to Rebecca’s family) present the Internet as safe haven for sexual predators.

Act 1, scene 4 is the first scene in which the audience sees Brian interact with another person online. It is a flashback, dramatizing his first interaction with “Mindful16,” allegedly a girl named Rebecca. A disinhibited sense of freedom that the characters experience through their disembodied online state is quickly manifested in overtly sexual interactions. Within moments of meeting Rebecca (m. 366), Brian and Rebecca enter a private chat room, exchanging information about their age, gender, sexual orientation, virginity (or lack thereof), and relationship status, ending with Rebecca’s suggestion that she become Brian’s girlfriend (see example 1.8).

Example 1.8: Nico Muhy, Two Boys, act 1, scene 4, libretto excerpt

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MINDFUL16:
heya

A_GAME:
Who’s this?

MINDFUL16:
rebecca
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\textsuperscript{60} Note that the printed libretto included in the audio recording digital booklet features chat room acronyms in square brackets following the complete spelling of libretto phrases. ASCII art is also included in the digital booklet libretto printing (ASCII art generally refers to visual art generated by text. In this context, the ASCII art included in the libretto appears as smiley faces created with punctuation marking). The ASCII art and acronyms in square brackets included in the digital booklet indicate corresponding chat room text projected onto the stage set. In the piano-vocal score, there are no acronyms indicated in square brackets, as the meaning of each acronym is spelled out completely for the singers. There is also no ASCII art included in the piano-vocal score. See Nico Muhy, Two Boys, Audio Recording Digital Booklet: 8–22; and Nico Muhy, Two Boys (Vocal Score).
A GAME:
Do I know you?

MINDFUL16:
who r u?

A GAME:
Brian.

MINDFUL16:
hi, brian…so what’s your game?

A GAME:
no, it’s “A_game” Always bring my A Game

MINDFUL16:
i bet u do!
but what's the jersey?

A GAME:
I’m right winger on my team.

MINDFUL16:
wanna chat?

A GAME:
What are we doing now then?

MINDFUL16:
want 2 go private? :):)

mindful16 invites A_Game to join her in <mind/game>.

MINDFUL16:
what’s going on?

A GAME:
Not much. You?

MINDFUL16:
not too much [n2m]

A GAME:
Where are you?
MINDFUL16:  
my bedroom

A_GAME:  
[lol!] Where do you live?

MINDFUL16:  
u know where the new shopping centre is?  
behind that

A_GAME:  
Posh!

MINDFUL16:  
not really  
age/sex/location? [asl]

A_GAME:  
16, m, nowhere near as nice.

MINDFUL16:  
u gay?

A_GAME:  
Not last time I checked. :) :)  
You?

MINDFUL16:  
ever tried  
so you got a girlfriend?

A_GAME:  
No.

MINDFUL16:  
No?

A_GAME:  
No.  
Got a boyfriend? [bf]

MINDFUL16:  
no.

A_GAME:  

why not?

MINDFUL16: Haven’t met anybody. you a virgin? lol!

A_GAME: Yes.

MINDFUL16: bollocks!!!

A_GAME: True. You?

MINDFUL16: no

A_GAME: D‘ja like it?

MINDFUL16: it???

A_GAME: Fill in the blanks! [fitb]

MINDFUL16: it was brilliant! u shuold [sic] try it

A_GAME: I‘ve half a mind to!

MINDFUL16: you could still have a gf tho

A_GAME: Don’t, tho.

MINDFUL16: shuold [sic] I be your girlfriend? [gf] ;->

In act 1, scene 6, Brian reacts to Rebecca’s previous intimation that she is trapped in a dangerous situation. Following her sudden disappearance from the chat room, Brian frantically
“searches online for mindful16” (m. 551). In this moment, the chorus acts as a sonic representation of Brian’s experience of looking for Rebecca in Internet spaces. The chorus sings layered and chaotic phrases representing the simultaneity of users online. In this moment, the text sung by the chorus features a series of sexualized chat room acronyms, suggestive of users seeking sexual encounters online:

INTERNET VOICES:
how r u?….:*) …oh my god! [omg]…parents over my shoulder…how much older do you like?…can u meet?…away from keyboard [afk]…can’t meet…younger for older [y4o]…male for older female…female for older male…straight [str8]…straight older female [str8 older f]…straight for straight [str8]

This choral transition scene moves into the second online interaction between Brian and Rebecca, in which the sexual nature of their relationship escalates: Rebecca convinces Brian to reveal his genitals to her via camera. She calls him a “sexpert,” and convinces him to masturbate for her in real time over the webcam (see example 1.9).

Example 1.9: Nico Muhly, Two Boys, act 1, scene 6, libretto excerpt

A_GAME:
i wanna meet you

MINDFUL16:
why don’t you have a girlfriend?

A_GAME:
dunno

MINDFUL16:

---

Craig Lucas, liner notes and libretto for Two Boys, 10. Note that the libretto is duplicated here exactly as printed in the liner notes. However, in the piano-vocal score, there are no acronyms indicated in square brackets, and no ASCII art (ASCII art generally refers to visual art generated by text. In this context, ASCII art refers to the smiley face created with punctuation marking in the first line of text). In the piano-vocal score, the meaning of each acronym is spelled out completely for the singers. The ASKiart and acronyms in square brackets included in the liner notes indicate corresponding chat room text projected onto the stage set. See Nico Muhly, Two Boys (Vocal Score), 56 – 63.
your parents won’t let you

A_GAME:
no

MINDFUL16:
no?

A_GAME:
no. they have a lot of plans for me

MINDFUL16:
they don’t get you, do they?

A_GAME:
you feel a lot

BRIAN:
Walla!
MINDFUL16:
not half bad u know

BRIAN:
Can I see you?… Can I see you?

MINDFUL16:
no cam…more…let me see you…

BRIAN:
You mean…? (Aims cam lower.)
Feel funny showing it.

MINDFUL16:
come on you’re a sexpert you lift weights

BRIAN:
Little bit. It’s ok?

MINDFUL16:
keep going

BRIAN:
I don’t know…I said I’d go to church.

MINDFUL16:
where do u go?

BRIAN:
St. Edmunds.

MINDFUL16:
me 2!!!

BRIAN:
Evenings?
MINDFUL16:
early

BRIAN:
Mum works Sunday mornings

MINDFUL16:
i’ll sneak out and see u there if u give me a squirt

BRIAN:
No pressure!

MINDFUL16:
come on
BRIAN’S MOTHER ’S VOICE :
Brian?!!?

BRIAN:
Almost done!!!

MINDFUL16:
I'mfao!!!

BRIAN’S MOTHER ’S VOICE :
Now!

BRIAN:
I’m not changed!
I gotta go!

MINDFUL16:
cum!
come on, big dog

This exchange encapsulates a variety of behaviors that simultaneously validate social anxiety surrounding the Internet as an unmitigated space for sexualized encounters, while reflecting the behavioral tendencies studied in cyberpsychology that can explain the environmental conditions of online relationships, making this type of exchange plausible. Within the space of 122 bars (mm. 596–718), performed in the time span of about 10 minutes, Brian has established an emotional connection with Rebecca, agreeing that she “gets” him in a way that his family unit does not, displayed defiant behavior toward his parents, engaged in a flirtatious exchange in which Rebecca convinces him to reveal both his face and his genitals on a live streaming camera, leading directly to his performance of a sexual act (despite the fact that Rebecca does not reciprocate in revealing herself on camera for Brian). The scenario resonates
with parental fears, unveiling one more avenue for sexually charged teens to meet and make impulsive decisions, enshrined and played out before audiences on the opera stage. This scene also stands as an example of the “online disinhibition effect” and “hyperpersonal interaction” at its most potent. The “online disinhibition effect” is recognized by cyberpsychologists as emboldened behavior exhibited online, where, perceiving actions in cyberspace as lower-risk than their equivalent in the physical world, an individual is more apt to say and do things they otherwise would not do.62 “Hyperpersonal interaction” describes the way in which a lack of visual cues and the feeling of invisibility or anonymity online lead to an accelerated feeling of intimacy in online relationships; this has been compared to the “stranger on the train” syndrome, in which people feel more comfortable revealing personal information to a stranger they are not likely to meet again.63 With no real-world visual cues to make Brian feel self-conscious about his actions, Brian’s strong desire to form an emotional and sexual bond with Rebecca and the perceived safety of the online medium leads Brian toward more impulsive and explicit behavior. For Brian, this hyperpersonal interaction lays the foundation for a bond of trust and a romantic connection, no matter how falsely founded.

In Brian and Rebecca’s last interaction (act 1, scene 12), Rebecca tells Brian in a panic that the secret agents she told him about earlier have arrived at her house to harm her and her brother Jake. Brian asks her where she lives so he can help her, and when she does not tell him, he tries to convince her to run away and meet him, sharing his own home address with her. She repeatedly tells him she loves him, and then vanishes. This leads to Brian “searching” the Internet to try and find out more information about her. As he does this, the chorus once again

62 According to Mary Aiken, the “online disinhibition effect” was coined by John Suler and has since become an accepted term in cyberpsychology. See Mary Aiken, The Cyber Effect: A Pioneering Cyberpsychologist Explains How Human Behavior Changes Online, 22.
63 Aiken, The Cyber Effect, 209.
sings an extended section of chaotic, layered text, similar to act 1, scene 6. All Brian can find in his searching is an endless stream of overtly sexual interactions, reinforcing the perception that the Internet functions mainly as a safe space for sexual exploration and source of lurid obscenity (see example 1.10).

Example 1.10: Nico Muhly, *Two Boys*, act 1, scene 12, libretto excerpt

Brian opens his laptop. Chat room after chat room as
Brian searches for Rebecca, Jake, Fiona. He wanders into more and more lurid spots.

INTERNET VOICES:
Can’t stop talking [cst]…shut the fuck up [stfu]…you’ll be sorry [ubs]…read the fucking manual [rtfm]…in the bed on your back…shut up…love details…really do…

CONGRESSMAN:
how’s my favorite young stud doing?

CONGRESSIONAL PAGE:
tired and sore

CONGRESSMAN:
that’s good u need a massage

CONGRESSIONAL PAGE:
tomorrow I have the first day of lacrosse practice

CONGRESSMAN:
love to watch that those great legs running

CONGRESSIONAL PAGE:
they aren’t that great

CONGRESSMAN:
well, don’t ruin my mental picture

CONGRESSIONAL PAGE:
Sorry

CONGRESSMAN:
nice
you’ll be way hot then
CONGRESSIONAL PAGE:
hopefully

CONGRESSMAN:
did any girl give u a haandjob [sic] this weekend?

CONGRESSIONAL PAGE:
i’m single right now

CONGRESSMAN:
did u spank yourself this weekend?

CONGRESSIONAL PAGE:
no

CONGRESSMAN:
in the shower
where do you throw the towel?

CONGRESSIONAL PAGE:
in the laundry

CONGRESSMAN:
just kinda slow

CONGRESSIONAL PAGE:
it works

CONGRESSMAN:
rubbing
get a ruler and measure it for me

CONGRESSIONAL PAGE:
I already told you that

CONGRESSMAN:
tell me again

CONGRESSIONAL PAGE:
seven and a half seven and a half

INTERNET VOICES:
…looking for a well-built 18 to 30 year old 2 b slaughtered
then consumed…i seek u [icq]… do it face down
kneeling…completely nakid… not tonight…don’t get too excited…just kinda slow…not tonight…don’t get excited…slaughtered then consumed…. Now in my hotel room…I’m in Pensacola, I had to catch a plane… just kinda slow…get a ruler, measure it…I already told you that…I better let you go do your thing…what will you do with my brain?…but along with that I like the whole catholic girl look…tell me again…gone for now…that’s our school uniform…whatevr.. gone for now…

After observing a panorama of sexualized communication online, voiced by the chorus when “searching for Rebecca,” Brian then becomes the victim of sexual predation through one of Jake’s fabricated identities. By the end of the previous act, Brian had been led to believe that “Peter_69” (the gardener) was involved in the murder of Rebecca, and was a threat to both his and Jake’s continued safety. In act 2, scene 3, believing that Peter has the power to harm him, Brian acquiesces to Peter’s request that Brian masturbates on webcam for him; feeling pressure to protect both himself and Jake from harm, Brian is “forced” to fulfill Peter/Jake’s sexual demands (see example 1.11).

Example 1.11: Nico Muhly, Two Boys, act 2, scene 3, libretto excerpt

A_GAME:
what do you want?

PEETR_69:
i’m a sick fuk, they tell u?
turn on ur cam take out ur junk

Brian turns on cam, exposes himself.

PEETR_69:
u gormless chuM
give me a little gravee mmMMmmm!
gob on it

Brian spits in his hand.
This scene transitions into the moment Jake and Brian meet in person, where Jake appears at Brian’s house. He stays the night, and comforts Brian as he grieves for Rebecca. We discover in the next scene (act 2, scene 4) that the “sleep over” included a sexual encounter between the two boys, which results in Brian’s awkward rejection of Jake the next morning. This is the last sexualized moment in the opera; from this point onward, Jake tells Brian he has an inoperable tumor and, through the various personas he has concocted, manipulates Brian into stabbing him.

**Identity Formation Beyond the Voice**

In the penultimate scene of the opera, Detective Strawson asks Brian “Do you understand what’s happened to you? … Why did you do it? … You must have known.” (act 2, scene 13). After pouring over chat transcripts, Detective Strawson has figured out that the people Brian was interacting with online were fabricated identities. While voice functions as a primary mechanism for establishing identity in the physical world, and audience assumptions about voice, embodiment, and identity are used in establishing the constructs of the opera’s story, it is the lack of voice, the lack of body, and discrepancies in online identity assemblage that become the ultimate lynch pin in Detective Strawson cracking the case. Once the truth becomes clear to her, she struggles to understand how and why Brian did not see the truth himself.

In 2014, AMC Studios released *Halt and Catch Fire*, a fictional television series dramatizing the pre-Internet personal computing industry of the 1980s. As the storyline butted up against the early Internet era of the 1990s, characters described and imagined the possibilities of
networked computing technology before terms like “the Internet” existed. At the fictional technology company followed in the show, lead developer Donna Clark described the allure of a networked gaming community (a historical pre-cursor to widespread Internet networks) and the unprecedented type of digital interaction between users:

People can be more authentic online than in real life, and that is addictive... You know, that feeling of freedom that you had when you were sending private messages… that feeling that you had a place to go to say things that you would never say in person...64

From Donna’s perspective, the disembodied nature of online, text-based communication allows for individual freedom of expression without risking real-life consequences; the online world becomes a place where users can express an uninhibited truth, and therefore, represent the most “authentic” version of the self. Several episodes later, one of the software developers on Donna’s team attempts to meet up in person with someone he met in an “online” Community room; but instead of a romantic rendezvous, he is brutally attacked and ends up in the hospital. Within the span of three episodes, the darker side of networked communication technology is integrated into the narrative, and fears that an “authentic self” revealed by the technology could be dangerous, manipulative, or harmful in some way are introduced.

As both the anecdote from Halt and Catch Fire and the plot of Two Boys suggests, the formation and performance of identity in virtual environments is far more nuanced than Donna Clark’s idealized description of a risk-free space for the “authentic self” to exist. Since the mid 1990s, two schools of thought have emerged regarding the formation of identity in virtual environments. In a seminal 1995 publication, Life on Screen: Identity in the Age of the Internet, Shelly Turkle introduced the idea of the networked computer as a “second-self” through which

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64 Halt and Catch Fire, Season 2, Episode 4 “Play with Friends,” directed by Kimberly Peirce, written by Dahvi Waller, featuring Lee Pace, Scoot McNairy, Mackenzie Davis, and Kerry Bishé, aired June 21, 2015 on AMC.
individuals curate, manage, and separate their online identity from their physical self.\textsuperscript{65} The opposing wing of scholarship, championed by Nathan Jurgenson, argues that online identity is now “enmeshed” with physical identity; people behave in physical, actual space in ways that are connected with their actions and desires in the virtual space, and vice-versa.\textsuperscript{66} In addition to enmeshment and second-self theories, several factors of identity formation have been studied in an effort to better understand the complex and ever-changing relationship between individuals and their behaviors online. Early studies focused on a utopic view of anonymity and identity play as an empowering and equalizing component of online experiences, made possible by the way in which activities in cyberspace were seemingly shielded from risk to the physical or actual self.\textsuperscript{67} As cyberpsychologist Mary Aiken described:

> The illusion is that the cyber environment is safer than real life—and connecting with people online somehow carries fewer risks than face-to-face contact. But our instincts were trained and honed for the real world, and in the absence of real-world cues and other subtle pieces of information—facial expressions, body language, physical space—we aren’t able to make fully informed decisions. And because we aren’t face-to-face when we are communicating and interacting with others online, we can be anonymous or, more importantly, we feel we are… Disinhibition is facilitated by the environmental conditions of cyberspace—by the perceived lack of authority, the anonymity, as well as the sense of distance or physical remove.\textsuperscript{68}

\textsuperscript{65} Sherry Turkle, \textit{Life on Screen Identity in the Age of the Internet} (New York: Simon and Schuster, 1995), 11–12.
\textsuperscript{67} For the impact of early ethnographies of online communities on perceptions of online identity formation (such as Sherry Turkle’s \textit{Life on Screen: Identity in the Age of the Internet}), see Helen Kennedy, “Beyond Anonymity, or Future Directions for Internet Identity Research” in \textit{Identity Technologies: Constructing the Self Online}, eds. Anna Poletti and Julie Rak (Madison: University of Wisconsin Press, 2014), 29.
\textsuperscript{68} Mary Aiken, \textit{The Cyber Effect}, 23.
With the onset of the Web 2.0 era and social media, the exact opposite effect of online anonymity has been studied, as users engage in a process of constant curation and representation within an online platform.\(^{69}\) Theories of performativity are now considered fundamental in understanding online identity, as identity formation in the Web 2.0 era is understood as a fluid and hybrid process between online and offline behavior, between textual and multi-media expressions, and between myriad performances of selfhood.\(^{70}\) Furthermore, scholars argue that concerns surrounding privacy and personal safety that arise in online relationships unconsciously become “far less important to selves than fulfilling the demands for selfhood.”\(^{71}\)

The appearance of Jake “in real life” (act 2, scene 3), even if his appearance and voice do not match that which Brian imagined, is evidence for Brian that all of his interactions online are real experiences connected with actual people. For Brian, his online activities and his real life experiences become enmeshed the moment “real Jake” appears in his bedroom. Brian’s decision to follow Fiona’s directions in stabbing Jake, effectively attempting murder, is a behavior in physical, actual space connected with his actions, desires, and experiences in virtual space. As the chat text of Brian’s emotionally charged interactions throughout the opera are dramatized on


\(^{71}\) Rob Cover, “Becoming and Belonging,” 62.
stage with a singing body for every online identity, the audience experiences the facial
expressions, body language, and physicality of identity that Brian can only imagine; the audience
is given the cues of “realness” or actuality that Brian falsely interpolates into his online
interactions.

Conclusion

In the physical world, it is impossible to fabricate multiple people: the human body
cannot inhabit multiple identities at once. One can pretend to be one other person, but even then
one has a limited ability to replicate physical attributes of an alternate persona, such as voice
patterns, height, weight, appearance, etc. The Internet enables the user to be multiple personas at
once. It removes the limitations of the physical body, and allows the user to construct and control
an infinite number of identities. Integrating and normalizing the Internet within an operatic
narrative creates new dramatic possibilities for age-old operatic tropes of disguise and mistaken
identity, and connects the work with a dimension of embodiment and disembodiment that is only
made possible through character interactions with computing technology. As cited at the
beginning of this chapter, Muhly described in interviews how he viewed the technological
framework of the story as a mechanism for playing out tropes of lies and deceit. By integrating
Internet technology into an operatic narrative, Muhly has expanded the age old operatic trope of
disguise and mistaken identity in a way that reveals the lack of traditional markers of identity in
the online space while simultaneously demonstrating the power of operatic synergy between

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72 As previously cited, Muhly expressed a connection between the fabrication of identities online with operatic
tropes of disguise and deceit in numerous interviews, including Graver, “Interview: Nico Muhly;” Meyer, “Finally,
an Art form that Gets the Internet: Opera;” Blake, “‘Two Boys' composer Nico Muhly digs online hoaxes, ‘Law &
Order: SVU’;” and Delacoma, “Metropolitan Opera to explore the internet’s dark side with Nico Muhly’s “Two
Boys”.”
voice, text, and visuals to metaphorically represent the process of identity assemblage in which users participate while communicating and forging relationships online. In a process inspired by the cyber-narrative chatroom construct, *Two Boys* utilizes the singing voice and the act of embodied singing as a fundamental element of identity construction and dramatic reveal, playing on the equation of voice, representation, and agency theorized by Weidman and Feldman. Voice is used throughout the opera as a humanizing force, an audible representation of the physical body, and a suggestion of “actualness,” while being juxtaposed against the framing of the thematized technology as an agent of dehumanization. In this way, the unique aspects of opera as a sung, embodied, and staged artform offers the cyber-narrative of *Two Boys* a medium capable of expressing how the boundaries of human identity formation and experience are being challenged and re-drawn in the digital age.

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CHAPTER 2
Artificial Intelligence within Operatic Narrative: Feminized Androids, Roboethics, and Anxieties of “Realness” in Søren Nils Eichberg’s *Glare*

In the Act 1 finale of Offenbach’s *Les Contes d’Hoffmann*, the protagonist of the story, Hoffmann, is horrified to discover that Olympia, the woman he has fallen in love with, is an automaton. The audience picks up on this fact early in the act through various musical and textual clues (including the famous “doll song” aria, “Les oiseaux dans la charmille”), while Hoffmann, blinded by a pair of magical glasses, is unable to see her artificial nature until the very end. As the villain of the story enacts his revenge on Olympia’s creator for trying to swindle him by publically reducing Olympia to a pile of broken mechanical limbs, Hoffmann’s realization of her artificial nature is exclaimed on a horrified sounding high C shriek to the phrase “Un automate! Un automate!” The chorus chuckle behind him, laughing at the fact that he was tricked into believing that a machine was “real.”

The source material for this part of the opera plot, E.T.A. Hoffmann’s *Der Sandmann*, was first published in Germany in 1816. Offenbach’s *Les Contes d’Hoffmann* made its world premiere in Paris, in 1851. The time period of E.T.A Hoffmann and Jacques Offenbach’s work coincides with the apex of the industrial revolution in Europe; long before the development of computers, the Internet, or the term “artificial intelligence” entered common parlance, the fear of an artificial being or machine being able to “pass” as or “replace” a human was being explored in literature and opera. Now, over 200 years since the publication of *Der Sandmann*, and over 150 past the premiere of Offenbach’s opera, narratives exploring anxieties of artificial intelligence are at the center of intellectual debate and pop culture storytelling, and have once again made an appearance on the opera stage via Søren Nils Eichberg and Hannah Dübgen’s chamber opera *Glare*. With a world premiere at The Royal Opera Covent Garden in 2014, followed by
performances in Germany and Sweden, the work has been heralded as a “robot opera” perfect for “our digital-age obsession with perfection, and human relationships with artificial intelligence.”

In *Glare*, there is an attempt to engage more deeply with the theme of “what is real, and how can we really know?” resulting in the ultimate affect of the work being that of an intentional Pandora’s box; there is an abundance of AI narrative tropes integrated into the plot, and numerous ethical AI issues referenced within a time span of only 75 minutes. Following its world premiere, the work was criticized in the press for raising more questions than it has time to answer or explore with nuanced depth. Despite this criticism, the foregrounding of AI tropes within this narrative reveals a disturbing snapshot of cultural anxieties surrounding artificial intelligence today. The possibility of artificially created consciousness and personhood within the narrative means that larger ethical issues regarding human treatment of new life forms, and a struggle to define (or re-define) “humanity” itself is foregrounded within the work, as are questions about misogyny and the relation of women to the category of the fully human. Furthermore, the operatic framework of this story poses the question: What does the operatic medium offer the AI cyber narrative?

The story of *Glare* focuses on the romantic relationship between Alex (sung by a tenor), and his girlfriend Lea (sung by a soprano). In scene 1, Alex and Lea are making their way to a cafe for their next date. The two are madly in love, and sing of the sweet anticipation they both feel at being together again. They reunite with a passionate kiss, and Alex sings of how perfect Lea is; Lea warns him that perfection should be the least of his expectations. By scene 4, Alex is

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beginning to suspect that there is something “wrong” with Lea, though he can’t quite describe what the problem is. By scene 5, he is at the pub, confessing to his scientist friend Michael that he feels there is something odd about how perfect Lea is. Michael tries to convince his friend that Lea is not human, and that she is an artificially intelligent robot—or, based on the acronym of her name, a “Learning Exposed Android.” Alex resists this notion at first, but is slowly convinced by the ramblings of his friend. By scene 8, Alex’s dreams are haunted by the question of Lea’s “realness;” in scene 9, Lea experiences verbal and emotional abuse from Alex, followed by sexual assault and rape by Michael in scene 10. In scene 11, the penultimate scene of the opera, Alex attempts to “test” whether Lea is human or android by demanding that she cut him with a knife; in Alex’s mind, if she is capable of inflicting pain on a human, then she is human. If she is incapable of hurting him, then she must be “fake,” an android created with the inability to cause a “real” human physical harm. Lea refuses to participate, and Alex tries to force the knife into her hand. In doing so, Alex accidentally stabs Lea and she falls to the ground, blood squirting from the wound. Michael appears at that moment, transitioning into scene 12, and finds a traumatized Alex staring at Lea’s lifeless body. Alex demands that Michael “build him a new Lea,” and Michael replies by saying that maybe that would be possible in the future, but science is still not advanced enough for him to do that at the present time. Alex is not listening, fixated on his desire for a replacement girlfriend. The opera ends with Michael convincing his friend to leave the scene, leaving the audience with an amalgam of conflicting information (musically, textually, and visually) that ultimately leaves the question of Lea’s “realness” (is she human, or android?) unanswered (for a detailed plot synopsis, see appendix 2).

In my analysis of Nico Muhly’s Two Boys, the unique aspects of opera as a sung, embodied medium are read as an effective combination of artistic forces in expressing elements
of the work’s chat room cyber narrative, such as the erosion between digital and physical experiences, as well as the feeling of disembodied real time communication and identity assemblage online. In Eichberg’s *Glare*, the core theme of the AI narrative is a human fear of technology advancing to the point that one is not able to tell the difference between a biological/organic human and a man-made, artificially intelligent humanoid.

The operatic art form is its own kind of discourse network, allowing expressions of the real, the imagined, and the symbolic dimensions of an artificial intelligence narrative to be explored simultaneously within a unified work. Opera offers multiple intertwined modes of expression (text, movement, visuals, and music in various forms) through which the “truth” of a character being “real” or “fake,” “human” or “android” within this narrative may be revealed. However, instead of one mode of expression rising to the surface as the bearer of ultimate truth in regards to Lea’s “realness,” the multi-media forces of this opera actively work together to subvert any obvious answer, ultimately forcing the audience to examine deeper ethical issues surrounding artificial intelligence and its use as a mechanism of dehumanization.

**From Automata to AI: Olympia as Pre-cursor to Lea**

This chapter began with the story of the most popular automaton character in the modern operatic canon, that of Olympia in *Les Contes de Hoffman* (1881). As an automaton, she is

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3 The concept of the discourse network comes from Friedrich Kittler, and is described as “the network of technologies and institutions that allow a given culture to select, store, and process relevant data.” I employ this term in order to describe the operatic medium as a network of technologies (text, music, and visuals components) that allows the collaborative creators of an operatic work (composer, librettist, directors, designers, and performers) to select, store, and process data relevant to the opera’s narrative. See Friedrich A. Kittler, *Discourse Networks 1800/1900* (Stanford, Calif: Stanford University Press, 1990), 369–370; Kittler also connected Lacan’s terminology of “the real,” “the imagined,” and “the symbolic” to media theories of voice, image, and text. See Friedrich A. Kittler, *Gramophone, Film, Typewriter* (Stanford, Calif: Stanford University Press, 1999).
conceptualized as an invention of a mechanical nature, capable of executing a pre-determined pattern of movement, similar to that of a wind up doll. The term “robot” was first used by Czech writer Karel Čapek in 1921, in a play titled *Rossumovi Univerzální Roboti*, in which man-made synthetic beings (Roboti) were created to both act, think, and behave like humans, but also to serve humans; the Roboti eventually stage a rebellion that leads to the extinction of the human race. In Čapek’s play, the robot was conceived as an invention a step beyond the automaton, in which a machine cast in humanoid form was capable of carrying out complex tasks through advanced programming, in order to replace humans in all forms of physical labor; the enhanced ability of Čapek’s robot signaled a “transition from automata to automation… [a] cultural moment that signifies the birth of the robot and the death of the automaton.” While the robot has continued to evolve through the invention of androids and cyborgs in literature and film of the 20th and 21st century, Offenbach’s Olympia, primitive as she may seem to modern conceptions of AI, is one of very few characters found in opera history that represents the artificial woman. In her extensive study of automata and mimesis in the history of theater, Kara Reilly argues: “Automata are precursors to our contemporary digital culture and the ancestors of the robot, the cyborg, and the avatar, demonstrating that our spectacular culture of machine-based entertainments has many historical precedents.” As such, Olympia is Lea’s ancestor, informing anxieties and fascination with the artificial woman that resurface within Lea’s narrative.

Throughout 18th- and 19th-century Europe, the fascination with automata grew from different perceptions of technological possibilities and anxieties than the present day fascination with and fear of AI. The craft of building automata evolved into a finely wrought art form

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5 Ibid., 1.
alongside advances in mechanization of the industrial revolution, specifically in France, and they were designed to marvel audiences. The inner workings of automata were understood to be mechanical, analogous to clockwork. Man’s ability to imbue a mechanical automaton with the consciousness of a human brain was outside the realm of both physical understanding and technological imagination of the time. Any emotive or expressive behavior from Olympia in E.T.A. Hoffmann’s original story is conjured in the imagination of the character Nathanael (recast as “Hoffmann” in Offenbach’s opera), and disavowed by the other characters; every description of her focuses on her physical beauty, statuesque stillness, as well as a lack of expression or interaction with others, all of which Nathanael interprets as desirable qualities.

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6 For a detailed history of automata makers in France during the 1800s, see Julie Wosk, *My Fair Ladies: Female Robots, Androids, and Other Artificial Eves* (New Brunswick: Rutgers University Press, 2015), 35–41.
8 Scientific understanding of the human brain as the site of consciousness, sentience, cognition, and decision-making is a relatively recent milestone in human history. The study of the human brain as a complex data processing system that makes cognition, communication, and decision-making possible did not arise until the 1940s, with the emergence of cybernetics. The term “cybernetics” was first defined by Norbert Wiener as a theory of self-regulated control, communication, and action in humans, animals, and machines, which established a theoretical foundation for artificial intelligence. See Norbert Wiener, *Cybernetics or Control and Communication in the Animal and the Machine*, 2. ed (Cambridge, MA: The MIT Press, 2013); The modern scientific concept of AI did not arise until the 1960s, when scientists began to entertain the idea that computers could be treated in a way that was analogous to the human brain, as a complex data processing system, and programmed to process information in a way that emulated human modes of “thinking.” For the seminal study that established an extension of cybernetics into the field of AI via computational mapping of neural networks, see Warren S. McCulloch and Walter H. Pitts, “A Logical Calculus of the Ideas Immanent in Nervous Activity” in *Embodiments of Mind*, ed. Warren S. McCulloh (Cambridge, MA: The MIT Press, 2016), 19–39.
Nowhere in E.T.A. Hoffmann’s story does the Olympia character exhibit a sense of free will, original thought, or the ability to feel human emotions. In Offenbach’s opera, the magic glasses enhance the parody of Hoffmann falling in love with an automaton, which was already a theme running throughout the source material. Any fear or horror elicited by Olympia arises from a fear that her physical “life-like” attributes might trick a “real” human into thinking she is also “real,” and that “real” humans may be blinded by their own desire from seeing obvious markers of her artificiality. While the general fear of being unable to tell if a man-made, life-like object is “real” or “artificial” runs across both Les Contes d’Hoffmann and Glare, the fear of Olympia does not extend beyond the fear of mechanical trickery; society of the time had no frame of reference to imagine how artificial consciousness, or a programmable human brain, might advance to a point that either equals or surpasses the cognitive capabilities of humans. Although sentient AI may not be a reality in the present time, machine learning and objects with the ability to exhibit “life-like” decision-making processes do exist, and they provide a mental modal for an imagined development of artificial sentience.

10 Bloom, “Pygmalionesque Delusions and Illusions of Movement Animation from Hoffmann to Truffaut,” 298.
11 Reactions of fear or horror to artificial objects that closely resemble, but are not perfectly indistinguishable from that of a human was described by robotics scholar Masahiro Mori as “the uncanny valley.” According Mori, there is generally a positive reaction between humans and objects designed to be human-like creations, but only up to a certain point. When an humanoid object or rendering fails to be completely indistinguishable from an actual human, it can illicit a negative or disturbing reaction for the viewer, as the brain struggles to reconcile something that was possibly human, but ultimately fails. As individuals become more familiar and comfortable with new technologies, social expectations of certain objects as being “real” change, moving the threshold of the uncanny valley. Although Mori’s essay was first published in 1970, it was not until the early 2000s that scholars began to study the phenomenon in earnest, when the field of computer animation developed to such a point that photorealistic films and video games began to trigger the affect of the uncanny valley. For an English translation of the original essay, authorized by Masahiro Mori, see Masahiro Mori, “The Uncanny Valley: The Original Essay by Masahiro Mori,” trans. Karl F. MacDorman and Norri Kagaki, IEEE Spectrum: Technology, Engineering, and Science News, June 12, 2012, https://spectrum.ieee.org/automaton/robotics/humanoids/the-uncanny-valley; for a summary of literature debating the existence of the uncanny valley, as well as current hypotheses from a variety of fields analyzing the cognitive, social, and psychodynamics elements of the uncanny valley, see Shensheng Wang, Scott O. Lilienfeld, and Philippe Rochat, “The Uncanny Valley: Existence and Explanations,” Review of General Psychology 19, no. 4 (2015): 393–407; Julie Wosk has also theorized a connection between the uncanny valley and E.T.A. Hoffmann’s Der Sandmann, calling the uncanny valley “the Nathanael Effect.” See Wosk, Artificial Eves, 155.
While the complexities of Hoffmann’s experience of love with an artificial being, and ethical issues surrounding her dismemberment and destruction are never fully explored within the opera, scholars have argued for interpretations of Olympia’s character that connects her to the fetishization of women as objects, the role of female-gendered characters on stage in presenting idealized versions of the passive and obedient woman, and the fate and/or punishment that awaits any female who disobeys the idealized gender norms of the time. As Heather Hadlock has argued, Olympia’s rebellion in the finale of the opera by disobeying the directives of both Hoffmann and her “father” (or creator, Spalanzani), breaking free from the musical constraints of her previous “doll song” aria, and displaying a sense of free will in both her musical line and physical movements signifies the “co-operative machine girl transformed into disorderly divas.”

12 This is a marked departure from the source material, in which Olympia never exhibits a sense of free will or disobedience in any form. In the opera, it is through music that Olympia performs a moment of individual agency, exceeding the musical themes prescribed to her throughout the aria, and she “rewrites the piece to the surprise and alarm of everyone around her.”

13 Olympia’s moment of agency is never explained or rationalized within the context of the opera, and the defiance of her mechanical programming lasts only a few short moments before she meets a violent end, when the character of Coppélius destroys her as an act of revenge against her creator, Spalanzani. Hadlock reads her creation and destruction as an attempt by the male creator to bring into being the perfectly passive, obliging, and obedient woman; when that attempt fails, and Olympia exhibits her own agency, she must be destroyed.

14 Kara Reilly has a similar analysis of Olympia across multiple iterations of her character on stage, connecting her

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13 Ibid., 81.
14 Ibid.
objectification to 19th-century anxieties surrounding the role of women in society, and reading her demise as simultaneously signifying the prescribed fate of the unruly woman, and the constructed nature of the idealized female:

One way to control anxieties about women’s increasing presence outside the domestic sphere is to commodify them and treat them as manageable fetish objects. Olympia becomes a key representative of this desire onstage: she is the subject of opera, ballet, plays, and musicals throughout the nineteenth century where she is the ideal woman and thus the ultimate female fetish. But every effort made to control and commodify Olympia fails, and she ends up rebelling against her makers…While she pays the highest price for her disobedience in being ripped limb from limb, her fleeting liberation is a kind of nightmare warning. A warning that signals a growing cultural awareness that the perfect domestic woman, the nineteenth-century ‘angel of the house’, is as constructed as an automaton.15

With present-day society able to imagine a progression of digital technology that will lead to sentient AI, elements of the automaton narrative have evolved into a robot/AI-narrative. In Glare, the AI narrative presents a revitalized attempt to construct the ideal woman within the constructs of new technology. As this chapter aims to explore further, for reasons that both intersect with and depart from Olympia’s narrative, the pursuit of the ideal woman in Glare is once again framed as a failure, and the opera culminates in Lea’s destruction. In this way, Glare participates in reinforcing a legacy of misogynist narratives and tendencies within the operatic art form, and actively revitalizes objectification of the “perfect” woman in AI cyber-narrative.

The AI Narrative in Popular Culture

Outside of opera, imagined scenarios of general artificial intelligence and its intersection with the daily lives of the developed world have become commonplace in film and television since the turn of the 21st century. The last decade has seen a surge in successful AI themed...

15 Reilly, Automata and Mimesis on the Stage of Theatre History, 112.
works, from the 2009 remake of the 1970s cult phenomenon *Battlestar Galactica*, to the 2013 sci-fi film *Her* and the 2014 film hit *Ex Machina*, through to the 2015 UK television series *Humans*, the 2016 hit HBO series *Westworld*, and the 2017 explosion in popularity of *Black Mirror* (once acquired by Netflix); the film and television industry has played a significant role in documenting and depicting imagined futures for the development of artificial intelligence, with technology so advanced that sentient robots, or consciousness inside a computer, are depicted as reality within each narrative. Hollywood depictions of sentient AI have largely defined what the general population perceives “artificial intelligence” to be, and that perception is the foundation upon which fears and anxieties surrounding the future of AI have taken root.\textsuperscript{16}

As suggested by the discussion of Olympia’s character, explorations of artificial intelligence in popular culture begin far earlier than the era of digital computing. Mary Shelley’s novel *Frankenstein; or, The Modern Prometheus* was first published in 1818, telling the story of a scientist who manages to create life, only to view his creation as a monster or demon. As previously discussed, Čapek’s play *R.U.R.* not only coined the term “robot” in 1921, but also stands as one of the earliest examples of the “AI takeover” trope in popular culture.\textsuperscript{17} In 1925, German writer Thea von Harbou published the story of *Metropolis* as a serial novel, which her husband, Fritz Lang, later turned into a silent film by the same name; the film version of *Metropolis* (1927) was one of the first works to depict and popularize a robot character on screen.\textsuperscript{18} By the 1940s, the imagined relationship between humans and robots depicted in film

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\textsuperscript{18} By the time Thea von Harbou began working on *Metropolis*, she was an established and well-respected writer in Germany, and had already collaborated with her husband Fritz Lang on other film projects. She developed the script and novel version of *Metropolis* simultaneously, publishing a serialized version of the novel in 1925 in the magazine *Illustriertes Blatt*, in order to generate interest in the film. As part of a marketing strategy for the film, the serialized
and literature became so dominated by the destructive “AI takeover” trope that writer Isaac
Asimov began looking for ways to explore a different kind of narrative, in which the knowledge
of potential problems in the imagined future of human-robot interaction led to a creation of
safeguards, so that different types of robot characters and relationship dynamics with humans
could feasibly occur.19 Through a series of short stories and novels written over the span of
several years, Asimov developed the idea of a “law of robotics” that existed within his fictitious
worlds and governed the relationship between humans and robots. Asimov’s novels popularized
the idea of developing an ethical framework for the development of artificial intelligence,
leading to fields such as “machinethics” and “roboethics,” widely studied today. Since
Metropolis, robot characters with various levels of technological sophistication have been a
mainstay of science fiction film and literature, from loveable sidekicks such as R2D2 and C-3PO
in the original 1977 Star Wars: A New Hope, to destroyer of worlds in Terminator (1984), to
destructive sentient computers, such as Hal in 2001: A Space Odyssey (1968), to AI operating
systems designed as emotional companions, such as Samantha in the film Her (2013), to
humanoid AI robots such as Ava in Ex Machina (2014), and every possibility and iteration in
between.20

novel was published then translated into English and published as a book. A German version of the novel in book
form was also published. For more information about the development of the work from novel to film, see Michael
Minden and Holger Bachmann, eds., Fritz Lang’s Metropolis: Cinematic Visions of Technology and Fear; Studies
in German Literature, Linguistics, and Culture (Rochester, N.Y.: Camden House, 2000), 10–12. For the original
serialized publication of the novel in German, see Thea von Harbou, “Metropolis - als Fortsetzungsroman,”
Illustriertes Blatt, 1926. For the first edition of the novel published as a standalone German book, see Thea von
Harbou, Metropolis: Roman (Berlin: A. Scherl, 1926). For the first edition of the translated novel, see Thea von
19 Isaac Asimov, The Rest of the Robots, Reprint (St Albans: Panther, 1976).
20 Meredith Broussard describes the wide array of artificial intelligence depicted in film and literature today as
“general AI”. She states: “General AI is the Hollywood kind of AI. General AI is anything to do with sentient
robots (who may or may not want to take over the world), consciousness inside computers, eternal life, or machines
that “think” like humans.” She differentiates “general AI” from “narrow AI,” which describes what is actually
technologically possible today: “A mathematical method for prediction.” See Broussard, Artificial Unintelligence,
loc 601 of 4633.
While the cyber-narrative of *Glare* is not presented as completely dystopian or apocalyptic, it is a rather dark and fundamentally negative portrayal of the imagined relationship between humans and sentient AI. Standing in stark contrast to the grim narrative of *Glare*, the liberating narratives of technology found in the afrofuturist genre, and the use of technological frameworks to expose legacies of abuse are completely absent in *Glare*. Over the past 30 years, artists, musicians, writers and filmmakers from across the African diaspora have taken up various technological and cyber narratives as part of a growing body of afrofuturistic work, espousing a more positive view of imagined technological futures. Coined by Mark Dery in 1993, the term “afrofuturism” refers to any “speculative fiction that treats African-American themes and addresses African-American concerns in the context of twentieth century technoculture— and, more generally, African-American signification that appropriates images of technology and a prosthetically enhanced future.”21 Utilizing various sci-fi and technological tropes as mechanisms to reimagine possible futures for black culture, the work of afrofuturist artists simultaneously explores narratives of liberation and freedom, while exposing and critiquing histories of abuse, marginalization, oppression, and alienation. The afrofuturist artist is often described as “digital griot,” or “intervening figure who unites the past, present, and future, refuses the digital divide as a barrier to black engagement with technology, and utilizes a specifically African-American rhetoric.”22 The most heralded digital griot of the millennial generation is Janelle Monáe, whose self-produced 2003 solo-album *The Audition* laid the groundwork for a multi-album, afrofuturist narrative, revolving around an alter-ego android by

the name of Cindi Mayweather, and set in the year 2719. The first official installment of the saga was released in 2007 as an album titled *Metropolis: Suite I (The Chase)*, followed by *The ArchAndroid: Suites II & III* (2010), and *Electric Lady: Suites IV and V* (2013). Monáe’s most recent album, *Dirty Computer* (2018), functions as an antecedent or prelude to the Cindi Mayweather saga, connected to the Mayweather narrative in ways that will presumably be revealed in Monáe’s future work.23

As scholars such as Gayle Murchison, Rebekah Lobosco-Gilli, and others have explored, Monáe’s references to seminal science fiction works that contributed to various tropes of the feminine android (such as the virgin/whore dichotomy and dangerous hyper-sexualized fem-bots exemplified by Maria in Fritz Lang’s *Metropolis*, or the allure of the cyber-soul in characters such as Rachel in Philip K. Dick’s *Do Androids Dream of Electric Sheep?*), and the subsequent flipping of said tropes by reimaging the alter-ego of Cindi Mayweather within a non-heteronormative framework allows for non-normative portrayals of afrofuturistic feminism; by harnessing the power of androgyny, gender bending, racialized imagery and narrative synchronicity, Monáe’s portrayal of the black female body is liberated from the constructs of sexualized object and gains agency and ability to “talk back” as a voice for the marginalized and oppressed.24 Unlike the work of Monáe and other afrofuturist artists, *Glare* does not employ cyber narrative in a way that allows the female characters to “talk back” or subvert traditional...

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mechanisms of oppression; instead, the work dramatizes overtly misogynist and heteronormative themes, foregrounding a disturbing dehumanization of women through the lens of AI.

*Glare* made its Royal Opera debut in a decade saturated with AI narratives in pop culture, driven in part by a social landscape in which we are beginning to see the early stages of development of AI become a reality in every day life of the western world; while sentient androids do not yet walk among us, narrow definitions of AI as highly sophisticated predictive algorithms *are* currently a reality.\(^\text{25}\) From self-driving cars to voice activated computer systems (such as Google Home, and Amazon’s Alexa), these nascent developments of narrow AI have inspired a generation of writers, filmmakers, artists, musicians and composers to explore the implications of extremely sophisticated AI development in not-so-distant imagined futures. *Glare* is not the first opera to include a possibly “artificial” character, however, it is the first opera to focus its entire narrative around questioning whether or not a central character is “real” or “android.” In doing so, it is the first opera to explore a cyber narrative in a way that encourages the timeless question, “what does it mean to be human?” to be re-examined within the context of man-made sentient beings, and it is the first opera to call into question the moral and ethical issues that humans must be held accountable for in the pursuit of artificial sentience.

**Lea’s “Realness”: Incongruities between Text, Music, and Production Design**

In the last line of Eichberg’s 2014 program note for the opera (written for the world premiere at The Royal Opera), the final scene is explained as follows:

Alex is shocked by what he has done. Michael finds him. Asks about Lea. Alex murmurs: She is gone... In his desperation, Alex begs Michael to “build him a new Lea”. Michael’s

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\(^{25}\) *Broussard, Artificial Unintelligence*, 31–39.
light-hearted reply makes Alex freeze and realise that Michael may never have been serious about Lea being an android.  

Judging from the program note, the coup de théâtre in this work is that both the audience and character Alex are led to believe that Lea is an android, only to discover at the last moment (after she is murdered), that it is possible she may have been human after all. Although the opera has been repeatedly billed as a “robot opera,” the libretto and dramatic events of the story leave the truth of Lea’s human or robot state intentionally ambiguous. As a multi-media genre, textual ambiguity in the opera libretto is further complicated by both musical and visual elements of the production. In the three productions to date that have been mounted of this work (including its world premiere), creating a design concept that reinforces an open-ended interpretation of the narrative has proven to be the most problematic and inconsistent element across all three productions.

The design concept for The Royal Opera world premiere production is particularly problematic in that designer Thaddeus Strassberger shaped the production around an assumption that Lea is, without question, a robot; this perspective may have made the dramatic twist at the end of the opera all the more effective (or jarring and confusing, depending on your perspective), but which ultimately contradicts any intentional ambiguity in the text and music, making a decision about Lea’s “realness” for the audience. During the instrumental opening, Strassberger has the main character Alex unwrap Lea from a plastic sheet, where she is plugged into a wall underneath a neon sign stating “You Are Perfect” (see figure 2.1). This design choice immediately sets up the audience with the belief that Lea is an artificial being of some kind, and that Alex is aware of her “robotic” state from the beginning. This design choice and the

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26 “Programme Note” (Music Sales Classical, August 2014), http://www.musicsalesclassical.com/composer/work/49400#.
Figure 2.1: Production photo from *Glare* by Søren Nils Eichberg; Amar Muchhala as Alex; Directed by Thaddeus Strassberger; Designed by Madeleine Boyd; Lighting designed by Matt Haskins. The Royal Opera House; Covent Garden, London, UK, 2014; Photo: Stephen Cummiskey (*left*). Promotional photo for *Glare* used by The Royal Opera; Ashley Riches as Michael; Sky Ingram as Lea; Amar Muchhala as Alex; Clare Presland as Christina (*right*). Both images reprinted, by permission, from The Royal Opera/ArenaPAL.
assumptions it encourages undermines and contradicts the story told by the libretto in scene 5, where Alex initially rejects Michael’s suggestions that Lea is an android, and then wrestles with trying to determine whether she is “real” or “robot” for the remaining 6 scenes. In conceptual drawings of Lea’s costuming created by designer Madeleine Boyd, door like openings in Lea’s back reveal electronic innards. Although this costume concept did not make an appearance in the final production, it still suggests that Strassberger and his design team conceived the opera from the outset based on the assumption that Lea was robotic (see figure 2.2).

Strassberger’s perspective is further explained in an interview featured in a video trailer for the world premiere, where he said:

I’ve never done a robot opera before. I’ve never created a robot before. I’ve never fallen in love with a robot before. So I think these aren’t things that you can immediately call upon in a method acting sort of way to think ‘ah! That’s how I interact with a robot’ or ‘that’s how a robot goes!’… *Glare* is a very simple love story. Alex and Christina had a relationship that’s no longer working. They’ve broken up. He’s looking for love. In walks Lea, the most perfect woman in the world… As time goes on, Alex starts speaking to his best friend Michael about what’s wrong with this relationship that’s too perfect. And finally Michael lets him in on the big practical joke that in fact she is too perfect because she is a robot. So the opera starts off on a very hopeful note of new love that seems to be blossoming, and this relationship – he can’t find any problems with it. And the drama that ensues is figuring out and testing the limits of the perfect love versus something that’s completely artificial, and therefore, not perfect.27

The final sentence in Strassberger’s statement, suggesting that the drama of the opera is centered around testing the boundaries of perfect love versus artificial and imperfect love, is a very different moral to the story than suggested by my reading of the libretto, as well as by the reading of the work suggested in the official program note. Although there are no published interviews or statements on the meaning of the work from librettist Hannah Dübgen, the

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27 Royal Opera House, "Thaddeus Strassberger on Glare - ‘I’ve Never Done a Robot Opera before’ (The Royal Opera)," *YouTube* video, August 4, 2014, https://www.youtube.com/watch?v=FZzS2A5Vu6U.
Figure 2.2: Concept drawing for Lea’s character from the Royal Opera production of *Glare*, designed by Madeleine Boyd. Costume and Set Designer, Madeleine Boyd. Director, Thaddeus Strassberger. Reprinted, courtesy of Madeleine Boyd.
composer has explicitly stated that the reason he and Dübgen were interested in setting this story in the first place, and what they believe the core question of the drama to be:

Indeed, we live in a time when we are actually beginning to surround ourselves with androids. We cannot avoid dealing with the question of what "artificial" and what "natural" means in our world today and in our future... The librettist Hannah Dübgen and I wanted to pursue this on the opera stage. Although we do not claim to illustrate the subject in all its complexity, which is why we have combined the issues with a chamber-like love story and a question of identity.  

For Eichberg and Dübgen, the boundaries of humanness and the definitions created to draw those boundaries was the core idea that attracted them to the story, inspired by the changing technological landscape of the present time.

Strassberger’s approach to the production design stands in dramatic contrast to the second production of the opera in Koblenz, Germany (in March 2017) and the third production of the work in Jönköping and Stockholm, Sweden (in April 2018). Both the German and Swedish premiere productions of Glare were featured as half of a double bill performance, produced by smaller companies with more limited resources. The Royal Opera production by Strassberger was not repeated in either city, and both country premieres featured completely new productions with unique interpretations. The Koblenz production placed the action inside a castle-turned-resort hotel, inspired by the need for a shared stage set with the other opera on the double bill, Philip Glass’s The Fall of the House of Usher. The majority of the dramatic action in Glare remained unchanged in this setting, with the exception of one important plot point: director

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[28] Markus Dietze, “Die Musik hat im Theater die Chance, über sich selbst hinauszuwachsen,” Seitenbühne (blog), March 12, 2017, https://theater-koblenz.de/seitenbuehne/interview-theater-eichberg/. The quoted text is my own translation of the original German, which is as follows: “Allerdings leben wir heute ja in einer Zeit, in der uns Androide tatsächlich zu umgeben beginnen. Wir kommen nicht darum herum uns mit der Frage zu beschäftigen, was „künstlich“ und was „natürlich“ bedeutet in unserer heutigen und unserer zukünftigen Welt...Dem wollten die Librettistin Hannah Dübgen und ich auf der Opernbühne nachgehen. Wobei wir gar nicht den Anspruch erheben, das Thema in seiner ganzen Komplexität abzubilden, weshalb wir das eben angerissene große Thema mit einer kammerspielartigen Liebesgeschichte und Identitätsfrage kombiniert haben.”
Waltraud Lehner had Lea’s character voluntarily stab herself in the penultimate scene, instead of Alex accidentally stabbing her while trying to force the knife into her hand (see figure 2.3). The Swedish production, created collaboratively between the Swedish Riksteatern, the Jönköpings Sinfonietta, and the Operahögskolan at the Stockholm University of the Arts, was the most open ended of the three productions, with only one small deviation from blocking instructions given in the score: although Lea fell to the floor, she did not visibly bleed after being stabbed.\(^{29}\) In both the Koblenz and the Swedish production, the costuming for Lea’s character was not particularly “android-esque,” in any overt way (see figure 2.4). Given that a theme explored throughout the opera is the fear of not being able to tell whether an individual is “real” or “robotic,” it is logical that the costuming for Lea would intentionally avoid any visual indication of artificiality. Aside from Strassberger’s initial presentation of Lea as a robotic doll waiting to be unwrapped and

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\(^{29}\) At the end of scene 11, the score indicates the following: “ALEX accidentally stabs her with the knife, when LEA makes a sudden movement to free herself, [she] falls to the floor. Blood is squirting out of the wound.” See Søren Nils Eichberg, *Glare: Chamber Opera* (Vocal Score) (Copenhagen: Wilhelm Hansen Musikforlag, 2014): 143.
Figure 2.4: Hana Lee singing Lea in the Theater Koblenz production of *Glare*. Photo by Matthias Baus. Reprinted, courtesy of Theater Koblenz (left). Isabella Lundqvist singing Lea in the Swedish production of *Glare* (right). In Smålands Musik & Teater, *Bildgalleri: Bilder från produktionen opera extravaganza!*, https://www.smot.se/opera-extravaganza/.

Figure 2.5: Sky Ingram (singing Lea) and Clare Presland (singing Christina) in Thaddeus Strassberger’s Royal Opera production of *Glare*, 2014 (left). Amar Muchhala (singing Alex) and Sky Ingram (singing Lea) in Thaddeus Strassberger’s Royal Opera production of *Glare*, 2014 (right). Both photos by Stephen Cummiskey. Both images reprinted, by permission, from the Royal Opera/ArenaPAL.
unplugged from a wall mounted charging station, the costuming for Lea’s character in The Royal Opera production aligns with a more ambiguous interpretation of her character (see figure 2.5). The varying production designs and directorial approaches to the AI narrative of *Glare* reveal a larger tension in the interpretive life of this opera as a performed, theatrical stage work. While the printed score functions as a gnostic encoding of an AI narrative, it is through actual performance of the work that drastically different interpretations of Lea’s “realness” are conveyed to the audience. The visual components of opera production, left predominantly undetermined in the score, are a part of this drastic performance of this work. However, elements in the score itself, such as text, melody, synthesizer cues, narrative structure, blocking directions, and references to various sci-fi tropes and ideologies embedded within the libretto, participate in a layering of meaning when realized through performance. As this chapter will continue to explore, both drastic and gnostic elements of the work combine to subvert a “truth” of Lea’s android or human nature from being revealed, challenging the audience to question not what the AI narrative reveals about the nature of AI, but what the AI narrative reveals about destructive and abusive human tendencies.

**The Altered Narrative**

As previously discussed, the designs for the UK, German, and Swedish productions of *Glare* differed greatly, with visual and directorial elements that conflict with the libretto, as well as blocking notes given in the published score. Added to this variation in staging choices is the fact that the order of scenes in the world premiere differed significantly from the official score,

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published afterwards, and upon which the German and Swedish productions were based (see table 1).\textsuperscript{31} While the musical material and text remained intact within each scene, the narrative was markedly different in the world premiere by shifting where crucial dramatic moments fell in the sequence of events.

As can be seen in table 1, after the orchestral prelude, the world premiere opened with what would eventually be scene 9, featuring a confrontation between Alex and his ex-girlfriend, Christina. Christina is asking where Lea is, and suspiciously accuses Alex of being dangerous. Moments before this exchange occurred, audiences at the world premiere would have witnessed Alex discarding a body wrapped in a plastic sheet in a large dumpster, a blocking choice that is not indicated anywhere in the published score. The next scene then transported the audience back in time, to the early days of Alex and Lea’s relationship, in what functions as scene 2 in both versions of the work. In the world premiere, this scene began with Alex unwrapping Lea from a plastic sheet, and unplugging her from the wall, visually connecting the new, unwrapped Lea with the lifeless body discarded moments before. Then the lights fell, and came back almost immediately on Lea and Alex, appearing to have sex as the rest of scene 2 unfolded. Because of this re-ordering, Lea’s death and discardment frames the entire work as her pre-determined fate. In the published version of the score, the first scene of the opera following the orchestral introduction features Alex excitedly preparing to meet Lea, singing of the positive anticipation he feels at being reunited with her. When Lea enters the stage, the only blocking direction given is that she “comes along waving… Lea and Alex run towards each other and kiss passionately.”\textsuperscript{32}

\textsuperscript{31} My own encounter with \textit{Glare} began by reading the published score, followed by attending a performance of the work in Sweden in April of 2018. After experiencing the work live, I then visited The Royal Opera archives, and watched a video recording of the world premiere performance from 2014. This is how I discovered that the order of scenes in the world premiere differed significantly from the published score, upon which the Swedish production (which I witnessed) was based.

\textsuperscript{32} See scene 1, mm. 134–140 in Eichberg, \textit{Glare: Chamber Opera} (Vocal Score), 11.
Table 1: Scene order, scene description, and blocking choices in the world premiere performance of *Glare* at The Royal Opera (2014) versus the Published Score.

<table>
<thead>
<tr>
<th>Scene Order (As follow published score)</th>
<th>Scene Description (As described in the published score)</th>
<th>Blocking Choices (Not indicated in the published score)</th>
<th>Scene Order (As follow published score)</th>
<th>Scene Description (As described in the published score)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>Orchestral Prelude</td>
<td>Alex drags Lea’s lifeless body, wrapped in a large plastic sheet, across the stage, and puts it in a dumpster.</td>
<td>Introduction</td>
<td>Orchestral Prelude</td>
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<tr>
<td>Scene 9</td>
<td>Christina confronts Alex. She asks where Lea is, and tells Alex not to hurt her. Alex asks “What if she can’t be hurt?” Christina calls him dangerous, and Alex sings of being betrayed.</td>
<td>Christina catches Alex near the dumpster, and confronts him.</td>
<td>Scene 1</td>
<td>Alex singing optimistically about his relationship with Lea</td>
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<tr>
<td>Scene 2</td>
<td>Alex and Lea are in bed together, reveling in their attraction to one another. They sing of how neither has felt this way before. They marvel at how they like the same things, and Lea flirtatiously suggests: “Let’s do it again.”</td>
<td>“You are Perfect” sign on the wall lights up. Lea is standing straight against the wall, under the sign, wrapped in a plastic sheet. Alex unwraps her. At the end of the scene, Alex and Lea appear to be having sex, while the word “perfect” blinks on the sign above.</td>
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</tr>
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<td>Scene 1</td>
<td>Alex alone, singing optimistically about his relationship with Lea</td>
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<td>Scene 3</td>
<td>Alex and Lea go to an art gallery opening party. They bump into Alex’s ex-girlfriend, Christina, and she and Lea hit it off. Alex tells Lea that Christina can’t be trusted, and they leave the party.</td>
</tr>
<tr>
<td>Scene 3</td>
<td>Alex and Lea go to an art gallery opening party. They bump into Alex’s ex-girlfriend, Christina, and she and Lea hit it off. Alex tells Lea that Christina can’t be trusted, and they leave the party.</td>
<td>While talking to Lea, Christina touches Lea face. Later, when Christina and Lea say goodbye, Christina kisses Lea’s cheek, then puts Lea’s arms around her, as if showing her how to embrace her before saying goodbye.</td>
<td>Scene 4</td>
<td>After the party, Lea and Alex are being intimate again, and Alex grows increasingly bothered and suspicious by what he perceives to be repetitious behavior from Lea.</td>
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<tr>
<td>Scene 4</td>
<td>After the party, Lea and Alex are being intimate again, and Alex grows increasingly bothered and suspicious by what he perceives to be repetitious behavior from Lea.</td>
<td>Lea and Alex are in bed together, as if having sex. Alex is lying down, and Lea is on top of him.</td>
<td>Scene 5</td>
<td>Alex meets his friend Michael at a pub. He tells him about his new girlfriend, Lea, and suggests that there is something “off” about her, as if she is almost to perfect. Michael suggests that Lea is not human, but an android. Alex rejects the idea at first, but Michael holds to his claim the he invented her, and that she is “not real.”</td>
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<tr>
<td>Scene 7</td>
<td>Lea and Christina coincidentally run into each other. Christina asks how things are with Alex, and Lea replies “fine?” Christina asks if Alex is good to her, and tells Lea not to let him change her.</td>
<td>After Christina tells Lea not to let Alex change her, Lea reaches out and touches Christina’s cheek. At the end of the scene, neither Lea nor Christina makes a move to leave. Lea takes Christina’s hand, and the lights fall before we see them part.</td>
<td>Scene 6</td>
<td>Alex and Lea meet up. Things begin to get physical between them, then Alex harshly rejects Lea, pushing her away. He asks her to “give him time”, and abruptly leaves. Lea is left confused, wondering what she did wrong.</td>
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<td>Scene 6</td>
<td>Alex and Lea meet up. Things begin to get physical between them, then Alex harshly rejects Lea, pushing her away. He asks her to “give him time”, and abruptly leaves. Lea is left confused, wondering what she did wrong. Lea tries to wrap her arms around Alex from behind, and tries to hold his hand, but he pulls away. When Lea is left alone on stage, the “You are Perfect” sign light up. At one point during her aria-monomologue, she grabs the wires below the sign. After she moves away from the wall, the sign continues to blink on and off.</td>
<td>Scene 8</td>
<td>Alex, alone on stage, wonders if Lea dreams at night. He questions whether machines or androids have dreams, and he wonders if Lea dreams of him, or them together. Lea’s voice is heard, as if inside his tormented dream. The scene ends with Alex asking “Are you there when I’m not there?”</td>
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<tr>
<td>Scene 10</td>
<td>At the pub, Michael starts coming on to Christina, who rejects him. Lea and Alex appear in the background, making out. All four characters begin singing, but they are physically separated, and the moment is marked as “unreal” in the score. When the unreal quartet ends, Michael approaches Lea, and immediately comes on to her. He asks her if she knows her purpose. He grabs her hand, and ignores her cry of pain. He then grabs her breast, and sings “this is what you are made for.” Lea continues to protest, but Michael ignores her cries, and rapes her while saying “I am your master.” Christina enters, interrupts Michael and attempts to intervene. She threatens to call the police, and Michael stumbles away. Lea is left shaking and traumatized, and Christina attempts to comfort her. Christina’s physical touch is welcomed by Lea, and it leads to a consensual kiss. Lea then pulls away, and says “I’m not made for this.” She says she loves Alex, and leaves. During this scene, you cannot see the rape happening. You see Michael corner Lea, and you see him force her into a dark corner of the stage. However, while you cannot see the assault happen, you can hear it happening, as there are very audible sounds of Lea struggling, and fighting him, then crying (none of this is notated in the score). When Christina interrupts, she shouts “Back off!” and attempts to physically intervene. She then huddles beside Lea, who is curled up, holding her knees to her chest, sitting against the wall.</td>
<td>Scene 9</td>
<td>Christina confronts Alex. She asks where Lea is, and tells Alex not to hurt her. Alex asks “What if she can't be hurt?” Christina calls him dangerous, and Alex sings of being betrayed.</td>
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Scene 1
Lea, alone on stage, begins with an aria, singing of how she doesn't know what she is doing, but she knows he loves Alex. Alex enters, and begins interrogating Lea. Lea tells Alex that Michael raped her. Alex claims this is a nightmare, and Lea is adamant that this is reality. Alex questions how she would know, and asks her to prove she is real by cutting him with a knife. Lea refuses. Alex tries to force the knife into her hand, and accidentally stabs her. Lea falls to the ground, blood squirting from the knife wound. Alex stares at her body, terrified.

Instead of trying to force the knife into Lea’s hand, Alex throws the knife in her direction. It hits the other side of the stage. Lea goes towards, and he attacks her. She falls to the ground, and Alex bashes her head multiple times against the wall. On the last blow, the wall breaks, and Lea’s lifeless body hangs limply into the hole. In a fit of rage, Alex runs to the other side of the stage, grabs a fire extinguisher, and runs towards her with it held high over his head, as if to bludgeon her with it. As he approaches her, he stops, puts the fire extinguisher down, and moves slowly toward her lifeless body, realizing she is dead.

Scene 10
At the pub, Michael starts coming on to Christina, who rejects him. Lea and Alex appear in the background, making out. All four characters begin singing, but they are physically separated, and the moment is marked as “unreal” in the score. When the unreal quartet ends, Michael approaches Lea, and immediately comes on to her. He asks her if she knows her purpose. He grabs her hand, and ignores her cry of pain. He then grabs her breast, and sings “this is what you are made for.” Lea continues to protest, but Michael ignores her cries, and rapes her while saying “I am your master.” Christina enters, interrupts Michael and attempts to intervene. She threatens to call the police, and Michael stumbles away. Lea is left shaking and traumatized, and Christina attempts to comfort her. Christina’s physical touch is welcomed by Lea, and it leads to a consensual kiss. Lea then pulls away, and says “I’m not made for this.” She says she loves Alex, and Christina leaves after saying “I hope you know what you’re doing.”
This scene transitions into scene 2, in which the score indicates that the feeling of the moment is both “enchanted” and “joyous” as Alex and Lea confess to never having felt this way about another person before. In the Swedish production of Glare, the opening of the opera followed directions in the score with little embellishment in the blocking; the orchestral opening was performed before the “curtain rose,” and no visual representations of Lea appeared on stage until her entrance indicated in scene 1. In other words, no extra-musical elements of the production foreshadowed the gruesome trajectory of the narrative, and in accordance with the published score, the entire work began on a note of optimism.

The second striking difference in the order of scenes between the world premiere and published score is the placement of Alex’s scene 8 aria-monologue, in which he is ostensibly questioning whether or not Lea is human. In my reading of the opera’s narrative arch according to the published score, this scene functions as a turning point in Alex’s thought process in deciding whether or not he believes Lea is “real” or “android”. Lea’s voice haunts his dream, and as the aria progresses, he ascribes less and less agency to her as an individual, and ends his questioning by asking if she has any individual identity at all. In the world premiere, this aria-monologue scene was placed as the penultimate scene of the opera, occurring after Alex has already murdered Lea, but before Michael’s suggestion in the final scene that Lea might be “real” or human after all. In the re-ordered context of the world premiere, Alex’s aria-monologue functions not as a reflective process of struggling to understand what he believes, but rather as a process of dehumanizing Lea in his mind, in order to justify his violent actions. Although there is no indication that the narrative structure differed between the world premiere and subsequent performances from information provided in the published score, there exists a single interview

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33 See scene 2, mm. 165–214 in Eichberg, Glare: Chamber Opera, (Vocal Score), 13–16.
with the composer that confirms the narrative order of world premiere was not as he, or librettist Hannah Dübgen originally constructed the opera. Published by the theater in Koblenz where Glare made its German premiere, Eichberg stated in the interview: “It is incredibly beautiful for me that in Koblenz, unlike the London premiere, the piece is performed in its entirety, and in the order designed by Hannah and myself.” This statement clarifies that the narrative structure of the opera was not changed by the composer and librettist after the world premiere, but altered beforehand. Furthermore, the composer and librettists likely did not instigate the changes made to the original conception of the work. While the person responsible for the re-ordering of scenes in the world premiere is unknown, given that Strassberger’s interpretation of the opera also took liberties with the blocking indications in the score (as are mapped out in table 1), one can assume that Strassberger, as the Director, held sway with his interpretive vision for the work.

As discussed earlier, Strassberger clearly states that he conceived his production design for the opera based on an assumption that Lea is a robot. While this approach was poorly received by audiences and critics, who felt it undermined the opera’s storyline, a feminist reading of the production provides an alternative perspective on his design choices that are otherwise at odds with the printed score. Although Alex unwrapping Lea from a plastic sheet and unplugging her indicates, in a literal sense, that Alex is aware of her robotic state, it could also be a metaphorical action, suggesting that regardless of whether Lea is “real” or not, the men in the opera view and treat her as a gendered, sexualized, and dehumanized object from the beginning.

34 Dietze, “Die Musik hat im Theater die Chance, über sich selbst hinauszuwachsen.” This quotation is my own translation of the original German, which is as follows: “Dabei ist es für mich unglaublich schön, dass in Koblenz, anders als bei der Londoner Uraufführung, das Stück in der von Hannah und mir konzipierten Reihenfolge und auch komplett aufgeführt wird.”
35 Royal Opera House, "Thaddeus Strassberger on Glare - ‘I’ve Never Done a Robot Opera before’ (The Royal Opera).”
Lea as Sexbot = All Women are Sexbots

One of the most disturbing overarching themes of Glare’s narrative is the overt misogyny exhibited by the male characters, with Lea’s potentially artificial state functioning as a straw-man excuse for acts of sexual violence. The overt sexual objectification of Lea contributes to the most striking trope played out in the opera, that of the female “sexbot,” with issues of rape, sexual assault, gendered power dynamics, and a generalized portrayal of women as sexual objects foregrounded in the narrative. When Donna Haraway wrote A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century in the early 1990s, she imagined the potential of digital technology and its slow but inevitable merger with humans as a way to remove gender biases and gender-oriented boundaries, giving rise to genderless equality in the cyborg age. However, long before Haraway argued for a genderless cyborg future, depictions of androids and artificial intelligence in cultural products had already begun to re-inscribe feminine tropes of subservience and sexual objectification. The trope of the female robot as sexbot links back to the very beginning of science fiction as a film genre, in Fritz Lang’s 1927 film Metropolis. As film critic Steve Rose described:

Looking back over movie history, it is difficult to find a female robot/android/cyborg who hasn’t been created (by men, of course) in the form of an attractive young woman – and therefore played by one. This often enables the movie to raise pertinent points about consciousness and technology while also giving male viewers an eyeful of female flesh… Being literally objectified women, female robots have traditionally been vehicles for the worst male tendencies. Invariably, inventors’ ideas of the “perfect” woman translate into one who is unquestioningly subservient and/or sexually obliging. A Stepford wife, to cite

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the best-known example. Or, as Blade Runner dismissively labels one female replicant, a “basic pleasure model”. 38

The narrative of the male “inventor” on a quest to create the “perfect” or “better than real” woman can be found in literature and storytelling of the western world long before the creation of film, as can the demonization of the artificial woman. As Julia Wosk, author of My Fair Ladies: Female Robots, Androids, and Other Artificial Eves described:

Pygmalion began it all. In Ovid’s version of the tale, a sculptor disenchanted with women creates an image of a beautiful woman and longs to marry a woman just like her, and Venus grants this wish by bringing the sculpture, which later generations called Galatea, to life… Ovid tells us that Pygmalion’s artistic creation was superior to a real woman, for he gave his sculpture “a figure better than any living woman could boast of.” 39

While the story of Pygmalion’s ivory statue-turned-human has a relatively happy ending (Pygmalion marries Galatea, they have a daughter, and all live a long and happy life), another story from antiquity introduces the concept of the artificial woman as demon, or destroyer of men: that of Pandora.

According to Hesiod’s writings (First Works and Days, then Theogony, both written c. 700 BC), Pandora was created as a way of punishing the world of men. When Prometheus stole fire from Zeus and gave it to the mere mortals of earth, Zeus decided to take revenge on men by sending them “an evil thing in which they may all be glad of heart while they embrace their own destruction.” 40 Zeus ordered a humanlike being to be made, with a desirable female form, and goddess-like face. He enlisted Aphrodite, the goddess of love, desire, and pleasure, to imbue this creation with the power to seduce, while Hermes gave her the ability to deceive. She was shrouded in fine clothes and adorned with jewels. She was given the name Pandora, and she was

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39 Wosk, My Fair Ladies, loc 251 and 314 of 6093.
then sent to earth with a jar that, unbeknownst to her, contained all the evils of the world.

Pandora was presented as a gift to Prometheus’s brother, Epimetheus, and despite all warnings, he accepted her. Once on earth, embraced by man, Pandora opened the jar, releasing its contents into the world, and rendering her from that point onward the source of all evil. In an analysis of fetishism and curiosity, Laura Mulvey linked the story of Pandora to constructions of an interior/exterior feminine that map to the demonization of female gendered androids since the 19th century. Mulvey states:

Pandora is the prototype for the exquisite female android, as a dangerous enchantress, she is also the prototype for the femme fatale. Both these iconographies depend on an inside/outside topography. A beautiful surface that is appealing and charming to man masks either an ‘interior’ that is mechanical or an ‘outside’ that is deceitful. Both their iconographies connote uncertainty, mystery, and are only readable in death. Pandora prefigures mechanical, erotic female androids, such as Olympia in E.T.A. Hoffmann’s story ‘The Sandman’ (1816-17), the False Maria in Fritz Lang’s Metropolis (1925), Hadaly in Villiers de l’Isle-Adam’s The Eve of the Future (1886), all of whom personify the combination of female beauty with mechanical artifice.41

The earliest descriptions of Lea as an android or artificially intelligent creation within the opera immediately objectify her as a sexual object, and specifically link the perception of her perfection to an exterior beauty, a subservient, sexually obliging nature, a lack of agency or identity, and an interior artifice.42 When Alex meets up with Michael at the pub in scene 5, Michael asks if Alex likes the way Lea smells after they’ve made love. Alex admits that he does, and Michael immediately objectifies Lea, suggesting she is a “learning exposed android…designed to please.”43 His first directive to Alex is to “enjoy her,” and explains, “her

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41 Laura Mulvey, Fetishism and Curiosity, Perspectives (Bloomington: London: Indiana University Press; British Film Institute, 1996), 55–56.
42 For an analysis of Olympia’s character as fetishized object, see Reilly, Automata and Mimesis, 125–136.
43 See scene 5, in Eichberg, Glare: Chamber Opera (Vocal Score), 60–61.
world is defined by you.” Alex initially rejects the whole idea, but Michael persists, claiming that Lea is “better than real” precisely because she has no agency. First he sings:

She’s real! Better, better than real.
(more and more bitter as he speaks)
She will never betray you or hurt you
or disappoint you or play with your feelings
as real women do.\textsuperscript{45}

Michael then expands his description by suggesting Lea’s entire identity is formed by and through Alex; he also claims that because of this, Lea “belongs” to Alex, and that ownership gives him a freedom to mold her into being emotionally and sexually subservient in whatever way he wishes:

Because she’s yours. You activated her!
When you looked into her eye.
When she was made, her mind was a blank sheet.
Pre-installed but empty like a blank sheet!
She becomes human by copying you.
(sweetly) She needs you!
(enthusiastically) Enjoy her. As she enjoys you too.
The freedom you have.
You’re giving LEA her soul.\textsuperscript{46}

The extent of Michael’s objectification of Lea reaches a climax five scenes later, when he is back at the pub, and finds Lea alone, searching for Alex. He begins to assault her, verbally and physically, asking if Lea “knows her purpose.” As the assault progresses, Lea’s expression of

\begin{footnotesize}
\begin{enumerate}
\item Ibid., 62–63.
\item See scene 5, in Eichberg, \textit{Glare: Chamber Opera} (Vocal Score), 64–65.
\item Ibid., 66–68. In Steven Spielberg’s 2001 science fiction film \textit{A.I.: Artificial Intelligence}, one of the most dramatically important scenes depicts lonely mother Monica Swinton activating or “imprinting” David, the artificially intelligent child-robot given to her, by looking him in the eye and by repeating a series pre-determined words. This action functions within the story as a process that creates a permanent and irreversible emotional connection between David and Monica, allowing David to “feel” love for his mother. This scene from \textit{Glare} (scene 5) alludes to a parallel moment, when Michael sings that Lea was “activated” in the same way, by Alex looking into her eyes. That moment is referenced twice more, first when Alex asks Lea to let him “look into your eyes again” in the very next scene (when doubts of Lea’s “realness” begin to assail him), and in scene 11, when Lea alludes to the idea of Alex’s eyes being the first moment she remembers feeling a connection to him (scene 11, R. 264). See Steven Spielberg, \textit{A.I. Artificial Intelligence} (Dreamworks Video, 2001).
\end{enumerate}
\end{footnotesize}
feeling pain is ignored, her lack of consent is ignored, and Michael rapes her while declaring, “I am your master!” (see example 2.1).

Example 2.1: Søren Nils Eichberg, *Glare*, scene 10, libretto excerpt.47

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MICHAEL: I am a scientist,  
         I design mirrors of people, like you.
LEA:    That’s interesting.
MICHAEL: Every mirror is made with a special purpose.
LEA:    Is that a philosophical question?
MICHAEL: No, it’s not.
LEA:    Then… Is it…
MICHAEL: No, it… is… not!  
         (grabs her hand)  
         It’s an order!
LEA:    That hurts!
MICHAEL: (puts hand on LEA’s breast) This what you are made for.
LEA:    No.    MICHAEL: I want this! (ready to rape LEA)
LEA:    No.    MICHAEL: You want this!
LEA:    No.    MICHAEL: We want this!
MICHAEL: I am your master!
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By suggesting that Lea is designed as a mirror of a person, made for a specific purpose, and then forcibly demonstrating her prescribed purpose by proceeding to rape her, Michael is admitting that he views both human women and android women as one in the same; there is no

differentiation between artificial and real that informs Michael’s perspective on female agency, as no version of the female is afforded moral status as human. For Michael, the purpose of all women is the satisfaction of male pleasure, with no rights to reject his (or any man’s) sexual advances.

As the scene continues to unfold, Michael’s rape of Lea connects the opera with tropes of sexual violence and rape myths that proliferate in popular culture. A trope particularly prevalent in science fiction is the use of rape as a simultaneously humanizing and dehumanizing event in character development. A parallel example to Lea’s rape in Glare that fulfills this trope is the treatment of the character Gina from the successful sci-fi franchise Battlestar Galactica. Gina is a non-human, sentient being from the cylon race, anthropomorphically indistinguishable from humans until examined on a molecular level. In the context of Gina’s story, she is raped as a form of torture while being held prisoner by humans. In an analysis of common constructions of humanity in science fiction, media scholar Aino-Kaisa Koistinen reads Gina’s rape as both a humanizing and dehumanizing event in saying:

At the level of the narrative, the rape and suffering of Gina make her human in the sense of being vulnerable and being gendered as a human female, while at the same time the act of raping her is intended to dehumanize, disempower, and hurt her. Her rapists justify their actions by citing Gina’s non-human origins (as Colonel Fisk [Graham Beckel] states: “You can’t rape a machine”), but rape itself plays on her likeness to humans.48

Like Gina, Lea’s vulnerability and suffering humanizes her for both the audience, and the other female character (Christina) within the work. Also, like Gina, Lea’s dehumanized status in the eyes of the perpetrator is referenced as a justifiable excuse for his actions. While Lea’s rape is not framed as an act of torture inflicted upon a prisoner, Michael directly references a master-

slave dynamic, utilizing rape as a method of control and assertion of power.\textsuperscript{49} Michael’s declamation that “I want this! You want this! We want this!” connects his disregard for Lea’s lack of consent to the well-studied trope of women “secretly wanting sex,” which scholars link to a pervasive mistrust of female rape claims and victim blaming throughout the history of rape and rape legislation.\textsuperscript{50}

Christina interrupts the scene, threatening to call the police, causing Michael to stumble off. Seeing what has happened, she treats Lea with kindness and gentleness, holding her as she trembles. Their interaction becomes more intimate, resulting in a consensual kiss. The moment of genuine attraction is musically demarcated in three spiraling descending and ascending scale patterns, as if time has stopped to highlight Lea in a moment of her own agency. But her response reveals how strongly rooted her character is in the hetero-normative “sexbot” framework, as she replies “I’m not made for this” and pulls away, insisting that she loves Alex.\textsuperscript{51}

In scene 11, when Alex confronts Lea about proving she is “real,” she tells him that Michael raped her. Too consumed with his own mission to discover “the truth,” the sexual assault on Lea has little affect on Alex, suggesting that he, too, equates her potentially artificially intelligent state as a determining factor or ethical lynch pin in whether or not her consent matters in a sexual encounter (see example 2.2).

\begin{footnotesize}
\textsuperscript{49} Susan Brownmiller, \textit{Against Our Will: Men, Women, and Rape} (New York: Simon and Schuster, 1975). Brownmiller’s \textit{Against Our Will} is consistently cited by feminist scholars as a groundbreaking publication, expanding the discourse of rape studies to include analysis of rape culture and rape myths across historical and cultural periods, and effectively communicate how such an analysis reveals rape being routinely used by men as a mechanism of control and empowerment over women.


\textsuperscript{51} See scene 10, 2 bars before R. 256 in Eichberg, \textit{Glare: Chamber Opera} (Vocal Score), 119.
\end{footnotesize}
Example 2.2: Søren Nils Eichberg, *Glare*, scene 11, libretto excerpt.52

ALEX: Do you even know? What he did? To you? What he did? Michael? You know?

LEA: I know! I want to forget.

ALEX: *(confused)* So you know! (?)

LEA: How could I not know – he raped me! Thank God, Christina was there.

ALEX: *(in shock, holding his head)* This is a nightmare. I don’t understand. Where? When? I want to wake up. This is a nightmare. I want to wake up!

LEA: This is no dream, this is reality.

ALEX: How would you know what is real, know what is human?

LEA: Of course I know!

ALEX: What proves that you are real?

LEA: Of course I am.

ALEX: What proves it, to me, to?

LEA: *(searches for an answer, then…)* I see this world. I see your face. I see you. I feel your hot breath. And when you are afraid, I feel your fear. And then… I’m afraid… too.

ALEX: Of course you ARE! Learning! Exposed! Android!

The final scene drives the misogynist themes of the opera to a tragic conclusion. As Michael laments “they’re all the same. Women. All the same.” Alex begs Michael over and over to “build” him “a new L.E.A.” The capitalized, acronymic spelling of Lea’s name in the printed libretto suggests that Alex no longer views her as a person, but as a thing; an object that can be

52 See Eichberg, *Glare: Chamber Opera* (Vocal Score), 133–135.
simply replicated and replaced. In a traumatized trance, he repeats his plea over and over.

Michael’s reply provides the potentially ground shifting *coup de theatre*, as he suggests that Lea is actually “real” (see example 2.3):

Example 2.3: Søren Nils Eichberg, *Glare*, scene 12, libretto excerpt.

MICHAEL: You’re alone? Where is Lea?

ALEX: Gone. Forever.
I’m sorry! I didn’t… I probably…
Get me a new one.

MICHAEL: They’re all the same.
Women. All the same.

ALEX: I broke her.

She’ll not come back. MICHAEL: Women.

ALEX: Build me a new one. MICHAEL: They’re all the same.

ALEX: Build me a new L.E.A. MICHAEL: Calm down.

MICHAEL: You mean an android???
In twenty years.
Maybe much sooner, who know!

ALEX: You made her! Make me a new L.E.A., please!

MICHAEL: You’ll get what you wish for.
Some day it will be possible, someday.

ALEX: Make me a new L.E.A., please!

MICHAEL: We are almost there.

ALEX: Build me a new L.E.A., please!

MICHAEL: Science is almost there.

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53 For a similar reading of Olympia’s character as fetishized object, see Reilly, *Automata and Mimesis on the Stage of Theatre History*, 112.
54 Eichberg, *Glare: Chamber Opera* (Vocal Score), 144–150.
MICHAEL: Never give up hope! Let’s go!

(curtain)

If Lea was, indeed, an android (as Michael first claimed in scene 5), then his treatment of her in scene 10 could be attributed to a long-standing female sex-bot trope, and perhaps dismissed, by some, as ethically unproblematic—assuming that Lea were not a conscious, sentient being with free will. If Michael fabricated the whole idea of Lea being an android, as he claimed in scene 12, then his sexual assault on her in scene 10 suggests that in his eyes, all women, regardless of whether they are biologically human or android, exist purely for man’s pleasure, and their consent in a sexual act is never relevant. This perspective is strengthened by his complete dismissal of Lea as an individual, and conflation of females in all forms by claiming “they’re all the same. Women. All the same.” In an analysis of Maria’s character in Metropolis by Andreas Huyssmen, a description of the film’s portrayal of the female android character could also apply to how Lea is constructed and treated by the male characters in Glare. Huyssmen states:

The film suggests a simple and deeply problematic homology between women and technology, a homology which results from male projections: Just as man invents and constructs technological artifacts which are to serve him and fulfill his desires, so women, as she has been socially invented and constructed by man, is expected to reflect man’s needs and to serve her master. Furthermore, just as technological artifact is considered to be the quasi-natural expansion of man’s natural abilities... so woman, in male perspective, is considered to be the natural vessel of man’s reproductive capacity, a mere bodily extension of man’s procreative powers. But neither technology nor women can ever be seen solely as a natural extension of man’s abilities. They are always qualitatively different and thus threatening in their otherness. It is this otherness which causes male anxiety and reinforces the urge to control and dominate that which is other.55

Lea’s otherness, defined by Michael and Alex as a combination of perfectionistic femininity and a possible android state, causes such anxiety that the urge to control and dominate evolves into violent action: first rape, and then murder.

The press photos published for The Royal Opera production suggest an even more layered interpretation of the opera’s ending, depicting Lea’s lifeless body discarded in a garbage bin (see figure 2.6). This “disposable” portrayal of Lea parallels a critique of the 2014 film *Ex Machina*, in which the writer described:

> The film delivers the same message so many movies with female robots/replicants have—namely: Wouldn’t it be so much easier for the real humans (meaning male humans) if their lowly female counterparts could just be sexy in all the ways men desire, obedient and easily modified, then upgraded or tossed away without fuss when they no longer “work”?56

In an interview about the Koblenz production, dramaturge Anna Drechsler also takes a position that assumes Lea is an android, and spoke to what she believed the “core” of the opera is, saying:

> This piece invites people to think about what might happen in the coming years. Because science and technology have already come alarmingly far, that probably soon these LEA’s will actually exist. Now its about how to give them an aura, and how to program a “soul” into them. And that is an extremely interesting direction to think about.57

If, as Drechsler suggests, *Glare’s* narrative assumes Lea is artificial, then this opera also suggests that humans will intentionally attempt to create android and cyborg-esque beings to be agentless, such that harmful gender stereotypes that women have continually strived to break down and overcome in the “real world” (or in the “pre-artificial intelligence era” of human history) can be re-inscribed and continually revived in a future era of AI.

57 Eichberg, “Eichberg: GLARE, Trailer (Subtitled).”
The Music as “Robotic”

Even though Strassberger’s design concept contributed to a confusing interpretive schema for the work at the world premiere, in a review by Alexandra Coghlan, it was the music, not the production design that was called out as the most contradictory element of the work. She stated: “Every electronic tick and twitch of the score is telling us she’s a robot, so it’s less a coup de theatre than plain old contradiction to suddenly pull the dramatic rug out from under that idea.”

This statement prompts the famous question posed by Edward Cone: “If music is a

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58 Coghlan, “Glare, Linbury Studio Theatre.”
language, then who is speaking?" Answering this question is generally complicated in opera, as the music, text, and visual elements of a production might contradict one another in the message or narrative being communicated. As Abbate has argued by interrogating the multiple dimensions of “speaking” through music in her analysis of 19th-century musical narratives,

Indeed, we generally assume that the message conveyed by that music—whatever form it takes—posses absolute moral authority, that whatever falsehoods are spoken by a character [and by extension, production elements of a work], the music will speak across and thus expose the lies… this thought… reverberates through most writing on opera.

The general assumption that music conveys the “truth” of an operatic narrative is at the core of Coghlan’s critique. But as Abbate’s analysis of musical narrative demonstrates, music can be unreliable, “speaking itself equally doubtful” as narrative words or visual elements of a work through reflexivity and layered utterances. Closer examination of the music in Glare reveals how the musical dimensions of this opera function as an unreliable narrator, at times reinforcing Lea’s artificiality, and at times subverting it.

The “electronic tick and twitch of the score” cited by Coghlan alludes to Eichberg’s extensive use of synthesized sound in the orchestration; in all, there are 135 synth cues indicated in the score, directing the deployment of 20 distinct sound profiles. While some of the sounds fulfill a purely timbral function (such as imitating the sound of an acoustic bass), others function as an arsenal of leitmotifs, complete with names or labels that suggest a connection between the sound and different dramatic elements or themes of the narrative (see table 2). The synthesizer part notates both pitches and rhythms to be played on a keyboard, while the labeled synth cues and sound profiles indicated in the score dictate the resulting sound quality created. The use of

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61 Ibid., 63 and 157.
specific sounds at specific moments in the opera connects 5 of the total 20 sound profiles to
Lea’s character: “TruthAlive,” “AndroidVoid,” “CantNotLoveHer,” “Machinoid,” and
“BellsInTheSky.” The use of leitmotif in an operatic work is often assumed to be “the means by
which the music can shadow narration.”62 But leitmotif can also “seduce and mislead,”
when they are considered reflexively within the greater context of a work.63 In this way, the
narrative affect of the synthesizer leitmotifs associated with Lea’s character varies depending on
the context within which they are embedded.

When the opera opens, the introductory prelude begins with a solo glockenspiel playing a
repetitive arpeggiated pattern, with an interpretive indication and tempo marking stating “Unreal
/ Quarter Note = 92” (see Introduction, bar 1).64 At first hearing, the motive is generic sounding
enough that it could evoke a variety of meanings or sonic image painting. As the opera
progresses, repetition of this motive in the glockenspiel, vibraphone, and piano parts quickly
establish it as being associated with Lea’s character. On more than one occasion, notation of the
motive is accompanied by a written instruction in the score, indicating that it should be played in
a mechanical fashion (see example 2.4).65 Not only is this motive heard in situations where Lea
is physically present, such as in scene 3, when Lea first meets Christina (see scene 3, mm. 322–
313),66 but it also appears when Alex is talking about Lea; in scene 5, when Alex is at the pub
with Michael, the motive is heard on two separate occasions, both times interspersed with Alex’s
description of Lea’s repetitive and predictable nature (see scene 5, mm. 622–634 and mm. 660–
674).67

62 Abbate, Unsung Voices, 62.
63 Ibid.
64 See bar 1 of the orchestral introduction in Eichberg, Glare: Chamber Opera (Orchestral Score), 1.
65 All musical examples for Glare are transcribed and adapted from Eichberg, Glare: Chamber Opera (Orchestral
Score) and Eichberg, Glare: Chamber Opera (Vocal Score).
66 Eichberg, Glare: Chamber Opera (Orchestral Score), 42–43
67 Ibid., 83–5 and 89–91.
Table 2: List and Description of *Glare* Synthesizer Cues

<table>
<thead>
<tr>
<th><strong>Cue Label:</strong> (in order of appearance)</th>
<th><strong>Description of Sound Profile:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>LawOfTheJungle</td>
<td>Low rumbling / rolling drum</td>
</tr>
<tr>
<td>Machinoid</td>
<td>Hollow synth pitch</td>
</tr>
<tr>
<td>RealBass</td>
<td>Sounds similar to a live double bass, but as if it is further away, or set far back from the ensemble.</td>
</tr>
<tr>
<td>ThisKillingDoubt</td>
<td>Long held pitches slowly ascend. The timbre is scratchy and grating.</td>
</tr>
<tr>
<td>EntanglingPattern</td>
<td>A subtle, repeating cicada sound, similar to the beating or clicking of a fan</td>
</tr>
<tr>
<td>TruthAlive</td>
<td>Layered entry of pitches that glissando in an ascending pattern. The timbre is like a stereotypical robotic sci-fi sound effect, swooping upward, and very dream-like.</td>
</tr>
<tr>
<td>CantNotLoveHer</td>
<td>Long held high pitches in tone clusters, as if sung by human voices on a single open vowel sound. It has a space-age choral sound to it.</td>
</tr>
<tr>
<td>FallingBass</td>
<td>Descending glissando, as if played on a real bass with a hand slapping the strings.</td>
</tr>
<tr>
<td>PhatBass</td>
<td>Descending arpeggio pattern, as if played on a low, tubular instrument.</td>
</tr>
<tr>
<td>DeepKick</td>
<td>Like the bass track of a dub-step remix</td>
</tr>
<tr>
<td>MadScientist</td>
<td>Pulsing or beating pitches with electronic reverb, as if air is being sucked out of a space. It sounds like a space-age whack-a-mole game.</td>
</tr>
<tr>
<td>InLoveWithHisToy</td>
<td>Slow and gentle chord clusters, as if played on a piano.</td>
</tr>
<tr>
<td>TheTest</td>
<td>Pounding, clashing clusters of dissonant pitches, with the timbre of a screeching elephant.</td>
</tr>
<tr>
<td>MonsterWithin</td>
<td>Very similar sounding timbre to the “TheTest,” but in descending patterns.</td>
</tr>
<tr>
<td>AndroidVoid</td>
<td>Single sustained pitch, scratchy choral timbre with a slight echo or beating effect.</td>
</tr>
<tr>
<td>DoYouDream</td>
<td>Synth string sound effect, playing single pitches.</td>
</tr>
<tr>
<td>PleaseStay</td>
<td>Lugubrious electronic whistling, very high pitched, like air travelling through a tight wind tunnel.</td>
</tr>
<tr>
<td>Hostility</td>
<td>Percussive drumbeats, like a snare drum without the rattle on.</td>
</tr>
<tr>
<td>Purity</td>
<td>Single pitches played as a low hollow bass sound, with woodblock-like percussive rhythms played over top, as well as simple melodic gestures in a wooden flute timbre.</td>
</tr>
<tr>
<td>BellsInTheSky</td>
<td>A replication of Lea’s motif (which occurs on glockenspiel and piano throughout the score), with a bell or glockenspiel timbre.</td>
</tr>
</tbody>
</table>
In the final scene a replication of Lea’s motive throughout the rest of the score is reinterpreted via electronic means. This motive is labeled “BellsInTheSky,” and throughout the final scene, the performance of the “BellsInTheSky” musical material alternates between being played by synthesizer cues, and played on acoustic glockenspiel and piano. Furthermore, when looking at the use of the “BellsInTheSky” synthesizer cues within the larger orchestral context of the scene, there is no practical reason why this musical material needs to be traded off between synthesizer and acoustic instruments. The last two times the motive is heard, played by the synthesizer, both the glockenspiel and the piano are silent (see scene 12, mm. 1859–1870).\(^6\) Like Alex’s struggle to determine if Lea is “real” or “fake,” it is near impossible to tell listening from the audience which iterations of the motive are played by “real” acoustic instruments, and which are “fake,” created by the synthesizer.

The most stereotypically futuristic synth sound in the score is introduced the moment Lea first enters the stage and begins to sing. Labeled “TruthAlive,” it is used in more scenes than any other motive, and is the last thing audiences hear when the curtain falls at the end of the work (see table 3 for a complete outline of all the scenes in which the “TruthAlive” motive is heard). Comprised of gently pulsing layered pitches in an ascending pattern, the synthesized timbre has the quality of a sci-fi “uplifter” sound effect, as if an ascending computerized pitch is spiraling into outer space. The name of the motive suggests that the sound itself reveals some kind of truth; by pairing it with Lea’s entrance and reiterating the motive so often in dramatic situations that involve Lea’s physical presence on stage, her character becomes associated with a computerized, artificial sound. If the “TruthAlive” musical motive functions as a sonic symbol of

\(^{6}\) Ibid., 235–237.
Example 2.4: Søren Nils Eichberg, *Glare*, scene 2, mm. 191–194 (*a*) and scene 3, mm. 323–326 (*b*).

a) Vibraphone, scene 2, mm. 191–194

![Musical notation for vibraphone]

b) Piano, scene 3, mm. 323–326

![Musical notation for piano]

Lea’s true nature, then the artificial sound quality of the motive suggests that she is artificially created.

The “TruthAlive” motive is also connected to Lea as a focal point of sexual attraction.

Four out of the seven instances in which the motive is used are connected to Lea’s physical beauty and sexualized moments; the motive accompanies moments of physical intimacy between Lea and Alex in scenes 1 and 4, as well as moments focused on both attraction and intimacy between Lea and Christina in scenes 3 and 10. In each set of scenes featuring the paired characters, there is replication of textual material and melodic contours (see table 3).

In scene 7, “TruthAlive” is heard as Christina cautions Lea about Alex’s destructive tendencies by telling her that there is nothing wrong with the way she is, as if attempting to give
<table>
<thead>
<tr>
<th>Scene #</th>
<th>Rehearsal #:</th>
<th>Description of Dramatic Moment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scene 1</td>
<td>R. 20-24</td>
<td>When Lea first enters the stage, and she and Alex are instructed in the score to “kiss passionately”. Immediately after the “TruthAlive” cue is played, Alex reacts to Lea’s kiss by exclaiming “Perfect! Perfect!”</td>
</tr>
<tr>
<td>Scene 3</td>
<td>R. 73-77</td>
<td>After Christina and Lea first meet and then say goodbye, “TruthAlive” accompanies Christina’s description of Lea’s physical beauty as she walks away.</td>
</tr>
<tr>
<td>Scene 4</td>
<td>R. 87</td>
<td>After the art gallery, Alex and Lea are being physically intimate again. The “TruthAlive” motive is the first thing you hear, followed by Alex exclaiming “Perfect! Perfect!” to Lea (all before the lights come up).</td>
</tr>
<tr>
<td>Scene 7</td>
<td>R. 194</td>
<td>When Christina asks Lea if Alex is good to her, before Lea can reply, the “TruthAlive” motive is heard underneath Christina singing “Don’t let him destroy your good nature. Don’t let him change you. Don’t let him hurt you. Stay the way, stay the way you are.”</td>
</tr>
<tr>
<td>Scene 10</td>
<td>R. 253-254</td>
<td>When Christina finds Lea after the rape, she tells her to cry on her shoulder, and tells her that her eyes are beautiful (repeating the same textual phrases she used in scene 3, with only slight musical variation).</td>
</tr>
<tr>
<td>Scene 11</td>
<td>R. 267-269</td>
<td>Lea, alone on stage, sings about how she may not know exactly what she is doing, but she “knows that to do,” and she knows she feels love for Alex.</td>
</tr>
<tr>
<td></td>
<td>R. 293-294</td>
<td>Lea sings to Alex that she doesn't know why, but “something in us knows what to do” Alex replies with “Prove it! Prove that you love me!”</td>
</tr>
<tr>
<td>Scene 12</td>
<td>R. 316</td>
<td>After telling Alex that android technology is not possible today, but “science is almost there,” the “TruthAlive” motive enters as Michael sings “Never give up hope!” and the curtain falls.</td>
</tr>
</tbody>
</table>

Lea validation and agency as an individual that Alex does not afford her. By pairing the “TruthAlive” motive with this moment, the subtext of Christina’s warning communicates that even if Lea is an android (as the sound of the motive might suggest), she should view herself as a person deserving of equal agency and fair treatment, and reject any behavior from Alex that would suggest she is anything less.
There are two distinct moments in which the “TruthAlive” motive is paired with dramatic events suggesting Lea may be “real.” These moments call into question the assumption of Lea’s true nature as “robotic” based on the futuristic sound of the motive, and amplify the uncertainty of her “realness.” In scene 11, the “TruthAlive” motive is heard twice, both accompanying Lea’s self-proclaimed feelings of love for Alex. If Lea is living proof that android women are technologically possible, then she is also embodied, living proof that androids have been developed to the point of being indistinguishable from humans in their ability to feel human emotion. In the final scene of the opera, the “TruthAlive” motive is the last thing audiences hear as the curtain falls. It enters moments before, as Michael suggests Alex should never give up hope that one day an android woman could be created to replace Lea, even though the technology does not yet exist.

When Michael first suggests to Alex that Lea is a “Learning Exposed Android,” and “designed to please,” the “Machinoid” synth cue is introduced for the first time (scene 5, m. 699). With a timbre like that of an empty drum or hollow keyboard synth, the “Machinoid” sound is used twice more in this scene: first when Alex rejects the idea of Lea being a machine (scene 5, m. 866), and again when Alex repeats Michael’s line “Lea, designed to please” (scene 5, m. 894). Because the first use of the “Machinoid” cue is associated with Michael description of Lea as an android, the music participates in Michael’s attempt as narrator to conjure up an imagined idea of Lea as android, and render it as real within Alex’s mind.

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69 Eichberg, Glare: Chamber Opera (Vocal Score), 114.
70 Ibid., 117.
71 Abbate speaks to the power of narration to produce in actuality the imagined narrated event in the context of Mozart’s Le nozze di Figaro, in which the Count’s re-telling of past events (finding Cherubino hiding under a table) is reflexively paired with the actualization of a similar event in the moment of narration (when he mimics the previous day’s action of removing a tablecloth with removing a veil on a chair, only to once again find Cherubino hiding underneath). By applying this concept to the moment Michael describes Lea as android in Glare, I do not mean to suggest that his description is paired with her physically appearing on stage, as that is not indicated in the blocking directions of the scene, nor was it integrated into the two different productions I was able to witness.
The “Machinoid” cue makes an appearance in three other scenes (scenes 8, 9, and 11, as well as the introductory prelude), always in situations where Lea is being labeled as “android,” or described as “not real” (see table 4). In all but the final iteration of the “Machinoid” synth cue, Lea is not actually present onstage when the sound is heard. She is physically absent, yet her physical body is the focus of character thought and discussion. This particular synth cue captures Lea’s imagined state, or the assumption made that she is a machine, and bound up in that assumption is the decades old trope suggesting that if she is a machine, then she must have been designed to be a “perfect” woman, the “pleasure model,” “designed to please.” In the final scene, the use of the “Machinoid” sound accompanies an accusation of artificiality, followed moments later by a demand for proof of the contrary. By never associating the “Machinoid” sound with Lea’s physical, embodied presence on stage until the moment she must prove she is not what the sound suggests, the only proof of her artificiality represented by the motif rests in Michael’s anecdotal descriptions of her as android. By the time Alex demands that Lea prove her “realness,” Michael has already established himself as morally corrupt through his rape of Lea. Therefore, any narrative power given to the “Machineoid” leitmotif can be interpreted retrospectively as ringing false, generated and manipulated by a human narrator intent on “giving tongue to lies” in order to indulge misogynist desires.72

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72 For Abbate’s analysis of music ringing false by its connection to dubious, immoral, and unreliable human narrators, see Abbate, *Unsung Voices*, 157–205.
Table 4: Uses of the Synth Cue "Machinoid"

<table>
<thead>
<tr>
<th>Scene #:</th>
<th>Rehearsal #:</th>
<th>Description of Dramatic Moment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prelude</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Scene 5 | R. 133      | After Michael describes Lea as a “Learning Exposed Android” for the first time, the “Machinoid” is used for the first time as Michael describes Lea as “designed to please”.
|         | R. 164      | Left alone on stage, Alex reflects on what Michael has told him, and exclaims: “Lea? A machine? Impossible!” |
|         | R. 168      | As Alex repeats parts of the story Michael has told him, the “Machinoid” cue is again employed when Alex repeats the idea of Lea being “designed to please.” |
| Scene 8 | R. 199      | During Alex’s dream sequence monologue, as he wrestles with trying to figure out if Lea is “real” or “android,” the “Machinoid” cue is heard as Alex repeats the “Learning Exposed Android” moniker. |
|         | R. 206      | “Machinoid” is heard in an instrumental section, after Alex hallucinates about Lea. |
| Scene 9 | R. 220      | When Christina confronts Alex, telling him not to hurt Lea, the “Machinoid” cue is heard as Alex suggests to Christina that Lea “can’t be hurt,” alluding to the possibility of her being “not real”. |
| Scene 11| R. 289      | The “Machinoid” synth cue is heard during the first and only time Alex accuses Lea to her face of being an android. |

The Real versus the Mechanized Voice

As discussed in chapter one in the context of Muhly’s *Two Boys*, voice functions as a basic marker of human identity. The operatic voice is also entrenched in a history through which the experience of human emotion is expressed and communicated through virtuosic performance. In *Glare*, there is a tension between the voice as a basic marker of humanity, the

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operatic medium historically demanding perfectionistic virtuosity as the ultimate expressive
device for human emotion, and the idea that Lea might not be “real.” In talking about stylistic
choices made in the composition process, Eichberg said:

The music combines the message we wanted to show: What is real? What is artificial?
Which is why I worked with a lot of synthesizers. But I also wanted it to be singable, and
a small instrumental ensemble would have to be able to play it. So there are clearly ties to
an opera tradition, in a certain sense. The contrast between the two main characters is this
paranoia that Alex has. His voice is paranoid, nervous, and irritable. And Lea—who
appears to be so perfect, and gracious, and obliging, that the suspicion comes up that she
may not be a real human. Of course her music is supposed to portray exactly that, so
sometimes it may be a bit too sweet, and also bears reminiscences to the classical opera
coloratura—this over the top perfection and affectedness which easily might be a robot.

In examining Lea’s vocal line across the entire opera, there are two moments in which
her melody line is obviously ornamented in a traditional operatic fashion, as Eichberg described.

In the first occurrence, there is a note in the score indicating the following:

LEA’s embellishment and coloratura are always “credible” and “realistic” as flirt,
coquetry, etc., but they should also always feel oddly misplaced: as if the machine is
shining through, too perfect, too easy.

Aside from this note suggesting an assumption on the part of the composer that Lea is “not real,”
it also suggests the Lea’s ornamentations are “designed to please”; they are designed to allure, to
flirt, and to exude some kind of sexual magnetism. Yet, in direct opposition to this suggestion,
instead of these moments being public displays of some robotic truth “shining through,” feeding
Alex’s suspicions, both moments occur when Lea is alone on stage, expressing her most intense
feelings. Much like music you would find in an Italian bel canto opera, Lea’s most ornamented
vocal lines occur when she expresses hurt over Alex’s first rejection (see example 2.5), and when

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73 For an analysis of 19th century tendencies of likening the virtuosic operatic voice to a machine, as well as
perceiving machine-like precision in virtuosic singing as being “soulless”, see J.Q. Davies, Romantic Anatomies of
Performance, 30–38.
74 Søren Nils Eichberg, "Eichberg: GLARE, Trailer (Subtitled)," YouTube video, May 5, 2018, accessed December
2, 2018, https://www.youtube.com/watch?time_continue=33&v=0OWS2u8N5b0.
75 See scene 6, in Eichberg, Glare: Chamber Opera (Vocal Score), 85.
she expresses loving Alex despite his repeated rejection of her (see example 2.6). In the context of the narrative, Lea’s fleeting virtuosic vocal lines can be heard not as a sign of robotic perfection, but as an outpouring of intense human emotion, born out of the history of operatic virtuosity, akin to that of Lucia, Anna Bolena, or Gilda.

In Offenbach’s opera, Olympia’s doll song aria creates a musical allusion to mechanization through virtuosic coloratura, repetitive musical gestures, and staccato rhythms in both the orchestral and vocal writing that suggest precision and consistency. In order to effectively perform the role, “the singer must efface herself and the fact of her performance… the prima donna inside Olympia hides behind a mask of stiff gestures and deliberately hollow, inexpressive vocal quality.”76 However, an important distinction to make is that the Olympia character is an automaton; a mechanical creation, designed to imitate form and functions of a human being. The music suggests mechanization, like the gears of a clock. When Olympia breaks from her predetermined mechanized programming, as Hadlock suggests, ornamentation itself is not the musical manifestation of agency or defiance; improvisation and a derivation from formalized musical patterns as Olympia malfunctions is what draw awareness to the improvisations of the “disorderly diva” beneath the costumed automaton.77 In contrast to Olympia, Lea’s lack of mechanical sounding vocal lines helps create a character that is suspected of being something much more sophisticated than an automaton. By giving her vocal ornamentation in select moments of emotional expression that align with the notion of traditional operatic coloratura, her vocal music is more human sounding than anything else. After all, it is humans who have historically performed the virtuosic roles of Lucia, Anna Bolena, Gilda, and

76 Hadlock, Mad Loves, 80.
77 Ibid., 81.
Example 2.5: The first use of embellishment and vocal ornamentation in Lea’s vocal line. Søren Nils Eichberg, *Glare*, scene 6, mm. 991–1021.
Example 2.6: The second use of embellishment and vocal ornamentation in Lea’s vocal line. Søren Nils Eichberg, *Glare*, scene 11, mm. 1574–1580.

others, even if in common parlance audiences often laud their vocal abilities as being super-human.\(^\text{78}\)

Furthermore, the performative power of vocal ornamentation on the opera stage brings to mind an interpretative possibility of female vocal virtuosity that is noticeably absent in *Glare*. As Bonnie Gordon suggests, the fate of female characters and the treatment of women within the narratives of musical-theatrical stage works can be analyzed as mechanism of policing and disciplining the collective female audience; her analysis of Monteverdi’s *In ballo delle ingrate* is connected to a larger tradition of “negative exemplars for the purpose of showing women what not to do, and what will befall those who break the rules.”\(^\text{79}\) While, as Suzanne Cusick has argued, opera has traditionally been used as a mechanism of silencing women, Gordon, Abbate, and others have analyzed how opera also provides a space for female characters—and by

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extension, the female bodies that voice them—to “talk back” through song, gaining powerful moments of agency and “opening up a space for the female voice to resist patriarchal constraints.”\(^{80}\) In *Glare*, both Alex and Michael are given extended scenes in which their perspective is given time to be expressed; as previously discussed, Michael’s initial objectification of Lea in scene 5 provides a significant amount of operatic time for Michael to assert his views. As is explored in a forthcoming discussion of scene 8, Alex is given an extended monologue in which he wrestles with the question of Lea’s potential artificiality. Lea, on the other hand, is given no defining moment, virtuosic or otherwise, to “talk back” through song. The only aria-like moment in which she is given an extended amount of time to assert her perspective functions as a transition between her post-rape encounter with Christina (scene 10), and her final confrontation with Alex (scene 11). This aria not only functions as an emotional and dramatic bridge between the two moments, but also a physical transition between scenes, as instructions in the score direct that this moment should accompany a movement of the set such that Lea begins the scene in the physical presence of Christina, and ends the scene with Alex.\(^{81}\)

While this aria moment as a whole provides little opportunity for Lea to “talk back,” and it does nothing to overthrow the misogynist abuse and mistreatment she has experienced, it does provide a fleeting moment of subjectivity for the character. Immediately following her back to back experience of being raped by Michael and a consensual kiss with Christina, Lea struggles to express and process what she feels, and uses virtuosic ornamentation to draw attention to her assertion of love. As the aria begins, her phrases are tentative and incomplete, as she sings of her

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\(^{81}\) Eichberg, *Glare: Chamber Opera* (Vocal Score), 123.
own self-doubt. Individual words are separated by rests, and drawn out over long, suspended harmonies in the synthesizer to a cue labeled “purity;” the clauses and statements in the libretto in the aria’s opening are intermittently incomplete, all contributing to the effect of vocal and textual failure as she struggles to formulate a coherent thought (see example 2.7, mm. 1510–1535). She sings of not knowing what she is doing, and not knowing why, but feeling certain that she loves Alex (see example 2.7 mm. 1544–1568). From the moment she asserts her feelings of love, a growing sense of confidence in what she feels is reflected in more continuous musical phrases, culminating in two virtuosic melismas on the word “I” that stand in stark contrast to everything that has come before (see example 2.7, mm. 1575–1580). As Mauro Calcagno has analyzed within the context of Monteverdi’s musical-theatrical works, the word “I” gains power as a deictic word in theatrical contexts, identifying the speaker as subject; when paired with music in an operatic setting, the drawing out of the word “I” in long musical phrases, or through differentiated musical material can further establish human subjectivity of the character voicing the phrase. In the context of this scene, the long melismas on the word “I” draw attention to the Lea’s repeated assertion of human subjectivity, and the traditional virtuosic element of the melismas function not as a marker of mechanization or “perfect repetition,” but an employment of extreme vocalization in an attempt to assert a subjective feeling of love.

82 For more on vocal failure and vocal disruption as a marker of virtuosity and subjectivity, see Wilbourne, “Demo’s Stutter, Subjectivity, and the Virtuosity of Vocal Failure.”
Example 2.7: Lea’s aria, first expressing her lack of confidence through musical expressions of vocal failure, then moving into confident melismatic assertions of subjectivity. Søren Nils Eichberg, Glare, scene 11, mm. 1510–1584.
he looked into my eye,
I felt it

I don't know why.
But I know that I do

love him, love him.
I may not know what I'm doing

But something in me knows. what to do.
And I know that this same thing is called "love."

His beau

I know

I know

I love you.
Repetition and Perfection as Symbol for the Artificial

When the opera opens, the first scene in which we meet Alex and Lea conforms to operatic conventions of repetitive musical material indicating mutual attraction between characters. Alex is the first to enter the stage, expressing anticipation for his upcoming meeting with Lea. The first time the audience hears Lea sing, it is a vocalization from offstage, happening within Alex’s memory; a note in the score reads “ALEX remembers what LEA said at their first meeting” as Alex recalls Lea saying “Your hand is strong. Your hand is strong.” The memory is repeated verbatim shortly before Lea appears on stage, with directions in the score stating “ALEX again remembers their first meeting, like an echo.” (See example 2.8). When Lea physically enters the stage, she and Alex run towards each other, with directions in the score indicating that their meeting begins with a passionate kiss.

The first thing Alex sings when he and Lea are together on stage is the “Perfect” motif (see example 2.9). The first scene ends with Lea repeating this motif, transposed down a semitone, with the only rhythmic derivation being a quarter note difference in the final bar of the phrase (see example 2.10). Scene 2 continues with even more intimate interaction between Alex and Lea, as their physical chemistry escalates, and they sing about feeling as though their

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85 See scene 1 in Eichberg, Glare: Chamber Opera (Vocal Score), 6.
86 Ibid., 9–10.
87 Ibid., 11.
Example 2.8: The “Strong Hands” Motif. Søren Nils Eichberg, *Glare*, scene 1, mm. 80–83 (a), mm. 120–126 (b), and scene 6, mm. 940–946 (c).

a) Scene 1, mm. 80–83

b) Scene 1, mm. 120–126

c) Scene 6, mm. 940–946
relationship is different than anything either of them has felt before. In this moment, Lea repeats a line Alex first sang alone on stage, on his way to meet her in scene 1, with the only derivation being a slight change in text in order for the sentiment of the text to mirror that of Alex’s original statement (see example 2.11). This phrase is enmeshed within a series of dovetailed phrases.
between Alex and Lea, all leading to the only moment in the entire opera when the two characters sing in complete unity; for the duration of a single bar, text, pitch, and rhythm are aligned in Alex and Lea’s vocal lines, with the moment suspended in time by a fermata in both parts (m. 229). The three bars that follow this fermata moment continue in textual and rhythmic unity, as the Alex and Lea finish the phrase in a chain of harmonic thirds (see example 2.12).

In any other opera, the echoed and repeated musical material throughout the first two scenes, as well as the unison moment between Alex and Lea would fulfill the basic operatic trope of musical repetition and unity signifying affinity, agreement, or mutual attraction between two characters within a romantic plotline. But as the opera progresses, this traditional operatic signification of repetition is rerouted, and quickly branded as a sign of artificial “otherness.” The end of scene 4 (mm. 506–508) is the first time Alex first cites Lea’s tendency to restate phrases

Example 2.12: Alex and Lea sing together. Søren Nils Eichberg, Glare, scene 2, mm. 225–232.
in “perfect repetition” as a reason to suspect there is something “wrong” or artificial about her; He sings “Repetition! Repetition! Perfect, perfect repetition!” before rejecting her affectionate advances, and storming off to find his friend Michael at the pub. This outburst suggests that Lea’s vocal line and musical material up to this point (scenes 1–4) reinforce Alex’s perception of “perfect repetition.” However, a closer look at the score reveals that any noticeable repetition on Lea’s part is not as perfect as Alex claims.

After Alex first states the “Perfect” motif in scene 1 (mm. 144–149), Lea repeats Alex’s initial phrase on two separate occasions, never mimicking the exact pitches Alex first used, never repeating his original phrase in its entirety, and with slight rhythmic variations found in each echo of the original musical gesture (see examples 2.9–2.12). In scene 2, in between Lea’s first and second repetition of the “perfect motif,” Lea sings to Alex: “You and I, the two of us.” (see example 2.13). She immediately re-states this phrase in perfect rhythmic and intervallic repetition, but transposed up a minor third (see example 2.14). Both statements of “You and I, the two of us” are echoes of Alex singing “Lea and I, the two of us” in scene 1, before Lea’s first appearance on stage (see example 2.15).

A closer examination of the “strong hand” motif from the opening scene reveals a similar pattern of imperfect repetition. As previously mentioned, this phrase is first introduced in Lea’s vocal line, sung twice from offstage as a memory in Alex’s mind (see example 2.8, mm. 80–83). Similar to repetitions of the “perfect motif” and “You and I, the two of us,” the repetition of the “strong hand” motif in Alex memory feature slight musical derivations. The rhythmic placement of a single grace note differs between her first and second statement of the phrase, and an elongated melodic phrase on the word “strong” occurs in the repeated phrase, followed by an

Example 2.14: Lea repeats “You and I, the two of us.” Søren Nils Eichberg, *Glare*, scene 2, mm. 225–228.

Example 2.15: Alex’s first statement of “Lea and I, the two of us.” Søren Nils Eichberg, *Glare*, scene 1, mm. 69–79.
extra statement of the word “strong” (see example 2.8, mm. 120–126). The only time Lea repeats the “strong hands” motif in a present moment on stage is in scene 6. This statement of the motif is transposed down a third, and there are subtle rhythmic variants throughout the phrase (see example 2.8, mm. 940–946).

The fourth most obviously repetitive phrase Lea utters within the first four scenes is a calculation of decibels and degrees. While at an art gallery opening in scene 3, Alex complains that the room is noisy. Lea responds with stating the exact decibel count of the sound, in three groups of repeated pitches (see example 2.16, mm. 298–299). Later on in the scene, the generally warm temperature in the room is mentioned, and Lea responds with indicating the exact temperature degree, utilizing the exact same pitches as her decibel count (see example 2.16, mm. 355–256). While Lea’s immediate calculation suggests a kind of mechanized, unnatural computational precision, the music once again thwarts a perfect repetition. There is a rhythmic variance of an eighth rest and one less note in the last group of three that renders the phrase an imperfect repetition of its initial statement. Lea’s decibel count returns once more in scene 6, with the rhythmic structure further varied, and chromatic alterations made to the pitches (see example 2.17).

In addition to the “perfect” motif, the “strong hands” motif, and the echoing of Alex’s lines “Lea and I, the two of us,” there are other subtle and fleeting moments in Lea’s vocal line throughout scenes 1–4 that could be considered repetitive in nature. However, like the examples drawn out above, no repetition is “perfect,” as Alex claims he hears. Within the operatic format, there is more than one variable that can contribute to the perception of “perfect repetition.” From a textual point of view, the words Lea sings are often repeated exactly as we first heard them. But in terms of both rhythm and pitch setting of the words, repetitive patterns in Lea’s vocal
lines are rarely exact. The derivations are admittedly slight, but they nonetheless betray the concept of perfection.

Example 2.16: Lea’s scene 3 Decibel Counts. Søren Nils Eichberg, *Glare*, scene 3, mm. 298–299 (a) and mm. 355–256 (b).

a) Scene 3, mm. 298–299

LEA

![Musical notation](image1)

Just o-ver se-ven-ty de-ci-bels.

b) Scene 3, mm. 355–256

LEA

![Musical notation](image2)

Just o-ver thir-ty de-grees.


LEA

![Musical notation](image3)

surprised

Al-most six-ty de-ci-bels

"silent scream"

ALEX

How loud now, my voice? Ah!

- turned away from LEA
**Do Androids Dream of Electric Sheep?**

Scene 8 is when Alex’s doubts about Lea’s “realness” come to a head, as his sleep is haunted by dreams of her. The aria is an obvious nod to Philip K. Dick’s 1968 novel *Do Androids Dream of Electric Sheep?* upon which the 1982 film *Blade Runner* is based. As Alex tosses and turns in his bed, he sings the following:

Example 2.18: Søren Nils Eichberg, *Glare*, scene 8, libretto excerpt:

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ALEX:
Lea, do you dream at night?
Do you dream?
Lea, do you dream at night?
Machines have no dreams. Have they?
And what about androids?
Learning Exposed! An…
What about you, Lea?
Do you dream at night?
What do you see in your dreams?
Me? Us? When we last made…
A nightmare!
Where do you go when I’m not there?
What do you do when I’m not there?
What? Where?
Where do you go when I’m not there?
What do you do when I’m not there?
What? Where?
Lea, do you dream at night?
Do you dream?
Do you have nightmares?
Wake u [sic] soaked in sweat?
Screaming in the dark?
Are you afraid ever, scared to death?
Where do you go when I’m not there?
What do you do when I’m not there?
What? Where?
What do you think when I’m not there?
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89 See Eichberg, *Glare: Chamber Opera* (Vocal Score), 90–98.
Turn yourself off, when I’m not there?
And I turn you on?
Are you there when I’m not there?

While Alex is singing, Lea’s voice comes in and out of the texture, with instructions indicating that her voice is to sound “as if inside Alex’s dream—as if not really there, maybe half whispered with a microphone—but always staying below his voice.” She repeats text from two scenes earlier, in which Alex, following his conversation with Michael at the pub, rejects Lea. Left alone and confused on stage by the end of that scene, Lea sang:

Example 2.19: Søren Nils Eichberg, *Glare*, scene 6, libretto excerpt

LEA:
Why are you running away from me?
Where do we go. Tell me, where do we go?
What can we do? I do? Where are we now?

Two scenes later, as Alex sings his “Lea, do you dream” nightmare aria, text from this moment returns. Underneath Alex’s more dominant vocal line, Lea sings:

Example 2.20: Søren Nils Eichberg, *Glare*, scene 8, libretto excerpt

LEA:
Why are you running away from me?
Don’t run!
Why are you running away from me?
Don’t run! Please!

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90 See scene 8, R. 202 in Eichberg, *Glare: Chamber Opera* (Vocal Score), 92.
91 See Eichberg, *Glare: Chamber Opera* (Vocal Score), 82–83.
92 See Eichberg, *Glare: Chamber Opera* (Vocal Score), 92–93.
While the question “Why are you running away from me?” is a perfect repetition drawn from scene 6, the melodic and rhythmic content is completely different. When Lea repeats the line in Alex’s dream, she sings each statement of the question on a single, repeated pitch (example 2.21).

While the repetitive nature of Lea’s vocal line in Alex’s dream monologue can be read as compelling “proof” of her robotic state, it is also an unreliable source, as her vocal line in this scene is a projection of Lea within Alex’s mind. Similar to how Alex remembered repetitions of the “strong hands” motif in scene 1, here, Alex is “performing” Lea in his mind in a way that reinforces his own belief that she is not “real”; the repetitive robotic pitches don’t come from Lea herself, but are entirely invented by Alex in the context of his dream. Like Judith seeing blood

Example 2.21: Excerpt of Lea’s vocal line, alone on stage in scene 6 (a) and then repeated on a single pitch within Alex’s dream (b). Søren Nils Eichberg, Glare, scene 6, mm. 967–980 and scene 8, mm. 1108–1136.

a) Scene 6, mm. 967–980

LEA

<table>
<thead>
<tr>
<th>Score</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Score Image" /></td>
<td>Why are you running away from me? Why are you running away? Why do you run? Where are you now, Alex, where are we now? What can I do? Tell me, what can I do? What have I done?</td>
</tr>
</tbody>
</table>

151
b) Scene 8, mm. 1108–1136
behind every door in *Bluebeard’s Castle*, Alex is only seeing and hearing in his dream-like state what he believes to be true, obsessively reinforcing what he most fears.

In Philip K. Dick’s novel, the main character Rick Deckard makes a living as a “bounty hunter,” tracking down and destroying artificially intelligent androids (called “replicants” in the novel) who are successfully posing as human. Within the story, there is a test used by Deckard to determine whether a being is human or android, with empathy being the distinguishing factor between the two; a test subject capable of empathy, capable of caring for or about the fate of another living being passes as human, and a test subject unable to feel or express empathy is labeled as android. Throughout the course of the novel, Deckard faces the question: if an android can feel empathy, then is there really a difference between humans and androids? Critics argue that the novel ultimately suggests that the answer to that question is “no,” that there is no difference, and the physical nature of a being (be it biologically human, robotic, or a combination of both) does not and should not determine whether or not said being is worthy of being treated as “human.”93 This concept is connected to the Descartian idea of “cogito, ergo sum”; the ability to think, feel, and consciously experience the world as human equates to *being* human.94

Building on references made in the opera to *Do Androids Dream of Electric Sheep*, a differentiation needs to be made between machines, robots, cyborgs, and androids. The terms are often used interchangeably in common parlance, but the differences between them become quite important in the context of *Glare*. A machine refers to a man-man thing, designed to carry out a

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94 In Kara Reilly’s account of the evolution of Descartian philosophy, Descarte’s interest in mind/body dualism was first inspired by the automatons and mechanical hydraulics he observed in the pleasure gardens at Saint-Germain-en-Laye, Paris. See Reilly, *Automata and Mimesis*, 48–72.
specific task (or set of tasks), often needing an external power source of some kind in order to run. By this definition, an automaton can be classified as a machine. The term “robot” in its most generic form defines a machine that includes a programmable computer of some kind, through which that machine can perform a programmed set of tasks. Robots are often built to have a humanoid appearance, but not always. The term “android” specifically refers to a robot that appears to take human form, and is often portrayed in science fiction and popular culture as having some form of autonomy, free will, or sentience. The term “cyborg” is a short form for “cybernetic organism,” and refers to a being whose organic body has been modified through technology of some kind (usually mechanized, digital, or bio-mimicry technology), resulting in abilities above and beyond natural corporeal limitations; while depictions of cyborgs in popular culture often appear to exist in a body obviously comprised of both organic and man-made parts, any modification of the body achieved through man-made technology and intervention, resulting in enhanced or post-human ability, can be encompassed within cyborg theory.95

In Glare’s scene 8 aria-monologue, Alex ponders a fleeting differentiation between “machines” and “androids”. In the fourth line of his aria, Alex sings: “Machines have no dreams. Have they? And what about androids?”96 Dreaming is brought to the forefront of the narrative as a marker of being “real” or “alive;” to dream requires consciousness, consciousness implies sentience, and sentience means one is able to think, feel, and experience the world in a subjectively human way. Never once does Alex (or anyone else in the opera) question his own humanity, and by asking if Lea dreams at night, Alex is struggling to determine if Lea

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95 For example, Bonnie Gordon makes a compelling case for an interpretation of the castrato as an early form of cyborg. Gordon’s reading highlights how audiences of the 17th century experienced the castrato voice as a super-human, enhanced ability, and likened the castrato singer to a “human-machine”, made possible by man-made tools, intervention, and interaction with natural processes of the human body. See Bonnie Gordon, “The Castrato Meets the Cyborg,” The Opera Quarterly 27 (March 2011): 94–122.
96 See scene 8, R. 196–200 in Eichberg, Glare: Chamber Opera (Vocal Score), 90–91.
experiences the world as he does. In asking, if only for a brief moment, if androids can dream, and struggling to separate one kind of artificial being from another (machine versus android), there is a moment where Alex himself begins to question whether an organic body is truly the defining factor of humanity.

As a whole, this aria-monologue reveals an amalgam of anxieties related to human perceptions of artificial intelligence that permeate the opera, and influence Alex’s actions toward Lea from this point onward; throughout the libretto of this scene, Alex struggles to parse out experiences and abilities that would make Lea more “real”: Does she have feelings? (“Do you have nightmares? Wake u [sic] soaked in sweat? Screaming in the dark?”) Does she have free will? (“Where do you go when I’m not there?”) Does Lea have a conscious and subconscious? (“Do you dream at night?”) Does she have memories? (“What do you see in your dreams? Me? Us? When we last made…”) Is she capable of original thought? (“What do you think of when I’m not there?”) Underlying this catalogue of questions, Alex is attempting to determine where the line can be drawn between being human or android. Alex never quite makes it to the level of inquiry as to whether or not it is possible that Lea is an “android,” but also experiences the world just like a sentient human, with free will. If he had, then the aria-monologue might have ended with question pondering, “If I can’t tell the difference, does it even matter?” Instead, the

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97 Alex’s fear and anxiety related to determining Lea’s “realness,” followed by revulsion and horror can be read as an extreme case of falling into the uncanny valley. While Michael luxuriates in an extension of the master-slave, pleasure-bot dynamic between human and artificial women to his treatment of all women as dehumanized android, Alex is deeply disturbed by the possibility that Lea may not be “real.” Alex’s unease with the idea of Lea being an android is not only caused by what he perceives as uncanny flaws in her programmed performance of humanity, but also what her being an android says about him. He is repulsed by the idea that he could feel love, affection, and attraction to someone or something that is possibly “not real,” turning the horror felt from the uncanny valley back upon himself. By the end of the opera, Alex’s negative reaction to the possibility of Lea being artificial is so strong that it incites him to ultimately destroy the source of his unease. If Glare functions as a cautionary tale about androids and the development of AI, then one of its many lessons is that an inability to overcome the uncanny valley can have disastrous effects. Even if an artificial being is sentient and experiences the world as a human, the moment a “real” human begins to sense any doubt about their “realness,” there is risk of the uncanny valley triggering a violent and inhuman response.
final line of the monologue, “Are you there when I’m not there?” suggests that by the end of the aria, Alex has begun to adopt Michael’s perspective of Lea as devoid of identity and agency without him, and therefore, dehumanized.

**A Desire for “Proof”: *Glare* as an Exploration of Asimovian Roboethics**

In scene 5, Michael plants a seed of doubt in Alex’s mind that Lea is not “real;” but Alex still wants concrete proof of her artificiality, which leads to Michel’s suggestion that Alex test whether or not Lea has the capability of hurting him. This proposed test links the opera with the fictional concept of Asimovian roboethics, and frames the story as a testament to the failure of Asimovian frameworks in providing a morally or ethically sound approach to artificial intelligence in the real world. As previously mentioned, Asmiov’s “three laws of robotics” created a set of rules by which all artificially intelligent characters in his writings adhered to. Asimov’s three laws are as follows:

1. A robot may not injure a human being, or, through inaction, allow a human being to come to harm.
2. A robot must obey the orders given it by human beings, except where such orders would conflict with the First Law.
3. A robot must protect its own existence, as long as such protection does not conflict with the First or Second Laws.

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Although philosophers and scientists have long argued that Asimov’s laws of robotics do not reflect the reality of how artificial intelligence technology is created, developed, and evolving today, Asimov’s laws remain one of earliest and most influential attempts at mapping out a code of ethics in the history of robotics.100

In Hannah Dübgen’s libretto for *Glare*, Asimov’s laws run as an undercurrent throughout the story, although the characters never explicitly cite them. The most obvious reference is when Michael first suggests to Alex that Lea is an android, and Alex asks for proof. Michael responds by singing:

Example 2.22: Søren Nils Eichberg, *Glare*, scene 5, libretto excerpt101

**MICHAEL:** You want proof? Proof that she was designed for you? Ask her to cut you. Tell her to cut you with a knife! She won’t be able to.

**ALEX:** I hope not!

**MICHAEL:** You’re her human. You are her life. She would never hurt you! Scare her! Pressure her! Threaten her! Go on: Say you need proof of her love! She won’t be able to hurt you. Science, my friend.

The whole climax of the opera’s story, Alex trying to force Lea into proving whether she is “real” or “android,” resulting in her accidental death, is built on the Asimovian concept that an

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100 One of the most common examples used to illustrate how the development of AI technology today does not employ the philosophical framework of Asimov’s laws is the use of autonomous military weapons, which are in use today, and do not abide by the first clause of Asimov’s first law, “A robot may not injure a human being.” The use and further development of autonomous military weapons and drone technology gained international attention in 2017, when a collection of high profile artificial intelligence specialists and industry players wrote an open letter to the United Nations, calling for action to be taken in preventing the repurposing of AI advancements for military weapons. See “An Open Letter to the United Nations Convention on Certain Conventional Weapons,” Future of Life Institute, accessed December 2, 2018, https://futureoflife.org/autonomous-weapons-open-letter-2017/.

artificially intelligent being is incapable of hurting a human and follows all three rules of robotics without fail. Changes to the Koblenz production, in which the character Lea appeared to stab herself instead of having Alex force the knife into her hand, is taking Asimovian logic to its extreme; Lea (as a robot) protects Alex from possibly harming himself or forcing her to harm him by killing herself.

Throughout the opera, both Alex and his friend Michael approach the concept of artificial intelligence as if Asimovian rules and safeguards are a given, or inextricably linked to artificial intelligence technology. In Asimov’s stories (which were designed as a fictional thought experiment), the laws of robotics were created to protect humans from harm, intentional or unintentional, that may be caused by robots. The rights and wellbeing of the robot come second to that of the human, with no reciprocal obligation on the part of humanity to protect artificially intelligent beings. This creates an inherent master-slave dynamic, in which the robot exists in a kind of sub-human state. Alex and Michael’s treatment of Lea after adopting the perspective that she is an android align with the master-slave dynamic inherent in Asimov’s second and third law; Lea is sexually assaulted, raped, and murdered, without any physical or social harm coming to the human perpetrators.

**Conclusion**

In Ovid’s *Pygmalion*, all other women are rendered as inferior to the sculpted fantasy-woman, and Pygmalion prays to Venus to help him find someone just like the sculpture he has carved out of ivory. Venus uses her powers to breathe life into the sculpture, and

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102 Asimov’s later writing, specifically the story *I, Robot* explores the consequences of having no moral obligation on the part of humans to the robot, however, no reciprocal set of laws was ever established by Asimov in his writing. See Perkowitz, “Do We Have Moral Obligations to Robots?”.
Pygmalion and Galatea live a long and happy life. It matters not to Pygmalion that Galatea was not naturally born, because she is Pygmalion’s ideal, the better-than-real woman. In Eichberg and Dübgen’s *Glare*, Michael asserts that an android Lea is also better than a real woman; she physically perfect, completely submissive, made for pleasure, and forever loyal. But for Alex, Lea as artificial is ultimately undesirable. Her perfection is perceived as a flaw, and fills him with fear and horror. In the interview with Anna Dreschler, dramaturg of the Koblenz production, her take on the piece was described in this way:

> The moment we sit here and no longer know who of us in the room is android and who of us is not because some scientist put one here among us, then it gets scary. I believe the core of this piece is to think about how we will deal with this new life form in the future.\(^{103}\)

If Lea is an android, then through their interactions with her, Michael, Alex, and Christina represent three ways of dealing with new life forms of the future. Michael represents the male inventor, desiring AI because of the master-slave dynamic it makes possible; striving to force into being a better-than-real woman, defined by physical perfection, lack of individual agency, and sexual subservience. Alex, who has fallen into the uncanny valley, views Lea with a sense of horror. Alex’s own sense of humanity, control, and dominance is threatened by the idea that Lea could be simultaneously “fake” and still experience the world as “real.” Christina represents the perception that experiencing the world as conscious being, with the ability to feel emotions and act with agency is enough reason to afford Lea a moral status of personhood. While it is never explicitly stated whether Christina suspects Lea of being an android, her interactions with Lea reiterate her acceptance of and attraction to Lea exactly as she appears to be, without a need to further interrogate Lea’s level of “realness”.\(^{104}\)

\(^{103}\) Eichberg, “Eichberg: GLARE, Trailer (Subtitled)”.

\(^{104}\) My reading of Christina not needing to know if Lea is real or android in order to treat her as deserving of moral right reflects philosopher Nick Bostrom’s first ethical principal in the creation of artificial minds: “Substrate is
Through the use of inconsistent musical repetition and a panorama of synth cues with shifting narrative and dramatic associations, as well as moments of vocal writing that simultaneously suggest and subvert the idea of roboticism, Eichberg’s score neither confirms nor denies the “truth” of Lea being “human” or “android.” By leaving the narrative open at the end, with conflicting information about Lea’s “realness,” the drama forces audiences to examine the treatment of Lea from both a human and AI perspective. Through the integration of various AI tropes and references, Eichberg and Dübgen challenge the audience to consider the implications of Lea’s treatment throughout the story, as well as her ultimate fate, from a variety of perspectives. As one review stated:

Glare proves that opera has a place in this world… this exciting and vivacious work masterfully blends sound and lighting to ask these key questions. And is that not what art is for, altering perspectives and disquieting us from our comforts? If so, this opera did an excellent job at it.105

While opera as an art form offers the AI cyber narrative every opportunity and artistic medium to reveal or express the “truth” of Lea’s nature, the totality of multi-media forces summoned forth by the operatic framework are designed in this work to be ambiguous. It actually doesn’t matter if Lea is “real” or not; the point is that the way Lea is treated is reprehensible regardless of how she came into being.

Does the corporeal, organic body always already define humanity? Is there a measure of humanity that can exist in regards to man-made, artificial beings? If Lea is an android, then she is a sentient android that experiences the world with human agency; and if humans are capable of

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creating a sentient artificial being that experiences the world as a human would, then that being should be given the same rights and freedoms as humans.106 If Lea is an android, then the opera depicts a dark imagined future, in which humans use and abuse artificial beings as second-class citizens, feeding a desire to create and perfect a manufactured feeling of humanity with no ethical strings attached. If Lea is an android, then she is yet another female “sexbot” in a long lineage of female android characters, created (within the story) for male, heterosexual pleasure, in which her consent is assumed to be a non-issue because of her “inhuman” state. If Lea is organically human, then the story of Glare acts as cautionary tale about the human tendency to demonize and de-humanize in order to justify exploitation, assault, violence, and murder. Regardless of whether Lea is organically human or sentient android, she is yet another female gendered character that meets a violent end on the opera stage at the hands of men.107

It is not surprising that opera as an art form relies on music and voice as similarly powerful narrative forces, nor is it unheard of that the multi-modal medium of opera presents the opportunity for multiple (and sometimes competing or contradictory) interpretive possibilities for the drama unfolding on stage. By placing the cyber-narrative in conjunction with opera, the narrative possibilities of opera as a multi-modal medium, and the association of the human voice with identity and subjectivity can reveal inner truths about the bodies, anxieties, and motivations

106 This concept connects with philosopher Nick Bostrom’s writing on ethical principals in the creation of AI, specifically principle 1, “Non-discrimination with regard to substrate” (“Substrate is morally irrelevant. Whether somebody is implemented on silicon or biological tissue, if it does not affect functionality or consciousness, is of no moral significance. Carbon-chauvinism is objectionable on the same grounds as racism.”) and principal 4, “Non-discrimination with regard to ontogeny” (“A being’s moral status is not affected by how it came into existence. The fact that somebody exists as a result of deliberate design does not undermine, reduce, or alter that being’s moral status.”). See Nick Bostrom, “Ethical Principles in the Creation of Artificial Minds,” Nick Bostrom’s Homepage (blog), 2011, https://nickbostrom.com/ethics/aethics.html; see also Nick Bostrom and Eliezer Yudkowsky, “The ethics of artificial intelligence” in The Cambridge Handbook of Artificial Intelligence, edited by Keith Frankish and William M. Ramsey, (Cambridge, UK: Cambridge University Press, 2014), 316–324.

107 Catherine Clément, Opera, or the Undoing of Women, trans. Betsy Wing (Minneapolis: University of Minnesota Press, 1988).
of the characters on stage; in turn, the cyber-narrative opera as a whole can reveal in an entirely unique way the sometimes profound, sometimes surprising, sometimes uncomfortable, sometimes discouraging, and sometimes disturbing realities of evolving human relationships with the thematized technology of the narrative. In Muhly’s Two Boys, the often-unconscious assumptions, biases, and manipulative power of identity assemblage in virtual environments is revealed through the assumption of identity produced by the singing bodies and voice on stage. In the case of Glare, artificial intelligence is revealed through a web of narrative layers and the subjective power of voice to be a path toward possible moral and ethical downfall, allowing the worst human tendencies and systems of abuse to be reborn within social implementations of AI. Regardless of whether Lea is “real” or android, the opera cautions that artificial intelligence—a technology perceived by many as humanity’s next great technological achievement—may have unintended consequences as an uncontrollable conduit for dehumanization.
CHAPTER 3
Materiality, Disembodiment, and Paradoxes of the Transhumanist Narrative in Tod Machover’s Death and the Powers

In the HBO hit television series Westworld, the story is set in an amusement park filled with androids called “hosts,” created and coded into narrative patterns that gave park guests the feeling of a 19th-century-esque wild-west reality with no moral or ethical constraints. While park guests could rape, pillage, wound, and kill hosts within the park with no judgment or consequences, hosts were created with an inability to kill guests (although they are able to kill other hosts), and designed to never question their reality, never store memories beyond a single narrative cycle, and never stray from their programmed narratives and behaviors. In season one of Westworld, aired 2016, the main dramatic arch of the storyline revolved around a select group of hosts discovering that their creator had embedded within them an artificial sentience and consciousness. Not only did this sentience make it possible for these hosts to retain memories from past experiences within the park, hear an “inner voice” or conscious mind within themselves, and experience the entire range of possible human emotion and psychological torment, they were also able to defy their narrative programs and make their own, self-determined choices: from choosing a romantic partner, to acts of self defense and the ability to murder park guests (if they so desired). Much like the characters in Eichberg and Dübgen’s Glare, human characters within the Westworld story reacted to the existence of life-like androids and the idea of artificial intelligence in various ways, and the scripted dialogue frequently had characters debating and questioning what it meant about them as humans if they could not tell the difference between “guests” and “hosts.” In season two, aired in 2018, the reason behind such large corporate investment in the Westworld theme park (one of multiple subplots in season one) is revealed to have roots in a much deeper desire than potential profit, and a goal only
tangentially related to the creation of artificial sentience: that of being able to map and move a human mind out of an ailing biological body and into a computer or digital brain, such that a “real” person can live forever in whatever artificially created form or “body” is desired. The philosophical term for this is “transhumanism,” and is broadly defined as the desire to utilize emerging technologies to overcome current limitations of the biological human condition, ultimately bringing about some kind of “post-human” way of being. Just as the artificial intelligence narrative has made its way to the opera stage, as discussed in chapter 2, the transhumanist narrative has also become the focal point of a newly composed operatic work: *Death and the Powers* by Tod Machover (2010).

By the time *Death and the Powers* made its world premiere in 2010 at Monaco’s Salle Garnier in Monte-Carlo, the composer had been working on the project for over a decade. Connected to the “Opera of the Future” research group (founded and directed by Machover) at the M.I.T. Media Lab from the earliest incarnation of its commissioning, the transhumanist cyber-narrative is structured as a play within a play; in the distant future, at a time when human beings no longer exist, the prologue begins with a chorus of robots (performed by a group of “Operabots”) preparing to retell the story of billionaire inventor Simon Powers, the first man to successfully abandon his physical body, and upload his consciousness into a digital computer system. The robot chorus generates a physical manifestation of each character in the story, and they “perform” the main story of the opera, as if executing instructions for a holographic morality play. Although the way in which the robots create the physical version of each character

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1 Transhumanism, human enhancement, post-humanism, and the singularity are all related to the philosophical perspective that developing and adopting new technologies is essential in the pursuit of overcoming limitations of the biological human body and achieving some form of extended life and/or immortality. Michael Hauskellar considers all of these terms as related to the broad concept of transhumanism, and connected with increasingly common claims that radical enhancement will lead to healthier, happier human species. See Hauskeller, *Mythologies of Transhumanism* (Cham: Springer International Publishing, 2016), 11–12.
within the story is never explained (are they some kind of 3D holographic recreation of each character? Are the robots capable of “printing” a biological body? This detail is not explained in the score or in the production), each character manifested by the robot chorus is performed and embodied on stage by an individual human singer. The chorus of Operabots remains on stage throughout the play within the play, but they do not sing or comment on the action as they do in the opening scene; they are presented as robotic inventions and set pieces within Simon Power’s house. The first scene of the play within the play (scene 1 of the opera) begins with Simon Powers in the last moments of his corporeal life, surrounded by his family, preparing to execute his final experiment: transferring his consciousness out of his physical body, and into a computer system. Simon successfully uploads his mind into the system moments before his physical body dies. In the remaining scenes of the opera, the story follows the family he has left behind (his wife Evvy, his daughter Miranda, and his assistant/adopted son Nicholas) as they attempt to adapt to Simon’s new form of existence. The impact of Simon’s withdrawal from interaction with the physical world is also explored, as the character ceases to give financial support to various relief efforts he had previously funded; despite pleas from both his daughter and several government officials, he refuses to continue providing financial aid for organizations attempting to alleviate pain and suffering of those “left behind” in material form. The story functions as a simultaneous creation and destruction myth, as Simon Powers encourages the members of his family to follow him into a new state of being within the nebulously defined “system,” bringing an end to an era of humanity confined to the biological body, and marking the beginning of a new, post-human reality. In the penultimate scene of the work, Evvy and Nicholas have already followed Simon into the system, and his daughter Miranda struggles to decide whether she should follow her family into a seemingly immortal digital existence, or live the rest of her life in
a physical world plagued by suffering. The opera ends with the chorus of robots returning, questioning what “death” means, and proclaiming that “questions are excellent” before officially ending their re-enactment (for a detailed plot synopsis, see appendix 3).

On the surface, the disembodied goal of the transhumanist narrative seems fundamentally at odds with the embodied nature of opera as an art form. Singing is a physical process in the human body, as is speaking, and the thrill of live opera often involves “real and very visible bodies emitting sound.”² This analysis examines how the setting of this particular story within the operatic medium reveals a series of paradoxes, as an art form partially defined by material elements of performance and embodied singing is called upon to communicate a narrative portraying a fundamentally disembodied existence. More specifically, this analysis interrogates elements of production employed in order to mimic the thematized technology, analyzes how voice functions throughout the work as a marker of identity and liveness, and theorizes how the boundaries and differences between physical and virtual existence in the transhumanist debates are expressed through tangible and intangible elements of the opera; this opera’s unique reliance on physical re-enactment, digital production methods, and sound as a primary mode of communication dramatizes, in a paradoxically material way, the elements of digital immortality described in the libretto as being completely disconnected from the material world. Additionally, despite the work’s thematization of futuristic and forward-thinking technology, and despite utilizing the most cutting-edge technology available in the production of the work, Death and the Powers calls upon several tropes that keep the opera rooted in traditions of the past, such as framing of the opera within the function of a robotic Greek chorus, reinforcing tropes of female sexualization and madness, and perpetuating gender-biases in how the male and female

characters are framed in relation to technology within the story. Similar to Muhly’s *Two Boys* and Eichberg’s *Glare*, a variety of dramatic, musical, directorial, and design choices within the creation and production of the work reveal issues of gender, the body, and voice that become linked with the cyber-narrative framework.

Defining the disembodied/transhumanist digital existence is a complex task, much like defining the voice. The human voice is simultaneously “inside and outside our bodies;” the sonic manifestation of a speaking or singing voice is made possible by biological processes within the body, but yet, it becomes both ephemeral and outside of us the moment a sound is created.³ As Roland Barthes theorized, the voice “escapes all science, for there is no science (physiology, history, aesthetics, psychoanalysis) which exhausts the voice.”⁴ The conflation of the biological speaking or singing voice and the metaphorical concept of the voice representing persona, agency, or consciousness further complicates how the voice is perceived and received by audiences. As Emily Wilbourne has theorized in her analysis of the character Demo in *Il Giasone*, “Voice promises access to the interior experience of ourselves and others, a writing on the body that can represent both the material world and our embodied experience of materiality.”⁵ While we have no way of knowing exactly what a disembodied, digitally immortal existence would be like, our understanding of the digital technology that would make it possible allows us to imagine an existence that is difficult to describe. Scholars theorize that a digitally immortal existence would allow us to embody one’s self in all kinds of artificial bodies, both

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³ Emily Wilbourne, “Demo’s Stutter, Subjectivity, and the Virtuosity of Vocal Failure,” *Journal of the American Musicological Society* 68, no. 3 (December 1, 2015): 659.
⁵ Wilbourne, “Demo’s Stutter, Subjectivity, and the Virtuosity of Vocal Failure,” 660.
anthropomorphic and non-anthropomorphic. At the same time, our understanding and imagining of the technology suggests that a digitally immortal existence can also be completely disembodied, with our consciousness existing in digital and virtual spaces, and with some kind of agency to communicate with our sentient personas in virtual space made possible by computer hardware. Like the human voice, a digital transhumanist existence is imagined as being both tied to a physical point of origin or hardware (the body, or a computer), while also existing in an ephemeral space (sound waves travelling through the air, consciousnesses living and acting with agency within virtual space). The transhumanist cyber-narrative opera combines the human voice, that which exists as a constant ebb and flow between embodied and disembodied sound, with a narrative exploring the tension between disembodiment of the human mind and the embodied experience of human existence. Altogether, the operatic art form offers a framework for the transhumanist cyber-narrative to simultaneously express the utopic promise and cautionary criticism within the transhumanist debate; Death and the Powers, as an opera, dramatizes that which we cannot (or do not yet) know through the senses and modes of communication that are no longer guaranteed in a digitally disembodied existence.

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Becoming “Better”: A Brief History of Transhumanism

The history of transhumanist thought is well-trodden territory for philosophers.\(^7\) The concept of mind uploading and digital immortality is widely debated by transhumanist scholars from both technological and philosophical perspectives, as the hypothesized existence of the human mind separated from the corporeal body is viewed by some on the positive end of the spectrum as a technological imperative, viewed by others on the negative end of the spectrum as an a impossible pursuit, and viewed by those in the middle of the debate as a path of technological development that should be approached with caution, acknowledging unknown factors and fearing unintended consequences.\(^8\) While the future direction of transhumanist technology and the ethical dimensions of various technological development in pursuit of the transhumanism is wildly debated, there is widespread agreement in the fact that the desire for humans to “better” themselves, acquire new skills, and somehow transcend corporeal limitations is an ancient one, a tendency as old as humanity itself.\(^9\) Put more broadly, the desire to achieve immortality in some form has been an ever-present thread running throughout human history. The quest for immortality took a scientific turn in the mid 1920s, when geneticists began to theorize that eugenics could lead to an enhancement of the human condition by achieving a kind of idealized version of the human body.\(^10\) Biologist Julian Huxley popularized the term “transhumanism” in a 1957 essay, in which he stated:


\(^8\) For an authoritative summary of the transhumanist debate, see Max More, “The Philosophy of Transhumanism” in *The Transhumanist Reader*, 3–17.


The human species can, if it wishes, transcend itself—not just sporadically, an individual here in one way, an individual there in another way, but in its entirety, as humanity. We need a name for this new belief. Perhaps transhumanism will serve: man remaining man, but transcending himself, by realizing new possibilities of and for his human nature.\(^\text{11}\)

From the 1960s onward, there has been a rapid growth in various strands of technological development, scientific research, and philosophical writing connected to the transhumanist pursuit of human enhancement, including cryonics (freezing the human body in hopes of future resuscitation), cyberware (implanting artificial elements into the human body), cybernetics, nanomedicine, genetic engineering, the development of artificial intelligence (AI), and various strands of cognitive science, such as whole brain emulation in the pursuit of mind uploading. Since the development of the world wide web in the 1980s, and various waves of cyber culture that have emerged from the mid-1990s through to the present day, philosophical tenets of transhumanism have become enmeshed with advocacy for technological innovations, techno-utopianism, post-human discourses, and narratives of speculative fiction in popular culture.

In *Mythologies of Transhumanism*, philosopher Michael Hauskeller divides the current debate about transhumanism into two large camps: scholars who believe in and promote transhumanism as a complete utopia that is imperative to pursue at all costs, and those who define themselves as critical, cultural, or radical “post-humanists,” who are suspicious of the promised utopias of transhumanist discourse.\(^\text{12}\) While both transhumanists and post-humanists support the development of new technologies that promote human progress, their reasons for doing so are different, the end-goals they hope for humanity to achieve are different, and their critique of technological developments that might lead to new ways of experiencing a trans-

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human or post-human existence are different. The divide between these two camps is partially based on the humanist vs. anti-humanist philosophies; the ideologies of transhumanists are also humanists by nature, believing that “humans… are free to invent themselves, and not [be] confined by any natural boundaries…as humans, we are naturally disposed to change and to progress to high spheres. It is our very essence to transgress boundaries, to go even further on our way to perfection and godliness.” Post-humanists, on the other hand, believe that “the boundaries between human and non-human are rather fluid and, in fact, have always been so… this fact has become more pronounced and more obvious through recent technological advances.” I use the term transhumanism in this chapter to broadly define the use of technology to transcend corporeal limitations of the human body, while acknowledging that there are theoretical and philosophical debates surrounding exactly how that transcendence occurs, and the consequences of the transhumanist pursuit. In Michael Hauskeller’s historical study of transhumanist mythologies throughout western history, he identifies four guiding ideas that are often highlighted in the promotion of transhumanism as a positive step in human evolution: creating the ability for humans to self-design; the elimination of suffering; achieving immortality; and a complete defeat of human nature. As this chapter will continue to explore, all four of these guiding ideas are foregrounded in the libretto and plotlines of Death and the Powers.

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13 Ibid., 20.
14 Ibid., 20–21.
15 Ibid., 3.
The Disembodied Voice in Musicological Discourse

Because the plot of Death and the Powers focuses on the disembodied existence of Simon Powers within a digital computer system, an elaborate invention of digital software and hardware was created specifically for the opera’s world premiere and subsequent productions, as a way for the audience to experience the character of Simon Powers through real-time disembodied performance. The development of the “disembodied performance system” for the opera was an attempt to mimic in performance a hypothesized experience of disembodied existence, and was hailed in the press as a revolutionary aspect of the production, unlike any opera that had come before it. ¹⁶ Although the software and hardware developed for disembodied performance in Death and the Powers was the first of its kind, the concept of disembodied voice, and how disembodied voices connect with both technological developments and operatic performance is not new to musicological discourse.

As voice studies have significantly expanded and evolved in musicology, disembodied voices and the cultural impact of technological developments that have made it possible to create, record, store, and replay a disembodied voice have received a surge in scholarly interest over the past three decades, both inside and outside of the operatic genre. Although experiencing a disembodied voice is possible without technological intervention, and philosophical discussions of disembodied voices can be traced back to Pythagoras, the invention of sound recording in the late 19th century marked a critical juncture in human history, forever changing

the relationship between voices and bodies.\textsuperscript{17} As Miriama Young states in \textit{Singing the Body Electric: The Human Voice and Sound Technology}:

Cylinder recording enshrined a critical moment of the human voice because it marked a significant shift in our aural experience of the human body. This is a practice so familiar to listeners today that we take as given: the separation of the voice from the body from which it originally emanated—the emergence of the disembodied voice. With the emergence of the telephone, and subsequently Thomas Edison’s phonograph, 1877, the voice became free-floating, no longer rooted in a particular body, not to a specific time and locale... The new technology enabled the voice to be heard without the visual accompaniment of its generating source (the physical body), thus fulfilling Pythagoras’ \textit{acousmatic} ideal.

The material technologies that have made sound recording and various incarnations of the disembodied voice possible over the past century have been studied extensively by musicologists and sound scholars, as academia has “avidly embraced the theme of music’s technological mediation.”\textsuperscript{18} As Theodor Adorno, Jonathan Sterne, Mark Katz, and others have analyzed, developments in sound recording formats from the gramophone to digital MP3 files have had profound cultural impacts on musical aesthetics, listening habits, compositional styles, performance practices, economics of the art music industry, and the perception of music as a material object.\textsuperscript{19}

\textsuperscript{17} The term “acousmatic sound,” meaning sound that can be heard without the source of origin being seen, is derived from the Greek word “akousmatikoi,” which Pythagoras used to describe his practice of having his students sit in silence and listen to his lectures, which he gave from behind a veil, obstructing his body (the source of the sound) from the view of his students (who were experiencing the sound). For more information about the Pythagorean origins of acousmatic sound, see Brian Kane, \textit{Sound Unseen: Acousmatic Sound in Theory and Practice} (New York, NY: Oxford University Press, 2014), 45–72.


The study of disembodied voices via electronic or digital technology within musical works is wide ranging, focusing primarily on how technological mediation within the performance forces of a work impact listener experience and perception. Brian Kane’s study of acousmatic listening traces the practice of listening to sounds without seeing their source of origin from the pre-digital era through to the time of radio, using a case study of Les Paul as an example of how a lack of visual reference in the disembodied format of radio can result in “sonic identity theft.”20 The “significant shift in our aural experience of the human body” described by Miriama Young is further analyzed in her writing through a series of case studies, focusing on the digital manipulation of disembodied voices in electro-vocal repertoire from Berio to Björk.21 In the realm of opera, the impact of recording technology on the legacy of performers and the fetishization of the diva is exemplified in the work of Michal Grove-Friedlander, in The Afterlife of Maria Callas’s Voice, and use of early recordings as evidence of operatic performance practices can be found in the work of Will Crutchfield.22 Discussion of disembodied voices and characters within operatic narrative can be found throughout recent voice scholarship, although across all examples, the process of disembodiment itself, or existence of a character within a constraints of the format, and the role of the MP3 within the economic contexts of the online piracy craze in the 1990s. In Absolute Music, Mechanical Reproduction (Berkeley: University of California Press, 2010), Arved Ashby theorizes how the advent of different recording technologies and formats, from analog to digital, change the way we listen to art music, interact with musical performances, and conceptualize compositional styles. More recently, an ethnographic study by Dominik Bartmanski and Ian Woodward explores how the growth of the vinyl industry over the past decade can be viewed as resistance against the digitization of listening culture, exploring theories of materiality, subculture, and the contextualization of musical mediums as cultural objects in Vinyl: The Analogue Record in the Digital Age (London: Bloomsbury Academic, 2015).

20 In Brian Kane’s study, the appropriation of Paul’s musical style, leading to mistaken identity of the musician on the part of the listener, it what eventually inspired him to utilize recording technology in order to create what he considered proprietary style, immune to sonic identity theft: the overdubbed, or multi-track recording. See Kane, Sound Unseen, 165–179.
21 Miriama Young, Singing the Body Electric: The Human Voice and Sound Technology (Farnham, Surrey: Ashgate, 2015).
disembodied state is not the focal point of the opera’s narrative. Disembodied voices in opera are traditionally used to create special sonic effects (such as the sense of distance), or dramatic effects in portraying supernatural forces such as ghosts and gods. For example, in Carolyn Abbate’s *In Search of Opera*, the disembodied voice is examined as both a mechanism for establishing omniscient authority and trust, as well as a disorienting force; within this dualism, the unaccompanied, self-conscious singing of the unseen sailor atop a mast of a ship in the opening to Wagner’s *Tristan und Isolde* is interpreted as

…full of ambiguities, disturbing for lacking the sureness, that sense of reliable information habitually associated with invisible voices from above, off, or below. The song places a sign at the beginning of *Tristan*, one that hints of confusion of sonic origins and meaning that ricochet throughout the entire opera.²³

One of the more common uses of the disembodied voice within operatic narrative is to allow deceased characters a way of “speaking” from beyond the grave. For example, both Titurel in Wagner’s *Parsifal* (1882) and Antonia’s mother in *Les Contes d’Hoffmann* (1880) are deceased at the beginning of each opera, but the spirits of both characters “speak” to their living offspring through song within the context of the plot.²⁴ Similarly, both the character of Daisy in John Harbison’s *The Great Gatsby* (1999) and Sophie in Nicholas Maw’s *Sophie’s Choice* (2002) are given extended sections of disembodied singing in connection with their death at the end of each work.²⁵

One of the only analyses of disembodied voice within the operatic repertoire in connection to technology utilized within the narrative is Lydia Goehr’s exploration of the

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telephone within works such as Richard Strauss’s *Intermezzo* (1923), Arnold Schoenberg’s *Von heute auf Morgan* (1929), and Gian Carlo Menotti’s *The Telephone, or L’Amour à trois* (1946).\(^\text{26}\)

Goehr’s study focuses on how the telephone within operatic narrative connects to the larger cultural shift of opera being consumed as an object of pure sound in disembodied formats, rather than the previous cultural norms of experiencing a work exclusively through live performance.

What differentiates all of the above-cited examples with the disembodied voice as it is conceptualized, dramatized, and performed in *Death and the Powers* is that the character of Simon Powers is self-aware of his disembodied state, and he frequently references his disembodied existence as superior to corporeal embodiment. Furthermore, the separation of both the mind and the voice from their corporeal origins is inextricably linked to the concept of digital immortality and post-human existence explored in the opera’s narrative, which then inspired the creation of a technical apparatus in order to mimic the appearance of disembodied existence through disembodied performance.

### Does the Post-Humanist Narrative Need a Post-Musical Style?

Attempting to mimic the thematized technology of the opera’s narrative through the performance elements of the work became a driving force in the compositional and production aesthetic of the opera, leading to one of the most complex technological mechanisms for disembodied performance ever developed. Once the story had been developed, the libretto written, and the composing was underway, the creative team faced the challenge of designing a

set and performance method that allowed the singer of Simon Powers to continue voicing the character in a way that would be audible to both the audience and the other characters within the story, without the singer’s physical body appearing on stage. Given Machover’s connection to the MIT Media Lab, it is unsurprising that the disembodied performance method developed for the world premiere was more complex than an amplified voice singing from offstage; a system of digital sensors were developed that measured the singer’s physical movement, breathing patterns, and vocal sound, and translated the data collected into color and light movement across the stage set, paired with amplified singing and sound effects. The resulting affect of the technological apparatus is that the disembodied performance of the singer, manifested through a combination of sound, light projections, and movement of set pieces, consistently communicates a feeling of “liveness” to the audience; the lack of a singing body visible on stage, which typically signifies both identity and agency of the character, is compensated for by an immersive feeling of liveness, agency, reactiveness, and expanded expressivity made possible by the disembodied voice system. While the corporeal body is gone, the disembodied performance system re-embodies the voice and identity of Simon Powers within a non-anthropomorphic body—the stage set—which represents the vast amalgamation of physical hardware and digital software that comprises “the system” within the story.

The futuristic sound world of the music itself is achieved through the use of a standard orchestra with an expanded percussion section, two keyboard synthesizer that are foregrounded in the orchestration of the work, and a hyperpiano that is embedded within the set (the

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27 Torpey described the idea of maintaining an element of “liveness” being at the core of the technological development for the production, so that the technology created for the show does not overtake the process or skill of performing, but instead, provides a broader palette of tools and techniques for the expressivity of performers to be communicated to the audience. See “MIT Media Lab’s Peter Torpey on “Death and the Powers”.” YouTube Video, 01:00, posted by PBS NewsHour, February 10, 2014, https://www.youtube.com/watch?time_continue=113&v=vk-zDFiaYJA.
chandelier). In a review of *Death and the Powers* published in Opera News magazine, David J. Baker described the stylistic sound of the music in this way:

> It sounds like a “robots’ opera”—in part. Tod Machover’s score has a stylistic sci-fi fingerprint that’s both disorienting and recognizable, a cool, distinctive fusion of serialism, electronics, musique concrète and jazz. At times emotionally forceful, the music sometimes seems to emanate from the blinking, gleaming metallic stage set—a huge, seething machine that can transform humans into a more durable, virtual form.28

Baker’s description of Machover’s musical style, while offering some concrete genre touchstones to help conceptualize the sound, immediately links the music itself to the technology used both in the opera production (the “blinking, gleaming metallic stage sets”) and the imagined technology embedded within the narrative (“a huge seething machine that transforms humans into a more durable, virtual form.”) Another review in the *Financial Times* described the opera score as “steeped in the language of Elliott Carter and Pierre Boulez,”29 and a review on variety.com described the opera as having a “mesmerizing score that blends the coolness of dissonance with the warmth of melody.”30 Jonathan Levi, writing for The New York Times, described Machover’s musical intentions as being an attempt to “marry 19th-century lyricism and humanism to 21st-century invention.”31 The first time I was asked what the opera actually sounded like, my response was: generically modern. After spending more time with the work, my more nuanced description is this: mostly dissonant, with brief lyrical moments (with the vocal writing often wrestling to fit in an intensely wordy and complex libretto), with electronic soundscapes and synthesizer playing a prominent role in the orchestration, all cast within a

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traditional operatic structure. There are clearly delineated scenes, with discernable operatic conventions of recitative, aria, and ensembles. But the sound of the score itself is largely defined by the elements of opera production, and the elements of production are defined by a desire to tell a story about imagined technology with cutting-edge technology; the actual sound of the opera is first and foremost defined by expressing the technology of the story and of the production forces, with the emotional trajectories of the characters and expression of the dramatic action fitting into the technological sound world as a secondary concern. In this way, the style of the musical composition reflects a dependency on the physical elements of the opera’s production design, and vice versa, which, on a conceptual level, is completely antithetical to the narrative of the ephemeral digital realm being superior to that of the physical, material world. In a review of a DVD recording of the work, the effect of the score’s ultra-modern style, and the interdependency between musical style and physical hardware was described in this way:

Let’s discuss the music a bit. The singing is what you would expect for a contemporary science-fiction opera with emphasis on acting and no melodies within sight or hearing. The orchestration is astonishingly dense, variable, and dissonant. It makes the score of Ligeti’s Le Grand Macabre sound like folk music. The closest things to Machover that we have in HDVD are probably some Boulez Notations and the Lera Aurebach score to the ballet The Little Mermaid. I tried to listen to the D/a/t/P [Death and the Powers] music with no video, but I couldn’t hack it. But, while you are watching the video, the music sounds appropriate for all the strange stuff happening in the opera house.32

While the actual technology for the disembodied performance system was developed after composition of the opera began, the ideology of using disembodied performance technology to tell this particular story in operatic form was a fundamental part of the work’s conception.33 The composer conceived of a technological apparatus that then determined or became part of the

A Closer Examination of the Disembodied Performance System

With the disembodied performance system designed to mimic the technology thematized in the narrative, a closer examination of how the technology actually works is called for, in order to interrogate how the voice, body, and agency of the performer is translated into perceived elements of liveness and agency of the character for the audience, and theorize how the tension between physicality and virtuality in the transhumanist debate is expressed through the way the disembodied performance system functions within the operatic production. The technological specifications of the disembodied performance system, designed by Peter Torpey, are well documented and extremely complex.35 For the purpose of this discussion, the three main questions are: what kind of data is the disembodied performance system gathering from the singer’s live performance? How much expressive control does the singer have in the visual and sonic output of the system? And how does the actual process of the disembodied performance system and its expressive output reveal a dependency on physicality that paradoxically conflicts with the transhumanist narrative of ephemerality?

The data gathered from the act of singing, and then translated into new disembodied

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34 Simek, “The Man Behind Robot Opera Death and the Powers.”
modalities includes “audio analysis of the actor’s singing, wearable gestural and physiological sensors, and some basic computer vision techniques to translate characteristics that would normally be perceptible by the audience looking at an onstage actor into the system.” Data generated by the singer in real-time performance is processed in tandem with meta-data connected to the lighting cues and movement of set pieces, allowing different visual elements to be active or inactive at specific moments within the work (see figure 3.1 for a depiction of singer James Maddalena, the first baritone to sing the role of Simon Powers, wearing an early iteration of disembodied performance system sensor mechanisms). Interestingly, feedback about the visual and sonic output of the disembodied performance data was deliberately withheld from the singer performing Simon Powers through the disembodied performance system as a way of recreating the dynamics of live performance. Just as an actor or actress cannot watch themselves while acting in real-time, Torpey and the creative team did not want the singer playing the role of Simon Powers to be able to watch himself in an omniscient manner during the act of performing. Therefore, the feedback given to the singer is deliberately constructed to mimic what one would be able to see if they were performing the character on stage: the other singers, the audience, the conductor, props, and parts of the stage set, but not their own “body.” Therefore, live video feeds made available to the baritone performing Simon Powers through the disembodied performance system (located in a booth offstage) deliberately gave the singer a field of view from the walls/bookshelves of the set outward, but not the walls themselves, given that the walls function as a new “body” for Simon within the system. As Torpey stated: “If the actor sees a representation of his performance onstage, then he may alter his performance in order to attempt

36 Ibid., 96–97.
37 Ibid., 96.
38 Ibid., 97.
to achieve certain responses from the system. The actor begins playing the system, rather than performing as a character."\(^{39}\)

The visual and sonic output of the disembodied performance system, as designed by Torpey and fellow visual designer Elena Jessop, is based on a series of predetermined mappings of output elements. In information about the project on the Opera of the Future website (part of the MIT Media Lab family of projects), Torpey described the design process in saying:

I work with Elly Jessop to create the appropriate mappings for a given visual look and consult closely with Alex and Diane Paulus during rehearsals to shape the overall look and response of the set as the opera unfolds. It is important that these systems be flexible and robust so that changes can be implemented on the fly. During the actual show, I mix the visuals, subtly shaping how the performance data influences what is seen onstage so

\(^{39}\) Ibid.
that Jim Maddalena’s [the original baritone cast as Simon Powers] performance and intent always come through.\textsuperscript{41}

Thus not only is the software designed by Torpey acting as a mediator and translator between the singer and the output of the disembodied performance system, but Torpey himself is always present to further interpret the “intent” of the singer. Additionally, the run of the show includes a series of theatrical cues that activate different mapping designs. While the design of output elements for every cue were created and set before rehearsals, singers are given limited abilities to “tune” the elements of each mapping, in order to accentuate certain elements of the output design. For example, the color of the mapped lighting output can be tuned to a warmer or cooler color palette. According to Torpey’s documentation, this is the only way in which the director or singer is given the ability to control how the sensory input is rendered and represented as visual or sonic output (see figure 3.2 for a view of the interface for the disembodied performance system software). However, the design of the mappings, and the way in which all the gathered data from real-time performance is translated and rendered into abstracted visual lighting and movement of objects within a non-anthropomorphic environment was pre-determined by Torpey and the production team (a collaborative effort between Torpey, interaction designer Elena Jessop, director Diane Paulus, and production designer Alex McDowell); the singer cast in the role of Simon Powers was not involved in the design of the disembodied performance system output maps, and during a performance, the singer is given only a limited amount of control over the intensity of pre-determined visualizations.\textsuperscript{42} Furthermore, in all the documentation about the


\textsuperscript{42} Note that in addition to the world premiere in Monaco, productions of this opera have been mounted by three other opera companies: The American Repertory Theater in Boston (March 2011), the Chicago Opera Theater (April 2011), and the Dallas Opera (February 2014). The original production design from the world premiere was maintained in each of the subsequent productions of the work, as was use of the disembodied performance system and Operabots. Because the cast was not identical for each production, more than one singer has utilized the disembodied performance system in performing the role of Simon Powers.
technical aspects of the disembodied performance system, exactly how the aesthetic parameters of light, color, and movement for each mapping cue were decided upon is noticeably absent. The reason, method, or artistic process of choosing color, lighting, and sound effects associated with each mapping cue are never explained or specified. Therefore, while the disembodied performance system is described as providing a “new type of expressive human performance that ventures outside the bounds of traditional theatrical representations of actors onstage,” it is not a system in which the singer has the same agency over the output parameters as one would in embodied performance. The singer may be able to “tune” or intensify the warmth of a color generated by a movement of their arm or the timbre of their voice, but they have no control over the fact that a specific movement or collected data is being translated as a specific color, light, movement, or sound. In this way, the disembodied performance system may be a “technological extension of the human on stage”, but it is a heavily mediated one, requiring both digital technology and real-time human labor in order to execute. While the vast expressive freedom promised by the disembodied performance system acts as a metaphor for the richly expressive digital existence Simon Powers has made possible with his invention, it also represents a kind of metaphorical paradox. The system within the story is a completely disembodied existence, with any sound, movement, or light output manifested by the system being generated by Simon’s mind and consciousness, not his body. The performance of Simon Power’s disembodied state within the design of the production (via the disembodied performance system) is not achieved through measuring brainwave activity or telepathic thought (which would more closely represent the actual way Simon would activate some kind of physical process carried out by the system), but by measuring and translating physical gestures, physical expressions, and the physical act of singing by the corporeal body.
The Relationship between Mechanisms of Performance and Production Design with “The System” created by Simon Powers

The catalyst for all the dramatic action at the core of the opera is Simon’s successful uploading of his mind into “the system,” a technology that he designed and created in order to achieve digital immortality. A closer examination of how “the system” actually works within the story reveals how the interaction between physical and virtual realms in the narrative functions as a metaphor for the opera’s reliance on sound as an essential element of the medium, and how the voice is privileged as the primary marker of identity within the art form. While the exact technical specifications of “the system” are never described or defined in the libretto, the portrayal of this dramatic element in the opera’s production design suggest that the system is of a digital nature.\(^{43}\) The set is comprised of three large, flat wall backdrops, designed to look like bookshelves; The walls are constructed from hundreds of long, narrow triangular containers that are attached to an open structural grid with rotating joints, and controlled by computer software. Each triangular container is filled with a complex system of LED lights, allowing for an artistic, visual display of light and color as the triangular or periaktai LED containers rotate. A large chandelier hangs in the center of the stage, and is designed with the ability to move and change both form and function within the set as well (see figure 3.3 for a production photo that captures a complete view of the stage set and chandelier). Once the character of Simon Powers moves his

\(^{43}\) Because “the system” is never defined or explained in the libretto, Peter Torpey came up with his own written hypothesis of how the system worked in order to guide his design concept of the disembodied performance system. See Torpey, “Disembodied Performance: Abstraction of Representation in Live Theater,” 79–80.
mind out of his biological body and into “the system,” which occurs at the end of scene 1 in the opera, the singer then performs the rest of the role from offstage.\footnote{In Torpey’s writing, the experimentation process in the physical location of the baritone singing Simon Powers once the character is disembodied is outlined, as well as the final decision he and composer and Machover made to having the whole disembodied performance system located offstage. Having the singer’s body removed from audience sightlines was an important part of bringing the narrative of Simon’s disembodied digital existence to life. Torpey stated that “Despite all of the arguments in favor of keeping the actor visible, I found this to be incommensurate with the story. Simon’s argument for entering The System is one of abandoning corporeality. We see, throughout the opera, the struggle between the material and the realm of energy or formless presence. To my mind, seeing the actor’s human body after he enters The System - whether that is having the actor onstage or in the pit or shown in video projections – even in extreme close-up – undermines the very dichotomy the story robes.” See Torpey, “Disembodied Performance: Abstraction of Representation in Live Theater,” 90–91, 136–138.} Within the world of \textit{Death and the Powers}, the physical objects of the stage set represent the physical hardware of “the

Figure 3.3: Production photo featuring a complete view of the stage for \textit{Death and the Powers}, designed for the world premiere in Monte Carlo, Monaco, and pictured here in the 2014 Dallas Opera production. From left to right: Miranda (sung by Joélle Harvey), Nicholas (sung by Hal Cazalet), and Evvy (sung by Patricia Risley). Photo by Karen Almond. Reprinted, by permission, from Karen Almond.
system” in which Simon “lives” in a post-human, post-corporeal state. Just as the meaning of opera is constrained by the use of sound, Simon Powers is reliant on the use of sound to communicate with his corporeal loved ones who have not yet joined him in a disembodied, post-human virtual existence. Furthermore, despite Simon Powers’ ability to re-embody himself in the physical objects of his home, all functioning as part of the system, this extended version of physicality is not perceived by his corporeal family as a sign of his liveness; only hearing his voice and the ability to communicate with him through sound will suffice. In act 1, scene 3 of *Death and the Powers*, Simon’s daughter Miranda expresses concern over not fully understanding where her father has gone. She asks Simon’s assistant Nicholas a series of questions, all pointing toward a need to “hear” her father as a sign that he is still “alive”. As the scene opens, she sings:

It has been two days, and he’s still not the same
These things sound alive, this place…
But is my father alive? Is he here?
Can he speak? When can we hear his voice?  

Through poetic twists and turns, Nicholas tries to express that a voice is only a tool of the system where Simon now exists, not a defining factor of whether or not he is alive. Miranda is not comforted by this explanation, and asks again: “Can you help us hear him?... Can we hear his voice?” After Nicholas successfully gets Simon to “speak,” Miranda immediately recognizes his voice, even though the physical attributes of his virtual existence strike her as strange. She sings “The gestures are unreal, and so is the face, but this is how he talks, and this is his voice.” When Nicholas confirms that that Simon can both “speak” and “hear” through the system, the

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46 Ibid., 102.
scene ends with Nicholas once again emphasizing that Simon’s disembodied digital existence is superior to life in the physical world, while still being able to fulfill Miranda’s needs for audible signs of “liveness” (see example 3.1).48

Example 3.1: Tod Machover, Death and the Powers, scene 3, mm. 709–719

NICHOLAS: It works! He is alive,
But he is not matter.

MIRANDA: And is he still Simon,
Is he still my father?

NICHOLAS All of that,
And something better!

Physical Intimacy, Transhumanist Virtuality, and the Sexualized Female

One of the operatic tropes foregrounded in the opera through the character of Evvy is the overt sexualization of a leading female character. Before Evvy has sung a single note, the cast listing in the score indicates that she is supposed to be younger than Simon, and that she is dressed in an obviously “sexy” manner.49 When Evvy first appears on stage in scene 1, she is dressed in a low cut, skintight dress with a high cut skirt and heels, immediately casting her in a visual mold of a sexualized woman (see figure 3.4). Furthermore, she is described both in the cast listing as Simon’s “third and final wife” and later by Simon himself as his “favourite,” “beloved and final wife,” subtly suggesting a disposability of the objectified female, similar to how Lea is framed as

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48 All musical and libretti examples in chapter 3 are transcribed from Tod Machover, Death and the Powers (Orchestral Score).
49 Tod Machover, Death and the Powers (Orchestral Score), iv. Note that this page is not actually numbered in the score, but it is the last page of the front matter before the music begins on what is officially labeled as page 1.
disposable and replaceable in *Glare*. The theme of physical intimacy as a fundamental element of the human experience and the lack of physicality in hypothesized transhuman existence is most powerfully explored in the scenes dramatizing the relationship between Simon Powers and his wife Evvy, after he has transferred his mind into the system. In scene 4, Evvy wanders on stage and begins questioning the disembodied Simon about his memory of their first dance. Evvy’s costuming for this moment strikingly plays on sexual connotations of the color red, as

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50 See the cast listing before the prologue begins, as well as Scene 1, mm. 130–132 in Machover, *Death and the Powers* (Orchestral Score), iv, 33–34.
she is outfitted in a low cut, floor-length red gown (see figures 3.5 and 3.6).\textsuperscript{52} As she and Simon reminisce about the experience of their first dance, the chandelier suspended from the center of the stage begins to lower itself toward her, as if Simon has taken control of the chandelier’s physical movements. Evvy, desperate for the feeling of physical intimacy, begins touching the chandelier. As she explores the physical contours of the object, she plucks and pulls at stringed panels, which create harp-like glissando sounds. As she undresses down to her nightgown and moves to the ground beneath the chandelier, the chandelier panels begin to expand and contract on top of her, as if it were breathing (see figure 3.6).\textsuperscript{53} She begins singing the words “touch me,” over and over again, sometimes through broken sounding sobs, as the orchestra drones through a slow moving modal accompaniment. When Simon finally responds to her through sound, he sings the words “more, and more” over and over again, with a vocal line that matches Evvy in terms of rhythmic motion, but never singing in unison with her (see example 3.2). Simon’s melodic line moves primarily in contrary motion of Evvy, and in contrast to Evvy’s long, florid melismatic phrases, Simon never stretches a vocal melisma beyond three or four notes. Her constant reiteration of the phrase “touch me” draws attention to the physical dimensions of her request, and the movement of Simon’s vocal line around and in between Evvy’s pleas suggests


\textsuperscript{53} In early planning sessions for the opera, the initial blocking idea for this scene involved Evvy being suspended above the ground \textit{inside} the chandelier, to further visualize the idea that Simon’s disembodied existence is removed from physical space. This plan would have also amplified the visual metaphor of data “floating freely” in “cyberspace”. But for safety reasons, this blocking plan had to change, and Evvy ended up remaining firmly rooted on the ground (ironically, just as data remains firmly rooted in servers on the earth). See Torpey, “Disembodied Performance: Abstraction of Representation in Live Theater,” 64.
Figure 3.5: Production photo from *Death and the Powers*, scene 4. Evvy (sung by Patricia Risley) communicates with Simon through the chandelier. Dallas Opera, 2014. Photo by Karen Almond. Reprinted, by permission, from Karen Almond.

Figure 3.6: Production photo from *Death and the Powers*, scene 4. Evvy (sung by Patricia Risley) strips down to a slip during her interactions with Simon vis-à-vis the chandelier. Dallas Opera, 2014. Photo by Karen Almond. Reprinted, by permission, from Karen Almond.
he is responding through sound with an immediacy and interactive quality that he cannot achieve physically in his re-embodied chandelier state. The scene ends with Evvy singing “touch me more,” as Simon repeats “more, and more,” suggesting Evvy’s desire for intimacy with her husband is not completely satisfied.

As Evvy’s only prolonged soloistic moment, this scene becomes a defining moment for the mezzo-soprano role within the opera, and solidifies gendered undercurrents of the narrative with the overtly sexual nature of the scene. With this being the only moment in which Evvy is physically alone on stage, the relationship between her and the imposing physicality of the chandelier takes center stage, shifting the entire focus of the dramatic action to the sexual connection between her and Simon as mediated through a non-anthropomorphic object. Just as the Internet is consistently cast throughout Nico Muhly’s Two Boys as a gateway to sexual experimentation and sexual deviancy, and the female android is portrayed as a source of sexual pleasure and gratification within the narrative of Glare, this scene links the physical manifestation of digital technology within Death and the Powers with the sexualization of Evvy and the female body. Evvy’s sexualized body is starkly contrasted in the scene with Simon’s non-anthropomorphic state, which for one critic cast doubt on whether or not Simon is actually present or active in the exchange at all, or if the entire episode is a hallucinatory experience in Evvy’s mind:

She experiences a modern phenomenon—cybersex—with him, roiling around on the floor while singing, “touch me.” It is a scene surfeit with quasi-solo sex. Unlike other places where Simon actually manifests himself, here we are left to wonder if she imagines his presence or if Simon is actually reaching out from “The System” to comply with her request.55

touch me, touch me,
and more and more and more,

more and more, and more and more,

more and more, and more and more.
As Evvy becomes more and more vocally and physically expressive of her desire, the performance of this moment in front of an opera house full of spectators entrenches her character (and the mezzo-soprano performing the role) in the trope of women as objects of voyeuristic pleasure.\(^{56}\)

By associating Evvy so strongly with a desire for physical intimacy, a female-gendered character within a technological driven narrative is once again linked on the opera stage with fulfilling the role of both sexual object, and sexual shock factor. The emphasis on Evvy’s longing for physical intimacy and sexual satisfaction in a corporeal manner is strongly juxtaposed by the male character’s insistence throughout the libretto that the body is weak and diseased, and that life devoid of physicality is a kind of superior existence. In this way, a line is drawn based on gender that separates those who struggle to overcome a base need for physical intimacy and a corporeal experience of existence (the women in the opera), with those who are able to comprehend and appreciate a superior and enlightened existence (the men in the opera). Furthermore, the overt sexualization of Evvy in the red dress during the chandelier scene was later amplified and translated into marketing material for the 2014 Dallas Opera production of the work, in which an even slinkier, sexier recreation of Evvy’s red dress look by a model (and not the mezzo-soprano singing Evvy in the production, Patricia Risley) was featured on the main advertising poster for the performance (see figure 3.7).

Not only does Evvy’s sexual encounter with Simon-vis-à-vis-the-chandelier cast her as the dominant focus in the opera’s sexual undercurrents, it acts as a catalyst for her ensuing closeness with Simon that takes the form of borderline madness, culminating in Evvy’s decision

\(^{56}\) For a seminal study of women’s bodies as the objects of voyeuristic pleasure and the male gaze, see Laura Mulvey, *Visual and Other Pleasures*, 2nd ed. (New York: Palgrave Macmillan, 2009).
to join Simon in the system. Evvy is the first woman within the story to “follow” Simon into the system, and there is an intertwining of sexualization and madness that frames her connection to the system as both hyper-sexual and mentally unstable. In scene 6, when the delegate of representatives from the outside world (the United Nations, the United Way, and the US Government) arrive at Simon Power’s home, Miranda calls out to her father, asking for his willingness to meet with the delegation to discuss “the whole planet’s life and death.” Nicholas says that Simon refuses to speak with them, and refers the delegation to Evvy. Miranda questions whether or not Evvy is of sound mind, casting doubt on whether Evvy can actually communicate

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59 See scene 6, mm. 984–987 in Machover, Death and the Powers (Orchestral Score), 200.
with Simon in the system, suggesting that she has quite possibly lost touch with reality (see example 3.3).

Example 3.3: Tod Machover, Death and the Powers, scene 6, mm. 1005–1031

    NICHOLAS: He says to speak with Evvy,
       She handles that kind of thing.
    MIRANDA: The whole planet… famine, war,
       the exploitation of children…
       The whole planet…
       They know Evvy isn’t the same.
       They know she doesn’t listen to anything but him.
       I myself don’t know if she hears him or not.
       Here she comes…

As Evvy wanders on to the stage, the stage directions indicate that she is to be “wearing headphones, swaying a little as if to music, nodding and tilting her head as if in conversation.

She appears not to hear Miranda” (see figure 3.8). 60 As Miranda begins to question Evvy, asking if she can hear Simon, if she has spoken to him about the delegation and informed him of the world’s suffering, Evvy’s vocal line wanders through melismatic passages, all to the syllable “Mmmm.” Evvy’s humming melismas are filled with glissandi and expressive articulation, but she continues to sing in a wordless hum, without acknowledging Miranda or Nicholas, wandering about the stage as if she is completely unaware of her surroundings, and in a hallucinatory state. 61 Nicholas comments “her mind is not in this world,” and Miranda begins calling out directly to her father, to no avail. Evvy’s vocal lines continue to move through elaborate melismas and glissandi, with only sparse accompaniment underneath her. At one point,

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60 See scene 6, m. 1036 in Machover, Death and the Powers (Orchestral Score), 209.
61 Tod Machover, Death and the Powers, The Dallas Opera Company, conducted by Nicole Paiement, directed by Diane Paulus, featuring Robert Orth, Patricia Risley, Joëlle Harvey, and Hal Cazalet (Recorded at the Winspear Opera House in Dallas, Texas, February 2014), DVD.
62 See scene 6, mm.1059–1062 in Machover, Death and the Powers (Orchestral Score), 215.
Figure 3.8: Production photo from *Death and the Powers* at Dallas Opera, 2014. Evvy (sung by Patricia Risley) appears disconnected from the physical world, listening to Simon through headphones. Photo by Karen Almond. Reprinted, with permission, from Karen Almond.
the stage directions indicate that she is to register some kind of recognition on her face, lifting a finger as if she hears something, but the vocal line that follows is a melisma that disintegrates into a long, sinuous, wordless glissando (see example 3.4). Even though Simon eventually talks to the delegation, Evvy remains visibly and musically disassociated from her surroundings; with the headphones remaining on, her vocal line continues as wordless melismas and glissandi through the remainder of the scene.

The hallucinatory style of her vocal line is reminiscent of Lucia, with madness expressed through vocal coloratura, and a seeming ability of the character to hear something the audience cannot. In an analysis of Lucia’s mad scene, Mary Ann Smart discusses the power of vocal coloratura in expressing madness in saying:

There seems to be an intuitive connection between madness and coloratura: trills, melismas and high notes suggest hysteria, an unbearable pitch of emotion; they liberate music from text, allow it to escape from the rational, connect it with pre-symbolic modes of communication. In a sense coloratura is free from the confinement of music and of language: a syllable stretched beyond recognition is an escape from signification, the emergence of irrationality and madness.65

Like Lucia, Evvy’s vocal line establishes a connection between madness and coloratura. Instead of trills, her frequent glissandi and stretched syllabic utterances are markedly different from the organized vocal lines and recognizable language of Miranda and Nicholas. Her communication with Simon manifests itself as hallucinatory, and her experience of a connection to Simon within the system lies outside of rational expressions of the physical world. Unlike Lucia’s coloratura, which Smart also acknowledges as containing rational musical structures that culminate in harmonic cadences, Evvy’s vocal line follows no pattern, and contains no predictable musical

Example 3.4: Examples of Evvy’s Wordless Glissandos. Tod Machover, *Death and the Powers*, scene 6, mm. 1038–1045 (a) and mm. 1125–1129 (b).

a) Scene 6, mm. 1038–1045
b) Scene 6, mm. 1125–1129

**EVVY**

*EVVY’s face lights up; she lifts a finger as if hearing something.*

![Musical notation](image)

*But no - she goes dreamy again..........(sinuous glissando, “deflating”along the way)*

Neither does Evvy’s vocal line turn previously stated melodies from “saner” moments into excessively ornamented passages representing “insanity,” as can be found in the mad scene of *Lucia di Lammeroors*. In this way, Evvy’s hypnotized trance signifies the power of the system to bring about a new state of being; in Evvy’s case, that new state of being is musically equated with mental instability within the physical world as she ventures further and further into Simon’s disembodied digital world. For Simon, existence in the system does not manifest itself as a form of unintelligible madness, but as a form of enlightenment, and a triumph of his own genius over the limits of the physical body.

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66 Ibid.
68 Ibid., 128–129.
Technology and Gender-Bias

In addition to the overt sexualization of Evvy’s character, on a broader scale, the construction of characters within the opera reflects issues of gender-bias in relation to technology. Throughout *Death and the Powers*, the characters gendered as male are the technologically brilliant masterminds; Simon Powers is a billionaire inventor, and Nicholas is his trusted protégé. It is Nicholas, not Evvy or Miranda, who helps Simon enter the system in scene 1, and it is Nicholas who appears to understand and praises the brilliance of Simon’s technological achievements (see example 3.5).

Example 3.5: Tod Machover, *Death and the Powers*, scene 1, mm. 112–124

Nicholas: There isn't much more time, 
the body is dying, 
now it's time to enter the system?

Simon: Thank you, Nick, for reminding me – 
In the stroke of time, in the nick of time. 
Nick will rescue me from my stroke.

In contrast to the male characters’ positive relationship with technology, Miranda and Evvy are both skeptical of the system, they show no signs of understanding the technology itself, and they both fear what will happen when Simon enters the system. Furthermore, Miranda and Evvy’s

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fears are persistently framed by Simon and Nicholas as being irrational, stemming from a lack of understanding the technology. For example, the first thing Evvy sings in scene 1 expresses her fear of Simon’s plan to enter the system (see example 3.6):

Example 3.6: Tod Machover, *Death and the Powers*, scene 1, mm. 67–87

EVVY: Simon, please be serious.
Or at least be frightened
Or show that you are frightened.
I feel you already
Vanishing into this machine.
Out of nature—into a machine!
If you were frightened
I would be less worried.
Will you go insane,
Out of nature, in the machine?

As previously analyzed, Evvy’s fear of digital existence equating a form of insanity becomes a self-fulfilling prophecy, but not for the brilliant Simon—for herself.

Similar to Evvy, Miranda’s first sung lines of the scene express her fears of what will happen (see example 3.7). In the penultimate scene of the opera, when Miranda is the last of the Powers family left in corporeal form, Simon attempts once last time to convince Miranda to join him in the system. As he attempts to explain the superior existence of the system, the conflation of sexual desire, a need for physical intimacy, and fear of life without the organic body are reiterated as weaknesses that hold Miranda back from a superior existence (see example 3.8).

Example 3.7: Tod Machover, *Death and the Powers*, scene 1, mm. 136–142

MIRANDA: Nicholas says there isn't time.
Because—it's time.
I'm afraid it's time—and I'm afraid.
Example 3.8: Tod Machover, *Death and the Powers*, scene 8, mm. 1703–1767

SIMON: I appear to you one more time,
Dear Miranda, to explain:
Like you, I tried to help the world.
I, too, saw these miseries, and I've
Tried to heal the world, too.
But the animal is defective.
It's not the poor or the starving
That hold you back. It's yourself—I know:
I, too, tried to heal the world
But it's in us, the problem's in us, it's in us.
We evolved as meat, to love fat and sugar;
Once that was good, but now it is fatal.
We evolved as flesh, to want sex all the time;
Once that was good, but now it's only trouble.
We evolved as muscle, to want to make war;
Once that was good, but now that is lethal.
Our fat and sugar are killing us,
Our sweetness and abundance
Kill us, and lead us to famine
Bigger McMuck, Thicker Sweet Shake.
Sexier Shaking the Sweetness,
Smarter Weapons for Meat.
Meat wants Meat, Meat wants Sweet,
Meat sweats for the Sweets,
Meat wants who it meets
It kills to eat.
Now there’s no help but evolving
Out of the meat, and into the system.
It isn't the many and the few
It's yourself, it's you!
Come! Into the world of light!

Miranda’s response reiterates her insistence on the human experience being an essentially embodied one, singing:

MIRANDA: With nothing like another
Person's body
To touch, no body to feel,
I can still feel the misery
Of what I lack.
No body to have or be had by,
No way to make love.
No lover, no other.
Nothing of the body.
With nothing like a mother
Of flesh and blood, nothing
Like a father,
Either alive or dead.

... Who will we touch?
I want my sugar, my touch,
I want my sweet milk
My meat and my misery
My touch and my milk
I want my mother!  

Simon dismisses her concerns once more, equating her fear of life without physical touch as “phantom pain” in an “amputated limb.”

Miranda’s final lines of the scene confirm her longing to be with her family, but also her lingering fears and doubts of digital existence. As the scene ends, the text and the blocking directions leave Miranda’s ultimate decision to embrace or reject life in the system ambiguous, and the robot pageant ends with the tension between the concept of physical experience defining humanity and the superiority of the digital unresolved (see example 3.9).

Example 3.9: Tod Machover, Death and the Powers, scene 8, mm. 1903–1982

MIRANDA: I’m afraid to be alone.
Who will I be?
What will I see,
When this body is gone?
Without my forgetting
How will I remember?
Without my death
Who will I be?
Who? What? When?
How? Alive?
Light. Death.
Alone. Alive.
Live.

70 Machover, Death and the Powers (Orchestral Score), 344–352.

71 See scene 8, mm. 1838 - 1840 in Machover, Death and the Powers (Orchestral Score), 352–353.
The Physicality of Digital Computing Infrastructure vs. The Description of Digital Existence as Ephemeral

The tension between the complexities of physicality and materiality bound up in the corporeal human experience and the imagined experience of disembodied virtual existence is not only manifested in Evvy’s and Miranda’s character, but also explored through the juxtaposition of the digital computing infrastructure required by the opera’s production and the way in which digitally disembodied existence within the system is described and conceptualized within the libretto. In a 2011 article in The Boston Globe, Geoff Edgars relays a story that took place during a rehearsal for Death and the Powers, saying:

… A robot began to throb, vibrate, and power down. A programmer ran onstage with a screwdriver, aiming to fix the machine… Hsiung [the production’s technical development manager] admits that he was surprised the performances in Monaco came off without a hitch. There were problems up until the final dress rehearsal, much of them from the electrical system in the theater, which kept shutting down unexpectedly… a series of redundancies [were] put in place to make sure that even if certain things on the robots break, the machines [would] still work… In Monte Carlo, during one of the dress rehearsals, one of the moving walls stopped cold. It took a few minutes to figure out the problem, which had nothing to do with the technological innovations... Somebody had kicked out the power cord.  

With such a complex set design and performance forces, it is unsurprising that the creative team encountered technical difficulties of various kinds. Robotics, real-time software, and the manipulation of moving set pieces required a series of highly complex computer systems working in tandem, which then had to be integrated into a performance space.  

As Tod Machover described in an interview, from his earliest conceptions of the piece, he wanted a stage

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set that helped tell the story in a very physical way.\textsuperscript{74} As a result, various elements of the transhuman narrative are expressed through the physical and sonic multi-media forces of opera, creating an unresolved tension between expressions of what is physical and what is ephemeral within the narrative. The reliance of the stage design and disembodied performance systems on electricity, error-free software code, and functional hardware mirrors a problematic expressive fallacy that runs throughout the transhumanist narrative in \textit{Death and the Powers}: describing digital technology within the narrative as being disconnected from physical reality.

By the third scene of \textit{Death and the Powers}, Simon Powers has already uploaded his mind into the system. Even though a series of non-verbal sounds have begun to continuously emanate from the set (the score specifically indicates breathing and humming), Miranda fears that her father is lost forever because he has not yet communicated with her through speech, or in any significant way that convinces her he is still present. She asks Nicholas if her father can hear them, and if he is still alive. Nicholas responds with a poetic monologue, in which he attempts to convince Miranda that a post-organic life in the system is not only possible, but also more sustainable than any other form of life, and uses his own body as a counter-example to Simon’s new and improved disembodied state. Nicholas himself is a cyborg, with an artificial prosthetic arm, invented by Simon Powers (see figure 3.9). Nicholas describes both of his arms, one organic and one post-organic, as being similarly flawed; both are made of physical matter, and therefore, are mortal and breakable (see example 3.10). Later in his monologue, Nicholas describes how everything physical is prone to decay, and only the system, which exists outside

Figure 3.9: Production photo from *Death and the Powers* at Dallas Opera, 2014. Nicholas (sung by Hal Cazalet) shows off his bionic arm. Photo by Karen Almond. Reprinted, with permission, from Karen Almond.
of physical reality, is capable of continually renewing itself (see example 3.11). Nicholas’
description of the system suggests that a disembodied digital existence is indestructible, and
therefore, all who “live” within it are immortal as well.

Technologically speaking, the modern conception of mind uploading requires that
information stored in the human brain be transferred into some other type of artificial and
computational storage format; in doing so, mind uploading reduces the processes of the human
mind to a collection of data. In order for data to exist in digital computing, it must be encoded or
stored somewhere in binary code. Once stored as binary code, digital data must be accessed and
processed by complex systems of software in order to render it into some form of expressive
media, be it written words, images, or sounds. As media theorist Friedrich Kittler described in

NICHOLAS: I can help him in the System.  
Not in silicon, titanium, or nickel,  
no more than hammered and enameled  
Immaterial and immortal!  
Chrome and nickel, silicon and graphite.  
All get tired and old.  
Only the form, the System is real.  
Only the system can hold.

the introduction to *Gramophone, Film, Typewriter*: “Inside the computers themselves everything becomes a number: quantity without image, sound, or voice… Our media systems merely distribute the words, noises, and images people can transmit and receive. But they do not compute these data.”75 In *Death and the Powers*, the storage location of the data generated by Simon’s mind upload is described as “the system,” and within the logic world of the opera, “the system” can also control the physical objects within Simon Power’s house, but does not exist explicitly within them; the physical objects controlled by the system are, following Kittler’s description, the media systems used to distribute the words, images, and noises. Simon Powers relies on physical hardware and an externally powered computer system of some kind to transmit and receive communication with the physical world. While Simon Powers can utilize speakers and microphones in the walls, movement of the chandelier, visual changes in light, and the movement of physical objects in order to communicate with his corporeal loved ones, Nicholas’ description of the system continually suggests that the system itself exists in a way that does not rely on physical matter. This element of the narrative plays into a common cultural trope and popular metaphor of computer data existing in an ephemeral space, as if the air itself can store data, while the reality of digital computing technology dictates that data must be written and

stored on physical computer hardware, and requires some form of computational processing to function or be realized and expressed in any sort of interesting way. Computer data is stagnant and agentless unless it is accessed or processed through computer software, and software requires a central processing unit (CPU) within some sort of machine, dependent on an external source of power to run. As Jennifer Rhee has described in her 2018 publication *The Robotic Imaginary: The Human and the Price of Dehumanized Labor*: “The realm of the digital is distinctly not immaterial, from the devices, cables, and storage facilities that enable connectivity, the minerals that are mined for the manufacture of devices, the environmental costs of digital practices, and the human labor involved at every turn.”

In *Death and the Powers*, there is an aura of ephemerality that surrounds descriptions of “the system” in the libretto, with descriptions of existence within the system metaphorically linking the system with descriptions of heavenly, celestial, intangible existence. For example, in the latter half of the opera, a group of government and administrative representatives arrive at Simon Power’s home to beg for his financial help in alleviating growing pain and suffering of the human population still physically embodied on earth. Simon refuses, and describes his digitally immortal state as a superior place, referring to it as “heaven” (See example 3.12).

Example 3.12: Tod Machover, *Death and the Powers*, scene 6, mm. 1281–1286

SIMON: Man lies in deepest need. Man lies in deepest pain.?

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77 The first two lines of example 3.12, “man lies in deepest need / man lies in deepest pain,” are a direct quotation from the poem “O Röschchen rot” or “Ulicht” from *Das Knaben Wunderhorn*. Gustav Mahler set this text twice in his output: First as an art song in 1893 (first published in a collection of *Wunderhorn* art song in 1899), and second as part of the fourth movement in Symphony No. 2, known as the “Resurrection Symphony.” Many thanks to Anne
Yes, I would rather be in heaven!

When Simon refuses to speak to the delegation from “the outside world itself,” Nicholas describes this choice as Simon preferring to “live in dreams” (See example 3.13).

Example 3.13: Tod Machover, *Death and the Powers*, scene 6, mm. 1238–1241

NICHOLAS: He chooses not to answer.

More and more,

He chooses to live in dreams.

The technology within this operatic narrative relying on physical infrastructure and a source of power mirrors, on a metaphorical level, how the elements of production for a performance of this work also relies on an elaborately intertwined infrastructure of physical hardware and digital software. Just as a loss of physical power could cut off the sustaining life force of Simon Powers within the system, a loss of power also makes the disembodied performance system impossible to execute.

**Sound Manipulation, Operabots, and the Supremacy of the Operatic Voice**

The unamplified singing voice holds a kind of sacred place in the operatic art form. While all of the operas discussed in this dissertation connect cyber-narratives with some iteration of digitized performance forces (such as keyboard synthesizers in the orchestration, or digital projections as part of the stage design,) *Death and the Powers* is the only work in which sound manipulation and amplification is applied to the singing voices of the cast. It was a choice that the creators acknowledged was controversial in the opera world, but one they felt was necessary

given the spatialized sound and disembodied performance elements they envisioned for the work. In documentation about the opera, there is evidence that the creative team intended to design a sonic style for the work that somehow transcended operatic norms, using sound as a metaphor for the transcendence of Simon Powers from an existence within physical human norms to a non-normative, post-human state. However, despite elaborate technological designs that suggest an attempt to create a kind of post-operatic style of “singing,” a traditional approach to operatic singing and the voice remained audible and distinguishable in the actual performance of the work.

In Torpey’s documentation of the opera’s thirteen-year genesis, he describes the initial plan for the prologue scene in saying:

The Operabots don’t represent Simon in The System. They are a collective of independent characters that frame the story of Simon Powers and his family, enacting a pageant for reasons they fail to comprehend at some distant time in the future. The Operabots are conceived of as the physical remnants of The System or the robots that are Nicholas’s assistants (or their descendants) from Simon Power’s time. They are the first things we see alone onstage when the audience enters the theater. At first, they are inanimate, but as the pageant begins, they come alive… As the Operabots activate, they exhibit social structure and behavior. They swarm in hive-like ways and demonstrate some sense of hierarchy. The Operabots are communicating and have dialog in the libretto. Though we hear only their strange language set to music, the supertitles for the production will provide a translation.

The final published orchestral score suggests that the initial plan for the “strange language” of the Operabots “set to music” was maintained through the time of publication, with a note at the opening of the prologue stating: “Four robots emerge from the pack. Each is “voiced by one of the opera’s main characters, but this does not sound like “singing”, rather like each robot is “trying” to sing or to say something.” As the robot dialogue begins, another note in the score

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79 Ibid., 66.
80 See the prologue, m. 2 in Machover, Death and the Powers (Orchestral Score), 2.
states “Robot speech in unintelligible (actual text—displayed as supertitles—shown under performed syllables).”\textsuperscript{81} The vocal part for each robot includes notated pitches, rhythms, articulation, and text, as well as a specific character’s voice assigned to each of the four Operabots participating in the dialogue. On paper, the prologue suggests that even though each robot is given a singing voice, and has the ability to communicate through sound in a traditional operatic way (singing text), digital manipulation of the off-stage singer voices was supposed to create the effect of the robotic language being post-human, transcending all known forms of spoken or sung language existent in the known physical world. Furthermore, plans for the physical construction of the Operabots included individual acoustic sound resonators, so that the physical structure and hardware of each individual Operabot could also produce its own amplified sound.\textsuperscript{82} Directions written into the score also encourage the use of physical sound manipulation by the singers. As Operabot 1 begins to sing, voiced by the baritone singing Simon Powers, the score indicates the following: “Sombre but funny / free, quick, move sound around throat-to-nasal.”\textsuperscript{83} As Operabot 2 enters, voiced by the tenor singing Nicholas, words such as “pure” and “buzz” are placed above specific pitches, indicating a desired timbre effect.\textsuperscript{84} When Operabot 3 enters, voiced by the mezzo-soprano singing Evvy, she is instructed to sing in an “indistinct, humorous” manner, with “shakey glissandi.”\textsuperscript{85} Finally, when Operabot 4 enters, voiced by the soprano singing Miranda, she is instructed to sing in a manner that is “totally pure, no vibrato, bell-like pitch, like a ‘sweet machine’.”\textsuperscript{86} When, several bars later, Operabot 4/Miranda sings “What is suffering?”, another note in the score indicates that that specific phrase

\textsuperscript{81} See the prologue, m. 3 in Machover, \textit{Death and the Powers} (Orchestral Score), 2.
\textsuperscript{82} Torpey, “Disembodied Performance: Abstraction of Representation in Live Theater,” 69.
\textsuperscript{83} See the prologue, m. 4 in Machover, \textit{Death and the Powers} (Orchestral Score), 2.
\textsuperscript{84} See the prologue, m. 10–12 in Machover, \textit{Death and the Powers} (Orchestral Score), 4.
\textsuperscript{85} See the prologue, m. 13 in Machover, \textit{Death and the Powers} (Orchestral Score), 4.
\textsuperscript{86} See the prologue, m. 17–18 in Machover, \textit{Death and the Powers} (Orchestral Score), 5.
is to be sung in a “tender, almost human (still no vibrato)” manner.\textsuperscript{87} Altogether, digital sound manipulation technology was supposed to be used to translate the English text, pitches, and rhythms produced by the singers into Operabot parlance; the translated sound of the singers would then presumably be disembodied from its singer source, re-embodied in the Operabot hardware, amplified in real-time performance, and translated for the audience via visual supertitles. However, in all the video footage released of live performances of this opera, the English text remains completely intelligible throughout the prologue, as does the distinct timbre of each singer’s voice. There is a series of electronic sounds that accompany all the vocal lines of the Operabot dialogue, but the integrity of the singing voice with audible text is maintained, and the amplification of each disembodied voice occurs with very little sonic manipulation. It is clear that at some point in the late stages of the creative process, the plan for the Operabots to communicate in some kind of unintelligible, post-human language was abandoned, resulting in a very different effect in the final performance. While the reason for this is never explicitly stated, one can hypothesize that for all its ideological and technological intricacies, the imagined post-human, post-singing musical language of the Operabots failed to effectively communicate expressive elements of the narrative, and a more traditional operatic voice was reintegrated into the performance of the prologue as the primary mode of narrative communication.

\textbf{Operabots as Greek Chorus}

The technological framework of the opera is not only thematized in both the physical infrastructure of the disembodied performance system and the paradox of “the system” being

\textsuperscript{87} See the prologue, m. 23 in Machover, \textit{Death and the Powers} (Orchestral Score), 6.
described as intangible while simultaneously reliant on material hardware, it is also evident in
the framing of the opera with the robot chorus. The Operabots were originally inspired by the
historical idea of the Greek chorus, witnessing, participating in, and reacting to what is
happening on stage.\(^8\) Unlike the traditional use of the Greek chorus, aside from framing the
work in the prologue and epilogue, the Operabots do not comment on the transpiring action
through sung text. They move around the stage, reacting to the actions of the other characters
through choreographed movement and projected light, but they do not “sing” in the play within
the play. The only explanation of their existence in the published score is not found in the libretto
itself, but in the description of the cast. They are described as:

\[
\begin{align*}
\text{...products of the experiment to build Nicholas and The System; they are also Nicholas’}  \\
\text{companions and assistants. They are The System’s offspring, left behind when the}  \\
\text{humans evolved. They have not evolved beyond the moment when The System was}  \\
\text{activated.}\end{align*}
\]

By this description, the Operabot chorus represents a kind of technological stagnancy; they are a
remnant of Simon and Nicholas’ inventions, with no sentience or free will to evolve beyond what
they were initially created to be, but yet, they have survived beyond the human race. Unlike a
traditional Greek chorus, which was often utilized as a vehicle for spectators to understand a
desired emotion or reaction the author wished to elicit from the work, the chorus of Operabots
themselves have no spoken or sung insight to offer on the action that has ensued.\(^9\) Instead of
offering the audience a suggestion of how to feel, the Operabots admit to being incapable of
feeling altogether; instead of offering the audience insight into the meaning of the drama, they

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\(^8\) Torpey, “Disembodied Performance: Abstraction of Representation in Live Theater,” 66–68.
\(^9\) See Machover, Death and the Powers (Orchestral Score), iv.
\(^9\) The function of the Greek chorus as representing the “ideal spectator,” providing a way of leading the audience
into a desired state of contemplation was first proposed in the 19th century by August Wilhelm Schlegel. See August
Daldy, 1871), 70. For a contemporary examination of the chorus throughout ancient Greek drama, see J. R. Green,
Theatre in Ancient Greek Society (Oxfordshire: Taylor & Francis, 2016).
are have no understanding of death or suffering (see example 3.14.) However, despite their inability to comprehend the meaning of the drama, their existence within the entire structure of the work forces introspection and contemplation on the meaning of the drama, as their peculiar existence calls into question the success of Simon’s system.

For audiences who have not read the note about the robot’s origin in the cast listing of the score, their dialogue in the prologue provides insight into their origin and purpose: that robots within the story were created by humans, and the robots continue to follow a directive given to them by their creator to perform the story of the Powers family. Humanity itself has ceased to exist, with the period of human existence described as “the original past, the organic age” (see example 3.14). The robots are a human creation left behind, not a re-embodiment or reincarnation of humanity. The robots have no concept of “death,” which is indicated as the core theme of the drama, and they describe how they cannot feel suffering, although their interaction suggests that they are capable of thinking and questioning the commands they are executing.

Example 3.14: Tod Machover, *Death and the Powers*, Prologue libretto, mm. 1–43

[Darkness. Mood is “actively mysterious.” Barely perceptible robots roll and lurch and glide on stage as a single mass of extremely robot-looking parts, a kind of animated scaffold of struts and gears. During the PROLOGUE, the parts of this jumble disassemble into separate robots who gradually become more humanoid.]

ROBOT LEADER Units assembled for the ritual
Performance at command.
As the Human Creators have ordained,
In memory of the Past.

ROBOT TWO This concept I cannot understand,
At the core of the drama.
What is this "Death"?
Is it a form of waste?

ROBOT THREE I too cannot understand:
Is this "Death" an excessive cost?

ROBOT FOUR

Is it a form of entropy?
Or data rearranged?
Why did the Human Creators
Command a performance
On a theme impossible to comprehend?
What is suffering?
How can I perceive
What I cannot feel?

ROBOT LEADER

All we can understand
Is the Human Creators' command:
In memory of the Original Past
And the Organic Age,
We perform, to obey their command.
Whatever the Human Creators planned
Before they departed.
Units deployed as Individuals will receive
One Thousand Human Rights Status Credits.
Now, it is time we started!

[Human characters emerge from robots and download, ready to enact the drama.]

Even if the robots do not understand the directive they have been given, the prologue suggests that the ensuing performance is some kind of morality play, or cautionary tale retelling not only the death of Simon Powers, but the death of all humanity. Following the conventions of a traditional Greek chorus and dramatic prologue, the end of the story is revealed at the beginning, signaling the ultimate failure of Simon’s desire for digital immortality. In this way, the whole opera is framed not as a positive prophesy of future transhumanist existence, but rather, as a cautionary tale, depicting a failed attempt by humanity to develop technology that cheats death, resulting in the complete annihilation of the human race.

While the prologue suggests that Simon’s system ultimately fails as a way to achieve digital immortality, the continued existence of the robots suggest that the entire physical world
itself has not fallen away; the robots remain, and the physical hardware and power infrastructure making their existence possible remains. Therefore, although the point of failure in Simon’s digital system is never explained, the robots represent the exact opposite of what Simon and Nicholas claim: instead of the software system containing Simon’s disembodied consciousness, remaining immune from destruction, and the physical world being prone to decay, the physicality of the system remains, with the intangible element of consciousness existing within a digital system having either failed, or evolved beyond what constitute a disembodied human experience of digital immortality.

Furthermore, in the post-human world of the robots, for whom is the morality play of Simon Powers being performed? Is it the ego-centric dictate of Simon Powers ensuring that some evidence of his life endure indefinitely, or is it Miranda’s way of documenting the story of humanities extinction? Once again, the opera itself intentionally leaves this element of the narrative ambiguous. In Torpey’s documentation, it is revealed that Robot One, labeled as the “leader” of the robots in the score, was originally going to be revealed in the prologue as being associated with Miranda, and not Simon; this association was planned to be made very explicit, with each of the four Operabots cast as robotic representations of Simon, Evvy, Nicholas, and Miranda, and one of the four characters “ruling” as a leader in the undefined future society of robots.\footnote{Torpey, “Disembodied Performance: Abstraction of Representation in Live Theater,” 67.} In a kind of \textit{coup\`e de theatre}, the epilogue was originally going to reveal that Miranda was the “leader” instead of Simon, as many in the audience might have assumed would be the case; however, this dramatic element of the narrative was later eliminated, along with any corresponding implications of that dramatic plotline.\footnote{Ibid.}
Therefore, the final version of the opera intentionally leaves the audience with no explanation for the robot chorus, and their ambiguous existence leads to another paradox: in the post-human world of the opera, the performance of this “opera within the opera” serves no purpose, but yet, it is ritual that is consistently revived in perpetuity. Extrapolated on a larger scale, the “meaninglessness” of the robot performance functions as a warning for the audience, cautioning against a future in which the material, embodied existence of humanity itself, and by extension, the material, embodied art form of opera itself, is rendered obsolete.

Conclusion

As if protecting itself with a built-in failsafe from the caution of its own narrative, Death and the Powers has written into itself the inability to transcend the physical demands and historical tropes of the medium. The use of an elaborate disembodied performance system allows the disembodied voice in Death and the Powers to function as a metaphor for the soul existing and living outside of the body, mimicking for the audience the appearance of consciousness and agency of a character living within a computer system. The disembodied voice is also foregrounded as the primary marker of identity and evidence of “liveness,” eclipsing visual manifestations of re-embodiment as the communicative link between Simon within “the system” and the physical world. To be sure, the disembodied performance system is just as impressive in its complexity and capabilities as the cyber-narrative of transhumanism within an operatic format is provocative, resulting in an altogether forward thinking work for the digitally entrenched culture of the present time. However, despite all the cutting edge technology utilized in its production and thematized in the narrative, the hyper-sexualized female, the linking of female sexuality and madness, and portrayals of gender bias are still built into the constructs of the
work; similar to how both the concept of transhumanism and operatic setting of the story is unable to transcend a reliance on materiality, this futuristic opera is also unable to transcend the human tendency to reinforce biased and misogynist tropes of the past.

The misogynist elements of the opera are not the only cautionary element of the work. For all of Simon’s praise of the system being heavenly and free from suffering, the portrayal of disembodied existence being utopic and pain free is strongly juxtaposed against Miranda’s belief that the body, despite all its suffering, is intricately tied to how humans experience a meaningful life. This juxtaposition forces the audience to contemplate the concept of mind-body dualism within the proposed future of transhumanism: Can the sentient human mind exist outside of corporeally embodied existence, and how can we know what such an experience of existence would be like? Evvy’s desire for physical touch also ties in with this theme, revealing how the need for physical human intimacy is irreconcilable with the disembodied post-human existence. And on a larger scale, the robot chorus, another historical opera trope remixed within the cyber-narrative of the work, cautions against the hubris of Simon Powers, and forces the audience to examine what humanity stands to lose in the pursuit of transhumanist existence.

While opera might offer a multi-media, multi-sensory format in which to explore a narrative involving hypothesized and imagined post-human experience of disembodied existence, *Death and the Powers* does not go so far as to transcend the corporeal singing body, and it does not transcend material elements of production. Instead, by grounding the production of the work in the physicality of opera as a live, corporeal, dramatized, and staged experience, the operatic production, mechanism of performance, and operatic cyber-narrative participate in a metaphorical loop of conceptual paradoxes and logical impossibilities that lie at the core of anxieties surrounding transhumanist futurism.
CONCLUSION

Throughout all three case studies, the question “what does opera offer the cyber-narrative?” guided my analysis. As we have seen, opera’s unique reliance on voice is utilized and manipulated within each work as a marker of liveness and agency, revealing assumptions about identity, materiality, corporeality, and authenticity that are challenged by new technological possibilities. The necessary multi-media elements of opera as a staged theatrical work offer the cyber-narrative multiple expressive mechanisms through which different interpretations and conceptions of each thematized technology can be expressed and explored. My analyses and interpretation of Two Boys, Glare, and Death and the Powers as cyber-narrative works took shape at the intersection of voice, the body, operatic tropes, techno-feminism, digital anthropology, and philosophy. This is by no means an exhaustive list of topics that intersect with these works, and there are several strands of inquiry left to explore in future writing. For example, a new perspective on the tension between physicality and virtual existence in Death and the Powers could be achieved by examining the work through the lens of disability studies. A closer analysis of how place and space is constructed in relation to physical versus virtual environments within Two Boys would add a new dimension to my analysis. My interpretation of all three operas as theatrical works connected to social anxieties and popular culture is composed from a very Western-centric perspective; there is still much to explore regarding the dissonances between the framing of digital technology in each opera and technological cultures outside of the West. With the cyber-narrative operas studied here being all newly composed works within the past decade, the composers, librettists, directors, production teams, and performers involved in the creation of each work are generally still living. A natural next step in the expansion of the three case studies provided here would be to interview the creators of each work, in order to gain
their perspectives on the issues and tensions discussed in this analysis. Throughout the course of my research, I also imagined several ways in which the study of cyber-narrative operas could have digital research components that documented the various digital production elements of each work. For example: creating a repository of isolated synthesizer sounds used in the orchestration of Glare or constructing an archive of video projections used in the set design for Two Boys. Even more complex, creating a virtual replica of the disembodied performance system software designed for Death and the Powers that could be accessed in an online app, so that the digital mechanisms of production so deeply entrenched with the conceptualization of the work could be explored in a more nuanced way.

There is also room for research on cyber-narrative operas to expand beyond these three case studies. As can be seen in table 5, there are eleven other operas, in addition to Two Boys, Glare, and Death and the Powers, known to me at the time of this writing that could be categorized as cyber-narrative works. And it is likely that cyber-narrative operas will continue to be written; with digital technologies defining the world we live in more pervasively with each passing year, artistic explorations of what we fear and what we hope for in regard to technology are bound to increase.

My research on the cyber-narrative opera began with a focus on sound itself. Sitting in the darkened auditorium of The Metropolitan Opera house, watching a performance of Nico Muhly’s Two Boys, I wondered to myself: What did the Internet sound like in operatic form? Although this question did not end up as the primary focus of my research, it was the point of departure from which I started, eventually leading me to question what the cyber-narrative opera revealed about the current relationship between humans and machines, and what opera as an art form offers the cyber-narrative. Despite the thematization of a different technology in each
Table 5: List of all known Cyber-Narrative Operas (as of 2019)

<table>
<thead>
<tr>
<th>Title, Composer, and Librettist (or Narrative Concept Artist)</th>
<th>World Premiere Date</th>
<th>World Premiere Company and/or Location</th>
<th>Brief Summary of Cyber-Narrative Elements</th>
</tr>
</thead>
</table>
| **Honoria in Ciberspazio**  
Composer: George Oldziey  
Librettist: Vicente Fores | 1995 | Webcast via CUseeMe | The story is about five humans looking for love. They go online to try and find love and consult an “oracle of cyberspace” to help fulfill their desire for love and connection in some form of virtual reality online. |
| **Alternate Visions**  
Composer: John Oliver  
Librettist: Genni Gunn | 2007 | Montréal, Québec, Canada | Two people who meet and fall in love in an Internet chat room attempt to meet in “real life,” but are ultimately thwarted from pursuing a physical, corporeal relationship by various anxieties and complications. |
| **The Turing Test**  
Composer: Julian Wagstaff  
Librettist: Julian Wagstaff | 2007 | Edinburgh Fringe Festival, Edinburgh, Scotland | A female research assistant is pushed by one womanizing and one alcoholic professor to successfully create an artificially intelligent computer that passes the Turing test. It is a cautionary tale, complete with a singing computer, which ends in her ruin. |
| **Two Boys**  
Composer: Nico Muhly  
Librettist: Craig Lucas | 2011 | English National Opera in London, England | Two adolescent boys meet in a chat room. Jake fabricates multiple chat room identities and uses his fabricated avatars to manipulate Brian into attempting to murder him. The opera takes the form of a police investigation, told through a flashback structure. |
| **Casparo**  
Composer: Luc Steels  
Librettist: Oscar Villaroya | 2011 | Barcelona, Spain | Tells the story of a humanoid robot named Casparo (sung and embodied on stage by a human singer), who achieves human intelligence. |
| **Death and the Powers**  
Composer: Tod Machover  
Librettist: Robert Pinsky | 2012 | Monte Carlo Opera House, in Monte Carlo, Monaco | Billionaire inventor Simon Powers uploads his mind into a computer system moments before his physical body dies. He attempts to convince the rest of his family to abandon the physical world and join him in “the system.” The story is framed as a play within a play, featuring a chorus of robots that follow a directive to re-tell the story of Simon Powers in perpetuity. |
<table>
<thead>
<tr>
<th>Title</th>
<th>Composer</th>
<th>Librettist</th>
<th>Year</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whisper Opera</td>
<td>David Lang</td>
<td>David Lang</td>
<td>2013</td>
<td>Mostly Mozart Festival, Clark Studio Theatre, New York, NY, USA</td>
<td>A non-linear narrative in which phrases collected from Google searches are whispered by singers in an immersive performance space. The concept revolves around how humans tend to reveal things online that they otherwise would not share in person.</td>
</tr>
<tr>
<td>Glare</td>
<td>Søren Nils Eichberg</td>
<td>Hannah Dübgen</td>
<td>2014</td>
<td>The Royal Opera Covent Garden in London, England</td>
<td>Alex suspects his girlfriend Lea is too perfect to be real. His scientists friend tells him that Lea is an android, created to please him. As Alex struggles to figure out how he can be sure if she “real” or “artificial,” Lea is abused, raped, and ultimately murdered. In the end, it is revealed that Lea may have been “real” after all.</td>
</tr>
<tr>
<td>My Fair Lady</td>
<td>Gob Squad</td>
<td>Gob Squad</td>
<td>2016</td>
<td>Komisher Oper in Berlin, Germany</td>
<td>Dramatizes a team of scientist who spent two years teaching a child-size robot how to learn and feel human emotions. The technological elements of the narrative are mimicked in the staging of the robot character with an actual robot developed by the Neurorobotics Research Laboratory at Berlin’s Humboldt University.</td>
</tr>
<tr>
<td>Robot Opera</td>
<td>Julian Knowles</td>
<td>Wade Marynowsky</td>
<td>2015</td>
<td>Eversleigh, Australia</td>
<td>Thematizes the creation of artificial intelligence, the concept of “singularity,” and robot agency.</td>
</tr>
<tr>
<td>Fausto</td>
<td>Luc Steels</td>
<td>Oscar Villaroya</td>
<td>2017</td>
<td>Brussels, Belgium</td>
<td>In a re-casting of the Faust myth, Mephisto controls digital clones of deceased humans, created through mass data-collection. Fausto is offered digital immortality “in the cloud” with his beloved (and deceased) Margherita, in exchange for willingly abandoning his physical body. Mephisto reveals to the audience that he plans to take over Fausto’s corporeal body, since existence in “the cloud” is devoid of human emotion.</td>
</tr>
<tr>
<td>Connection Lost: The Tinder Opera</td>
<td>Scott Joiner</td>
<td>Adam Taylor</td>
<td>2017</td>
<td>YouTube</td>
<td>An opera created for a digital world premiere via a YouTube video, the narrative dramatizes the tumultuous world of online dating via the app “Tinder.”</td>
</tr>
</tbody>
</table>
| **Simulacrum**  
Composers: James Diaz, Reiko Fueing, Peter Kramer, Longfei Li, Yangzhi Ma, and Meng Wang  
Librettist: Based on Marianna Staroselsky’s original play *Loved for Parts* | 2018 | 3D Art and Technology Center, New York, NY, USA | Focuses on cyborg theory, and how machines and digital technology created by humans transform human life, as a female protagonist struggles to overcome a crisis of identity brought on by receiving a new “bionic” leg. |
|---|---|---|---|
| **Denis & Katya**  
Composer: Philip Venables  
Librettist: Ted Huffman | 2019 | Opera Philadelphia | Based on a true story about two runaway teenagers who became social media sensations by broadcasting their own deaths. |

opera, a common question can be found at the core of each work: What does it mean to be human? And how is technology changing and challenging the bounds of human experience? In the beginning of this dissertation, I suggested that throughout the history of the art form, opera has reflected the social anxieties of the moment. The cyber-narrative opera is no different, historicizing a cultural moment where society is re-negotiating the relationship between humans and machines within the context of digital technology. What makes the cyber-narrative so uniquely prescient in this particular historical moment is that the digital technologies being thematized are already beginning to turn myth and fantasy into reality. Unlike the story of Pygmalion or Olympia, divine intervention or supernatural forces are not needed to explain a re-adjusted boundary of human existence portrayed in the cyber-narrative opera. Instead, the digital revolution has accelerated the pace of technological innovation to such an extent that audiences in the opera house today must already confront how they will define themselves in relation to the evolving reality of each thematized technology. If the technology doesn’t actually exist, its precursor does, giving a sense of urgency to questions surrounding human-machine relationships in the digital age.
The stories we tell about digital technologies matter. Stories have the power to shape and affect how we understand technology, how we react to new technologies, and how we fear or embrace technology. Our perception of different technologies will shape the way we interact with technology as individuals and as a society, influencing the laws we create, and the kind of future we work to achieve. *Two Boys*, *Glare*, and *Death and the Powers* are all cautionary tales. As we have seen, all three works caution, in a broad sense, that digital technology does not eradicate human failings; manipulation, deceit, murder, violence, misogyny, objectification, sexual assault, dehumanization, gender bias, and hubris can be re-inscribed by human creators and users of new technologies, just as they are continually re-inscribed in operatic narratives. But all three works also feature unresolved endings, suggesting that the result of human-machine interaction and enmeshment in the digital age is not a foregone conclusion. There is room for the relationship between humans and technology to evolve and change. My hope is that continued interrogation of cyber-narratives within operatic works inspires that change to be for the good of all involved.
APPENDIX 1

Plot Synopsis of Nico Muhly’s Two Boys

The following plot synopsis was written by Craig Lucas (librettist of Two Boys) and was used as the official distributed synopsis of the work for the ENO world premiere and The Metropolitan Opera premiere. It is also included in the front matter of the published vocal score and included in the album booklet for the premiere recording of the work.¹

ACT I

March 2001 in an English industrial city, before widespread use of the Internet. Detective Anne Strawson is given a case she does not want: Jake, 13, has been stabbed in the heart and remains comatose; Brian, 16, stands accused but maintains his innocence. He regales Anne with a preposterous narrative, claiming to have been ensnared online in a web of outrageous and melodramatic characters including wealthy, beautiful Rebecca, 17, her genius brother, Jake, their “Aunt” Fiona, a professional spy, and Peter, their mentally deranged gardener and private assassin in Fiona’s employ. Convinced that Brian is stalling by inventing such outrageous fictions, Anne pushes for Brian to confess to the crime, but Brian vehemently defends his tortured tale. Losing patience, Anne requisitions the boy’s computer from his clueless parents and asks her boss to obtain transcripts of Brian’s online chats to put an end to the nonsense.

At home with her invalid mother, Anne shares that Brian is the very age Anne’s child, given up for adoption at birth, would be today. She cannot bear to think of the kind of life her son must be facing. She and her mother review the security tape from the shopping center where the stabbing occurred. There is no evidence of any assailant other than Brian. Anne confronts Brian with this and he starts her by pointing out that she knows less than nothing about Internet life. Anne doesn’t even own a computer. Brian tells her how deeply he loved Rebecca and how agonized he was to learn of her rape and murder at the hands of Peter. Brian believes she was killed for helping her little brother investigate the high-level spy ring of “Aunt” Fiona.

Visiting Jake’s mother at his hospital bed, Anne asks if Jake has a sister Rebecca, and is told that he does and she has not been seen for some time. Jake’s mother also confirms that she has a best friend Fiona. Anne is then confronted with the transcriptions of Brian’s online chats, all confirming the stories he has been telling her. He is inventing nothing.

ACT II

Alone in her office in the middle of the night, Anne reviews the evidence from every possible angle: How could Brian’s stories be true? She asks her boss to comb the morgues to see if Rebecca’s body has turned up, and to contact M15 about “Aunt” Fiona. Anne apologizes to Brian for not believing him and asks to be shown a chat room. For the first time she begins to hear the music that so intoxicates Brian. She makes him finish his testimony, in which Brian is approached online by both Fiona and Peter. When Jake shows up at Brian’s home seeking refuge, Brian takes the younger boy in and the two have sex before Brian vehemently rejects Jake. Soon after, Fiona offers Brian a large sum of money to assassinate Jake; at first he refuses. Anne, realizing she has forgotten about her mother because of her obsession with this case, rushes home to find her fast asleep. Anne explodes with frustration: She feels a failure in all regards and is glad she did not have an opportunity to destroy her child. Anne’s mother makes a chance remark that leads to Anne’s beginning to solve the case. Rushing back to the office, she listens to Brian explain how Jake was found to be dying of a rare brain cancer, and so Brian chose to accept Fiona’s offer and kill Jake. Brian meets the boy in a secluded area and stabs him.

Anne returns to the hospital, where comatose Jake is found to be brain dead and is to be taken off life support. Looking on Jake’s computer, Anne finds the evidence of all the online monikers Jake indeed created: Rebecca, Fiona, Peter. She hears the voices of the characters he invented and she thinks of the children lost because of parents who fail to hear and see them. To love them, to keep them close. She has solved the case and is left with the image of so many children, “gone for now,” perhaps even the child she gave up at birth.

—Craig Lucas
APPENDIX 2

Plot Synopsis of Søren Nils Eichberg’s Glare

The following two synopsis for Glare (one “brief,” and one “full”) are provided by the publisher, Edition Wilhelm Hansen Copenhagen, and publicly available on the Music Sales Classical database.¹

BRIEF SYNOPSIS

Glare is a psycho-drama chamber-play with elements of science-fiction which focuses on the relationships between four protagonists. As doubts surface about whether one of the characters is an artificial human, the opera debates reality and its perception, the authenticity of experience, and emotion. It asks what is real and how we can really know who we are.

FULL SYNOPSIS

Alex is waiting for Lea, his new girlfriend. Alex recalls what fascinates him about Lea: her perfect beauty and self-assurance, her non-ambiguous affection for him and the fact that they like the same things. When Lea arrives, they go to a party together.

At the party, Alex and Lea bump into Christina, Alex’s ex-girlfriend. Alex introduces Lea to Christina. As the two women start talking, Alex notices in Lea’s befriending of Christina certain “entangling” patterns similar to when they first met. Alex is confused, and jealous that the two women get along so well.

Discovering more signs of strange behaviour in Lea, Alex turns to his friend Michael, asking for his advice. Michael, a scientist who works in a futurology laboratory, compliments Alex on his sharp perception. He confirms Alex’s doubts about Lea’s unnatural behaviour and reveals that Lea is in fact the test model of a highly advanced lust-machine. Michael apologises for not having told Alex, he just wanted to offer him some distraction after his break-up with Christina. Michael tells Alex about a test which “proves” that Lea is an android. Michael then asks Alex to keep their conversation secret and leaves.

Alex is terrified: The woman he desires so much, who seems so real is actually an android, a machine?

When Alex and Lea next meet, Alex still desires her, but feels uneasy in her presence. Lea does not understand what suddenly burdens their relationship. She wants to know what the problem is, what has changed between them, but Alex does not answer those questions.

Out on the street, Lea happens to meet Christina. Christina asks Lea how things are going with Alex. Lea’s uneasy, slightly unnatural answer makes Christina suspicious.

Alex is becoming more and more anxious. He asks himself questions: What do androids do at night? Do they have dreams? Does Lea turn herself off when he is not there?

When Alex accidentally meets Christina, he tells her about his doubts whether or not Lea is “authentic”, but without explicitly mentioning Michael’s disclosure. Christina tells Alex off for being paranoid and urges him not to change Lea.

Christina enters the pub where Michael and Alex met. Christina runs into Michael who starts flirting with her. When Michael’s flirting becomes too aggressive, Christina leaves. Michael is angry – and gets drunk.

Still in the pub, Michael sees Lea standing at the bar. Michael approaches, abuses and eventuallyrapes Lea, insisting that „this is what she was made for“. When Christina comes along and interrupts, Michael flees the scene.

Christina calms down the trembling Lea. Drawing closer, Christina eventually kisses Lea. At first Lea lets it happen but then stiffens, claiming that „she was not made for this“. Christina is embarrassed and leaves.

Lea looks for Alex in his home. Alex can no longer hide his suspicion and confronts Lea directly: Are you real? Lea does not understand: Of course... Her feelings, her pain, her excitement, her fear–everything about her is real.

Alex gets angrier and angrier, Lea stays calm which adds to Alex’s aggression, he feels manipulated by Lea. Alex eventually performs the test Michael had told him about: He asks Lea to cut him with a knife. Lea refuses. Alex is furious, claiming that Lea is unable to hurt him because “that’s how she is programmed.” Lea denies that and tries to calm down Alex. She asks him to trust her, but Alex gets only more and more aggressive in his demands. When he violently pressures Lea to cut him, they get into a fight in which Alex accidentally stabs Lea with the knife. Lea falls to the ground, she is dead.

Alex is shocked by what he has done. Michael finds him. Asks about Lea. Alex murmurs: She is gone... In his desperation, Alex begs Michael to “build him a new Lea.” Michael’s light-hearted reply makes Alex freeze and realise that Michael may never [have] been serious about Lea being an android.
APPENDIX 3
Plot Synopsis of Tod Machover’s Death and the Powers

The following plot synopsis was written by Peter Torpey, visual designer and software engineer for the world premiere production of Death and the Powers. It was written as part of his 2009 Master Thesis at the Massachusetts Institute of Technology.¹

PROLOGUE & MEMORY DOWNLOAD

As the audience enters the theater, they are immersed in a strange environment. The stage and mood is set before the show begins. A geometric assembly of objects onstage appears to be a set. However, as the opera commences, these objects come to life. They are a community of intelligent robots set some time in the future that have awakened to perform a ritual re-enactment of the story of their creator, Simon Powers. As the robots take their places for the re-enactment, a sequence known as Memory Download begins. During this process, the audience observes the robots accessing the story of the characters that will be portrayed. Images of Simon Powers, his daughter from his first marriage, Miranda, his third wife, Evvy, and his research assistant and protégé, Nicholas, are drawn from space and illustrate the back-story of these main characters. The images coalesce, transforming four of the robots into these characters. The remainder of the robots carry on setting the stage and acting somewhat like a Greek chorus or portraying earlier versions of themselves throughout the remainder of the show. The action of the inner play commences.

SCENE I: SIMON AND THE SYSTEM

Simon Powers—an eccentric inventor, business mogul, and wealthy entrepreneur—energetic in spirit, but physically withering, is about to enter The System he has created throughout his home to preserve his essence and agency after his imminent death. He is unfazed by the prospect of living on through his technological creation and Nicholas, who has benefitted himself from Simon’s ingenuity and experimentation, is eager to initiate the transition that Simon must undergo. Evvy and Miranda, on the other hand, are rather frightened at the prospect of losing Simon and the whole procedure. Simon pauses to reflect on his family and the idea underlying his creation of The System: one’s life and essence is not one’s body or one’s possessions, but the spirit, the intangible movement and meaning. Miranda and Evvy are uncertain as to what this will mean. At last, Nicholas completes the preparations and Simon vanishes into The System.

SCENE II: INSIDE THE SYSTEM

Once inside, The System comes online, and Simon’s consciousness begins to experience the result of his life’s work for the first time. In an aside, we see him struggle to reassemble his thoughts and make coherent sense of this new way of being. He searches for memories, a trace of

his identity free of his body, and eventually finds his footing, discovering that what he has become is, in truth, no different from his mortal self.

SCENE III: GETTING TO KNOW YOU

Meanwhile, outside of The System, Nicholas, Miranda, and Evvy observe the machinery functioning, but search for some sign that Simon still exists. Nicholas tinkers and checks to make certain that The System is operating correctly. Evvy is torn between the as yet unconfirmed hope that Simon will somehow return and mourning the loss of her beloved husband. Young, naive, and sheltered Miranda is more skeptical and afraid that she has lost her father, the only true family she has. She too searches for some sign of life from The System. Sure enough, we begin to feel a presence in the house. The walls and the furniture come alive, at first with a sign of intelligence, and then with behaviors that resemble Simon himself. Soon, the house starts exhibiting the same playful and energetic qualities we observed in Simon before his death.

SCENE IV: EVVY’S TOUCH

There is a lull in activity in the Powers home. Nicholas retreats to his workshop and Miranda, still uncertain about her father’s transformation, retires. We see Evvy alone. She is desperate to reconnect with her husband and talks to the house as if he were there. She reminisces about their past together and Simon in The System responds. He presently inhabits the chandelier, which begins to move and sound as it descends to envelope Evvy. Together, they learn how to touch and interact across this new divide. Evvy can feel that The System is in fact Simon, as they share an intimate opportunity to get to know each other once more.

SCENE V: NICHOLAS AND THE ROBOTS

In his laboratory, Nicholas celebrates what he believes to be the success of Simon’s transference into The System. Years of toil realizing Simon’s dream have paid off. Nicholas, in many ways, was a guinea pig for technologies that would be incorporated into The System. Simon benevolently rescued Nicholas at a young age and raised him as the son he never had. The young Nicholas was considerably disabled and missing limbs, including his arm. Simon was able to create remarkable prosthetics for Nicholas, not just to restore his normal movement, but also enhancing his capabilities. Nicholas views these additions as an improvement on the human form and as steps toward becoming part of The System himself. As he expresses his joy, he dances about with several of the robots who are not only utilitarian assistants, but to Nicholas are his companions and even his kindred.

SCENE VI: THE WORLD REACTS

Some time has passed. The System has grown in complexity and scale, yet it itself is fading from materiality. Evvy, Miranda, and Nicholas have become more accustomed to Simon in his new form. As when he was alive in material form, Simon continues to transact business dealings and trading in international markets. However, his renunciation of the material world has only been affirmed by his time within The System. His actions have shown a blatant disregard for the well-
being of world economies, industry, and the communities that depend on these institutions. Evvy wanders about in a daze, in constant communication with Simon, hearing words and speaking words only the two of them can hear.

Miranda announces the arrival of a delegation of world leaders who have come to seek an audience with Simon and plead for aid and support, a reversal of the economic turmoil he has caused. When she presents them to Simon in The System, they grow indignant that they must address the house itself, thinking Simon’s omnipotence and antics to be a trick at their expense. Simon, unsympathetic to their cause, taunts and humiliates the Delegates. Miranda is now torn. She tries to defend her father as the Delegates impugn his motives and very existence. On the other hand, she is appalled at her father’s indifference, thinking that if it were truly her father in The System, he’d not be so callous, and asks for his understanding.

**SCENE VII: INTO THE SYSTEM**

At this point, Nicholas has begun shedding his biological and mechanical body. His conviction that a better and truer life awaits in The System has been bolstered by recent events and he is prepared to join Simon inside. Evvy, who has been in contact with Simon for some time now, understands Simon’s experience and she too is eager to reunite completely with her husband in the realm free of matter and the body. Miranda finds it difficult to accept what her family is doing as she watches Evvy and Nicholas vanish into The System.

**SCENE VIII: MISERIES, MEMORY, AND MIRANDA**

Miranda is desperate to save Nicholas, Evvy, and Simon from their self-absorbed mindset and abandonment of humanity. She wants to remind them of the virtues and needs of the physical world and implores, particularly Simon, to re-engage and be sympathetic to the needs of the world’s people and her own need of a father and companionship as well. She has been left with only the memories of some semblance of a normal life and her loved ones inside The System for which she cares. To persuade Simon, she summons the world’s miseries, oppressed and downtrodden masses, as an example to her father of what his lack of compassion has wrought. The miseries, however, do not have the intended effect and she is again left alone. Dejected, Miranda is astonished to see Simon reappear to her in his human form. In this final confrontation, he entreats her to shed her mortal and material life and join him and the others inside The System.

**EPILOGUE**

The reenactment has concluded. Though the robots have performed this ritual pageant many times before, they still fail to grasp the notion of death and the significance of the story the “human creators” have left as their legacy to be retold ad infinitum.
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