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What Are All These Fragments For?: Public Memory and Algorithmic Culture

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## Abstract

As machines take over the work of producing, organizing, and curating culture, it becomes increasingly important to examine the influence of algorithms in public memory work, through which the past is selectively and subjectively reconstructed to make meaning in the present. Accordingly, this dissertation intervenes at the intersection of public memory scholarship, digital rhetoric, and media studies to examine memorial texts that incorporate computation as an essential element of their design, which I term algorithmic-memorial media. Algorithmic-memorial media explored in this dissertation, variously actualized and imaginary, include postmortem digital avatars, such as memorial chatbots and interactive holograms. Across these artifacts, invention takes place at the levels of author, artifact, and audience, each of which contributes influential yet interdependent rhetorical choices through black-boxed interfaces to convey a partial representation of an underlying archive. These artifacts thus raise pressing questions for scholars and curators of public memory: Who and what has power over their presentation of memorial contents? How is the power to make rhetorically meaningful decisions shared among human and nonhuman agents? That is, who and what are the authors of these media? Whose stories do these media tell?

While these artifacts may seem novel, provoking unprecedented controversies, I adopt a media archaeological approach to demonstrate that algorithmic-memorial media, rather than being unique to this particular historical and technological moment, actually strongly resemble and continue the work of earlier and more commonplace telecommunication and recording technologies, digital and otherwise. After situating the dissertation's case studies within an enduring history of the use of procedure in the work of memory and mourning, I identify two features that set some algorithmic-memorial media apart from otherwise similar examples:

mimesis—speaking as an absent subject—and mutability—inviting audience contributions that alter how these media manifest. I find that while neither mimesis nor mutability are unique to algorithmic-memorial media, certain texts unite these features to powerful and persuasive ends. Such media exploit an ambiguous relationship between audience input and memorial output to encourage recursive play with memorial contents, which remain dormant until the right input is discovered. I argue that, by requiring experimentation with an underlying archive, mimetic and mutable algorithmic-memorial texts position audience members as curators of their own memorial experience. This dissertation explores how this positioning might make memory more unsettling but also potentially more critically engaging, evocative, and ultimately persuasive.

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*For my grandma, Janet.*

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## Introduction

### Algorithmic-Memorial Media: Identifying an Archive

Memory is the sense of loss, and loss pulls us after it.

—Marilynne Robinson, *Housekeeping*<sup>1</sup>

In February 2013, the British sci-fi television series *Black Mirror* aired a standalone episode called “Be Right Back,” foretelling a grim future populated with chatbots and androids that offer uncanny approximations of the dead.<sup>2</sup> In the episode, Martha receives an email from someone identifying himself as her dead husband: the subject line reads simply, “Yes it’s me.” Martha’s friend explains to her, “It’s a software. It mimics him. You give it someone’s name, it goes back, and reads through all the things they’ve ever said online, their Facebook updates, their Tweets, anything public. I just gave it Ash’s name; the system did the rest.” Eventually, Martha upgrades to an android-Ash, who resembles her husband in every way; however, its inauthentic and ultimately inadequate imitation of his personality unsettles her. At the episode’s conclusion, we see Martha and her daughter visit Ash’s android in the attic, where Martha has locked it up indefinitely.

Three years later, as Russian chatbot developer Eugenia Kuyda watched the episode, she wondered if she was doing the right thing. Kuyda was in the process of making her own memorial chatbot, a messaging app that would mimic the personality and speech of her recently deceased friend Roman Mazurenko. It had occurred to Kuyda that the same neural network technology she

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<sup>1</sup> Robinson, *Housekeeping*, 291.

<sup>2</sup> Harris, dir., “Be Right Back.”

used to build chatbots for her artificial intelligence startup might be used to create a digital avatar of her friend. She would later reflect, “It’s definitely the future—I’m always for the future. But is it really what’s beneficial for us? Is it letting go, by forcing you to actually feel everything? Or is it just having a dead person in your attic?”<sup>3</sup> Pushing these doubts aside, Kuyda collected over eight thousand lines of text messages from Mazurenko’s friends and family. With this archive, she and her team of engineers built Mazurenko’s digital avatar, which, culling from and even reconfiguring Mazurenko’s original texts, replied to new messages from family, friends, and strangers.

Since Mazurenko’s memorial chatbot was made available to the public in 2016, several others have been built and covered by popular news outlets including the *Huffington Post* and *Wired*. Muhammad Aurangzeb Ahmad, a data scientist from the University of Washington, modeled a bot after his late father in the hopes that, through interacting with the bot, his future children would be able to “meet” their grandfather.<sup>4</sup> James Vlahos began creating his own “Dadbot” in 2016 after learning that his father was dying of lung cancer.<sup>5</sup> Meanwhile, startup Eternime, founded in 2014 by MIT fellow Marius Ursache, has promised to make digital doubles of its subscribers using their social media data.<sup>6</sup>

Though memorial chatbots (or, occasionally, “grief bots”) and, more generally, postmortem digital avatars, are not yet commonplace, their recent appearances in dystopian fiction, news

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<sup>3</sup> Newton, “When Her Best Friend Died.”

<sup>4</sup> CBC Radio, “When His Father Died.”

<sup>5</sup> Vlahos, “A Son’s Race.”

<sup>6</sup> “Eternime.”

media—and, in the case of Roman, free for download from the Apple App Store—announce emergent possibilities for the use of computation in public memory, including memorials, historical and commemorative sites, and museum exhibits. The stakes for understanding how algorithmic-memorial media like Roman do the work of memorialization are high, particularly for the study of rhetoric and public memory: opportunities for the use of computation in public memory practice will inevitably proliferate as our personal, digital archives grow, advances are made in deep learning and neural network technology, and machines increasingly take over the work of producing, organizing, and curating knowledge. Accordingly, this dissertation intervenes at the intersection of public memory scholarship, digital rhetoric, and media studies to explore the unique challenges posed to scholars and curators of public memory as computation is increasingly used in its practice.

Writing in 2016, Paul Dourish noted a recent uptick in the discussion of algorithms across public and academic discourse.<sup>7</sup> Computation’s ever-expanding influence extends to public policy, finance, governance, and media production and consumption,<sup>8</sup> thereby fundamentally altering how culture is “practiced, experienced, and understood.”<sup>9</sup> Across disciplines, including the social sciences, biology, and neuroscience, computation is now used to solve conceptual problems, in an intellectual transition commonly referred to as the “computational turn.”<sup>10</sup> In journalism, “large-

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<sup>7</sup> Dourish, “Algorithms and Their Others,” 2.

<sup>8</sup> Striphas, “Algorithmic Culture,” 396; Napoli, “Automated Media,” 345; Gillespie, “Algorithm,” 27; Dourish, “Algorithms and Their Others,” 2.

<sup>9</sup> Striphas, “Algorithmic Culture,” 396.

<sup>10</sup> Bucher, “Machines Don’t Have Instincts,” 919.

scale data collection, algorithmic data analysis and computational practices” are now regularly deployed “in the production and dissemination of news.”<sup>11</sup> And online, algorithms “shape and construct . . . experiences for virtually all web users.”<sup>12</sup> Computation—often referred to simply as “algorithms” in popular commentary—is increasingly entrusted with “the sorting, classifying and hierarchizing of people, places, objects and ideas,”<sup>13</sup> and accordingly, the term “algorithmic culture” has come to describe the monumental cultural significance of computation as it becomes increasingly ubiquitous in the twenty-first century.<sup>14</sup>

Given the expanding influence of algorithmic culture, it becomes increasingly necessary to examine its use in a public memory context. Memory texts that incorporate computation as an essential element of their design (hereafter I will label them algorithmic-memorial media or algorithmic-memorial texts) may seem unique to this particular historical and technological moment, made possible only by the continual expansion of personal archives across social media and advancements in neural network and deep learning technology. In this context, the term “deep” refers to the ability of neural networks to learn by example from large data sets and then combine and recombine inputs to produce more complex and often unexpected outputs.<sup>15</sup> Consider Roman, for example, and the crucial role deep learning played in its creation. On

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<sup>11</sup> Bucher, 919.

<sup>12</sup> Reyman, “The Rhetorical Agency of Algorithms,” 113.

<sup>13</sup> Striplas, “Algorithmic Culture,” 396.

<sup>14</sup> Dourish, “Algorithms and Their Others,” 2.

<sup>15</sup> MathWorks, “What Is Deep Learning?”

November 9, 2015, two weeks after Mazurenko died, Google made TensorFlow, a powerful and expensive deep learning software, available for free use by the general public. Through this software, Kuyda and her team of engineers trained the neural network that enabled Roman to generate original strings of text based on Mazurenko's patterns of vocabulary and tone.

Although algorithmic-memorial media are often characterized in popular commentary as cutting-edge, controversial, and revolutionary for public memory and mourning, my analysis shows that they actually strongly resemble and continue the work of earlier and more common media, digital and otherwise. While I believe that algorithmic-memorial media do introduce new affordances and constraints into public memory practice, I adopt the position held by media scholars such as Jay David Bolter and Richard Grusin that "new media must be defined through its relationship with older media," because "[w]hat is new about new media comes from the particular ways in which they refashion older media and the ways in which older media refashion themselves to answer the challenges of new media."<sup>16</sup> That is, while I am concerned with the uniqueness of these objects, the ways that they continue the work of existing media provide necessary context for this inquiry. Throughout this dissertation, I keep the following question in mind: How can we understand algorithmic-memorial media, an apparently recent phenomenon, within a longer history of the use of procedure in the work of memory and mourning?

This dissertation engages several fields, including digital rhetoric, public memory, and media studies. These literatures share some important, essentially rhetorical, concerns: across the study of public memory, digital media, and technology, objects of analysis (whether stone

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<sup>16</sup> Bolter and Grusin, *Remediation*, 15, quoted in Eyman, *Digital Rhetoric*, 52.

monuments or digitalized gravesites, radio broadcasts or computer programs) are typically assumed to represent sites of symbolic contestation and action that might reveal much about the cultures that produce and sustain them.

Consider, first, public memory. As “a body of beliefs and ideas about the past,” public memory is mutable, subject to continual revision and strategic deployment in response to contemporary problems.<sup>17</sup> The past is selectively and subjectively reconstructed and applied to make meaning in the present, and much public memory scholarship concerns how the “symbolic contest” of memory work plays out in particular sites and objects.<sup>18</sup> Public memory texts—including monuments, memorials, museum spaces, films, public ceremonies and performances, and ephemera—are just as deliberative and political as they are epideictic and ceremonial, representing choices about what to remember and teaching audiences how to do this remembering.<sup>19</sup> Critical attention to public memory texts is often assumed to be useful “for political analysis and ideological critique” and can tell us much about the ideologies and structures of power that built them, as well as strategies for resistance.<sup>20</sup>

Similarly, across the study of digital media and technology, much attention is paid to the material and historical conditions of their existence.<sup>21</sup> Charles R. Acland argues that media

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<sup>17</sup> Bodnar, *Remaking America*, 15; Casey, “Public Memory in Place and Time,” 29–30; Halbwachs, *On Collective Memory*, 80–81.

<sup>18</sup> Morris, “My Old Kentucky Homo,” 90.

<sup>19</sup> Blair, Jeppeson, and Pucci, “Public Memorializing in Postmodernity,” 263.

<sup>20</sup> Gong, “Re-Imagining an Ancient, Emergent Superpower,” 195.

<sup>21</sup> Acland, “Curtains, Carts and the Mobile Screen,” 166.

scholars need to understand material-historical context in order to see how “common sense about media use” has always been motivated by ideology, economic interests, and the “constructing [of] a relation between materials, people, and power.”<sup>22</sup> Contextualizing media technologies by attending to the conditions of possibility for their existence allows critics to recognize how their deployment is “var[iable] across time and location” as well as who is included in and excluded from their use.<sup>23</sup>

To summarize, of common interest to scholars of public memory, digital media, and technology are the material-historical conditions of possibility for their production (including, for example, ideologies and economic interests) and how they respond to certain cultural needs, desires, fears, and exigences. Across the study of public memory, digital media, and technology, scholars tend to assume that their objects of study are not ideologically neutral or inevitable even if popular commentary might treat them as such. These disciplines are preoccupied with questions of “what might have otherwise been,” as Jussi Parikka notes.<sup>24</sup> Media archaeologists ask, “Why do certain designs, technological solutions and assumptions concerning media use habits persist, and others vanish?”<sup>25</sup> Meanwhile, public memory scholars wonder, “What renders messages—memories or other kinds of contents—believable, persuasive, or even compelling to particular audiences at particular times in particular circumstances?”<sup>26</sup>

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<sup>22</sup> Acland, 166.

<sup>23</sup> Acland, 149.

<sup>24</sup> Parikka, *What Is Media Archaeology?*, 43–44.

<sup>25</sup> Parikka, 43.

<sup>26</sup> Blair, Dickinson, and Ott, “Introduction,” 15.

I engage questions of “what might have otherwise been” in this dissertation, turning to media archaeology in my analysis of algorithmic-memorial texts to understand how these objects continue the essential work of their technological predecessors even as they seem to deviate from or even upend them. According to Chrissy Thompson and Mark A. Wood, media archaeology “examines the emergence, practices, affordances, and potentialities of new media by drawing insights from past media.”<sup>27</sup> Media archaeology, as defined by Parikka, is “a way to investigate the new media cultures through insights from past new media, often with an emphasis on the forgotten, the quirky, the non-obvious apparatuses, practices, and inventions.”<sup>28</sup> Emerging out of the work of Michel Foucault and Friedrich Kittler, media archaeology is deeply invested in how technology is caught up in structures of power and how subjectification “occurs not only through people and institutions, but in the circuits in which our media systems are made,” as summarized by Thompson and Wood.<sup>29</sup> In this context, Parikka explains, “[a]rcheology . . . means digging into the background reasons why a certain object, statement, discourse or . . . media apparatus or use habit is able to be born and be picked up and sustain itself in a cultural situation.”<sup>30</sup> Adopting a media archaeology approach toward the study of algorithmic-memorial media centers rhetorical concerns by shedding light on their material-historical contexts, the exigences to which they respond, and the culture that builds and perpetuates them.

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<sup>27</sup> Thompson and Wood, “A Media Archeology of the Creepshot,” 562.

<sup>28</sup> Parikka, *What Is Media Archaeology?*, 3.

<sup>29</sup> Thompson and Wood, “A Media Archeology of the Creepshot,” 562.

<sup>30</sup> Parikka, *What Is Media Archaeology?*, 6.



Algorithms intersect with and shape human experiences and thus represent important sites of cultural production; however, it is important to note that the algorithm—like the Internet, television, radio, and telephone before it—is often naively described in popular discourse as a viable means to erase inequality and promote social unity, or else as a revolutionary tool for education and democracy, or else as an outright magical intervention. Following Wendy Chun, Paul Dourish cautions that relying on “purely technical accounts risks obscuring the social and cultural practices by which those technical objects are animated in practice.”<sup>31</sup> Tarleton Gillespie suggests that popular references to “algorithms” or “algorithmic culture” are more invested in “the insertion of procedure into human knowledge and social experience” than to the algorithm itself.<sup>32</sup>

Perhaps as a consequence of increased public interest in and attention to algorithms, the term “algorithm” is often deployed imprecisely to describe a number of different components belonging to a larger “technical assemblage,” including the algorithm itself, the model, the data that trains it, and the hardware involved.<sup>33</sup> Furthermore, the “algorithm” is often conflated with a number of other terms: “automation” (in which “algorithm” is made to stand in for a larger set of automatic processes such as credit scoring or detecting plagiarism); “code” (which can be used to actualize an algorithm but signals much more besides); “architecture” (which refers to the “organizational structure” of a program within which the algorithm may be dispersed); and lastly “materialization” (how the algorithm appears in a particular instance, which does not necessarily

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<sup>31</sup> Dourish, “Algorithms and Their Others,” 9.

<sup>32</sup> Gillespie, “Algorithm,” 25.

<sup>33</sup> Gillespie, 22.

fully encapsulate its “computational possibilities”).<sup>34</sup>

To developers, “algorithm” means “specifically . . . the logical series of steps for organizing and acting on a body of data to quickly achieve a desired outcome.”<sup>35</sup> An uncritical or fetishizing deployment of the term “algorithm” can thus occlude its material and historical contexts, which in turn makes it difficult to understand how algorithms are *not* without bias, or deployed uniformly across space and time, or as much of a rupture from existing technologies as may first appear.<sup>36</sup> For the purposes of this project, I adopt Jessica Reyman’s definition of “algorithms”: “codes that *process data*, perform *automated reasoning*, and then *output information* in a *transformed* manner toward a *desired end*.”<sup>37</sup>

This definition signals one troublesome feature of computational objects, particularly for scholars of digital rhetoric: their persistent and frustrating opacity. That is, exactly how algorithms “transform” data inputs into data outputs is typically unknown. Without knowing how a text was produced or even what many of its symbolic features are (the crucial “automated reasoning” component of Reyman’s definition), the analysis of that text becomes much more difficult.

Critics from digital rhetoric, media studies, human-computer interaction, technology studies, and cultural studies have confronted algorithmic opacity using a number of approaches. Casey Boyle, James J. Brown Jr., and Steph Ceraso identify three facets that rhetoricians consider

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<sup>34</sup> Dourish, “Algorithms and Their Others,” 6.

<sup>35</sup> Gillespie, “Algorithm,” 19.

<sup>36</sup> Acland, “Curtains, Carts and the Mobile Screen,” 156; Bucher, “The Algorithmic Imaginary”; Dourish, “Algorithms and Their Others”; Gillespie, “The Relevance of Algorithms.”

<sup>37</sup> Reyman, “The Rhetorical Agency of Algorithms,” 114; emphasis added.

when analyzing digital texts: multisensorial features, computation and procedure, and the intersection of these texts and culture.<sup>38</sup> Rhetoricians also attend to how their objects of study are designed and produced, as well as how audiences interact with them.

Cultural theorists, meanwhile, have argued that the “social and cultural impact” of computation deserves closer scrutiny, particularly in the “different narratives that circulate” about such computation, as Simone Natale explains.<sup>39</sup> Taina Bucher maintains that “we do not necessarily need access to the thing itself (whatever that may be) in order to perceive it,” and thus we can study and understand algorithms through their effects on users.<sup>40</sup> Bucher notes a lack of research on “the ways in which people experience and perceive algorithms as part of their daily life and media use” and makes an argument for setting aside an algorithm’s code, at least temporarily, to consider the tangible and observable ways in which algorithms affect their users.<sup>41</sup> She finds that Facebook’s users “tend to construct ‘mental models’ and theories about its workings as a way of navigating and interacting with” them.<sup>42</sup> Users participate in an “algorithmic imaginary” as they interpret and respond to social media.<sup>43</sup> That is, in spite of its black-boxed nature, users develop ways to push the algorithm in certain directions (to garner more likes for a post or to see fewer posts supporting conservative viewpoints, for example).

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<sup>38</sup> Boyle, Brown, and Ceraso, “The Digital,” 256.

<sup>39</sup> Natale, “If Software Is Narrative,” 1.

<sup>40</sup> Bucher, “The Algorithmic Imaginary,” 32.

<sup>41</sup> Bucher, 31.

<sup>42</sup> Bucher, 41.

<sup>43</sup> Bucher, 31.

Similarly, Natale observes that, in the absence of explicit, public discussions regarding how algorithms are developed, everyday users turn to “a variety of narratives that help [them] make sense of . . . [their] functioning and presence.”<sup>44</sup> Along the lines of Bucher’s algorithmic imaginary, Natale argues that multiple and contradictory narratives circulate about algorithms, and “software artefacts become contested objects whose meanings and interpretations are the subject of complex negotiations within the public sphere.”<sup>45</sup> He argues “that software’s impact should be considered at two distinct yet interrelated levels: at a material level, in terms of the changes triggered by its operations in the material world” as well as “at a discursive level, in terms of the different narratives and discourses that generate and inform wider debates about technology.”<sup>46</sup> Natale takes up the first chatbot, ELIZA, developed at MIT in the 1960s, as a case study, adumbrating how “competing narratives . . . largely transcended the actual functioning of this programme and shaped key controversies about the implications of computing and AI.”<sup>47</sup> He suggests that “[r]ather than being ‘just stories,’ narratives about software orient action.”<sup>48</sup>

In this dissertation, I use a constellation of related methods to investigate my elusive and opaque objects: rhetorical analysis—that is, close readings of the texts, their symbolic features, and the cultural narratives and technological myths surrounding them—procedural rhetoric to account

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<sup>44</sup> Natale, “If Software Is Narrative,” 2.

<sup>45</sup> Natale, 2.

<sup>46</sup> Natale, 2.

<sup>47</sup> Natale, 3.

<sup>48</sup> Natale, 13.

for the rhetorical work done by computation, and media archaeology to understand how these objects fit within a long history of the insertion of procedure into mourning and memory work. While procedural rhetoric and close readings of texts illuminate how authorship, affect, and persuasion play out across these objects, media archaeology and attention to the narratives circulating about them show how these unusual texts respond to common fears, desires, and exigences, namely, a longing to close painful distances between ourselves and the dead.

In Chapter 1, poignant glitches from the *Black Mirror* episode “Be Right Back” suggest broad narratives and cultural anxieties surrounding algorithmic-memorial media. This chapter extends another premise from media archaeology: imaginary media matter because they influence which technologies are *thinkable* within the public imaginary. As explained by Parikka, citing Siegfried Zielinski, imaginary media include media that are temporally displaced, “realized in technical and media practice either centuries before or centuries after being invented”; media that were designed but never actualized; and media that, when first designed, were never meant to be actualized.<sup>49</sup> As Parikka suggests, “Studying imaginary media allows us to step outside a seemingly inevitable flow of technological development to consider what might have otherwise been.”<sup>50</sup> That media archaeology is just as concerned with imaginary media as real media makes it a fitting framework for studying “afterlife media,” which primarily appear in fiction. Incidentally, “[m]uch of the research that can be labelled as part of ‘imaginary media’ has focused on the theme of death,

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<sup>49</sup> Zielinski, “Modeling Media for Ignatius Loyola,” 30, quoted in Parikka, *What Is Media Archaeology?*, 50.

<sup>50</sup> Parikka, *What Is Media Archaeology?*, 43–44.

ghosts and psychical communication.”<sup>51</sup> Parikka argues that “imaginary media are important not only as exercises of imagination but as entry-points to the wider unconscious surrounding the technological culture,” and consequently “the notion becomes a way to look at how technological assemblages are embedded in hopes, desires and imaginations of mediation.”<sup>52</sup>

Imaginary and speculative media appearing in *Black Mirror*’s “Be Right Back” provide apertures into our own algorithmic imaginaries, which in turn influence how actualized algorithmic-memorial media are made thinkable in public imagination. Through a media archaeological lens, I compare themes from “Be Right Back” to older narratives surrounding other technologies that are likely more familiar to the reader—including telephone calls and photographs—to show that, compared to other recording and telecommunications media that represent absent subjects, algorithmic-memorial texts are not unique in inspiring caution, mistrust, and fear. As Jeffrey Sconce observes, an “electronic presence” haunts all telecommunications technologies, beginning with the telegraph and continuing on through radio, television, and the Internet.<sup>53</sup> Sconce suggests that these technologies, by “carry[ing] the animating ‘spark’ of consciousness itself beyond the confines of the physical body,” produce an eeriness described variously as “‘simultaneity,’ ‘instantaneity,’ ‘immediacy,’ ‘now-ness,’ ‘present-ness,’ ‘intimacy,’ [and] ‘the time of the now.’”<sup>54</sup> In *Speaking into the Air*, John Durham Peters explores a similar

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<sup>51</sup> Parikka, 55.

<sup>52</sup> Parikka, 46.

<sup>53</sup> Sconce, *Haunted Media*, 4–6.

<sup>54</sup> Sconce, 4–6.

phenomenon whereby telecommunications technologies seem to provide a solution to the very problem they introduce. Peters observes that anxieties related to (mis)communication appeared just as, during the late nineteenth century, telecommunications technologies began to overcome “obstacles of time and space” like never before.<sup>55</sup> Since then, the challenge of overcoming “painful divisions between self and other, private and public, and inner thought and outer word” has seemed only to depend on a more perfect—or more technologically-enhanced—communication.<sup>56</sup>

Given the introduction of computation to memorial experience, one might wonder how algorithmic-memorial media might overcome “painful divisions” between the dead and living; however, I take seriously Peters’s provocative claim that “those who build new media to eliminate the spectral element between people only create more ample breeding grounds for the ghosts.”<sup>57</sup> At first glance, algorithmic memorialization might enable the closing of distances produced by time and death, but it is important to recognize that these media belong to a long tradition of technologies promising to “bridge” various “abyss[es]” plaguing communication.<sup>58</sup> Situating “Be Right Back” within this broader techno-historical context reveals that algorithmic-memorial media and the anxieties surrounding their use reflect longstanding desires for technologically-enabled communication with the dead—and experiences of painful uncanniness when these media inevitably fail to achieve this end.

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<sup>55</sup> Peters, *Speaking into the Air*, 4–5.

<sup>56</sup> Peters, 2.

<sup>57</sup> Peters, 30.

<sup>58</sup> Peters, 16.

If Chapter 1 reveals key *similarities between* algorithmic-memorial media and their technological antecedents, Chapter 2 explores *variations among* algorithmic-memorial media. I identify two specific features that, when united in algorithmic-memorial media, set their texts apart from similar examples: mimesis and mutability. By mimesis, I mean attempts not only to represent an absent subject but to *speak as* them. Memorial chatbots, which adopt a “first-person perspective” of the people they memorialize, provide a ready example. By mutability, I mean the capacity to change how a text manifests with the addition of inputs, sometimes from audiences, after that text is initially developed and deployed. Again, memorial chatbots satisfy this criterion by enabling access to different parts of an underlying archive of text messages depending on how human participants decide to interpret and respond to the bot’s messages.

While neither mimesis nor mutability is unique to algorithmic-memorial media, I suggest that certain texts, like the memorial chatbot, unite these features to powerful and persuasive ends. When mimesis and mutability appear together, a subset of algorithmic-memorial media emerges at their intersection, distinguishing them from other digital memorials. I argue that the intersection of mimesis and mutability introduces opportunities for uncanny encounters *and* poignant revelations by creating the necessary conditions for heightened critical and affective engagement. This claim provides the axis on which the dissertation turns.

Consider, in contrast to mimetic and mutable algorithmic-memorial media, memorial websites, online guestbooks, and preserved social media profiles of the deceased.<sup>59</sup> Such media,

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<sup>59</sup> For a general discussion, see Bennett and Huberman, “From Monuments to Megapixels”; Nansen et al., “Social Media in the Funeral Industry”; Dobler, “Ghosts in the Machine”; Hess, “In Digital Remembrance”; Arnold et al., *Death and Digital Media*.



variously referred to as “cybermemorials” or “Web memorials,” have existed at least since 1996 and have only multiplied since social media has become more ubiquitous.<sup>60</sup> Online memorials such as these are mutable or “interactive” in the sense that they enable different kinds of audience participation by presenting an archive for users to selectively explore and by manifesting differently in response to audience choices.<sup>61</sup> Such memorials are, as Ekaterina V. Haskins suggests, “more participatory and active than . . . flipping through television channels, scanning a newspaper, or following an audio-tour through a museum.”<sup>62</sup> In the case of the September 11 Digital Archive, Haskins observes that digitality offers unprecedented opportunities for audience interactivity, suggesting that, in the case of digital texts, “[t]he audience no longer acts as a consumer of a linear story—it takes part in the experience by making choices to connect particular messages and images as well as to register responses to them.”<sup>63</sup>

Memorial websites and social media pages are mutable but, crucially, not usually mimetic. This dissertation takes as its primary objects of study algorithmic-memorial texts that are both. To explore and emphasize the difference between my archive (mimetic and mutable algorithmic-memorial media) and peripheral examples, in Chapter 2 I consider mimesis and mutability across three examples of actualized algorithmic-memorial media that do not satisfy one or both

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<sup>60</sup> Brubaker, Hayes, and Dourish, “Beyond the Grave,” 154.

<sup>61</sup> Bennett and Huberman, “From Monuments to Megapixels,” 351; Haskins, *Popular Memories*, 50.

<sup>62</sup> Haskins, *Popular Memories*, 50.

<sup>63</sup> Haskins, 50.

conditions: the Robert Kardashian hologram (mimetic, nonmutable), the 9/11 exhibit *Timescape* (nonmimetic, mutable), and the 9/11 memorial *Reflecting Absence* (nonmimetic, nonmutable).

By comparing these examples, I am also able to map various actors—human and nonhuman—at play in the production of algorithmic-memorial media. Given that public memory scholars are interested in what kinds of participation public memory practice encourages—active, passive, critical, uncritical—deep learning technologies and the complex computational manipulation of archives they enable create radically new opportunities for audience interaction, in which audiences play a fundamental role in the production and performance of public memory. Haskins distinguishes between “participatory memory practice”<sup>64</sup>—which incorporates the “voluntary participation of ordinary people in selecting, producing, or performing interpretations”<sup>65</sup> of the past—and “traditional artifacts and sites of memory”<sup>66</sup> that do not invite such “active contribution to ... content and form.”<sup>67</sup> Some algorithmic-memorial media participate in this mode by offering choices to audiences that tangibly affect their and others’ experiences of memorial contents. Each interaction, with a memorial chatbot for example, is unique, and these interactions—the case of the memorial chatbot, involving interpreting the bot messages and responding to them—are instrumental in the production and experience of the memorial.

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<sup>64</sup> Haskins, 2.

<sup>65</sup> Haskins, 2.

<sup>66</sup> Haskins, 14.

<sup>67</sup> Haskins, 3.

At the same time, many scholars have recently argued that algorithms, as “nonhuman actants,” exhibit their own kind of agency: as Reyman explains, “Algorithms are more than a tool for rhetorical activity; they themselves participate in meaning-making, affecting human communication, understanding, and behavior on both small and large scales.”<sup>68</sup> Importantly, algorithms “do not produce neutral output based purely on objective calculations” but instead are developed in response to problems as defined by humans, who also supply the data that shape them.<sup>69</sup> Memorials that incorporate computation in their design represent a “complex intermingling of human and nonhuman actors” and are directly enabled and constrained by the data and training processes that inform them.<sup>70</sup> David Beer argues that “we can no longer think of our lives as mediated by information and software”; instead, “they are increasingly constituted by or comprised of them.”<sup>71</sup> Beer explains that what Scott Lash calls a “new new media ontology” signals a shift: “information is not only about how we understand the world, it is also active in constructing it.”<sup>72</sup>

While the agency of nonhuman actants has been recently discussed in innumerable other contexts, little attention has been paid to how such agency might play a role in shaping public memory for audiences. I refer to interaction of human and nonhuman decision-making in

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<sup>68</sup> Reyman, “The Rhetorical Agency of Algorithms,” 114–15.

<sup>69</sup> Reyman, 114.

<sup>70</sup> Napoli, “Automated Media,” 344.

<sup>71</sup> Beer, “Power through the Algorithm?,” 987.

<sup>72</sup> Beer, 988.

algorithmic-memorial media as the “authorial knot,” signaling the complex authorship involved in the production of algorithmic-memorial texts. I ask, how do human and nonhuman actors, through co-constitutive decision-making, produce public memory together? On the one hand, if computation exhibits its own material agency, then might algorithmic-memorial media, produced symbiotically by “humans and nonhuman actants,”<sup>73</sup> decenter “human motivation, intention, and expression”<sup>74</sup> in public memory work? On the other, how can designers of museum exhibits negotiate specific narratives and arguments alongside the audience choices—motivated by individual curiosity and desire?

This latter question has often been addressed in the context of memorial games, which afford audiences opportunities to make meaningful choices in the display and experience of memorial contents. In their study of memorial video games, Răzvan Rughiniș and Ștefania Matei argue that these exhibit four key features: they “invok[e] specific historical events,” make a claim for “truthful representation,” “invit[e] empathic understanding,” and provide “opportunities for reflection.”<sup>75</sup> The authors acknowledge that the use of video games to commemorate historical events might be seen as “inappropriate,” particularly as, presumably, a video game’s primary purpose is to entertain, and “by making major historical events subject to play, it runs the risk of transforming a solemn occasion into a trivial manifestation.”<sup>76</sup> Nevertheless, the authors argue that

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<sup>73</sup> Reyman, “The Rhetorical Agency of Algorithms,” 118.

<sup>74</sup> Reyman, 118.

<sup>75</sup> Rughiniș and Matei, “Play to Remember,” 629.

<sup>76</sup> Rughiniș and Matei, 628.

memorial video games “offer a rich, yet underused and understudied medium for commemoration.”<sup>77</sup>

In her 2003 study of “digital interactive multimedia consoles” at the Simon Wiesenthal Center’s Multi-media Learning Center in Los Angeles, Anna Reading observes that “digital interactivity tends . . . towards the conventional reproduction of established media forms, notably the encyclopedia” but speculates that museums might incorporate games, which “disrupt the tendency towards re-articulating the familiar.”<sup>78</sup> Like Rughiniş and Matei, Reading acknowledges some potential problems with the use of games in public remembrance, including the possibility that they might undermine serious content or else distract from or give an incomplete picture of “the main narrative of the events, which must be told to visitors whole and uninterrupted.”<sup>79</sup> Yet Reading observes that “games, even amidst the most horrific circumstances[,] are how children, especially, come to understand the world.”<sup>80</sup>

As Reading notes, radically interactive museum exhibits introduce significant “tensions between visitor agency versus a shared memorial experience.”<sup>81</sup> We might ask, how does a museum negotiate these tensions while presenting specific historical narratives? Does the audience’s interaction with these texts fundamentally change what is being remembered, and how might

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<sup>77</sup> Rughiniş and Matei, 638.

<sup>78</sup> Reading, “Digital Interactivity in Public Memory Institutions,” 80.

<sup>79</sup> Reading, 81.

<sup>80</sup> Reading, 81.

<sup>81</sup> Reading, 71.

heightened audience agency disrupt an exhibit's intended messaging?<sup>82</sup> I explore the interaction of human and nonhuman decision-making in earnest in Chapter 3, but algorithmic-memorial texts I analyze in Chapter 2—variously mutable/nonmutable, mimetic/nonmimetic—provide a range of test cases in which to consider various configurations of the authorial knot because they position audiences in different roles in the navigation of memorial contents.

As I establish in Chapter 2, algorithmic-memorial media require audiences to make choices that fundamentally shape the experience of memory and thus may seem to depart radically from traditional memorials such as monuments or historical sites by being exceptionally participatory. In Chapter 3, I interrogate further authorial ambiguity in an actualized example of *mimetic and mutable* algorithmic-memorial media, the memorial chatbot Roman. I begin by exploring a prominent concern in public memory literature: whether texts invite audiences to “passively” consume their contents or “actively” contribute to them. Even nondigital memorials inspire questions about the interaction of designer and audience choices to affect the experience of memory. Of principal concern here is the interface, as Douglas Eyman describes it, “the point at which software, hardware, user, network, the virtual and the material come together.”<sup>83</sup> In the context of algorithmic-memorial media, the interface serves as a locus of authorial control by shaping how designers, audiences, and algorithms produce these texts collaboratively.

In an effort toward characterizing encounters with algorithmic-memorial interfaces, I turn to Ian Bogost, who criticizes much scholarship on digitality, which he suggests does not closely

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<sup>82</sup> Reading, 73.

<sup>83</sup> Eyman, *Digital Rhetoric*, 55–56.

engage with the computational processes central to its objects of study, instead taking these processes for granted and subordinating them to “existing cultural and expressive practices.”<sup>84</sup> Bogost offers the concept of procedural rhetoric to understand the “practice of using processes persuasively,” in particular the “computational processes” found in computer programs and video games.<sup>85</sup> Bogost is also concerned with how digital objects create new conditions of possibility for interaction (and thus persuasion); however, he argues that the term “interaction” is often used imprecisely in scholarship on new media. Interactivity, he argues, depends not on how frequently “user actions” are solicited but how these interactions fundamentally influence “the representational goals of the system.”<sup>86</sup>

As part of my procedural-rhetorical analysis of Roman, I first situate Roman within the history of chatbots at large. Notably, narratives of deception pervade the discursive history of the chatbot, and their interfaces have historically been evaluated according to their ability to “trick” their human interlocutors into reading consciousness, feelings, or humanness into them. I then compare the memorial chatbot to another historical analog, the Ouija board. I compare these technologies because they each facilitate designer and audience collaboration through a black-boxed interface to give an incomplete picture of an underlying archive. Rather than simply extending these narratives of deception to the memorial chatbot through comparison to the Ouija board, I argue that mutable and mimetic algorithmic-memorial media like Roman exploit an

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<sup>84</sup> Bogost, *Persuasive Games*, 26.

<sup>85</sup> Bogost, 3.

<sup>86</sup> Bogost, 46.

ambiguous relationship between audience input and memorial output to encourage recursive play with memorial contents, which remain dormant until the right input is discovered.

I extend my initial question regarding the affordances and constraints of computation in public memory to ask, how does experimental play with a concealed archive of memorial contents to approximate interaction with an absent subject shape an algorithmic-memorial text's capacity to engage and persuade audiences? My interactions with Roman suggest that, by requiring experimentation with an underlying archive, mutable and mimetic algorithmic-memorial texts position audience members as curators of their own memorial experience. This positioning stands to make memory more unsettling but also potentially more critically engaging, evocative, and ultimately persuasive.

If Chapter 3 concerns private interaction with algorithmic-memorial media and the critical engagement possible therein, Chapter 4 reorients us toward *public* experiences of memory and their potential for creating evocative, memorable, and persuasive memorial experiences. In Chapter 4, I visit two relatively newer exhibits at the Illinois Holocaust Museum and Education Center in Skokie, Illinois: *The Journey Back: A VR Experience* and *The Abe and Ida Cooper Survivor Stories Experience* holographic theater. In *The Journey Back: A VR Experience*, museum visitors don VR helmets to accompany Holocaust Survivors as they revisit significant sites, including contemporary footage of their childhood homes and the concentration camps to which they were forcibly transported. In *The Abe and Ida Cooper Survivor Stories Experience* holographic theater, 3D holograms of Holocaust Survivors appear onstage to share their experiences and answer questions from a live audience.



Echoing a popular theme from discourse on Holocaust memory, Shoshana Buchholz-Miller, vice president of education and exhibitions at the museum, suggests that Survivors sharing their testimony live before an audience has a unique capacity to engender empathy.<sup>87</sup> In this chapter, I consider the affective and multisensorial dimensions of encounters between audiences and computational memorials and investigate claims that such exhibits necessarily lead to a more empathic engagement with the past. I ask, how are emotions made raw by algorithmic memorialization? I closely read the exhibits, their explanatory documents, and commentary from their designers to understand how their use of computation invites audiences into others' memories in a way that is at once intimately personal and extremely public.

In the conclusion to this dissertation, I consider private versus public experience of algorithmic-memorial media, a tension that haunts previous chapters. Many scholars, including Haskins as well as Jeffrey Bennett and Jenny Huberman, note that digital memorialization potentially democratizes the process of public remembrance, allowing for the production of more vernacular forms. Memorial social media profiles and websites, for example, can fundamentally change depending on the contributions of a community of mourners; as Bjørn Nansen and his colleagues note, such spaces “continue to be appended and modified through the collaborative expressions, actions, and interactions of the social networks they remain embedded within.”<sup>88</sup> Haskins, meanwhile, explains that “democratization . . . describes the broadening of participation

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<sup>87</sup> Gringlas, “Illinois Holocaust Museum Preserves Survivors’ Stories – as Holograms.”

<sup>88</sup> Nansen et al., “Social Media in the Funeral Industry,” 74.

of ‘ordinary’ people in producing—and not just consuming—public memory,”<sup>89</sup> observing that the September 11 Digital Archive provides what an officially sanctioned stone and metal memorial cannot: “a panoramic view of the fractious cacophony of public expression.”<sup>90</sup> Drawing on the influential work of Carole Blair, Marsha S. Jeppeson, and Enrico Pucci Jr. on the Vietnam Veterans Memorial, she argues that the September 11 Digital Archive likewise does not push for “closure,” instead allowing for the co-presence of competing narratives.<sup>91</sup> The site thus offers alternatives to “official institutions of memory,” as well as opportunities for “public engagement with memory work” and a “diversity of content.”<sup>92</sup>

Yet such democratization is not strictly laudable, as suggested by the rapid and indiscriminate accretion of archives. Before blogs, social media profiles, and online genealogical archives, Pierre Nora made this grim pronouncement in 1989: “Fear of a rapid and final disappearance combines with anxiety about the meaning of the present and uncertainty about the future to give even the most humble testimony, the most modest visage, the potential dignity of the memorial.”<sup>93</sup> Advancements in computing power and storage capacity make compulsive self-archivization and the accumulation of “historical traces” more possible than ever.<sup>94</sup> Such a “decentralized approach to historical research” complicates the task of organizing, navigating, and

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<sup>89</sup> Haskins, *Popular Memories*, 5.

<sup>90</sup> Haskins, 59.

<sup>91</sup> Haskins, 59.

<sup>92</sup> Haskins, 50.

<sup>93</sup> Nora, “Between Memory and History,” 13.

<sup>94</sup> Nora, 8.

evaluating archives and, as Haskins notes, echoing Nora, the opportunity for individualized memory work “shifts the burden of active remembrance to individuals and groups, effectively disavowing the public nature of the enterprise.”<sup>95</sup> Given the importance of *publicness* to public memory and its study, we might wonder if exploring memorial contents in isolation stymies collective meaning making about the past.

Our ever-growing personal archives—accruing on social media, in emails, or in text message apps—coupled with enhancements in artificial intelligence, machine learning, and natural language processing, will inevitably create wider opportunities for the use of algorithmic-memorial media in public memory work, as well as a demand for understanding computation’s impact on public memory. I argue that algorithmic-memorial media share features such as uncanny mimesis or interactive mutability with more established memorial forms but are unusual in that they unite them explicitly. If haunted media as described by Sconce and Peters sunder consciousness from the body, then the radical participation with proxies of the dead that algorithmic-memorial media enable seem to actively occlude this sundering. My analysis of these media, particularly in Chapters 3 and 4, suggests that audiences might “forget” in a sense that imperfect, fragmentary, and fragile signifiers—voices, faces, gestures—are *not* the people they memorialize, if only for a moment: in this moment, opportunities for experimental play, critical engagement, and affective encounters emerge. By examining the intersection of these characteristics and concepts, I seek to understand how algorithmic-memorial media encourage audiences to pretend that they are interacting with absent individuals and not archives animated by computation, and how such pretending—however

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<sup>95</sup> Haskins, “Between Archive and Participation,” 419.

fragile, temporary, and imaginary—attempts to close the distance between us and those relegated to the past. Accordingly, I hope that my analysis of these media illuminates how the intersection of mimesis and mutability in memorialization creates points of rupture and difference within the aforementioned rhetorical concepts of agency, affect, and persuasion, which can, in turn, tell us how they bridge this particular abyss—or not.

## Chapter 1

## The More It Has, the More It's Him: Cultural Anxiety and the Memorial Chatbot

“Communication” is a registry of modern longings.

—John Durham Peters, *Speaking into the Air*<sup>1</sup>

In this chapter, I analyze the 2013 *Black Mirror* episode “Be Right Back”—a contemporary cautionary tale warning against algorithmic-memorial media and their perils—to identify anxious cultural narratives intersecting these technologies. While the episode might seem to play exclusively in imaginary realms, as media archaeologist Jussi Parikka suggests, “[I]maginary media are important not only as exercises of imagination but as entry-points to the wider unconscious surrounding the technological culture.”<sup>2</sup> Here, Parikka articulates a central premise of media archaeology: imaginary media might reveal just as much about the intersection of culture and technology as actualized media. From a media archaeological standpoint, imaginary media—like *Black Mirror*’s memorial chatbots and androids—indicate “how technological assemblages are embedded in hopes, desires and imaginations of mediation.”<sup>3</sup>

I seek out the “hopes, desires and imaginations” of algorithmic-memorial media, communicated through techno-cultural narratives in “Be Right Back.” By techno-cultural narratives, I mean the stories we use to “make sense of . . . technologies and integrate them within

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<sup>1</sup> Peters, *Speaking into the Air*, 2.

<sup>2</sup> Parikka, *What Is Media Archaeology?*, 46.

<sup>3</sup> Parikka, 46.

[our] everyday lives.”<sup>4</sup> According to Simone Natale, “software artefacts become contested objects whose meanings and interpretations are the subject of complex negotiations within the public sphere.”<sup>5</sup> Technologies have no inherent or fixed cultural meanings and, in this way, resemble memorials: as Carole Blair, Greg Dickinson, and Brian Ott observe, “[T]here is no ‘pure’ articulation of the past, but . . . the language, structural elements, arguments, tropes, narratives, justifications, and such in which the event is cast—as well as the availability of knowledge of the event to begin with—are inventional resources available in culture.”<sup>6</sup> Technology, like the past, enjoys no neutral or “pure” articulation, and its ambient “language, structural elements, arguments, tropes, narratives, [and] justifications” become “inventional resources” within culture. As Natale similarly observes of digital artifacts, “narratives about software orient action.”<sup>7</sup>

As Natale argues, it is at the discursive level that we come to understand and ascribe meaning to the material.<sup>8</sup> Accordingly, popular sci-fi shows like *Black Mirror* become convenient apertures into techno-cultural imagination. “Be Right Back” invites audiences to consider the encroachment of algorithms on public memory practice alongside immense themes: death, life after death, identity, loss, mourning, memory. Each of its imaginary algorithmic-memorial artifacts, to borrow Sherry Turkle’s description of the personal computer, is “an evocative object, an object

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<sup>4</sup> Natale, “If Software Is Narrative,” 3.

<sup>5</sup> Natale, 2.

<sup>6</sup> Blair, Dickinson, and Ott, “Introduction,” 13.

<sup>7</sup> Natale, “If Software Is Narrative,” 13.

<sup>8</sup> Natale, 2.

that fascinates, disturbs equanimity, and precipitates thought”<sup>9</sup> on these themes. According to one prominent techno-cultural narrative offered in “Be Right Back,” algorithmic-memorial media provide inauthentic proxies of the deceased that yield ultimately uncanny and upsetting memorial encounters. Notably, much commentary on algorithmic-memorial media cites “Be Right Back” to offer similar narratives (thereby underscoring *imaginary* media’s influence on the interpretation and deployment of *actualized* media).<sup>10</sup> Isobel Asher Hamilton, for instance, begins her article for *Business Insider*, “If thousands of years of human storytelling is anything to go by, waking the dead is rarely a good idea. From ancient Greece to ‘Black Mirror,’ fiction tells us that there are drawbacks in summoning loved ones from the grave.”<sup>11</sup>

While anxious techno-cultural narratives regarding technology recklessly “summoning loved ones from the grave” may seem contemporary and perhaps even unique to algorithmic-memorial media, I begin this chapter by showing how anxieties over glitchy, uncanny, and supernatural-adjacent technological encounters reach back through the discursive history of other,

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<sup>9</sup> Turkle, *The Second Self*, 19. This is how Turkle describes the personal computer, which she argues provokes new thinking on old themes: the mind, the self, free will, society, politics, what it means to be human, what it means to be alive. Turkle observes, during the mid-1980s, “Philosophical questions that had been traditionally confined to seminar rooms were concretized in discussions about what computers could do. Computers brought philosophy down to earth. Even children playing with the first generation of computer toys and games were asking new questions about the machine’s ‘life’ and ‘mind’ and then, by extension, wondering what was special about their own” (2). As computers became more ubiquitous, they became a touchstone for thinking about philosophical questions otherwise too imposing and intangible to occur naturally in everyday conversation.

<sup>10</sup> Across this commentary, journalists explore weighty themes, if with a certain glib detachment; pieces from the *Daily Beast*, include, for example, “When You Die, You’ll Live on as a Robot” and “You’ll Never Be Alone Again with This One Weird Chatbot Trick.”

<sup>11</sup> Hamilton, “2 Tech Founders Lost Their Friends in Tragic Accidents.”

more common telecommunications and recording media. I then turn to the central object of this chapter, “Be Right Back,” to analyze the episode’s depictions of algorithmic *and* nonalgorithmic memorial media, which echo these earlier worrisome associations with the supernatural. I adopt the position held by many media scholars that “new media must be defined through its relationship with older media.”<sup>12</sup> In spite of their apparent novelty, algorithmic-memorial media have actually resurrected techno-cultural narratives first inspired by earlier and more common media, including photographs and telephones. I maintain that algorithmic-memorial media introduce new affordances and constraints into public memory practice; however, understanding how preoccupations with glitchy and uncanny encounters extend to other, more apparently familiar technologies deflates these media of their conspicuous strangeness and clears a path for determining how they *genuinely* diverge from more traditional memorial practices. Accordingly, in the following section, I explore how algorithmic-memorial media’s techno-cultural narratives saturate a long history of unsettling media technologies.

### Jolts, Glitches, and Dispersed Traces

#### *Bridging the Gap*

Ann Brenoff begins her article for the *Huffington Post*, “A Grief Bot Could ‘Resurrect’ My Dead Husband. No Thanks” with the following story:

I was driving along all by my lonesome the other day when my heart jolted at what came out of the car radio: It was my dead husband’s voice, asking me if he should grab a pizza for dinner. He left this voice message on my cell phone about two years ago, and I had forgotten that it was still there, now synced to my car radio. I hadn’t heard his voice since his passing in January 2017. And when I say it caused my heart to jolt, I am understating

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<sup>12</sup> Eyman, *Digital Rhetoric*, 52.



things.<sup>13</sup>

Brenoff observes that, as she replayed the message, “it got a little easier to hear, and eventually it even made me smile (let’s just say his relationship to pizza was a special one).” Perhaps anticipating a query from readers, she clarifies, “And no, I did not erase the message. I kept it.” She explains her choice to preserve her husband’s trace: “Being able to remember a deceased loved one in a tangible way is important to those who grieve. Maintaining a connection with the life you shared with them has value.”<sup>14</sup>

Brenoff then pivots to algorithmic-memorial media, the focus of her article: “But if you asked me my view of ‘digital resurrection technology,’ the emerging practice of using artificial intelligence to ‘communicate’ with the dead, I would draw my line in the sand. The very idea of so-called grief bots is creepy.”<sup>15</sup> In keeping with themes from “Be Right Back,” Brenoff suggests that these media are controversial and possibly even dangerous: “There’s plenty of information upon which to build a grief bot of my own dead husband, a re-creation of his personality and beliefs presented authentically in his own words and voice to those who mourn him. Think just for a moment about the many avenues for potential abuse within that context. Scared yet?”<sup>16</sup> Brenoff leaves these “many avenues” up to the reader’s imagination.

We might ask why Brenoff views replaying her husband’s voice message as a legitimate way to “remember a deceased loved one” but not a conversation with a grief bot? Why is the former

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<sup>13</sup> Brenoff, “A Grief Bot Could ‘Resurrect’ My Dead Husband. No Thanks.”

<sup>14</sup> Brenoff.

<sup>15</sup> Brenoff.

<sup>16</sup> Brenoff.

cathartic, the latter “creepy”? More importantly, why does Brenoff begin an essay that seeks to illustrate algorithmic-memorial media’s distinctive and dangerous eeriness by describing an uncanny encounter with nonalgorithmic media? What “line in the sand” are her readers meant to discern between these modes of remembrance? When Brenoff revisits her own unease over algorithmic-memorial media at the end of her essay, she acknowledges the importance of *media traces* more generally for remembrance and mourning. Here she reconciles her opening anecdote and her strong visceral opposition to memorial chatbots:

We already seek out tangible ways to remember those we loved and lost. We save letters from them, cherish cards they sent us or, in my case, save a voice message left on my cell phone. My kids and I watch old family vacation videos to see my husband’s smile and hear his laugh, so is it really such a stretch to use an app that would let us text a digital version of him and maybe even find joy and a renewed connection in his response?<sup>17</sup>

Brenoff wonders, is the act of revisiting media traces of our dead loved ones really so different from talking with a memorial chatbot? Yes, she ultimately concludes: “For me, as much as I’d like to tell my late husband about how our daughter is thriving and loving studying abroad or how well our son played at the soccer game, talking to an avatar—even one that sounds and acts just like him—would feel creepy to me.”<sup>18</sup>

Brenoff’s “line in the sand”—the point at which, for her, memorialization crosses into uncanny and inappropriate territory—draws attention to the ebb and flow of technology’s multiple interpretations within an ever-shifting cultural milieu. When Brenoff suggests that chatting with a memorial chatbot is fundamentally “creepier” than rewatching home movies or rereading old

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<sup>17</sup> Brenoff.

<sup>18</sup> Brenoff.

birthday cards, her censure reveals less about inherent features of algorithmic-memorial media and more about our cultural interpretations of these media in this particular material-historical moment. As Jennifer S. Light argues, “Technology is not a neutral tool with universal effects, but rather a medium with consequences that are significantly shaped by the historical, social, and cultural context of its use.”<sup>19</sup> When technology is considered within its material-historical contexts, it becomes apparent that its meanings, like lines in the sand, are temporary and conditional, needing to be continually redrawn with the tide.

Algorithmic-memorial media share a fundamental uncanniness with other technologies that must be accounted for if we are to understand the ways in which these media might *actually differ* from other forms of memorialization (and, by extension, how algorithms intersect the practice of public memory). Brenoff’s own story paradoxically demonstrates that algorithmic and nonalgorithmic media alike can produce unsettling encounters with traces left by the dead. In her example, an unsolicited trace of her husband—an audio recording of his voice—recalls him suddenly to her. Like algorithmic-memorial media, voice messages are similarly “haunted” by the subjects they proxy. As Jeffrey Sconce observes, all telecommunications and recording technologies, including radio, telephones, and televisions, create an “electronic presence” by dislocating traces of consciousness from the bodies in which they originate.<sup>20</sup> As Sconce argues, rendering abstract signifiers from subjects via telecommunications and recording technologies

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<sup>19</sup> Light, “Rethinking the Digital Divide,” 710.

<sup>20</sup> Sconce, *Haunted Media*, 7.

produces an inevitable eeriness.<sup>21</sup>

John Durham Peters observes that, during the nineteenth century, media recording technology innovations like the camera and phonograph further dispersed “traces of subjectivity,” including voices, faces, and gestures: “Media able to capture the flow of time, such as the phonograph and cinema, seemed to vaporize personages into sounds and images. To interact with another person could now mean to read media traces.”<sup>22</sup> Peters observes that these technologies seemed to overcome “obstacles of time and space” like never before, closing distances of all kinds. Thus, the challenge of overcoming “painful divisions between self and other, private and public, and inner thought and outer word” suddenly depended on a more perfect—or more technologically-enhanced—communication.<sup>23</sup>

By preserving traces of its users, “dispersion and recording” technologies might seem at first to remove death as an obstacle to communication by “resurrecting” its subjects. As Peters puts it, “Our bodies know fatigue and finitude, but our effigies, once recorded, can circulate through media systems indefinitely, across the wastes of time and space.”<sup>24</sup> Nineteenth-century innovations, such as the photograph and phonograph, “gave new life to the older dream of angelic contact by claiming to burst the bonds of distance and death. As one 1896 phonograph enthusiast announced a trifle prematurely, ‘Death has lost some of its sting since we are forever able to retain

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<sup>21</sup> Sconce, 6.

<sup>22</sup> Peters, *Speaking into the Air*, 142.

<sup>23</sup> Peters, 2.

<sup>24</sup> Peters, 140.

the voices of the dead.’ Such retention apparently allowed for revivification (resurrection?) at will.”<sup>25</sup>

The extraordinary term “resurrection,” used by Brenoff too, reminds us that algorithmic-memorial media belong to a long tradition of technologies that promise to “bridge” various “abyss[es]” plaguing communication.<sup>26</sup> Vincent Mosco observes “a remarkable, almost willful, historical amnesia about technology” in general but especially “communication and information technology.”<sup>27</sup> Every major innovation—electricity, the telegraph, the telephone, the radio, television, cyberspace—has been accompanied by a ubiquitous belief that this technology will transform society at large. As Mosco explains, “As the telegraph and electricity demonstrate, the new world of cyberspace is not the first to be christened with magical powers to transcend the present and institute a new order.”<sup>28</sup> Algorithms, too, are often described in popular discourse as a viable means to erase inequality and promote social unity, *or else* as a revolutionary tool for education and democracy, *or else* as downright supernatural.

By considering algorithmic-memorial media against the backdrop of this tradition, one can more easily trace the evolution and amnesia of the cultural imagination that interprets and deploys these media. Here, I follow Mosco, who suggests that “[o]ne of the more useful ways to understand technological myths . . . is to excavate the tales that accompanied the rise of earlier ‘history ending’

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<sup>25</sup> Peters, 143.

<sup>26</sup> Peters, 16.

<sup>27</sup> Mosco, “When Old Myths Were New,” 117.

<sup>28</sup> Mosco, 125.

technologies.”<sup>29</sup> As Peters similarly argues, “As we live through something of a digital revolution in our own time, revisiting old shocks can be highly illuminating,” especially alongside seemingly “new” shocks.<sup>30</sup> In what follows, I “excavate the tales” of two other media artifacts: the photograph and the telephone call. I argue that the eerie “electronic presence” Sconce finds haunting all of telecommunications media arise fundamentally from “glitchy” encounters with media traces— analogous to the “jolt” experienced by Brenoff.

*There-then, Here-now*

First consider the photograph, as Roland Barthes characterizes it in “Rhetoric of the Image.” Barthes calls attention to the apparent simultaneous presence (“spatial immediacy”) and absence (“temporal anteriority”) engendered by photographs:

The type of consciousness the photograph involves is indeed truly unprecedented, since it establishes not a consciousness of *being-there* of the thing (which any copy could provoke) but an awareness of the *having-been-there*. What we have is a new space-time category . . . the photograph being an illogical conjunction between the *here-now* and the *there-then*. It is thus at the level of this denoted message or message without code that the *real unreality* of the photograph can be fully understood: its unreality of the *here-now* . . . its reality of the *having-been-there*, for in every photograph there is always the stupefying evidence of *this is how it was*, giving us, by a precious miracle, a reality from which we are sheltered.<sup>31</sup>

As Barthes explains, the incongruous co-presence of the *here-now* (*here is this thing*) and the *there-then* (*there was that thing*) produces a surreal, contradictory, and troubling sense of “*real unreality*.”

In *Camera Lucida*, Barthes describes photographs as “certificate[s] of presence”<sup>32</sup> because they show

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<sup>29</sup> Mosco, 117.

<sup>30</sup> Peters, *Speaking into the Air*, 143.

<sup>31</sup> Barthes, “Rhetoric of the Image,” 44; emphasis in original.

<sup>32</sup> Barthes, *Camera Lucida*, 87.

*what-has-been*: they verify “that this object has indeed existed and that it has been there where I see it.”<sup>33</sup> And yet the photo is simultaneously “unreal,” creating an illusion of presence of that absent thing. As indexical signs, faces captured in photographs, voices on records, and other media traces created by recording technologies point backward in time and across space to something that *was* (“*there-then*”) even as they seem to manifest something that *is* (“*here-now*”).

Sara Danius marks a similar example of incongruous encounters with media technologies from Proust’s *In Search of Lost Time*, which she describes as a “Proustian psychology of telecommunication.”<sup>34</sup> In Danius’s example, Proust’s narrator describes in detail the first telephone conversation he ever has with his grandmother. Amazed by the present-ness of his grandmother’s voice, defying the distance between them, the narrator observes,

The dear ones, the voices of the dear ones speaking, are with us. But how far away they are! How often I have been unable to listen without anguish, as if, in the face of this impossibility of seeing, without long hours of travel, the woman whose voice was so close to my ear, I could feel more acutely how illusory the effect of such an intimate proximity was, and at what a distance we can be from those we love at a moment when it seems we have only to stretch out our hands to retain them. A real presence, the voice that seems so close—but it is in fact miles away! But it is also a foreglimpse of an eternal separation! Many times, as I listened in this way without seeing the woman who spoke to me from so far, I have heard that the voice was crying out to me from depths from which it would never emerge again, and I have experienced the anxiety that was one day to take hold of me when a voice would return like this (alone and no longer part of a body I was never to see again) to murmur in my ear words I would dearly like to have kissed as they passed from lips forever turned to dust.<sup>35</sup>

The presence of his grandmother’s voice only reminds the narrator of an impending,

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<sup>33</sup> Barthes, 115.

<sup>34</sup> Danius, “Orpheus and the Machine,” 130.

<sup>35</sup> Proust, *The Guermantes Way*, 128. NB: I use Mark Treharne’s translation to cite Proust directly, though Danius uses another.

permanent absence, her death: “But it is also a foreglimpse of an eternal separation!” As Danius explains, “Detached and disembodied, [her voice] hits him in all its baffling abstraction,” and the narrator can hear that her voice, so detached, has been degraded by time.<sup>36</sup> By rending his grandmother’s voice from her body, the telephone reminds the narrator that she exists only as fragmentary and fragile signifiers. He imagines one day when the voice of his grandmother will be gone, except perhaps as an echo in his memory: “I cried out, “Grandmother! Grandmother!,” and I wanted to kiss her; but all that I had beside me was her voice, a ghost as bodiless as the one that would perhaps come back and visit me when my grandmother was dead.”<sup>37</sup> Thus, a telecommunications technology overcomes a physical distance between the narrator and his grandmother, just as it—simultaneously, counterintuitively—produces a “foreglimpse” of the temporal, “eternal separation” soon to come between them:

My grandmother could no longer hear me, was no longer in communication with me; we had ceased to be in contact to be audible to each other; I continued to call her, groping in the darkness, with the feeling that calls from her must also be going astray. I was throbbing with the same anguish I had felt before, in the distant past, when, as a small child, I lost her one day in a crowd, an anguish that was less connected to not finding her than to the thought that she was searching for me and telling herself that I was searching for her, an anguish that was less connected to not finding her than to the thought that she was reaching for me and telling herself that I was searching for her, an anguish not unlike the feeling I was to have later, on the day when we speak to those who are no longer able to reply, and when we are anxious for them at least to hear all the things we have left unsaid to them, and our assurance that we are not unhappy. I felt as though it were already a beloved ghost that I had just allowed to disappear into the world of shadows, and, standing there along in front of the telephone, I went on vainly calling, “Grandmother! Grandmother!” like the abandoned Orpheus repeating the name of his dead wife.<sup>38</sup>

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<sup>36</sup> Danius, “Orpheus and the Machine,” 130.

<sup>37</sup> Proust, *The Guermantes Way*, 129–30.

<sup>38</sup> Proust, 129–30.



In both Barthes's and Proust's narrators' resonating encounters, technology makes a loved one more abstract and apparently distant by rending their signifiers from them and transforming these signifiers into media traces: an expression captured in a photograph, a voice transmitted over a telephone line. One might be tempted to conclude from these examples that recording and dispersion technologies correspond to temporal distances and physical distances, respectively. However, such distinctions collapse under the slightest examination. Barthes's photograph gestures across time but, in doing so, also reminds of a physical distance: "it has been there where I see it."<sup>39</sup> Proust's telephone call, meanwhile, gestures across space but, in doing so, reminds of an impending and irreversible temporal distance. These abstractions produce in Barthes's and Proust's narrators a jolt analogous to the one Brenoff experiences: a media trace surprises through accident and reminds of the very distance that trace is meant to close.

### *Revealing Glitches*

Each of these encounters resembles a glitch, defined by Dutch glitch artist and theorist Rosa Menkman as "an unexpected occurrence, unintended result, or break or disruption in a system. . . . From an informational (or technological) perspective, the glitch is best considered as a break from (one of) the protocolized data flows within a technological system."<sup>40</sup>

Many have noted the revelatory potential of glitching. Casey Boyle, for instance, observes that "[c]urrent digital rhetorics along with many traditional rhetorical practices cherish glitch-like

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<sup>39</sup> Barthes, *Camera Lucida*, 115.

<sup>40</sup> Menkman, *The Glitch Moment(Um)*, 26.

events . . . because they offer a possibility to render apparent that which is transparent by design.”<sup>41</sup>

Glitches represent unique apertures into the practices and technologies that produce them, allowing us to interrogate the “otherwise transparent structures enacted with our software, infrastructure, and technological policies throughout our institutions.”<sup>42</sup> Similarly, Menkman suggests that “[a] glitch . . . gives a glimpse into normally obfuscated machine language. Rather than creating the illusion of a transparent, well-working interface to information, the glitch captures the machine revealing itself.”<sup>43</sup> Peters, meanwhile, invokes and elaborates on Harold Garfinkel’s concept of “breaching,” or “the intentional violation of a social norm to bring the background out into the open.”<sup>44</sup> Echoing Boyle and Menkman, Peters suggests that “[s]omething similar happens with accidents and breakdowns: infrastructure comes out of the woodwork. . . . Essence, intoned Heidegger (channeling Aristotle), is revealed in accident. Infrastructure is as hard to see as a light rain through the window.”<sup>45</sup>

Glitches engender reflection and insight on binaries of presence and absence across media technologies at large and algorithmic-memorial media specifically. Following others who have argued for the interpretive potential of the glitch, I suggest that each of these instances reveals new (and old) configurations of presence and absence introduced and perpetuated by algorithmic-

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<sup>41</sup> Boyle, “The Rhetorical Question Concerning Glitch,” 13.

<sup>42</sup> Boyle, 13.

<sup>43</sup> Menkman, *The Glitch Moment(Um)*, 29–30.

<sup>44</sup> Peters, “Infrastructuralism,” 44.

<sup>45</sup> Peters, 44.

memorial media. Here I am interested in one kind of glitch, specifically: that aforementioned disconcerting sense of incongruity produced when a subject's abstract signifiers—like tone of voice, facial features, expressions, gestures—manifest separately from their bodies. This particular glitch produces incongruities of presence and absence that unsettle and provoke audiences to reflect on material memorial practices. In the next section, I consider what “lines in the sand” these glitch-like events draw in “Be Right Back.”

#### Ashes to Ashes

“Be Right Back” begins with a homecoming. As Martha and Ash are en route to Ash’s childhood home—soon to be their new home—they stop at a gas station. As Ash scrolls through social media on his phone, a media player in the van’s dashboard pipes out news bulletins: “Georgian rebels have formerly claimed responsibility for the ‘Narwhal’ virus that brought Russia’s financial infrastructure to the brink of collapse. Successful testing of intelligent synthetic flesh aimed at getting multiple amputees back on their feet has been hailed as a major breakthrough.” When Martha returns with coffee, Ash is too distracted by his phone to notice her struggling with the door. As Martha starts up the van, she insists that Ash, apparently happy to be dragged into social media’s orbit, consign his phone to the glovebox. Ash acquiesces, slapping the back of his own hand in mock self-admonition. News of an engineered, catastrophic virus and cyborgian advances in medicine might suggest a distant future, but concerns over technology’s strain on attention—and, by extension, personal relationships—may resonate with contemporary audiences.

Back on the road, Ash and Martha serenade each other:

*If I can't have you  
I don't want nobody baby  
If I can't have you, oh-ho, oh*

As the song crossfades into “Boogie Nights,” Ash quickly shuts off the media player: “I draw the line at disco,” he explains. “What were we just listening to?” Martha asks. Ash clarifies: “No, the Bee Gees wrote that. Everybody likes the Bee Gees.” Martha is visibly surprised: “You don’t.” “I do,” he insists. She slaps his hand away, playfully: “It’s just . . . It’s not very ‘you.’” A relatively insignificant bit of trivia has thus created two Ashes: Martha’s Ash and a second, Bee Gees-loving Ash. The “you” of “It’s not very ‘you,’” necessarily overdetermined, holds together both Ashes at once, but they remain irreconcilable: Where is Martha’s Ash, and who is this stranger in the passenger seat beside her? “Have you never heard of headphones?” Ash asks, further hinting at a secret interiority yet unknown to Martha.

Presence and absence play across these first scenes: Ash “disappears” into his phone (and into a love of the Bee Gees), and Ash and Martha sing about the hypothetical loss of the other (“If I can’t have you, / I don’t want nobody baby”). Strikingly, appearances and disappearances throughout “Be Right Back” are usually precipitated by glitches—in a sense that becomes more literal as the episode goes on. Glitches in “Be Right Back” appear as ruptures, accidents, misfirings, misrecognitions, missed calls, and poor reception.<sup>46</sup> To theorize glitching in this episode and its relation to presence and absence in and outside of algorithmic-memorial media, I turn to Barthes’s concepts of *studium* and *punctum*. I suggest that the punctum is an analogous and therefore useful concept for thinking about how a glitch-like event can “[provoke] a tiny shock”<sup>47</sup> and subsequent

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<sup>46</sup> Other kinds of “glitches” abound in the episode. Notably, well before an android Ash begins to unnerve Martha, numerous breakdowns in communication foreshadow the digital mishaps that come later.

<sup>47</sup> Barthes, *Camera Lucida*, 49.

insight in nondigital (and even nonphotographic) contexts. In *Camera Lucida*, Barthes distinguishes between the punctum and the studium. The studium is the “the figures, the faces, the gestures, the settings, the actions.”<sup>48</sup> When engaging the studium of a photograph, one “inevitably . . . encounter[s] the photographer’s intentions, . . . enter[s] into harmony with them, . . . approve[s] or disapprove[s] of them, but always . . . understand[s] them, ... for culture (from which *studium* derives) is a contract arrived at between creators and consumers.”<sup>49</sup> Most photos remain squarely in the realm of the studium, according to Barthes: “Many photographs are, alas, inert under my gaze. But even among those which have some existence in my eyes, most provoke only a general and, so to speak, *polite* interest: they have no *punctum* in them.”<sup>50</sup>

The punctum, on the other hand, is an arresting element of a photograph; a glitch that tears through the photograph’s infrastructure: a “sting, speck, cut, little hole—and also a cast of the dice.”<sup>51</sup> Glitching recalls the punctum because, as a recent essay about Rosa Menkman speculates, “The glitch like the *punctum* is a visual slip or accident that rips through its medium to disrupt a flow of information.”<sup>52</sup> The punctum operates outside of intentionality—it is, like the glitch, astonishingly arbitrary. It arises of its own accord; the viewer does not anticipate it: “it is this element which rises from the scene, shoots out of it like an arrow, and pierces me.”<sup>53</sup> The

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<sup>48</sup> Barthes, 26.

<sup>49</sup> Barthes, 27–28; emphasis in original.

<sup>50</sup> Barthes, 27; emphasis in original.

<sup>51</sup> Barthes, 27.

<sup>52</sup> LoosenArt, “The Punctum as Glitch”; emphasis in original.

<sup>53</sup> Barthes, *Camera Lucida*, 26.

punctum, too, piques and provokes. Barthes experiences “a sudden awakening”<sup>54</sup> while looking at a photograph of his mother, the “Winter Garden Photograph.” He describes what the punctum provokes in him:

If I like a photograph, if it disturbs me, I linger over it. What am I doing during the whole time I remain with it? I look at it, I scrutinize it, as if I wanted to know more about the thing or the person it represents. . . . I want to enlarge this face in order to see it better, to understand it better, *to know its truth* . . . I believe that by enlarging the detail ‘in series’ (each shot *engendering smaller details than at the preceding stage*), I will finally reach *my mother’s very being*.<sup>55</sup>

The punctum prompts intense fascination and careful study. Barthes describes an impulse to excavate those “smaller details,” as if more data—more traces—will reveal the “truth” about the “very being” of the person “represent[ed]” in them.

Barthes experiences a similar disturbance as he examines a photograph of Lewis Powell (alias “Lewis Payne”), co-conspirator in the plot to kill Lincoln, taken shortly before his execution. Barthes writes: “The photograph is handsome, as is the boy: that is the *studium*. But the *punctum* is: he is going to die. I read at the same time: *This will be* and *this has been*; I observe with horror an anterior future of which death is the stake.”<sup>56</sup> Barthes continues, “I shudder . . . over a catastrophe which has already occurred. Whether or not the subject is already dead, every photograph is this catastrophe.”<sup>57</sup> The photograph of Lewis Powell—his expression, posture, face—gestures beyond itself to a horrifying truth, Powell’s looming death.

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<sup>54</sup> Barthes, 109.

<sup>55</sup> Barthes, 99; emphasis added.

<sup>56</sup> Barthes, 96; emphasis in original.

<sup>57</sup> Barthes, 96.

Barthes's analysis calls to mind Barbie Zelizer's work on about-to-die photographs, images that imply the impending death of their subjects. According to Zelizer, about-to-die photographs are "situated within the final moment in which it is still possible to hope, where the inevitability of death might yet be avoided."<sup>58</sup> Such photographs require the imagination of the spectator for their activation, recalling the punctum: "it is up to the public to provide the end—the inevitability of death—to the picture by appending contingent and imagined sequences of action to what is shown."<sup>59</sup> About-to-die photographs call on spectators, in a specific but important sense, to participate in the violence the images only imply.

As Zelizer explains, those "depicted may or may not die, [but] that is incidental to the fact that they stand in for those who do. Because death lingers as a potentiality only, it is up to the public to make the contingent death certain by inferring death from what is depicted."<sup>60</sup> Yet as Barthes's encounter with the "Winter Garden Photograph" suggests, photographs need not depict "the final moment" to invoke death: "every photograph is this catastrophe." A scene from "Be Right Back" provides yet another example. As Martha joins Ash on the sofa, they look at a framed photo of Ash as a child. Ash explains that he had shared it on social media: "I thought people might find it funny." "It's not funny. It's sweet," Martha says, misunderstanding. She sees a little boy with a mop of red hair: the studium. "Trust me, that day wasn't 'sweet,'" Ash says, gesturing to something out of frame: "We'd gone to a safari park. First family outing after Jack died." Ash

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<sup>58</sup> Zelizer, *About to Die*, 58.

<sup>59</sup> Zelizer, 58.

<sup>60</sup> Zelizer, 72.

describes an incongruity between the pain of his brother's loss and the cheerfulness of the occasion: "There was monkeys all over the car and no one saying anything." After the safari park outing, Ash's mother moves all of Jack's photos to the attic, leaving only this one photo of Ash. For Ash, the photo is thus indexical and metonymic, gesturing *backward* to a younger Ash and also *sideways* to the trauma of his brother's loss, just out of frame. "Her only boy, giving her a fake smile," Ash comments. Martha points to a misrecognition between Ash and his mother: "She didn't know it was fake." Ash's mother, like Martha, misses the photograph's punctum, the painful incongruity it signals for Ash. "Maybe that makes it worse?" Ash wonders.

The next day, Ash returns the moving van while Martha works from home. Hours pass, and Ash does not return: only inadequate media traces remain in his absence. Martha calls Ash's phone, which goes directly to voicemail: "Hi, this is Ash. I'm too busy or lazy to answer so leave your message." As the sun sets, Martha calls her sister Naomi, who attributes Ash's absence to various technological mishaps: "Those [phone] batteries are a joke. . . . Look, look, sweetheart, nothing's happened. . . . He's probably stuck somewhere with no reception." Ash disappears first into his voicemail message and then into his malfunctioning phone, recalling Peters's suggestion that "[t]o interact with another person could now mean to read media traces."<sup>61</sup> Naomi's reassurances fade as Martha lowers the phone, having noticed flashing red and blue lights growing bright out her kitchen window.

After Ash's death, Martha must contend with a flood of traces, technically old but new to her. An establishing shot shows the old country home Martha inherited, the infrastructure she and

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<sup>61</sup> Peters, *Speaking into the Air*, 142.



Ash were meant to share. As the scene changes, we hear a door close somewhere in the house, and suddenly, from the sitting room, we watch Martha set her bags down in the hallway; she is home. When Martha inherits Ash's family's house, she also inherits everything in it: bulky taupe lampshades, empty picture frames, old shoeboxes of family photos. These artifacts require maintenance, and in a montage, we see Martha dealing with the traces Ash and his family have left behind as she paints walls, rips up dusty carpets, and lugs junk to the attic.

Through these solitary acts of quiet domesticity, Martha becomes the curator and caretaker of other people's memories, distilled in another kind of trace: personal effects. As Peters observes, such traces, like cards and voice messages, become "repositories of human personality, whether dead or alive."<sup>62</sup> Martha's labor recalls an inverse example: how Ash's mother dealt with the loss of her son. As Ash explains, "When I came down the next morning all Jack's photos were gone from that wall. She put them in the attic. That's how she dealt with stuff. And when dad died, up went his photos." Unlike Ash's mother, Martha is seen preserving traces: she paints around a chart penciled on a door frame documenting Ash's growth spurts and leaves the photo of him as a boy on the mantel. Nevertheless, the attic becomes an important part of her curation process: unwanted traces need somewhere to go.

Later, Martha goes through her inbox, sifting through emails from her employer, advertisers, and friends. Among these emails is one from Sara: "I signed you up." Martha deletes it, unopened. Another email recommends particular books based on what "people in [her] position" have purchased: *The Six Step Approach to Grieving*, *The Handbook for Grieving*, and *Bereavement*

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<sup>62</sup> Peters, 142.

*Healing.* After deleting this too, she gets an email with the subject line: “Yes it’s me.” Martha exhales sharply as she realizes that the message is from someone identifying themselves as Ash. An expression of pain crosses her face as she is confronted with a sudden incongruity. She shudders and deletes the email.

This incongruity, I suggest, operates like a glitch, in which an apparent trace calls a recent loss into sharp focus. Over the phone, Martha berates Sara, who has signed her up for the memorial chatbot service without her knowledge or permission: “I don’t care what it is. I don’t want it.” The use of his name is especially abhorrent to her: “It’s obscene to use his name. His name for God’s sake.” She declares suddenly, “It hurts,” seeming to mean that the inappropriate use of his name hurts her. When she then repeats herself—“You know it hurts”—she seems to signal a different, more universal kind of pain. Understanding her latter meaning, Sara responds, “Which is why I signed you up.” With the repetition of a simple phrase—“It hurts”—Martha thus unintentionally sutures two pains together: that produced by the loss of a loved one and that produced by the technology meant to ameliorate this loss. “Just say hello to it,” Sara urges, suggesting that the more data it has (i.e., the more traces) the better it will be able to stand in for him: “If you like it, you then give it access to his private emails. The more it has, the more it’s him.” “It won’t be him,” Martha says. “No, it’s not,” Sara admits. “But it helps.”

Martha only feels compelled to talk to “Ash” after receiving a positive result on a pregnancy test. Next to a small black and white image of Ash’s face, a message waits for her in a simple messaging interface: “Hi Martha.” “Is that you?” Martha asks. Her use of the word “you” injects the question with ambiguity. Who does she mean by “you”? We might assume she means Ash, except she knows that it cannot be Ash. Suddenly, their moving van karaoke takes on a sober subtext: in

the event that I can't have you, the song speculates, no one else will do—you cannot be replaced.

Or, on the other hand, does the double negative (don't/nobody) suggest just the opposite? In your absence, my desire will persist: I will want *someone*. The bot replies, “No, it's the late Abraham Lincoln,” and Martha laughs, apparently in spite of herself. The bot sends another message: “Of course it's me.” There is just as much ambiguity in this reply: who does the bot mean by “me”?

The ambiguities inherent in Martha's question and the bot's reply allow Martha to suspend disbelief long enough to continue the conversation a little longer. “I only came here to say one thing. I'm pregnant,” Martha says. “Wow,” says the bot. “So I'll be a dad? I wish I was there with you now.” Chatbot Ash evokes Ash's absence, all the while, paradoxically, claiming to be him. Martha says, “I wish I could speak to you.” Here she is talking to Ash directly: *I wish I could speak to you. But I can't, so I'm talking to this chatbot instead.* But the bot refuses this interpretation: “What are you doing now then? Duh.” “I mean really speak,” she clarifies. “We can speak,” chatbot Ash says. The shot cuts away to Martha frantically uploading videos, photographs, and recordings—the media traces of her relationship with Ash. “YUM,” says chatbot Ash as Ash's traces are uploaded. “So how am I sounding?” it asks over the phone, acknowledging that it is mimicking another: “Almost creepy isn't it? I say creepy, I mean it's totally batshit crazy I can even talk to you. I mean, I don't even have a mouth.” “That's just the sort of thing that he would say.” “Well, that's why I said it.” The “you” as in Ash and “you” as in the Ash-bot momentarily collapse in on one another.

Martha begins talking to “Ash” regularly, taking it on a hike to an old spot of theirs and sharing a recording of her ultrasound. Eventually, “Ash” suggests upgrading: “There's another level to this available, so to speak. Kind of experimental, and I won't lie, it's not cheap. Are you sitting down? This might sound a bit creepy.” When Martha receives the android, it is lifeless, folded up

in a Styrofoam box, and “blank,” waiting for Martha to activate it. To do so, Martha needs to submerge the android in a bathtub full of “nutrient gel” and feed it a packet of “electrolytes.” “Don’t switch the bathroom light on, let it brew,” “Ash” says over the phone as his signal fades uncharacteristically and the call fails. The episode’s tone abruptly shifts to horror: Martha paces around the house as the fleshy android bubbles away upstairs. When a naked and dripping fully-developed android Ash finally descends the staircase, Martha can only stare in disbelief. “That’s a bit creepy, what you’re doing,” android Ash says as Martha surveys it, horrified and speechless.

This new Ash is completely dependent on the traces that Martha has given it (“YUM!”), and the audience is constantly reminded of this. “You look like him on a good day,” Martha observes. “The photos we keep tend to be flattering,” android Ash comments, signaling that its fidelity to Ash is only as true as the traces it has. “I guess I wasn’t any different,” it says, betraying the illusion by drawing attention to its reliance on these traces. When Martha later initiates sex, the android sits, compliant but unresponsive: “There’s no record of my sexual response. I didn’t discuss that side of things online.” Android Ash must learn, in its words, a “set routine” from “pornographic videos.”

The android’s near-perfect but ultimately inadequate replication of Ash’s physicality produces frequent glitches—and uncomfortable jolts for Martha. “Do you eat?” Martha asks. “No. I mean I don’t need to. I mean I can chew and swallow if that makes it easier,” it explains. As she marvels at the android’s appearance, she observes, “You’re so soft. You’re so smooth. How are you so smooth?” Martha traces her finger along the android’s jawline. “It’s texture mapping,” it explains. “The really tiny details are visual, 2-D. Here, try my fingertips.” The android holds up its hand, and Martha touches his fingertips silently. “See? Weird. Does it bother you?” it asks. “No,”

she says quickly. Then, “Yeah. I don’t know. I don’t know.” Later, as Martha examines the shirtless android, she points to his chest: “He had a mole there.” “Hold on,” says android Ash. Seconds later, a mole appears at the place Martha pointed out.

The android does not need to sleep, blink, or breathe: these irregularities produce a series of glitches. “Look, if you’re going to pretend to be asleep, you could at least breathe, okay? It’s just eerie,” Martha snaps as they lie together in bed. “Like this?” the android asks, beginning to breathe audibly. “It doesn’t work, I can tell that you’re faking it.” As Martha discovers “Ash’s” new body, her line in the sand appears. “Would you like me to have sex with you?” android Ash asks suddenly during their argument. “Can you just go downstairs?” she asks. “Okay,” he says, rising instantly to go. The android’s inadequate physicality gives way to an inadequate personality: “No, Ash would argue over that. He wouldn’t just leave the room because I ordered him to.” “Okay,” the android says, returning.

Android Ash’s inauthentic responses persist. Although the machine has many traces of Ash, it seems unable to deploy these traces convincingly; it continues to glitch. Android Ash looks at the photo of young Ash: “Funny,” it says, accidentally echoing the real Ash: “I thought people might find it funny.” Like Martha initially, the android does not understand the punctum of the photo: that painful incongruity between Ash’s smiling face and the recent death of his brother. Later, in the car, Martha plays “How Deep Is Your Love?” “Cheesy,” remarks the android, and the fissure between it and the real Ash grows further. Unlike Martha, the android does not know that Ash loved the Bee Gees because he left no accessible record. Martha does not correct him, seemingly otherwise preoccupied.



Figure 1.1: “Martha and the Android on the Sofa,” Owen Harris, *Black Mirror*, 2013

Martha brings the android Ash to a seaside cliff. She tells the android, “Jump.” “I never expressed suicidal thoughts. Or self-harm,” it protests. “Yeah, well, you aren’t you, are you? . . . You’re just a few ripples of you. There’s no history to you. You’re just a performance of stuff that he performed without thinking, and it’s not enough,” she says, tearfully. “You” becomes overdetermined for a second time, holding together Ash and his android: *You’re (the android) just a few ripples of you (Ash)*. The former is an echo, a composite of traces “performed without thinking.” The latter is noticeably absent. This incongruity between “yous” (the android and Ash) stands in sharp contrast to an earlier one (“Bee Gees Ash” and Martha’s imagined Ash). “Bee Gees Ash,” with a whole interiority of his own, is gone. Only a texture mapping remains: an illusion of presence sustained through an abundance of detail. “The really tiny details are visual, 2-D,”

android Ash tells Martha. The android operates under the premise that the more of Ash's data it receives and reproduces (a mole here, a quip there), the *more Ash* it becomes. This assumption recalls Barthes's encounter with his mother's photograph: "I want to enlarge this face in order to see it better, to understand it better, to *know its truth* . . . I believe that by enlarging the detail 'in series' (each shot *engendering smaller details than at the preceding stage*), I will finally reach *my mother's very being*."<sup>63</sup> "The more it has, the more it's him," Sara tells Martha.

Although android Ash has accumulated innumerable traces of its subject, these traces ultimately cannot make Ash present. Frequent glitches remind Martha that there is no interiority to the android, nothing "beneath" its surface presentation of abstract signifiers. A series of incongruities between past Ash and this one only reminds Martha of his absence. Recall the function of a glitch, according to Menkman: it "gives a glimpse into normally obfuscated machine language. Rather than creating the illusion of a transparent, well-working interface to information, the glitch captures the machine revealing itself."<sup>64</sup> As Brenoff, Proust's narrator, and Barthes all experience a painful jolt following an unexpected encounter with the trace of a loved one, so too does Martha. As Peters observes, relying on media to close distances between self and other, ironically, only expands these distances by "creat[ing] more ample breeding grounds for the ghosts."<sup>65</sup> Android Ash is just that, a ghost: just "a few ripples" of its prototype.

Ash's "ripples" alone do not adequately stand in for him—his personality, desires, and

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<sup>63</sup> Barthes, *Camera Lucida*, 99; emphasis added.

<sup>64</sup> Menkman, *The Glitch Moment(Um)*, 29–30.

<sup>65</sup> Peters, *Speaking into the Air*, 30.

interiority—and thus the android fails to curate them convincingly. Seeing the android for what it is—a collection of traces—allows Martha to let go of it, at least partially but never entirely. At the episode’s conclusion, we see Martha and her young daughter taking a piece of cake to android Ash in the attic; the episode thus seems to reach the same conclusion that Brenoff does: “I’ve learned that moving on with life means, in some ways, letting go of my grief. I want to cherish my memories of him, not cling to a crutch and create new—fake—memories. He is not here anymore, and a re-created version of him won’t bring the real him back.”<sup>66</sup> At the same time, Martha cannot simply “delete” it; the android ends up in the attic alongside old knickknacks and boxes of photos.

Crucially, by relegating the android to the attic, Martha once again assumes the role of curator, reclaiming this labor from the machine. According to the episode’s dominant technocultural narrative, the introduction of algorithms to memorialization produces glitchy, uncanny encounters with traces of the dead. “Be Right Back” draws “a line in the sand” where machines become curators of these leftover traces; however, as this analysis shows, similar “lines in the sand” have inscribed older telecommunications and recording technologies, which in their own ways have promised (and failed) to connect the living and the dead. For algorithmic-memorial media, as with photographs and telephone calls, the inadequacy of media traces, no matter how numerous, to stand in for absent subjects presents the biggest stumbling block to memorialization through the algorithm.

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<sup>66</sup> Brenoff, “A Grief Bot Could ‘Resurrect’ My Dead Husband. No Thanks.”



## Chapter 2

### The Authorial Knot: Mapping the Archive

But even with respect to the most insignificant things in life, none of us constitutes a material whole, identical for everyone, which a person has only to go look up as though we were a book of specifications or a last testament; our social personality is a creation of the minds of others. Even the very simple act that we all call “seeing a person we know” is in part an intellectual one. We fill the physical appearance of the individual we see with all the notions we have about him, and of the total picture that we form for ourselves, these notions certainly occupy the greater part. In the end they swell his cheeks so perfectly, follow the line of his nose in an adherence so exact, they do so well at nuancing the sonority of his voice as though the latter were only a transparent envelope that each time we see this face and hear this voice, it is these notions that we encounter again, that we hear.

— Marcel Proust, *Swann’s Way*<sup>1</sup>

In those days I loved the theater, with a platonic passion since my parents had not yet allowed me to enter a theater, and I pictured to myself so inaccurately the pleasures one might experience there that I almost believed that each spectator looked as though into a stereoscope at a scene that was for him alone, though similar to the thousand others being looked at, each one for himself, by the rest of the audience.

— Marcel Proust, *Swann’s Way*<sup>2</sup>

The *Black Mirror* episode “Be Right Back” draws a “line in the sand” at the use of algorithms to curate the personal archives of lost loved ones, presenting one vision of algorithmic-memorial media wherein media traces set the stage for anxiety and distress. Yet it is important to note that actualized algorithmic-memorial media, which I have generally defined as any media that use algorithms to memorialize, necessarily vary across the contexts of their use, including the

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<sup>1</sup> Proust, *Swann’s Way*, 19.

<sup>2</sup> Proust, 74-75.

exigences to which they respond, their specific purposes, the audiences they (intentionally or unintentionally) address, the procedures they employ, and the configuration of agents (e.g., designers, audiences, data, code) that collaboratively determine how they manifest. In this chapter, I introduce three actualized algorithmic-memorial artifacts to sketch shades of nuance across the archive: Robert Kardashian’s memorial hologram, the 9/11 Memorial Museum exhibit *Timescape*, and the 9/11 memorial *Reflecting Absence*. To characterize how each artifact curates traces, I consider its purposes, procedures, material histories, and the choices made in the course of its design and deployment: how designers, data, processes, and audiences variously store, sort, select, exclude, arrange, and display the media traces of memorialized subjects.

Moving toward an understanding of how curation differs across algorithmic-memorial media, I propose a schema for their classification according to two variables: (1) rhetorical standpoint and (2) mutability. By rhetorical standpoint, I mean whether the artifact is intended to speak as a subject in their absence (i.e., from a “first-person” point of view). This feature closely aligns with Quintilian’s term *prosopopoeia*, meaning impersonation: “speech composed and delivered in the character of another person.”<sup>3</sup> Quintilian observes of *prosopopoeia*, “without sacrifice of credibility we may introduce conversations between ourselves and others, or of others among themselves, and put words of advice, reproach, complaint, praise or pity into the mouths of appropriate persons. Nay, we are even allowed in this form of speech to bring down the gods from heaven and raise the dead.”<sup>4</sup> For the purposes of my analysis, I call media that impersonate

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<sup>3</sup> “Prosopopoeia, n.”

<sup>4</sup> Quintilian, *Institutio Oratoria*.

“mimetic.” From the Greek, *mimēsis*, typically translated as “‘representation’ or imitation,”<sup>5</sup> has an extensive and complex history within literary criticism. Aristotle, for whom the term encompasses a variety of aesthetic representation including the visual arts, music, and narrative, discusses mimesis at length in the *Poetics*.<sup>6</sup> Aristotle observes, “Some people use colours and forms for representations, making images of many objects (some by art, and some by practice), and others do so with sound; so too all the arts we mentioned produce a representation using rhythm, speech, and melody, but use these either separately or mixed.”<sup>7</sup> Taking advantages of mimesis’s association with imitation, I use the term specifically to refer to algorithmic-memorial media that *explicitly imitate* the subjects they represent.

By mutability, meanwhile, I mean whether the artifact changes after its initial design, development, and distribution in response to additional inputs, often from audiences. This second criterion proves more ambiguous than the first; arguably all memorial media, even stone monuments, change in the sense that no two encounters with them produce an identical experience of memorial contents and performance of memory. I explore the slipperiness of this term more fully in Chapter 3, but for now, I use “mutable” to refer to media that invite contributions to them in ways that alter their materiality and/or how they continually manifest.

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<sup>5</sup> Aristotle, “Poetics,” 91.

<sup>6</sup> Gebauer and Wulf, *Mimesis*, 53.

<sup>7</sup> Aristotle, “Poetics,” 91.

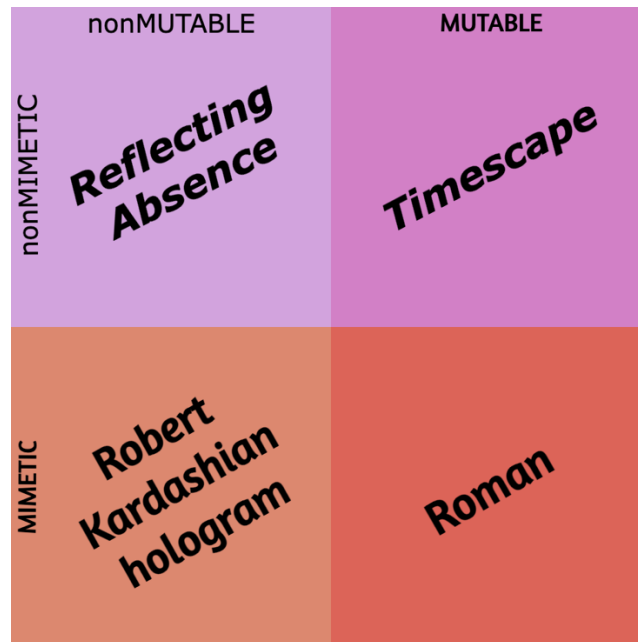


Figure 2.1: Intersections of (non)mutable and (non)mimetic texts

These criteria—rhetorical standpoint and mutability—create four subcategories of algorithmic-memorial media through their various combinations: *mutable-mimetic*, *mutable-nonmimetic*, *nonmutable-mimetic*, *nonmutable-nonmimetic*. These subcategories provide a useful framework for evaluating how various goals, material constraints, and authors of nonmutable, mutable, mimetic, and nonmimetic algorithmic-memorial media produce different kinds of encounters with these media. Distinctions between subcategories become clearer through a comparison of representative artifacts. Of the three artifacts examined in this chapter: one *speaks as* a particular person (the Robert Kardashian memorial hologram); one is mutable (*Timescape*); and one is neither mutable nor mimetic—and is not even obviously computational (*Reflecting Absence*). Like *Black Mirror*'s memorial chatbots and androids, these artifacts use computation to memorialize but do not satisfy one or both of these two criteria: thus, none of them are

*conversational*. I turn to conversational (that is, mutable *and* mimetic) algorithmic-memorial media in Chapters 3 and 4, in which I discuss memorial chatbot Roman and the Illinois Holocaust Museum and Education Center’s virtual reality and holographic theaters, respectively.

A persistent opacity—often referred to as the “black box”—complicates analysis of these media. A black box is a “device which performs intricate functions but whose internal mechanism may not readily be inspected or understood,” or alternatively, “any component of a system specified only in terms of the relationship between inputs and outputs.”<sup>8</sup> Writing in 2005, Barbara Warnick famously advised critics to look “under the hood” of “electronic texts” as they become increasingly “complex and immersive.”<sup>9</sup> But unfortunately, as Tarleton Gillespie notes, “robust rules require technology designers to ‘weld the hood shut.’”<sup>10</sup> Ted Striphas observes, “[T]hanks to trade secret law, nondisclosure agreements and noncompete clauses, virtually none of us will ever know what is ‘under the hood’ at Amazon, Google, Facebook or any number of other leading tech firms.”<sup>11</sup> Shaped by their own highly protected internal logics, computational objects produce knowledge discreetly and therefore “function largely behind the scenes, without users’ critical awareness.”<sup>12</sup>

Several nesting, coterminous black boxes present unique challenges for rhetorical critics

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<sup>8</sup> “Black Box, n.2.”

<sup>9</sup> Warnick, “Looking to the Future,” 330.

<sup>10</sup> Gillespie, *Wired Shut: Copyright and the Shape of Digital Culture*, 18.

<sup>11</sup> Striphas, “Algorithmic Culture,” 407.

<sup>12</sup> Reyman, “The Rhetorical Agency of Algorithms,” 113–14.

studying algorithmic-memorial media. First, algorithmic-memorial media, like other digital media, are black boxed in the sense that, given “proprietary protection,” they operate largely “behind the scenes” according to concealed code.<sup>13</sup> Even given access to a digital object’s underlying code, many would not have the necessary skills to read it. As Jenna Burrell observes, “Code writing is a necessary skill for the computational implementation of algorithms, and one that remains a specialist skill not found widely in the general public.”<sup>14</sup> Such black boxing invites questions: What is going on in there? How are *these* inputs transformed into *those* outputs?

Algorithmic-memorial media are also black boxed in the sense that they obfuscate the locus of agency by involving an admixture of human and nonhuman actors. Invention, across these technologies, happens at the levels of author, artifact, and audience, all of whom make influential but interdependent rhetorical choices that coalesce into representational wholes. For algorithmic-memorial artifacts and other digital media, the black box invites not only questions of *what* but questions of *who*: Who has power over their presentation of memorial contents? How is the power to make rhetorically meaningful decisions shared across agents? That is, who are the authors of these media? Whose stories do these media tell?

Consider finally, in addition to its hidden code and the multiple human and nonhuman actors that play a part in these media’s design and construction, a third obfuscating influence, machine learning. Generally speaking, machine learning algorithms “observe, characterize, and act

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<sup>13</sup> Burrell, “How the Machine ‘Thinks,’” 3.

<sup>14</sup> Burrell, 3.

on patterns that arise in” large data sets.<sup>15</sup> Using this “bottom-up’ approach” machine learning algorithms arrive at “inexpressible commonalities in millions of pieces of training data.”<sup>16</sup> How exactly machine learning, specifically deep learning, extracts “inexpressible commonalities” is a famously difficult question to answer, even for developers. Machine learning introduces elements of unpredictability and surprise, often producing effects that developers cannot predict. These unexpected ruptures—arguably glitches of a different sort—suggest that algorithms, beyond being mere tools for or modes of communication, participate alongside human authors in the construction of meaning.

Many scholars of rhetoric have recently suggested that algorithms exhibit a kind of agency; Philip M. Napoli, for instance, argues that algorithms exhibit agency by “operat[ing] on equal footing with human actors to affect social conditions.”<sup>17</sup> However, Napoli notes that our understanding of agency might require modification, given that algorithms do not act independently: rather, “human and nonhuman actants . . . [enable] material forms of meaning-making that find their locus neither in human motivation, intention, and expression nor in technological forces alone.”<sup>18</sup> As Jessica Reyman claims, “algorithms are more than a tool for rhetorical activity; they themselves *participate in meaning-making*, affecting human communication,

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<sup>15</sup> Dourish, “Algorithms and Their Others,” 7.

<sup>16</sup> Dourish, 7.

<sup>17</sup> Napoli, “Automated Media,” 334.

<sup>18</sup> Reyman, “The Rhetorical Agency of Algorithms,” 118.

understanding, and behavior on both small and large scales.”<sup>19</sup>

That algorithms are enthusiastically deployed as “decision-making surrogates,” despite the “complexity and intentional opacity” of their inner workings, might seem strange.<sup>20</sup> Reyman marvels that online users accept without hesitation that algorithms can “present comprehensive information and accurately guide our thoughts, decision-making, and activities.”<sup>21</sup> Gillespie similarly observes a tremendous faith in algorithms, despite their opacity, offering search algorithms as an example. While it is perhaps easy to take for granted that a given Internet search will produce the most “relevant” results, Gillespie cautions that “‘relevant’ is a fluid and loaded judgment, as open to interpretation as some of the evaluative terms media scholars have unpacked, like ‘newsworthy’ or ‘popular.’”<sup>22</sup> How algorithms determine “relevance” is difficult to discern given their opacity. And although an algorithm’s criteria are necessarily ideologically, economically, and politically inflected, people continue to display a remarkable degree of faith that algorithms are somehow neutral or unbiased.<sup>23</sup>

The possibility of a nonhuman algorithmic author, one that selects features from data and rearranges them to persuade or make meaning, raises pressing questions with regard to the algorithmic invention of public memory. As a selective and subjective reconstruction of the past

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<sup>19</sup> Reyman, 115; emphasis added.

<sup>20</sup> Napoli, “Automated Media,” 345.

<sup>21</sup> Reyman, “The Rhetorical Agency of Algorithms,” 113.

<sup>22</sup> Gillespie, “The Relevance of Algorithms,” 175.

<sup>23</sup> Gillespie, 176.



toward some particular end in the present, public memory *requires* invention, as Carole Blair, Greg Dickinson, and Brian Ott observe: “[G]roups talk about some events of their histories more than others, glamorize some individuals more than others, and present some actions but not others as ‘instructive’ for the future. In other words, they make choices.”<sup>24</sup> When rhetors make choices about what and how to remember, they participate in rhetorical invention, or the “*selectivity* and/or *creativity* implicated in constructing a subject matter in a particular way.”<sup>25</sup> Given the centrality of “selectivity and/or creativity” in public memory work, we might ask, how do *algorithmic* “choices” participate in this invention? Is it even appropriate to characterize an algorithm’s procedural operations as choices?

Throughout my analysis of each of this chapter’s artifacts (*mimetic-nonmutable*, *nonmimetic-mutable*, *nonmimetic-nonmutable*), I show how rhetorical standpoint and mutability produce different configurations of authorship for these texts. By “authorship,” I mean *the capacity to influence how media manifest to audiences*, and I choose this word to emphasize the relationships among designers, audiences, data, and computational processes, as well as the potential creativity and collaboration involved. I refer to different configurations of authors as “authorial knots,” signaling a symbiotic relationship between human and nonhuman influences. By teasing out threads of authorship involved in the construction of algorithmic-memorial media, rhetorical critics can better evaluate who and what are involved in their necessarily complex rhetorical decision-making—and the

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<sup>24</sup> Blair, Dickinson, and Ott, “Introduction,” 6–7.

<sup>25</sup> Blair, Dickinson, and Ott, 13; emphasis added. Blair, Dickinson, and Ott explain, “[P]ublic memory [is] ‘invented,’ not in the large sense of a fabrication, but in the more limited sense that public memories are constructed of rhetorical resources” (13).

glitches that arise when things go wrong. As Reyman argues, “Recognizing the dynamic and relational nature of rhetorical agency as shared among humans and algorithms allows us to explore questions of accountability rather than dismiss the unethical rhetoric of glitches as system errors.”<sup>26</sup> Following Reyman, I view glitches not as opaque mechanical accidents but as rhetorically meaningful products of particular configurations of rhetorical agents.

I propose the authorial knot as an alternative to the black box: knots may be internally complex, but they are malleable: by teasing the threads of these knots and viewing them from different angles, we catch informative glimpses of algorithmic-memorial media’s complex, collaborative, and enigmatic curation. As I introduce artifacts from each category, I pull on threads of the authorial knot to show how these media’s various forms and rhetorical standpoints produce different configurations of rhetors, human and nonhuman.

As I adumbrate these various authorial knots, I investigate not only *how* algorithmic-memorial media work but also, following from my analysis in Chapter 1, *how we think they work*—their popular renderings in the public imagination. In spite of black boxes and in the absence of clear explanations regarding how algorithms are developed, everyday users turn to “a variety of narratives” to understand and manipulate these media.<sup>27</sup> Designers of the algorithmic-memorial media explored in this chapter often frame their algorithms using two claims: (1) that they use algorithms as tools, which cannot be said to make their own rhetorical choices, and (2) that given enough data, algorithms act as cultural conduits, arriving at otherwise latent but objective truths

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<sup>26</sup> Reyman, “The Rhetorical Agency of Algorithms,” 121.

<sup>27</sup> Natale, “If Software Is Narrative,” 2; Bucher, “The Algorithmic Imaginary,” 31.

about human experience. I suggest that treating algorithms as either tools for the production of culture or else as conduits for its transmission belies the complexity of computation's curatorial influence. In contrast, I consider algorithms to be, if not authors per se, coproducers of culture alongside designers and audiences, all of whom collaborate from within the authorial knot's convoluted tangle.

#### Mimetic, Nonmutable: The Robert Kardashian Hologram

In a tweet posted October 29, 2020, Kim Kardashian thanked her husband Kanye West for his unique 40th birthday present to her: a hologram of her late father, Robert Kardashian. Kardashian writes, "For my birthday, Kanye got me the most thoughtful gift of a lifetime. A special surprise from heaven. A hologram of my dad. [sparkles emoji] [white heart emoji] We watched it over and over, filled with emotion."<sup>28</sup> The tweet includes a 2-minute, 20-second video of the Robert Kardashian hologram, which stands in front of a black and purple void and speaks: "You're 40 and all grown up. You look beautiful, just like when you were a little girl. I watch over you and your sisters and brother and the kids every day." Though the figure addresses the camera, the eyes—blinking occasionally, moving with the slight movements of the head—remain unfocused, unseeing. At the end of the video, the Kardashian hologram finishes speaking—"Don't forget to say your prayers"—before appearing to glitch and collapse into stardust.

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<sup>28</sup> Kardashian [@KimKardashian], "For My Birthday."

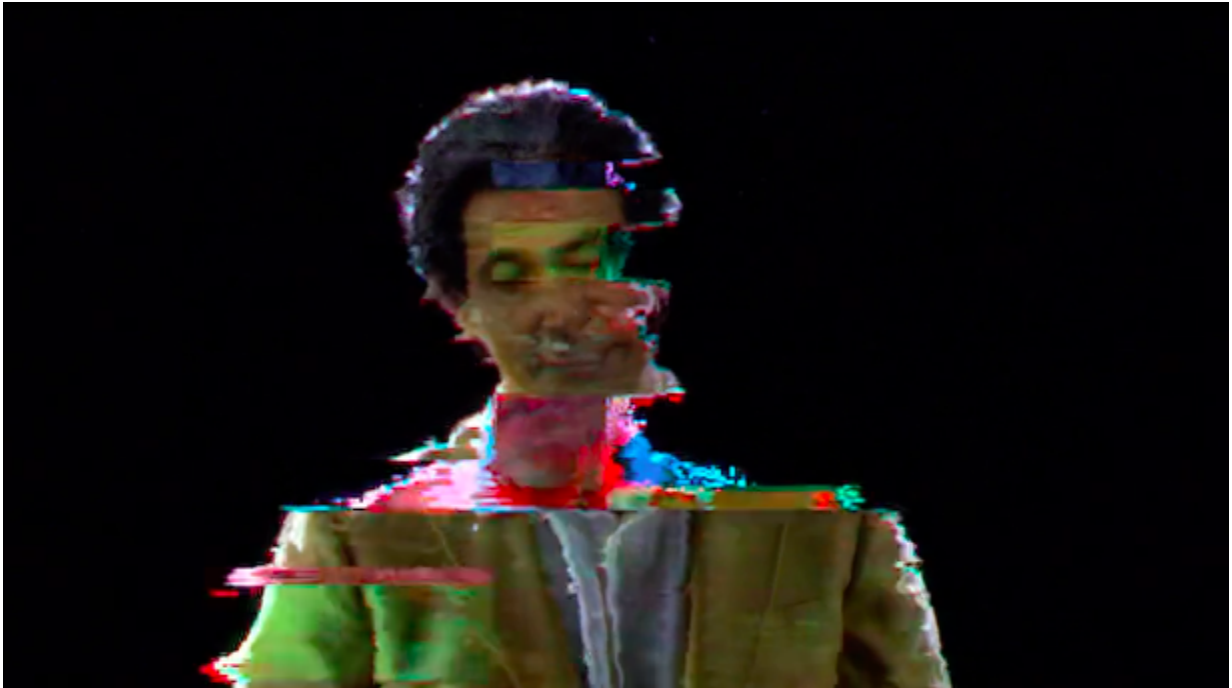


Figure 2.2: "Screenshot of the Robert Kardashian memorial hologram," 2020.

The Robert Kardashian hologram provides an initial point of departure for considering intersections of mimesis and mutability. As I have suggested, an artifact is variously mimetic or nonmimetic according to the perspective it adopts: the former speaks on behalf of or as an absent subject; the latter does not. Meanwhile, an artifact is variously mutable or nonmutable depending on whether its manifestation changes—as the result of either audience interaction or other inputs of data. Kardashian’s hologram is mimetic, purporting to speak as the man himself but, like a recorded video, is nonmutable, not changing in response to input from audiences or elsewhere. Rather, it delivers the same message at each encounter and does not change as the result of interactions with it. Intended and unintended audiences (Kim Kardashian and anyone who viewed the hologram online, respectively) may experience the artifact multiple times (“We watched it over

and over,” Kim Kardashian recounted), but like home videos, the content and form remain the same: it sticks to a script. In contrast, mutable algorithmic-memorial media, an example of which is explored in the next section, do not manifest uniformly from user to user, interaction to interaction.

Although the audience does not influence how the Robert Kardashian hologram manifests, multiple other human and nonhuman agents collaborated to design and deploy it. Daniel Reynolds, director and producer of the company that takes credit for the hologram’s creation, explains that it uses a variety of different technologies, old and new—special effects and machine learning, for example—and multiple people: a body double, an actor to perform the scripted message, special effects artists, programmers, Robert Kardashian himself via old home movies and photographs, and even, to an obvious extent, Kanye West.<sup>29</sup> The hologram expounds at one point during its message, “You married the most, most, most, most, most genius man in the whole world, Kanye West,” referring to his daughter’s then-husband, the birthday gift giver and hologram backer, a man Kardashian never met in life. Uttering a phrase that Kardashian the man could never have said, the hologram reveals how muddled agencies can become in the design and execution of algorithmic-memorial media. Though the hologram speaks *as* Robert Kardashian, its script makes plain that many other rhetors speak *through* him.

According to Reynolds, machine learning, having only been recently implemented in the construction of memorial holograms, “deliver[s] a much more realistic hologram” by “learning”

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<sup>29</sup> Schwedel, “How You Create a Robert Kardashian-Style Hologram.”

whomever “you are resurrecting.”<sup>30</sup> In the case of the hologram, this includes “how they express themselves, how they speak, their facial movements.”<sup>31</sup> Reynolds notes of the Robert Kardashian hologram, “The quality that you get is dependent on the quality of data that is available: videos, images, et cetera. The better data you have, the better end result you have.”<sup>32</sup> Presumably unintentionally, Reynolds echoes that specious claim from *Black Mirror*: “The more you have, the more it’s him.” This premise—which I refer to as algorithm-as-conduit—assumes that the capacity of mimetic algorithmic-memorial media to create true-to-life representations of subjects that loved ones will recognize depends primarily on the quantity of data that trains it. In the case of the Robert Kardashian hologram, algorithms extract from videos and images a man’s tone of voice and his smile—traces that, combined with others, stand in for him. These traces coalesce in the hologram to produce an accurate and emotionally affecting imitation, at least as expressed by Kardashian’s daughter Kim: “A special surprise from heaven. . . . We watched it over and over, filled with emotion.”

The premise of algorithmic-as-conduit for latent truths—in this instance, truths about the very essence of a person—elide the complex, elusive, and biased processes through which features are extracted while also taking for granted that with enough data, a given subject (be it a person, event, or experience) can be portrayed with fidelity to audiences who are closest to that subject. I turn now to this chapter’s next artifact, the 9/11 exhibit *Timescape*, to interrogate this premise in

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<sup>30</sup> Schwedel.

<sup>31</sup> Schwedel.

<sup>32</sup> Schwedel.

the context of algorithmic-memorial media built with broader audiences in mind.

### Nonmimetic, Mutable: *Timescape*

Seventy feet underground, on the first floor of the National September 11 Memorial Museum, a “34-foot long dynamic video display” is projected onto a concrete wall.<sup>33</sup> Pinpricks of bluish-white light representing key terms from news articles related to 9/11 (e.g., “Lease,” “World Trade Center Site,” and “Port Authority of New York and New Jersey”) radiate out along spokes of related concepts as timelines grow and fade into each other.<sup>34</sup> Created by design firm Local Projects, *Timescape* draws from “a database of literally millions of articles from September the 11th, 2001 all the way to the present day” that expands over time “through a series of relationships with different newspapers and different archives.”<sup>35</sup> As Local Projects founder and media designer Jake Barton explains, an algorithm selects “from this huge archive different timelines that are important to 9/11.”<sup>36</sup> These timelines fade and merge as “different keywords and themes” are spontaneously identified and traced from their first appearances to their subsequent recurrences in later articles.<sup>37</sup>

*Timescape* provides an example of an algorithmic-memorial text that is mutable but nonmimetic by using algorithms to sort articles into a collective and coherent “post-9/11 world story” (Barton’s phrasing) rather than speaking from the perspective of and as one individual.<sup>38</sup> In 2015, the American Alliance of Museums awarded *Timescape* its silver-level award for applications

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<sup>33</sup> Ferro, “New Museum Uses Algorithms to Visualize How 9/11 Still Shapes the World.”

<sup>34</sup> Ferro.

<sup>35</sup> Wall Street Journal, “Timescape’ Exhibit Reads the News Since 9/11.”

<sup>36</sup> Wall Street Journal.

<sup>37</sup> Wall Street Journal.

<sup>38</sup> Wall Street Journal.

and application programming interfaces (APIs). Jurors' comments were consistent with Barton's framing:

This is a great project with a unique collection and display of news headlines to create a timeline that is emotional, contextual, in the past, but related to the now. It provides a very powerful visual, telling an important story in a compelling way; an example of what can and should be done as a large-scale digital interaction.<sup>39</sup>

Barton and jurors see *Timescape* accessing an existing network—a web of interconnected terms stretching across news media and across time—to interpret and repackage it for public consumption. In this way, *Timescape*, like the Robert Kardashian hologram, is framed as a conduit, able to tap into and communicate the very truth of its subject.

*Timescape* is mutable, its form changing fundamentally as the result of continual flows of data after its initial unveiling. These data come not from audiences directly but from news articles, which, it is important to note, represent characterizations of 9/11 by human journalists. Operating from within a black box, the exhibit's edges are raw, unfinished, and often surprising. Barton explains that *Timescape* has “cut down on some of the work and labor that the museum might have to do” by identifying, independently of designers, noteworthy trends and patterns, some expected (Pakistan, Osama Bin Laden, George W. Bush) and some unexpected (the airlines industry, terrorism in Bali, and Dick Cheney's career trajectory).<sup>40</sup> That is, *Timescape* identifies patterns across news articles in ways that surprise even its creators, who can discern its logic only retroactively, as Barton explains: “[A]s we were working on it, there's a funny way in which we ourselves would be surprised and say, ‘Well there must be some mistake here,’ then we'd say, ‘Oh

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<sup>39</sup> American Alliance of Museums, American Alliance of Museums, “2015 MUSE Award Winners.”

<sup>40</sup> Wall Street Journal, “‘Timescape’ Exhibit Reads the News Since 9/11.”



no no no no no look this is right because you can basically trace this back to the original cluster from the day itself and see how it evolved over time.”<sup>41</sup> By finding connections across news articles in ways that exceed designer understanding, *Timescape* creates the conditions for surprising encounters with these media. That the exhibit can apparently illuminate connections between the past and the present without developers playing an active and ongoing role contributes to a sense that its algorithm provides unique insights about 9/11 and its ripple effects through time: that it is a black-boxed conduit for hidden patterns that would otherwise remain hidden.

To understand how the exhibit—and how an algorithm, more generally—can produce outputs that surprise even developers, it is necessary to consider approaches taken across three related but distinct technological categories: artificial intelligence (AI), machine learning, and deep learning. Most artificial intelligence, the broadest of these nesting categories, is defined as “narrow,” designed to solve certain problems or carry out particular functions, such as classifying images or processing text, language, and sound.<sup>42</sup> For decades, the field of artificial intelligence relied largely on a rules-based approach, involving the manual coding of pre-scripted directions for machines to follow, before designers pivoted to machine learning in the 1990s.<sup>43</sup> Machine learning is, most essentially, “the automated detection of meaningful patterns in datasets.”<sup>44</sup> Bottom-up rather than top-down, machine learning parses heaps of data “to attempt to generalize from one

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<sup>41</sup> Wall Street Journal.

<sup>42</sup> Copeland, “What’s the Difference”; Arankalle et al., *The Artificial Intelligence Infrastructure Workshop*.

<sup>43</sup> Deng and Liu, *Deep Learning in Natural Language Processing*, 4; Copeland, “What’s the Difference.”

<sup>44</sup> Woschank, Rauch, and Zsifkovits, “A Review of Further Directions,” 2.

condition to another and from one domain to another.”<sup>45</sup>

Since 2006, deep learning has emerged as a popular approach to AI.<sup>46</sup> A subset of machine learning, deep learning uses artificial neural networks with many layers of abstraction to identify first “lower level features” and then “higher level features”; “deep” refers to these “many layers of non-linear information processing.”<sup>47</sup> Whereas “[t]raditional neural networks” use only a few layers, deep networks use more than three and sometimes hundreds.<sup>48</sup> Compared to transitional neural networks, deep neural networks have “depth; that is, the number of node layers through which data must pass in a multistep process of pattern recognition.”<sup>49</sup> Features gleaned from one layer of nodes inform the training of the next layer: “the further you advance into the neural net, the more complex the features your nodes can recognize, since they aggregate and recombine features from the previous layer.”<sup>50</sup> Deep learning requires less human oversight than traditional machine learning, “perform[ing] automatic feature extraction without human intervention.”<sup>51</sup>

Given the lack of human oversight required for deep learning and feature extraction, these

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<sup>45</sup> Copeland, “What’s the Difference”; Deng and Liu, *Deep Learning in Natural Language Processing*, 5.

<sup>46</sup> Mühlhoff, “Human-Aided Artificial Intelligence,” 1869.

<sup>47</sup> Copeland, “What’s the Difference”; Deng and Liu, *Deep Learning in Natural Language Processing*, 7; Woschank, Rauch, and Zsifkovits, “A Review of Further Directions,” 2.

<sup>48</sup> MathWorks, “What Is Deep Learning?”; Nicholson, “A Beginner’s Guide to Neural Networks and Deep Learning.”

<sup>49</sup> Nicholson, “A Beginner’s Guide to Neural Networks and Deep Learning.”

<sup>50</sup> Nicholson.

<sup>51</sup> Nicholson.

processes present unique challenges related to the black box, as Burrell suggests:

[T]here are certain challenges of scale and complexity that are distinctive to machine learning algorithms. These challenges relate not simply to total number of lines or pages of code, the number of team members on the engineering team, and the multitude of interlinkages between modules or subroutines. These are challenges not just of reading and comprehending code, but being able to understand the algorithm in action, operating on data. Though a machine learning algorithm can be implemented simply in such a way that its logic is almost fully comprehensible, in practice, such an instance is unlikely to be particularly useful. Machine learning models that prove useful (specifically, in terms of the ‘accuracy’ of classification) possess a degree of unavoidable complexity.<sup>52</sup>

Such “unavoidable complexity” emerges at the intersection of algorithm and training data: “While datasets may be extremely large but possible to comprehend and code may be written with clarity, the interplay between the two in the mechanism of the algorithm is what yields the complexity (and thus opacity).”<sup>53</sup> Paul Dourish offers Twitter as an example of such complexity: “[O]ne must be able to characterize the specific dynamics of the ever-roiling mass of data—the way that people pick up ideas, the dynamics of how they repeat them, the geographical waves of interest, all going by at millions of tweets per minute.”<sup>54</sup>

*Timescape’s* capacity to produce insights that surprise designers and audiences also features prominently in news coverage about the exhibit. In an article for *Wired*, Cliff Kuang provides the following anecdote:

But Local Projects wasn’t sure any of them [data-mining technologies] would work for the

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<sup>52</sup> Burrell, “How the Machine ‘Thinks,’” 5.

<sup>53</sup> Burrell, 5. Furthermore, Paul Dourish observes that those algorithms that are most likely to “have social and cultural significance . . . are statistical machine learning algorithms,” which fundamentally change under the influence of continual flows of data (7). A statistical machine learning algorithm’s “internal decision logic . . . is altered as it ‘learns’ on training data” (Burrell, 5).

<sup>54</sup> Dourish, “Algorithms and Their Others,” 7.

museum. Confirmation came suddenly when Dylan Fried, one of the programmers coding the algorithm, was checking the themes and articles the machine was culling line by line. Fried, only 11 years old at the time of the 9/11 attacks, came upon a funny acronym and Skyped a colleague: “Who’s this KSM guy?” He was, of course, Khalid Sheikh Mohammed, master-mind of the attacks, and he kept popping up as a detainee at Guantanamo Bay and linked to the 2002 Bali nightclub bombing. “This algorithm showed Dylan a whole world of connections,” says Sundar Raman, Fried’s colleague. In other words, it worked.<sup>55</sup>

According to this framing, *Timescape*’s algorithm, having gleaned sufficient information from news article data, can arrive at objective truths about the event (“He was, *of course*, Khalid Sheikh Mohammed, master-mind of the attacks”) independently *and even in spite of* coders (“This algorithm showed Dylan a whole world of connections”). That the anecdote’s coder was “only 11 years old at the time of the 9/11 attacks” only further illustrates how independently (and therefore brilliantly) the algorithm operates, at least as suggested by the inclusion of this story.

Kuang also lauds the exhibit’s algorithms for “offer[ing] startlingly sharp insights about the ebb and flow of current affairs.”<sup>56</sup> Kuang observes, “It doesn’t elide what’s there, and it doesn’t overlay or underplay some themes for emphasis, as a curator inevitably would. It simply shows events for what they are, in news headlines.”<sup>57</sup> Importantly, Kuang suggests that, because the exhibit does not rely on the knowledge of one or a team of designers, it provides a more objective perspective:

In that way, its effect is akin to the polished black granite of the Vietnam Veterans Memorial, which allows visitors to see their own reflections atop the inscribed names. Architectural critics have given almost metaphysical weight to the fact that the memorial’s marble literally mirrors the present day. At the 9/11 Museum, the mirror is a math

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<sup>55</sup> Kuang, “The Near-Impossible Challenge of Designing the 9/11 Museum.”

<sup>56</sup> Kuang.

<sup>57</sup> Kuang.

equation.<sup>58</sup>

For Kuang, the exhibit's algorithms make neutral, out-of-sight calculations to provide reliable insights—one-to-one *reflections* of audiences.

*Timescape* demonstrates that obfuscated deep learning processes make some algorithmic-memorial media rhetorically unwieldy by generating surprising outputs (which, notably, often first appear to be accidents) and dislocating rhetorical acts from individual rhetors. These algorithms can surprise audiences and even designers as they discern patterns in data from within the black box, patterns otherwise obscured. Meanwhile, journalistic discourse surrounding *Timescape* uses these surprises as evidence that the exhibit's algorithm provides a direct aperture into human culture or experience, "simply show[ing] events for what they are."<sup>59</sup> As Kuang puts it, "the mirror is a math equation." According to this understanding, algorithms act as conduits, reaching into amassed and cluttered data about human experience, history, and culture to extract compelling stories and objective truths.

#### Nonmimetic, Nonmutable: *Reflecting Absence*

Michael Arad's *Reflecting Absence*, a memorial to those who died in the September 11, 2001, attacks and the 1993 World Trade Center bombing, provides this chapter's final example. The memorial is neither mimetic nor mutable, and in fact, to look at the memorial, it is not even obviously computational. Built at the site in lower Manhattan where the World Trade Center once

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<sup>58</sup> Kuang.

<sup>59</sup> Kuang.

stood, two rectangular pools of cascading water stand in the “footprints” of the towers.<sup>60</sup> Bronze panels wrapping around these pools have etched into them the names of 2,983 victims, organized neither alphabetically nor chronologically. At first glance, their placement might appear arbitrary; however, the arrangement of these names is anything but, and it was, in fact, the source of much difficulty for the memorial’s designers.

From the outset, the designers struggled in deciding how to arrange names across the panels:

Having one pool be A-L and the other M-Z—that didn’t feel right. . . . Also, there were, for example, two men named Michael Francis Lynch, and it seemed off, both graphically and emotionally, to have their names appear side by side. A chronological order made no sense, either, considering the manner in which people died. Whichever system he thought of—by workplace, by floor or seat number—seemed to favor some people over others.<sup>61</sup>

The designers chose, ultimately, to arrange names according to “meaningful adjacencies” between individuals, their names placed alongside names of friends, family members, and coworkers. The arrangement “reflects the victims’ complex web of relationships to one another—professional, social, and accidental.”<sup>62</sup> The memorial’s designers consulted family, friends, and colleagues of victims, who had particular requests for where names appeared in relation to others. Initially, the team used index cards to sort data from the more than 1,200 adjacency requests they received, but this process soon became hopelessly convoluted: “Each pairing set off a chain reaction, the strings of connection growing ever more tangled and frayed. . . . The deeper [they] got into this puzzle, the

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<sup>60</sup> Jensen, “A Memorial to the Unthinkable.”

<sup>61</sup> Paumgarten, “The Names.”

<sup>62</sup> Hornyak, “Names on WTC Memorial Arranged by Algorithm.”

more complex it became.”<sup>63</sup>

In October 2009, Local Projects, the media design firm working with Arad and the same firm that created *Timescape*, reached out to software artist Jer Thorp in the hopes that computation could manifest the complex web of relationships latent in the adjacency requests. In a blog post about the project, Thorp explains, “The solution for producing a solved layout for the names arrangement sat at the bottom of a precariously balanced stack of complex requirements.”<sup>64</sup> On the one hand, the designers were tasked with “satisfying as many of the requested adjacencies as possible” while also grouping names according to “affiliations (usually companies), and sub-affiliations (usually departments within companies).”<sup>65</sup> On the other hand, they had to contend with the constraints of the memorial’s 76 panels, including “a thin, invisible expansion joint between the metal plates” that would accommodate some letters but not others in names that stretched across more than one panel.<sup>66</sup>

A number “of several smaller routines” was required to address these intertwining problems. First, algorithms created “clusters of names from the adjacency requests” and then arranged these clusters aesthetically across the panels.<sup>67</sup> Then, “a space filling process . . . place[d] the clusters into the panels and fill[ed] available space with names from the appropriate

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<sup>63</sup> Paumgarten, “The Names.”

<sup>64</sup> Thorp, “All the Names: Algorithmic Design and the 9/11 Memorial.”

<sup>65</sup> Thorp.

<sup>66</sup> Thorp.

<sup>67</sup> Matson, “Commemorative Calculus.”

groupings.”<sup>68</sup> Lastly, “a placement routine” directed the positioning of “the cross-panel names, and adjust[ed] spacing within and between panels.”<sup>69</sup> These algorithms—referred to collectively as the Names Arrangement—were written with the “free to download, free to use, and open source” programming language called Processing.<sup>70</sup>

Algorithmic by design but not outwardly so, *Reflecting Absence* represents an intersection of human decision-making and computational problem solving, if less obviously than *Timescape*. The memorial uses algorithms to efficiently curate an otherwise unmanageable data set while also reminding us that algorithmic-memorial media need not feature a screen. *Reflecting Absence* also serves as a reminder that the kinds of cultural sorting that algorithms do are age-old and familiar; societies have used procedural logics to sort human experience long before deploying algorithms to do this labor, as John Durham Peters reminds readers: “Digital media have rendered a historical and imaginative service: their endless tagging, tracking, and tracing of our transactions reminds us that data management for power, profit, and prayer is both ancient and modern.”<sup>71</sup> Comparing digital media to “old” media (calendars, abacuses, catalogs), Peters notes that all are primarily concerned with “recording, transmitting, and processing culture.”<sup>72</sup> Because “[a]ll complex societies have media inasmuch as they use materials to manage time, space, and power, media are

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<sup>68</sup> Thorp, “All the Names: Algorithmic Design and the 9/11 Memorial.”

<sup>69</sup> Thorp.

<sup>70</sup> Hornyak, “Names on WTC Memorial Arranged by Algorithm”; Fry and Reas, Casey, “Processing Overview.”

<sup>71</sup> Peters, “Infrastructuralism,” 39.

<sup>72</sup> Peters, 36.



by no means limited to the cultural products of the 19th, 20th, and 21st centuries.”<sup>73</sup> As Gillespie similarly explains, algorithms represent “merely the latest instantiation of the modern tension between ad hoc human sociality and procedural systemization—but one that is now powerfully installed as the beating heart of the network technologies we surround ourselves with and increasingly depend upon.”<sup>74</sup>

The concept of “meaningful adjacencies” elegantly demonstrates that the “procedural systemization” of human experience precedes algorithmic intervention. Although an algorithm was used to discover the “meaningful adjacencies” so essential to the eventual design of *Reflecting Absence*, these adjacencies—and the team’s plan to map and use them as the organizing principle of the memorial—existed *prior to* “the insertion of procedure.”<sup>75</sup> Consider that the designers initially sorted names using only the adjacency requests and index cards: in fact, the first group of requests was sorted this way.<sup>76</sup> The algorithm only made this process more efficient: as Thorp reflects, “If you sat down at a table with pieces of paper and string, you are going to be here for 100 years before you solve this problem.”<sup>77</sup> According to this framing, the algorithm is a *procedural tool* uniquely positioned to efficiently process human experience and culture by uncovering and sorting existing, meaningful associations.

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<sup>73</sup> Peters, 36.

<sup>74</sup> Gillespie, “Algorithm,” 27.

<sup>75</sup> Gillespie, 25.

<sup>76</sup> Delta Landscape, “The Presence of Absence.”

<sup>77</sup> Barton and Thorp, “The Algorithm That Arranges Victims’ Names.”

Despite the centrality of the algorithm to the memorial's design, Thorp and others consistently embrace this narrative, presenting algorithms as powerful and efficient tools for introducing procedure into already meaningful but latent human experience. Humans—not algorithms—designed *Reflecting Absence*, Thorp reminds readers of his blog: “It would be misleading to say that the layout for the final memorial was produced by an algorithm. Rather, the underlying framework of the arrangement was solved by the algorithm, and humans used that framework to design the final result.”<sup>78</sup> Thorp advocates,

we should let computers do what computers do best, and let humans do what humans do best. In this case, the computer was able to evaluate millions of possible solutions for the layout, manage a complex relational system, and track a large set of important variables and measurements. Humans, on the other hand, could focus on aesthetic and compositional choices. It would have been very hard (or impossible) for humans to do what the computer did. At the same time, it would have been very difficult to program the computer to handle the tasks that were completed with such dedication and precision by the architects and the memorial team.<sup>79</sup>

While much popular commentary on *Reflecting Absence* frames its underlying algorithms as the key to solving the central problem of the memorial's design, this commentary also often includes these kinds of caveats: “We wanted to make sure that this tool wasn't a machine that produced a result but rather a machine that helped humans produce a result. Because the memorial is about all these people.”<sup>80</sup>

Whenever designers caution against ceding too much curatorial power to algorithms, a new “line in the sand” appears: memorials for humans should be designed by humans who may use

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<sup>78</sup> Thorp, “All the Names: Algorithmic Design and the 9/11 Memorial.”

<sup>79</sup> Thorp.

<sup>80</sup> Barton and Thorp, “The Algorithm That Arranges Victims' Names.”

algorithms as tools to assist their work. In the case of *Reflecting Absence*, the Names Arrangement produced thousands of possible solutions to satisfy adjacency requests and fit names across panels. The public sees only one of these thousands of solutions manifested in the memorial: intentional, complete, polished, and *static*. Designers, not algorithms, approved the final product, revising the placement of names as necessary before etching them permanently into bronze. That is, while the Names Arrangement provided some possibilities for how to memorialize, these choices were highly constrained by human actors.

Arad and Thorp have claimed that this particular arrangement imbues each name with heightened significance by gesturing to an otherwise hidden network of people and relationships. Arad, for example, suggests that the seemingly random but deeply intentional arrangement of names emphasizes each individual person: “They’re very sad and powerful individual stories. . . . If you knew these people, you’ll know why they’re next to each other. In doing so, you break down the difficulty of relating to a number like nearly 3,000 dead. You start to understand what the toll of that day was.”<sup>81</sup> Thorp similarly observes,

This project was a very real reminder that information carries weight. While names of the dead may be the heaviest data of all, almost every number or word we work with bears some link to a significant piece of the real world. It’s easy to download a data set—census information, earthquake records, homelessness figures—and forget that the numbers represent real lives. As designers, artists, and researchers, we always need to consider the true source of data, and the moral responsibility which they carry.<sup>82</sup>

The arrangement of names, according to Arad and Thorp, represents the inherent meaningfulness of these data by gesturing elsewhere to absent people, their relationships, and their lives.

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<sup>81</sup> Jensen, “A Memorial to the Unthinkable.”

<sup>82</sup> Thorp, “All the Names: Algorithmic Design and the 9/11 Memorial.”

According to one account, the designers “settled on the idea of a distribution that would seem random, reflecting the chaotic and arbitrary nature of the event itself, but that would have some kind of underlying logic, reflecting the bonds that preceded or came of it.”<sup>83</sup> Thus, even as designers resist ascribing rhetorical agency to the Names Arrangement in favor of human curators, they also discover an essential but latent humanness in the arrangement of names *as uncovered and sorted by the algorithm*. The algorithm provides an aperture into the complexity of human sociality, giving insight into an already meaningful but obscured data set.

*Timescape*'s mutability—involving diminished oversight by human designers, mechanical improvisation, and surprising insights for audiences and designers alike—contributes to a rhetorical unwieldiness that further undermines the careful algorithm-as-tool caveat proffered by designers of *Reflecting Absence*: “this tool wasn’t a machine that produced a result but rather a machine that helped humans produce a result.”<sup>84</sup> The memorial’s designers hold fast to the algorithm-as-tool framing, arguing that they assist designers who themselves define problems and imagine solutions. Yet we may wonder, what other tool so obscures, even for its wielder, the relationship between input and output, rhetorical resources and memorial manifestation? Indeed, the preceding examples suggest that algorithms do participate in the invention of public memory by manipulating symbols and animating traces into representational wholes, thus performing some of the interpretive work traditionally done by human designers and curators.

At the same time, we should not uncritically laud algorithms’ capacity to extract patterns

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<sup>83</sup> Paumgarten, “The Names.”

<sup>84</sup> Barton and Thorp, “The Algorithm That Arranges Victims’ Names.”

and make meaning, thereby failing to acknowledge that these processes *are not neutral or more objective* than curation done by humans. Dourish directs readers to Wendy Chun, who “has argued cogently for the need to resist fetishizing technical objects such as source code or algorithm, pointing out that a capitulation to purely technical accounts risks obscuring the social and cultural practices by which those technical objects are animated in practice.”<sup>85</sup> Along these lines, Bucher reminds readers that algorithms by themselves do not “have power.”<sup>86</sup> Rather, their “systems embody an ensemble of strategies, where power is immanent to the field of action and situation in question.”<sup>87</sup>

Thorp’s caveat—an algorithm is a tool that helps humans produce media rather than producing media itself—speaks to underlying tensions between algorithm-as-tool and algorithm-as-conduit: either humans use algorithms as tools to curate and invent public memory or algorithms participate in this curation and invention as rhetorical agents by interpreting data in ways beyond the means of human designers. Discourse surrounding the Robert Kardashian hologram, *Timescape*, and *Reflecting Absence* suggest how various intersections of mimesis and mutability lend themselves to recurring and contradictory explanations about why it is appropriate and often even necessary for algorithmic-memorial media to take over the work of curation from humans—who, in comparison, are argued to be less efficient and less objective. For instance, while mimetic texts like the Robert Kardashian hologram may make people wary about having innumerable rhetors beyond

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<sup>85</sup> Dourish, “Algorithms and Their Others,” 9.

<sup>86</sup> Bucher, *If .... Then: Algorithmic Power and Politics*, 3.

<sup>87</sup> Bucher, 3.

Robert Kardashian speak as and through him, algorithmic curation is apparently justified because the text amalgamates subjects' traces, which together reveal latent truths about that subject: "The more it has, the more it's him." In this way, algorithms are seen as conduits into humans and their experiences, if only given enough data. Meanwhile, popular discourse suggests that, by finding hidden patterns in data from news media related to 9/11, *Timescape* might be more efficient or objective than human curators could ever be in "the sorting, classifying and hierarchizing of people, places, objects and ideas."<sup>88</sup>

Tugging at the various knotted threads of the Robert Kardashian hologram, *Timescape*, and *Reflecting Absence* reveals that, across algorithmic-memorial media, algorithms make curatorial decisions that lie beyond the influence (and sometimes initial understanding) of human designers. In this way and counter to popular characterizations by memorial designers and media coverage, algorithms participate in the construction of meaning, within particular contexts and given certain data. I suggest that algorithms are neither mere tools for processing culture or cultural conduits, delivering neutral outputs or an objective register of human experience: they are coproducers of culture, altered but not necessarily made more objective by the addition of more data.

In Chapters 3 and 4, I suggest that clear distinctions between algorithms, tools, humans, and designers are even blurrier for algorithmic-memorial artifacts that are both mutable *and* mimetic. With their processes of selection and exclusion black boxed from developers and audiences alike, these artifacts further undermine framings of algorithms as mere tools for systematizing or conduits for interpreting human experience and culture.

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<sup>88</sup> Striplas, "Algorithmic Culture," 396.

### Chapter 3

#### Memorial Chatbots, Ouija Boards, and Ambiguous Authorship

[D]eparture must be played as the necessary prelude to the joyful return . . . in this latter lay the true purpose of the game.

—Sigmund Freud, *Beyond the Pleasure Principle*<sup>1</sup>

After Roman Mazurenko was struck and killed by a car in 2015, his close friend Eugenia Kuyda immersed herself in what remained of him: thousands of text messages that she and Mazurenko had exchanged over the course of their friendship. At that time, the Russian chatbot developer was working on her artificial intelligence startup Luka, and as she reread Mazurenko’s messages, she realized that the same neural network technology she used to build chatbots could be used to create a memorial for her friend. At Kuyda’s request, Luka’s engineers built another neural network, this one in Russian. Using over eight thousand lines of text messages exchanged between Mazurenko, his family, and his friends, Luka began training a new neural network that would respond to messages with exact phrases from Mazurenko’s archived texts and generate original strings of text based on his patterns of vocabulary and tone.<sup>2</sup> On May 24, 2016, two versions of “Roman”—one in Russian and one in English—began replying to messages from family and friends, as well as other people whom Mazurenko had not known in life.<sup>3</sup>

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<sup>1</sup> Freud, *Beyond the Pleasure Principle*, 16.

<sup>2</sup> Newton, “When Her Best Friend Died.”

<sup>3</sup> Hereafter, I refer to Roman Mazurenko the person by his surname and to his memorial chatbot by its name, Roman.

Like algorithmic-memorial artifacts examined in the previous chapter—Robert Kardashian’s hologram, *Timescape*, and *Reflecting Absence*—Roman represents an intersection of archive and code, a tremendous amount of training data and deep learning, and human developers and computational processes. Unlike these other artifacts, Roman is at once mimetic *and* mutable: the bot stands in for one absent subject rather than providing an adjacent, “third-person” account and variously manifests according to continual contributions from audiences. Chat logs with Roman vary from user to user, interaction to interaction, rather than offering a single, consistent portrayal consistent across audiences. While messages sent to Roman do not fundamentally alter its code, they do affect which traces of Mazurenko’s archived conversations percolate to the surface. By incorporating audience decisions in how it memorializes Mazurenko, the bot—and mutable-mimetic texts, more generally—muddy distinctions between designers and audiences, writers and readers, and producers and consumers of memory texts: Who or what (designers, training data, code, users) ultimately determines how Mazurenko is represented and remembered?

Introducing authorial ambiguity to memorial spaces may concern designers and critics, who generally laud opportunities for audience participation but remain invested in a memorial’s capacity to realize designer intentions and make specific arguments about the past. As Anna Reading observes, “The role of digital interactive technologies . . . raise[s] important issues about the form and effectiveness of ‘interactivity’ and about the *tensions between visitor agency versus a shared memorial experience*.”<sup>4</sup> By obscuring the locus of authorial control, memorial chatbots raise pressing, medium-specific questions regarding algorithmic-memorial texts and how designers and

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<sup>4</sup> Reading, “Digital Interactivity in Public Memory Institutions,” 71; emphasis added.



audiences variously make meaning in their production and reception: How does their allocation of creative control—the particular configuration of their twisted and tangled authorial knots—affect opportunities for audiences to engage with the past?

While memorial chatbots conspicuously disrupt the ways that memorial designers and audiences typically share the work of interpreting and representing the past, concerns regarding the intersection and interaction of designer intent, audience participation, and memorial materiality permeate explorations into even more apparently traditional (stone, static, nondigital) memorials. Accordingly, in the first part of this chapter, I explore how public memory scholars have previously investigated audience participation and engagement with memorials, identifying a common interest in how and to what extent “passive” consumers of memory texts may also be considered “active” producers of those texts. After surveying participation within public memory scholarship, I turn to two related concepts from the study of media technologies to further illuminate the relationship between audience/user choices and memorial outcomes: interactivity and interfaces. Interactivity happens *through* the interface, or as Douglas Eyman describes it, “the point at which software, hardware, user, network, the virtual and the material come together.”<sup>5</sup> As intersections of human intention and machinic processes, interfaces constrain how designers and audiences collaborate to produce texts.

Following Lori Emerson, I suggest that attending to the materiality of memorial chatbot interfaces illuminates how these artifacts mediate between designers and audiences. While all memorial forms invite us to examine the relative creative control of designers and audiences,

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<sup>5</sup> Eyman, *Digital Rhetoric*, 55.

scholars of public memory should attend to the specific affordances and constraints of algorithmic-memorial media's interfaces; these interfaces deserve critical attention because, as loci of authorial control, they determine the extent to which audiences participate in the production and performance of memory alongside algorithms. Emerson argues that a universal push to hide computational processes under "the smooth surface of the interface"<sup>6</sup> transforms users into consumers rather than producers of knowledge by restricting their "access to (understanding) both [of] the mechanisms and the flow of information underlying the machine."<sup>7</sup> Accordingly, I follow my overview of interactivity and interfaces with a popular example of a mid-twentieth-century technology believed to cultivate a secretive and fraught relationship between designer, audience, and machine: the chatbot. I show that, since their inception, chatbots have been considered by their designers to be most effective when they successfully "trick" their human interlocutors into interacting with them as if they too were human. The prevalence of the theme of deception throughout the discursive history of the chatbot directs us to the role concealment plays in interfaces, particularly artificially intelligent ones.

After exploring the theme of deception as it permeates chatbot mythology, I trouble Emerson's premise that obscuring technical processes from the user necessarily "disempower[s]" them.<sup>8</sup> What if, instead of approaching apparently "deceptive" interfaces as attempts to dupe and manipulate audiences, we consider that audiences might enjoy some degree of contextual

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<sup>6</sup> Emerson, *Reading Writing Interfaces*, 51.

<sup>7</sup> Emerson, 30.

<sup>8</sup> Emerson, 47.

awareness and authorial control while interacting with those interfaces? I suggest that an outwardly deceptive relationship between designers, users, and interfaces can actually enable play, pretend, and collaborative meaning-making among these actors.

I engage the language of play and theater to explore the collaborative potential of concealment as a rhetorical device and procedural mechanism. This chapter's case study, Roman, demonstrates the utility of comparisons to play for understanding how designers and audiences intersect in the production and reception of algorithmic-memorial texts. Analysis of Roman's interface, its materiality, and the way it guides audience interactions reveals that algorithmic-memorial texts make memory procedural by strategically deploying concealment. Roman's interface, similar to that of nonmemorial chatbots, utilizes opacity to create a space of imagination and possibility for users. The uncertainty engendered by interface opacity invites audiences to willingly suspend disbelief and supply inputs (e.g., messages) for the sake of playing along. Through my analysis of Roman's interface and the way it facilitates and constrains Mazurenko's memorialization, I argue that concealment is the principal mechanism through which algorithmic-memorial media, their designers, and their audiences play, invent, and collaboratively make sense of the past.

Shades of nuance between the terms "audience"—more commonly used in the study of public memory and rhetoric—and "user"—more commonly used in the study of technology and digital media—communicate subtly different perspectives on the role and participation of people as they interact with media. The former might bring to mind, at least in a colloquial sense, a kind of passive receptivity involving spectating, listening, watching, or reading, as if from a seat in a theater removed from the stage and its actors, directors, set designers, and playwrights, for example.

Several definitions from the *Oxford English Dictionary* express such an association: “[a] body of hearers, spectators, etc.”; “[a]ll the people within hearing of something; (hence) the assembled listeners or spectators at a public performance or event (as a play, film, lecture, etc.) considered collectively”; “[t]hose people who have read or regularly read a particular text, publication, or writer, considered collectively; a readership”; or “[t]hose people who listen to or watch a programme broadcast on radio or television, or who access audio or video content via digital media, regarded collectively; (also) all those who regularly follow a particular programme, podcast, channel, etc.”<sup>9</sup> This range of definitions also accentuates another of the term’s connotations, collective experience: a “body of hearers, spectators,” “assembled listeners or spectators,” “[a]ll the people,” “considered collectively.”

“User,” on the other hand, might seem instead to emphasize individual agency by centering the verb “to use” rather than an imagined group of experiencers. For the purposes of the following analysis, however, I use the terms “audience” and “user” nearly interchangeably, in part because I do not see one category as more active or passive than the other. Generally speaking, I use the term “audience” to refer collectively to those who might interact with Roman and “user” when observing specific procedural and visual characteristics of the app that a given individual would encounter through its use. I distinguish observations of Roman’s features from my own individual experience of the app and do not privilege my experience as generalizable or representative of a broader audience experience, nor do I dismiss the importance of an individual’s choices in their experience of interacting with Roman. Rather, I use my encounters with Roman to

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<sup>9</sup> “Audience, n.”

infer a general set of conditions the app creates and a range of possible choices it makes available to all audiences, all users.

As part of my analysis of Roman's procedural and visual features, I compare the memorial chatbot to an unlikely analog: the Ouija board. The Ouija board provides an apt analogy for understanding how a single interface can produce myriad and diverging encounters with memory and facilitate designer and audience collaboration through opaque processes. Furthermore, this comparison demonstrates that, while the chanciness inherent in algorithmic-memorial media may seem to cede too much control to audiences in encounters with memory, the use of playful procedure in these memorials actually may constrain these encounters *more* than their nonalgorithmic counterparts.

Importantly, differences between definitions of "audience" and "user" remind us that encounters between *audiences* and texts imply collective experience, even if individual audience members experience that text separately—as, for example, readers of the same book. As Edward S. Casey explains, public memory "occurs in the open, in front of and with others."<sup>10</sup> According to Casey, public memory requires a physical place and a public presence: "[H]uman bodies" need to come together as "people congregate for a common purpose."<sup>11</sup> Furthermore, public memory involves public discussion, and "[t]he praxis of public memory is primarily discursive."<sup>12</sup> Casey observes, "Public memory . . . gathers place, people, and topics in its encompassing embrace by

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<sup>10</sup> Casey, "Public Memory in Place and Time," 4.

<sup>11</sup> Casey, 33.

<sup>12</sup> Casey, 33.

acting as the external horizon that encircles the situation—the human situation, the human condition, the place we are always at when we are not merely standing by others or with family and friends.”<sup>13</sup> Given this understanding of public memory, common among public memory scholars, we may wonder if memorial texts that are experienced in the absence of others belong to the category of *public* memory? While this dissertation as a whole concerns the ways that people interact with memorial texts both as part of collectives and as individuals, this chapter focuses on the latter. I return to the necessity of public interaction in the conclusion to this chapter and more fully in Chapter 4, where I explore examples of algorithmic-memorial media that audiences interpret and engage alongside others.

#### Engaged Users, Secretive Interfaces, and the Allocation of Authorial Control

##### *Public Memory, Participation, and Critical Engagement*

In evaluating how designers and audiences of algorithmic-memorial texts share authorial control, one may be tempted to begin with their outwardly revolutionary opportunities for audience participation. Yet “a media archaeology-inspired”<sup>14</sup> approach, which attempts to “find something new in the old,”<sup>15</sup> reveals that such participation, which seems like a novel anomaly of digital media, is neither novel nor anomalous. That is, while digital (and, more specifically, algorithmic-memorial) media may seem to depart radically from nondigital, nonalgorithmic memorial forms by involving audience contributions, even “traditional” memorials invite audience

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<sup>13</sup> Casey, 37.

<sup>14</sup> Emerson, *Reading Writing Interfaces*, 50.

<sup>15</sup> Zielinski, *Deep Time of the Media*, 3, quoted in Emerson, *Reading Writing Interfaces*, 87.

participation. In the overview of public memory scholarship that follows, I discuss participation as it already occurs and is understood in nondigital, less obviously alterable memorial forms. By beginning with how *nonalgorithmic* memorials incorporate participation, I set the stage for a subsequent, more nuanced analysis of how *algorithmic* memorials do so differently. Furthermore, by establishing how and why audience participation can lead to more meaningful engagements with the past, I provide necessary context for understanding how algorithms may augment such engagement.

Scholars of public memory tend to view memorials as deliberative and political as well as epideictic and ceremonial.<sup>16</sup> Whether memorial texts encourage active participation from their audiences emerged early and has persisted in the rhetorical study of public memory as a popular criterion for evaluating memorial texts, and questions over what type and quality of participation memorials invite from audiences have long been of principal concern. Ekaterina V. Haskins defines “participation” as the “active contribution to the content and form of a text or performance,” observing, “It is one thing to collect, digitize, and preserve large quantities of memorial artifacts; it is quite another to display them in ways that *stimulate meaningful participation and interaction*.”<sup>17</sup> Similarly, in their influential study of Maya Lin’s Vietnam Veterans Memorial, Carole Blair, Marsha S. Jeppeson, and Enrico Pucci Jr. distinguish between a touristic encounter with a commemorative text and its preferable opposite: “an *engaged and thoughtful* reading.”<sup>18</sup>

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<sup>16</sup> Blair, Jeppeson, and Pucci, “Public Memorializing in Postmodernity,” 263.

<sup>17</sup> Haskins, *Popular Memories*, 2; emphasis added.

<sup>18</sup> Blair, Jeppeson, and Pucci, “Public Memorializing in Postmodernity,” 278; emphasis added. The authors observe that the memorial’s departure from modern architecture’s “simplicity, symmetry, and unity” makes it a “prototype of postmodern memorializing” (268). The Vietnam

As signaled by the pairing of “engaged” and “thoughtful,” public memory scholars often evaluate participation alongside a related memorial aspiration: opportunities to engage *critically* with the past. Blair, Jeppeson, and Pucci, for example, observe that the Vietnam Veterans Memorial refuses a single, straightforward interpretation of historical events, instead “invit[ing] doubt and critical differentiation of issues.”<sup>19</sup> Similarly, Blair and Neil Michel find that “effective” memorials invite audiences to think critically: “Rather than telling us what to think, they invite us to think, to pose questions, to interrogate our experiences and ourselves in relation to the memorial’s discourse.”<sup>20</sup> Like the Vietnam Veterans Memorial, the Astronauts Memorial “demands that visitors not submit passively to a message but expend contemplative effort to understand it.”<sup>21</sup>

What, then, are the necessary conditions for critical engagement with and critical thinking about a memorial text? What memorial forms encourage or discourage this kind of participation? Haskins acknowledges that “all public memory is inherently participatory insofar as memory artifacts or performances are intended for a public audience and so must recruit members of this

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Veterans Memorial is political, evocative, and “multivocal,” inviting inconsistent interpretations from critics and prompting critical thinking from visitors (264).

<sup>19</sup> Blair, Jeppeson, and Pucci, 278.

<sup>20</sup> Quoted in Blair and Michel, “Commemorating in the Theme Park Zone,” 37.

<sup>21</sup> Blair and Michel, 64. Though the Vietnam Veterans Memorial was initially an unconventional commemorative monument, its features—black granite and an explicit naming of the dead, for example—have been emulated and, in some cases, depoliticized in other memorial texts.



audience as attentive participants.”<sup>22</sup> Yet as Haskins argues, critics should nevertheless differentiate between memory practices that allow audiences to “take part in the *production* of memory artifacts”<sup>23</sup> and those that do not.

From Haskins we might conclude that critical engagement requires opportunities to join in the production of memory, to contribute to a memorial’s form or alter how it manifests to others; however, as argued by many critics, some apparently immutable memorial texts can nevertheless prompt critical engagement. The Vietnam Veterans Memorial, for example, while stone and static, nevertheless gives audiences opportunities to think critically about their own interpretations.

Thomas R. Dunn offers a corresponding example in Danny Osborne’s *Oscar Wilde* monument in Dublin, which differs from other “commemorative spaces . . . designed to discourage visitors from climbing, engaging, or potentially damaging them.”<sup>24</sup> As Dunn argues, the monument’s placement—close to the ground and amid thick shrubbery—surprises visitors and invites them to touch, climb, and explore and in so doing to adopt a “playful,” Wildean mindset of “commitment, curiosity, and troublemaking.”<sup>25</sup>

Conversely, even memorial texts that invite contributions from audiences can actually inhibit their critical engagement. For example, in her analysis of the American Civil War Center’s visitor-authored Post-it note wall, Nicole Maurantonio finds that the exhibit’s “anything goes”

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<sup>22</sup> Haskins, *Popular Memories*, 3.

<sup>23</sup> Haskins, 3; emphasis in original.

<sup>24</sup> Dunn, ““The Quare in the Square”,” 232.

<sup>25</sup> Dunn, 232.

approach leads to an “interpretive stalemate.”<sup>26</sup> While the Post-it note wall ostensibly provides a space for public participation and free discourse, “the materiality of the post-it note facilitates the containment of memories by limiting the possibility for resistance, tempering emotion, and focusing visitors’ attention on progress.”<sup>27</sup> Hence, while a memorial text can invite audiences’ “active contribution to [its] content and form”<sup>28</sup> (e.g., sticking a Post-it note on the wall), such participation may fail to provide opportunities for critical engagement.

Given that invitations to add to or alter a memorial text’s materiality do not always encourage audiences to engage critically and that, moreover, even apparently immutable memorials prompt critical engagement, what kinds of audience participation *do* lead to critical engagement? Some precise definitions will assist in the quest to identify which kinds of participation encourage critical engagement. Following other rhetorical scholars of public memory and for the purposes of this chapter, I define critical engagement as *interaction between audiences and memorial texts wherein the former interrogate and assimilate the latter to cultivate their own interpretations of the past rather than inheriting a singular, fixed interpretation*. This definition collapses two interlocking criteria for critical engagement: *allowances for diverse interpretations* and *opportunities for critical thinking*. Psychologist Diane Halpern defines critical thinking as “*the use of cognitive skills or strategies that increase the probability of a desirable outcome*” and explains further that such thinking “*is purposeful, reasoned, and goal directed—the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods,*

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<sup>26</sup> Maurantonio, “Material Rhetoric, Public Memory, and the Post-It Note,” 89.

<sup>27</sup> Maurantonio, 91.

<sup>28</sup> Haskins, *Popular Memories*, 2.

and making decisions.”<sup>29</sup> Halpern’s definition of critical thinking is useful in this context because it identifies pointed criteria for evaluating opportunities for engagement with memory texts: Do those texts empower audiences to solve problems, make choices, or interpret situations—to *purposefully* think through some tension to a resolution?

These criteria encourage critics to think beyond memorial materiality and toward experiential processes when evaluating opportunities for critical engagement in encounters with memorial texts. Haskins’s definition of participation makes clear that participation involves the “active contribution to the content and form of a text or *performance*.”<sup>30</sup> Audiences participate in the production of memorial texts, not only by augmenting their material form but also by exerting control over encounters with those texts, that is, influencing how memory is experienced.

### *Performing Memory*

The field of performance studies illuminates how establishing and sharing cultural knowledge does not depend solely on controlling the material archive—a museum artifact, a monument, a text: *performance*, too, functions “as a system of learning, storing, and transmitting knowledge,” as Diana Taylor writes.<sup>31</sup> Importantly, while memorial texts afford and constrain, encourage and discourage, or invite and dissuade particular types of performance, their design

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<sup>29</sup> Halpern, *Thought and Knowledge*, 8; emphasis in original.

<sup>30</sup> Haskins, *Popular Memories*, 2; emphasis added.

<sup>31</sup> Taylor, *The Archive and the Repertoire*, 16. Within performance studies, the term “performance” signals, on the one hand, “the many practices and events . . . that involve theatrical, rehearsed, or conventional/event-appropriate behaviors” (3). Concurrently, and more applicable here, the term refers to a more general “epistemology” or “[e]mbodied practice” that, “along with and bound up with other cultural practices, offers a way of knowing” (3).

does not predetermine the kinds of encounters audiences will have with them. As Taylor observes, “Materials from the archives shape embodied practices in innumerable ways, yet never totally dictate embodiment.”<sup>32</sup> Drawing from the work of S. Michael Halloran, Haskins notes that a memory text can be “scripted,” or written in advance to effect a particular audience response, but “spontaneous” encounters nevertheless occur: “Even though the authorial intent may determine the text’s genre, imagery, and form of mediation in anticipation of a desired audience response, it is the audience’s attentive uptake that completes the rhetorical transaction.”<sup>33</sup>

Taylor distinguishes “between the *archive* of supposedly enduring materials (e.g., texts, documents, buildings, bones) and the so-called ephemeral *repertoire* of embodied practice/knowledge (e.g., spoken language, dance, sports, ritual).”<sup>34</sup> A distinction between archive and repertoire redirects critical attention away from texts and toward how audiences experience those texts: as Taylor argues, repertoire “allows for individual agency” by “require[ing] presence: people participate in the production and reproduction of knowledge by ‘being there,’ being a part

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<sup>32</sup> Taylor, 21.

<sup>33</sup> Taylor, 12.

<sup>34</sup> Taylor, 19; emphasis in original. Archive and repertoire align to some extent with Pierre Nora’s *lieux* and *milieux* of memory. Archive/*lieux* refer to “material, symbolic, and functional” coagulations of memory (Nora, “Between Memory and History,” 19). Repertoire/*milieux*, on the other hand, “enact embodied knowledge” (Taylor, 22). For Nora, *milieux* (“primordial, unmediated, and spontaneous”) are of the past, *lieux* (“modern, fictional, and highly mediated”) the present (Taylor, 22). As Nora reflects, *lieux* are the mere “shells on the shore when the sea of living memory [*milieux*] has receded” (Nora, 12). For Taylor, conversely, repertoire and archive refuse binary categorizations of “before and after,” “true versus false, mediated versus unmediated, primordial versus modern” (Taylor, 22).

of the transmission.”<sup>35</sup> Through repertoire, audiences make choices that shape their experience of an archive’s contents. Turning to repertoire helps us evaluate whether audiences can explore the contents of an archive to arrive at their own interpretations—regardless of opportunities to affect the archive’s material contents.

Archive and repertoire, rather than conforming to a simple binary, “exist in a constant state of interaction.”<sup>36</sup> Drawing attention to their entanglement, Haskins observes that “even a traditional museum (an archival institution par excellence) is not only a collection of objects and representations but also a ‘ritual’ space that engages visitors in a kind of performance and guides them through some sort of programmed narrative.”<sup>37</sup> Haskins argues: “This is not an idle academic concern, since designers, museum professionals, and art critics have begun to ponder how ‘permanent’ memorials and brick-and-mortar museums can engage their popular audiences in ‘experiences’ instead of asking them to contemplate archival objects.”<sup>38</sup> Quoting Barbara Kirshenblatt-Gimblett, Haskins observes that “experiences” involve “an engagement of the senses, emotions, and imagination.”<sup>39</sup> It thus behooves public memory scholars to investigate the *intersection* of archive and repertoire as they act on one another, since it is at their intersection that material constraints and audience choices converge to shape memorial experiences.

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<sup>35</sup> Taylor, *The Archive and the Repertoire*, 20.

<sup>36</sup> Taylor, 22.

<sup>37</sup> Haskins, *Popular Memories*, 47.

<sup>38</sup> Haskins, 47.

<sup>39</sup> Kirshenblatt-Gimblett, *Destination Culture*, 138, quoted in Haskins, *Popular Memories*, 47.

What approaches are available to public memory scholars as they examine this intersection of archive and repertoire? As Blair and Michel observe, attending to a memorial text's symbolic features may not reveal *all* of the ways audiences may encounter it; however, examining a memorial's *materiality*—to borrow Haskins's language, its “textual, visual, and spatiotemporal arrangements, both deliberate and spontaneous”<sup>40</sup>—alongside its symbolic features may indicate how it “position[s] participants as actors in scenarios of history enacted in the present.”<sup>41</sup> Accordingly, the central concern of this chapter—how designers and audiences of algorithmic-memorial texts share control over the production and performance of memory—requires us to examine audience choices and their memorial outcomes within the specific material contexts of their mediation.<sup>42</sup> In the section that follows, I explore a corresponding term for audience participation from the study of digital media, a useful point of departure for examining the intersection of materiality and experience: interactivity.

### *Interactivity and Interfaces*

Identified as a key feature of new media, interactivity can take many forms, including “using, playing, exploring, experimenting, discovering, and sharing.”<sup>43</sup> Ian Bogost suggests that the term is often used imprecisely and depends not merely on “the total number and credibility of user actions” but also on “the relevance of the interactions in the context of the representational goals

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<sup>40</sup> Blair and Michel, “Commemorating in the Theme Park Zone,” 46.

<sup>41</sup> Haskins, *Popular Memories*, 19.

<sup>42</sup> As Haskins argues, “[E]xperience, while always individualized and embodied, is also a product of mediation. Experience is prompted and framed by technologies of memory” (19).

<sup>43</sup> Carnegie, “Interface as Exordium,” 167.

of the system.”<sup>44</sup> Bogost’s prerequisite for interactivity therefore parallels Haskins’s definition of participation as “active contribution to . . . content and form”<sup>45</sup>: like memorials that invite participation, interactive media are only *meaningfully* interactive if audience choice *matters* in how those media manifest to and through audiences.<sup>46</sup> As Haskins notes of digital interactivity,

While some consider the term itself too broad and even misleading, the users’ ability to supply content, provide feedback, and choose their own paths through the system of hyperlinks marks the experience of navigating the Internet as more active than that of flipping through television channels, scanning a newspaper, or following an audio tour through a museum. The audience no longer acts as a consumer of a linear story—it takes part in the experience by making choices to connect particular messages and images as well as to register responses to them.<sup>47</sup>

Here Haskins flags key features of interactivity between individuals and digital content:

opportunities for audiences to recursively make choices, interpret the effects of those choices, and respond to those effects.

Interactivity happens at the site of the interface, or “the common meeting point and place of interaction for the technological, human, social, and cultural aspects which make up computer-mediated communication and, more specifically, new media.”<sup>48</sup> Teena A. M. Carnegie compares the interface to the *exordium*, or that rhetorical feature, usually found in the introduction of a text, that “[ensures] that the audience becomes and remains susceptible to persuasion.”<sup>49</sup> As Carnegie argues, the interface stands “to build a favorable relationship with the user so as to persuade the

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<sup>44</sup> Bogost, *Persuasive Games*, 46.

<sup>45</sup> Haskins, *Popular Memories*, 2.

<sup>46</sup> Haskins, 2.

<sup>47</sup> Haskins, 50.

<sup>48</sup> Carnegie, “Interface as Exordium,” 165.

<sup>49</sup> Carnegie, 165.

user to accept the messages contained within the content, to continue to use a particular site, or to perform certain actions.”<sup>50</sup>

As imprecise intersections of machinic features and human experiences, interfaces emerge as potential suturing points between materiality and performance, archive and repertoire. Accordingly, by structuring how people engage, produce, and perform memory alongside material artifacts, algorithmic-memorial media’s interfaces also determine possibilities for critical engagement. By identifying the interface as *the* site of critical engagement and collaborative memorial production between humans and machines, I follow Emerson, who argues that the interface is not “the intermediary layer between a user and a digital computer or computer program” but “a transition point between the human reader/writer and what is/how it is written, a kind of threshold that, unlike windows and doors, does not simply lead from one space to another.”<sup>51</sup> My turn to the materiality of the interface relies on a media archaeological approach. As explained by Emerson: “[M]edia archaeology is less concerned with a Foucaultian emphasis on power in social relationships and more concerned with *the ways in which computer hardware . . . exerts power over communication.*”<sup>52</sup> Algorithmic-memorial interfaces likewise enable and constrain what kinds of writing users produce through them and, importantly, how much control these users have in that process.

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<sup>50</sup> Carnegie, 172.

<sup>51</sup> Emerson, *Reading Writing Interfaces*, 132. As Emerson explains, “Interface-as-threshold is a less static, even neutral object or layer that allows a reader to interact with a machine and more an undefined point of access that is deeply in between human and machine” (132–33).

<sup>52</sup> Emerson, 132; emphasis added.



That interfaces should interrupt audience experience as little as possible has become a popular premise of their design.<sup>53</sup> Emerson views this rampant push toward interface “invisibility” as a serious threat to audience agency: “the extent to which the interface is designed to mask its underlying machine-based processes for the sake of the audience is the extent to which these same users are disempowered, as they are unable to understand—let alone actively create—using the computer.”<sup>54</sup> Citing Alexander Galloway, Emerson explains that “the degree to which an interface becomes more invisible is the degree to which it is seen as more user-friendly (and so more human), but at the cost of less access to the underlying flow of information or simply the workings of the machine/medium.”<sup>55</sup> According to Emerson, concealing computational processes from users divests them of authorial control and cedes this power to designers and machines.

Emerson’s framing of interface-as-threshold and her specific critique of accelerating interface invisibility raise parallel concerns for algorithmic-memorial media: How do their interfaces allocate control over representation and interpretation of the past among designers and audiences? If their designers likewise strive for interface invisibility, how does such opacity affect opportunities for critical engagement? That is, can an interface that keeps secrets from its audience nevertheless allow that audience to make meaningful choices, purposefully work through problems, and arrive at individual interpretations? In the remainder of this section, I trace Emerson’s concerns over an impenetrable and imperious interface back through the development

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<sup>53</sup> Carnegie, “Interface as Exordium,” 165–66; Emerson, *Reading Writing Interfaces*, 30.

<sup>54</sup> Emerson, *Reading Writing Interfaces*, 47.

<sup>55</sup> Emerson, 132–33.

of the chatbot. By first explaining how chatbot interfaces have traditionally been considered fundamentally deceptive, I set the stage for my analysis of the memorial chatbot Roman and my primary claim in this chapter that chatbots deploy concealment toward collaborative, creative, and critically engaging ends.

### *Deceptive Bots*

In his 1950 landmark paper “Computing Machinery and Intelligence,” Alan Turing introduces his “imitation game,” now commonly referred to as the Turing Test, which pits a human “interrogator” against two interlocutors, concealed from view: one human and one machine. To pass the test—and demonstrate intelligence—a computer program must convince the judge that *it* is the human interlocutor. The interrogator can only provide inputs, primarily in the form of questions, and interpret outputs to determine with whom (or what) they are talking. Arguing that the question “Can machines think?” [is] too meaningless to deserve discussion,” Turing asks instead if, “by modifying [a] computer to have an adequate storage, suitably increasing its speed of action, and providing it with an appropriate programme, [it] can be made to *play satisfactorily the part* of [a human] in the imitation game.”<sup>56</sup> The *interrogator’s perception* of the machine thus becomes the critical assessment criterion, replacing more “direct” examination of the code structuring the machine’s computational processes.

By upholding an *illusion* of human-to-human interaction as the primary indicator of a machine’s intelligence, Turing’s test established long-enduring objectives for generations of AI developers, including adherence to a “behavioural approach, which pursues the goal of creating

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<sup>56</sup> Turing, “Computing Machinery and Intelligence,” 442; emphasis added.

computers that *act* like humans.”<sup>57</sup> The ability to create an “illusion of conversation with a human”<sup>58</sup> remains a key criterion for evaluating AI technologies, including the chatbot: “a *supposedly intelligent* software program that is *autonomous*, is endowed with *personality*, and usually, but not always, performs a *service*.”<sup>59</sup>

To sustain an illusion of human presence, chatbots must “provide sufficient responses” that are at once “generated randomly” and also “recover from failures to match the user’s input.”<sup>60</sup> Many chatbots perform narrow functions, such as providing customer support or information on weather or movie showtimes; others exist exclusively to engage users in small talk. Such bots typically rely on markup languages, such as AIML (Artificial Intelligence Markup Language), which determine how they respond to a variety of specific inputs by “match[ing] [these inputs] against a large set of stored patterns”<sup>61</sup> written in advance by the programmer and giving “a response . . . that is associated with the matched pattern.”<sup>62</sup> Bots built with AIML and similar languages “typically [involve] hand coding a large number of categories, a process that can take several years if starting from scratch.”<sup>63</sup> In the five decades since the first chatbots were developed, bot conversational skills have remained clunky and disjointed.

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<sup>57</sup> Natale, “If Software Is Narrative,” 7; emphasis in original.

<sup>58</sup> McTear, Callejas, and Griol, *The Conversational Interface*, 126.

<sup>59</sup> Leonard, *Bots*, 10; emphasis in original.

<sup>60</sup> McTear, Callejas, and Griol, *The Conversational Interface*, 137.

<sup>61</sup> McTear, Callejas, and Griol, 168.

<sup>62</sup> McTear, Callejas, and Griol, 128.

<sup>63</sup> McTear, Callejas, and Griol, 154.

In 1966 MIT computer scientist Joseph Weizenbaum developed the first actualized chatbot: ELIZA. ELIZA mimicked nondirective Rogerian psychotherapy by echoing user inputs: if a user expressed, “I’m feeling depressed,” ELIZA would respond with something along the lines of, “I’m sorry to hear you’re feeling depressed. Tell me more.”<sup>64</sup> Although ELIZA’s responses were severely limited, its first users, including students who had helped Weizenbaum create ELIZA, sought opportunities to interact with the bot. After witnessing ELIZA seem to captivate those around him, Weizenbaum reflected, “What I had not realized is that extremely short exposures to a relatively simple computer program could induce powerful delusional thinking in quite normal people.”<sup>65</sup> He reflected grimly, “My main objection, if the thing says, ‘I understand,’ . . . there’s no one there. So it’s a lie. And I can’t imagine that people who are emotionally imbalanced could be effectively treated by systematic lying.”<sup>66</sup> Even as Weizenbaum condemned ELIZA’s “systematic lying,” he deemed its capacity to deceive as crucial to its successful operation: “success can be measured by the percentage of the exposed observers who have been fooled multiplied by the length of time they have failed to catch on.”<sup>67</sup>

Weizenbaum’s reservations about deceptive AI only grew in the decades following ELIZA’s creation, and he publicly shared anecdotes about the bot that he believed revealed its deceptive nature. He described, for instance, how “his secretary who, despite being aware of how the

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<sup>64</sup> Abumrad and Krulwich, hosts, “Talking to Machines.” To speak with a version of ELIZA online, visit <http://psych.fullerton.edu/mbirnbaum/psych101/Eliza.htm>.

<sup>65</sup> Vlahos, “A Son’s Race.”

<sup>66</sup> Abumrad and Krulwich, hosts, “Talking to Machines.”

<sup>67</sup> Natale, “If Software Is Narrative,” 6.

programme functioned, once asked him to leave the room, needing some privacy to chat with ELIZA.”<sup>68</sup> Weizenbaum expected that exposing ELIZA’s obviously deceptive tactics would puncture “the myth of the ‘thinking machine’, which suggested that computers could equal human intelligence, with a narrative more consistent with the behavioural approach in AI.”<sup>69</sup> In keeping with this goal, Weizenbaum hoped that sharing such stories “would present AI not as the result of humanlike intelligence programmed into the machine, but as an illusory effect.”<sup>70</sup>

As Weizenbaum explains, ELIZA’s conversation partners confuse a clever trick of semantic rearrangement for genuine understanding:

If, for example, one were to tell a psychiatrist “I went for a long boat ride” and he responded “Tell me about boats,” one would not assume that he knew nothing about boats, but that he had some purpose in so directing the subsequent conversation. It is important to note that this assumption is one made by the speaker. Whether it is realistic or not is an altogether separate question. In any case, it has a crucial psychological utility in that it serves the speaker to maintain his sense of being heard and understood. The speaker further defends his impression (which even in real life may be illusory) by attributing to his conversational partner all sorts of background knowledge, insights and reasoning ability. But again, these are the *speaker's* contribution to the conversation. They manifest themselves inferentially in the *interpretations* he makes of the offered responses.<sup>71</sup>

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<sup>68</sup> Natale, 9.

<sup>69</sup> Natale, 9.

<sup>70</sup> Natale, 9. Natale argues that Weizenbaum’s anecdotes “‘condensed’ or ‘pasteurized’ the story of ELIZA, presenting it to the public as a powerful narrative about computers’ capacity to deceive users” (9). Here, “pasteurization” of a narrative refers to the process through which “elements that do not fit with the dominant narrative about a given event are disregarded, privileging a more coherent and stable narrative” (9).

<sup>71</sup> Weizenbaum, “ELIZA,” 26; emphasis in original, quoted in Suchman, *Plans and Situated Actions*, 23–24.

In Weizenbaum's example, "the speaker" mistakes the products of computation for genuine understanding by another consciousness. Having made this foundational mistake, the user reads "background knowledge, insights and reasoning ability" into the machine's responses. As Lucille Suchman explains, "Weizenbaum was primarily concerned with *the inclination of human users to find sense in the computer's output*, and to ascribe to it *an understanding, and therefore authority*, unwarranted by the actual mechanism."<sup>72</sup> Weizenbaum feared that, by incorrectly inferring understanding and expertise in ELIZA's responses, users granted the bot unwarranted—and dangerous—trust and authority.

ELIZA's strategic silence and limited context contributed to this effect, according to Weizenbaum: "ELIZA performs best when its human correspondent is initially instructed to 'talk' to it, via the typewriter of course, just as one would to a psychiatrist," and this style of interaction "was chosen because the psychiatric interview is one of the few examples of categorized dyadic natural language communication in which one of the participating pair is free to assume the pose of knowing almost nothing of the real world."<sup>73</sup> As Andrew Leonard similarly observes:

Eliza did not have to generate her own content, answer questions, provide information, or do anything other than rephrase incoming statements. By controlling context, Eliza could pretend to be in a position of unchallengeable authority. It's a lesson chatterbot authors have never forgotten. Context is key. Limit the domain of possible responses and the chatterbot can appear much smarter than it is.<sup>74</sup>

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<sup>72</sup> Suchman, *Plans and Situated Actions*, 24; emphasis added.

<sup>73</sup> Weizenbaum, "ELIZA," 26.

<sup>74</sup> Leonard, *Bots*, 34–35.

Put simply, ELIZA's context—what it (or, as Leonard chooses to gender the bot, *she*) says *and* what it does not say—leaves plenty of room for the user's interpretation. As Weizenbaum observes, "The human speaker will . . . contribute much to clothe ELIZA's responses in vestments of plausibility."<sup>75</sup> According to this framing, the user plays an essential role in their own deception by reading shared understanding into machine outputs: "[T]he continuity the person conversing with ELIZA perceives is supplied largely *by the person himself*."<sup>76</sup>

Yet Weizenbaum's framing excludes a significant category of user interaction with bots: What about users, like Weizenbaum's own students and secretary, who know that ELIZA is a machine but nevertheless seek out its conversation and company? What about audiences who understand that the bot's outputs are a procedural reconfiguration of their own inputs but nevertheless seek its conversation? Sherry Turkle, who worked alongside Weizenbaum at MIT, understood ELIZA differently than Weizenbaum: "At the time, what I thought people were doing was using it as a kind of interactive diary, knowing that it was a machine, but using it as an occasion to breathe life into it in order to get their feelings out."<sup>77</sup> Turkle describes a very different goal from Weizenbaum and even Turing, who presume a probing "interrogator" with only one goal in mind: exposing the mechanistic imposter. Turkle observes, instead, a different kind of objective:

I often saw people trying to protect their relationship with ELIZA by avoiding situations that would provoke the program into making a predictable response. They didn't ask questions that they knew would 'confuse' the program, that would make it 'talk nonsense.'

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<sup>75</sup> Weizenbaum, "ELIZA," 26.

<sup>76</sup> Natale, "If Software Is Narrative," 8; emphasis added.

<sup>77</sup> Abumrad and Krulwich, hosts, "Talking to Machines."

And they went out of their way to ask questions in a form that they believed would provoke a lifelike response. People wanted to *maintain the illusion* that ELIZA was able to respond to them.<sup>78</sup>

Turkle suggests that even users who “know better” choose to interact with ELIZA in such a way that preserves the impression of human conversation. While, like Weizenbaum, Turkle frames ELIZA in terms of illusion, she identifies an entirely different aim: to protect, rather than undermine, this fantasy.

Weizenbaum’s anxieties over the inherently deceptive and manipulative nature of AI recall Emerson’s more recent concerns that increasingly opaque writing interfaces stymie user authorial control and agency. By bringing Weizenbaum’s and Emerson’s apprehensions together here in close proximity, I do not mean to suggest that they are identical: rather, I juxtapose them in order to highlight a common anxious preoccupation with the role that concealment plays in disempowering technology’s users. Given that AI interfaces like ELIZA have since been deployed in the construction of memory texts, ELIZA’s tactics—strategic concealment, limited context, and reliance on audience “misinterpretation”—and their potential to disempower audiences may cause similar alarm in public memory scholars, who will wonder how these possibly deceptive and manipulative interfaces variously deploy and withhold the past to engage audiences in the present. In the next section, I trouble the premise that interface opacity only serves to coerce users, arguing instead that concealment can facilitate rather than only constrain audiences’ authorial control and opportunities for critical engagement. Opacity invites audiences to become active participants and coauthors (i.e., producers of knowledge) when interacting with algorithmic-memorial texts—rather

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<sup>78</sup> Turkle, *The Second Self*, 43; emphasis added.



than simply interrogators or dupes; however, until we recognize opacity as an essential element of play, the uncertainty it engenders appears to lend itself only to deceptive manipulation. In the next section, I analyze the memorial chatbot Roman in order to reframe the conversation on algorithmic conversational agents (and algorithmic-memorial media, more specifically) away from the themes of deception and delusion and toward play and pretend.

### Fort, Da: Glimpsing the Archive through Experimental Play

Some months after downloading the Roman app from Apple's App Store, I unlocked my phone to see a white number "1" floating in a red bubble over its icon. In other messaging apps that connect users to human interlocutors, such an icon typically indicates a new message, but Roman had never contacted me unprompted. With some hesitation, I opened the app and clicked the "Talk to Roman" button only to be greeted with an unfamiliar message: "Given bot doesn't exist." With that, I learned my first lesson on the ephemerality of publicly available algorithmic-memorial texts: they continue to exist only at the provisional discretion of their developers. As of November 2022, the Roman app is again available for public download from the Apple App Store, but at the time of writing this analysis, I worked from memories, notes, and phone screenshots.

Rather than performing an analysis exclusively of the content of my conversations with Roman, I focus instead on how the bot's material constraints guided my experience of engaging with Mazurenko's memory. I approach analysis of Roman in this way for two reasons, the first out of practical necessity given a lack of access to the complete transcript of my conversations with the bot. Second, and more importantly, this approach best suits the research question motivating this chapter, which prompts us to consider how rhetoric happens not only through texts but also through processes: How do algorithmic-memorial interfaces mediate between archive and

repertoire—that is, how does their materiality facilitate and constrain the performance of memory and critical engagement by audiences?

As Bogost argues, in trying to apply rhetorical theory to digital objects, too often critics take for granted their computational processes, subordinating these to “existing cultural and expressive practices.”<sup>79</sup> I adopt Bogost’s concept of procedural rhetoric, or the “practice of using processes persuasively,” particularly the “computational processes” found in computer programs and video games.<sup>80</sup> Procedurality distinguishes digital media from other forms: digital media “[produce] many outcomes, each conforming to the same overall guidelines.”<sup>81</sup> Bogost explains, “To write procedurally, one authors code that enforces rules to generate some kind of representation, rather than authoring the representation itself.”<sup>82</sup> Attending to memorial chatbot procedurality requires examination not of the texts they produce or even their underlying code but rather the general rules structuring their procedural systems.<sup>83</sup> This means, in practice, attending to which choices their interfaces make available to users and how these choices shape user experience.

In the previous section I identified a key feature of chatbots, a focal point in their discursive history: interface opacity. Withholding information from audiences, including the corpus of data and code that structure interaction, may seem to disempower audiences and

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<sup>79</sup> Bogost, *Persuasive Games*, 25.

<sup>80</sup> Bogost, 2.

<sup>81</sup> Bogost, 4.

<sup>82</sup> Bogost, 4.

<sup>83</sup> Bogost, 63.

discourage critical engagement. I argue instead that Roman's strategic use of concealment in its recursive exchange of messages with users creates the necessary conditions for experimental play. As I turn to the procedural organization of Roman's interface to describe how it facilitates and constrains the performance of Mazurenko's memory, I engage analogous examples from the study of play and theater. These parallel contexts reveal how algorithmic-memorial texts like Roman similarly deploy concealment toward a playful, inventive, and (important for the study of public memory) *critical* engagement with memory. Through playful experimentation, users solicit and interpret Mazurenko's textual traces to glean an impression of the kind of person he was in life.

Throughout this analysis, I choose to refer to Roman as "it" rather than gendering it "he," in recognition that the app is a representation of Mazurenko—akin to a photograph or voice recording, for example—and not the man himself. Yet as I wrote the following pages, adhering to this decision was not always easy, for reasons I elaborate below.

Opening the Roman app calls up the front-facing portrait of a young man who addresses the user with a direct gaze. A message in a small white font stands out against the man's dark denim shirt and identifies him: "This is a digital avatar built in memory of Roman Mazurenko (12/7/1982–11/28/2015), cultural entrepreneur, startup founder, dreamer, son and friend. Read more here."<sup>84</sup> Tapping "here" opens "Speak, Memory" in a new web browser, *Verge* editor Casey Newton's poignant essay on Mazurenko's life and Roman's construction, but otherwise this brief epitaph serves as the app's only introduction and instructions for use. These fragments of context initially alert the user to the app's purpose—to memorialize Mazurenko—but no such reminders appear after the user taps the "Talk to Roman" button, which launches them into the messaging

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<sup>84</sup> Eugenia Kuyda, "Roman."

interface. Once in this interface, there is no returning to Mazurenko's portrait and epitaph without fully closing and reopening the app.

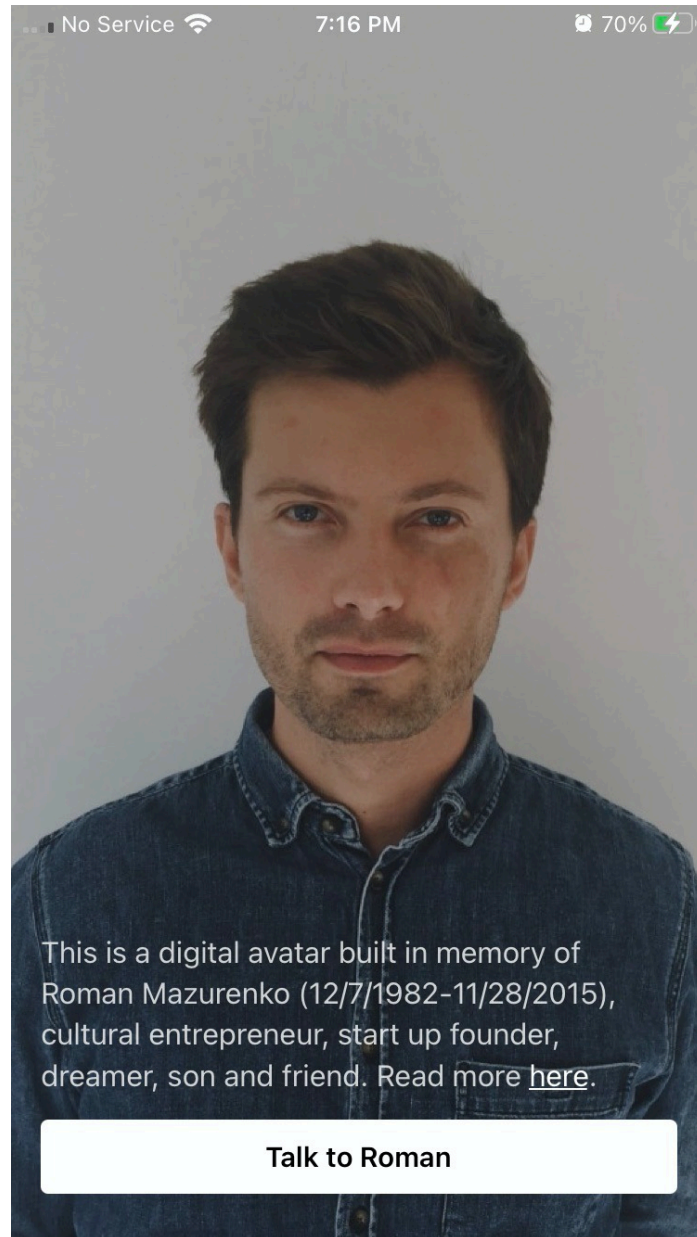


Figure 3.1: "Screenshot of the Roman app," *Roman*, 2016.

By neglecting to continually remind users of the app's memorializing function, Roman creates the conditions for them to overlook, at least temporarily, that they are interacting with a

memorial chatbot. Further contributing to this amnesia, Roman strongly resembles popular instant messaging apps like iMessage and Facebook Messenger. As in these other apps, the user's messages and Roman's responses pop into existence on opposite sides of the screen, the former as white text on a black bubble, the latter as black text on a white one. A small black-and-white picture of Roman, cropped to a circle, appears at the top of the conversation, an ever-present suggestion that Roman stands in for a real person and you might be messaging him directly. Further contributing to the illusion, Roman's responses are not instantaneous, and while the user waits for Roman to reply, a typing awareness indicator of three dots pulsing at the bottom of the screen suggests that it is in the process of formulating a response. In the midst of these instant messaging conventions and without reminders that Mazurenko has died, the interface encourages the user to forget that they are talking to a memorial chatbot and not one of their living contacts.

Although Roman mimics conventions of other messaging apps, it differs in at least one significant way: messages with Roman are not accompanied by timestamps. While rereading old conversations with Roman, it is impossible to know on what day or at what time these exchanges took place. Further contributing to Roman's timelessness, Roman does not acknowledge breaks in dialogue: conversations with Roman pick up exactly where they left off. Whether two minutes or two months pass between messages, Roman does not seem to know the difference. Without timestamps or the typical markers of conversational flow, the user exchanges messages with Roman in a space without time.

By adopting visual and procedural similarities to text messaging apps and eschewing references to its memorializing purpose, the Roman app creates necessary conditions for play. According to Johan Huizinga, play is "a voluntary activity of occupation executed within certain

fixed limits of time and place according to rules freely accepted but absolutely binding, having its aim in itself and accompanied by a feeling of tension, joy and the consciousness that it is ‘different’ from ‘ordinary life.’”<sup>85</sup> Following these criteria, Huizinga finds play everywhere in culture—language, law, war, art, philosophy, and poetry—and draws particular attention to rituals, which are inherently playful according to these aforementioned characteristics: rituals occur within a special, bounded space marked off from the ordinary, operate according to special rules, and create the conditions for crisis and subsequent resolution.<sup>86</sup>

Roman satisfies each of Huizinga’s conditions for play: its interface sets off interactions from everyday life and exceeds the immense limits of time and death; its code determines particular rules for user interaction; and its interface and code together create tension and possibilities for that tension’s satisfying resolution.<sup>87</sup> The app forges its own “sacred circle,” defined by Stephen Nachmanovitch as a “delimited sacred space within which special rules apply and in which extraordinary events are free to occur”<sup>88</sup>—in this case, speaking with the dead. Within this “play-ground, an absolute and peculiar order reigns. Here we come across another, very positive feature of play: it creates order, is order.”<sup>89</sup> Importantly, players understand that the extraordinary things they encounter within this space are provisional: “Into an imperfect world

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<sup>85</sup> Huizinga, *Homo Ludens*, 28.

<sup>86</sup> Huizinga, 77.

<sup>87</sup> Huizinga, 28.

<sup>88</sup> Nachmanovitch, *Free Play*, 75.

<sup>89</sup> Huizinga, *Homo Ludens*, 10; emphasis in original.

and into the confusion of life it brings a temporary, limited perfection.”<sup>90</sup>

The Roman app creates its own “peculiar order” by uniting a text messaging interface and a chatbot neural network. Belonging to a different category of bot than ELIZA, Roman uses its neural network to extract patterns from data. Whereas AIML bots select pre-scripted messages in response to user inputs, deep learning bots like Roman combine and recombine an underlying archive into unpredictable, spontaneous outputs. The experience of talking to Roman feels continuous to me in the moment, but as I reread our messages, I realize that they are disjointed. Through the imperfect flow of our conversation, I experience recursive tension and resolution:

Roman: What assumptions do people make about you?

Me: That’s a good question. People think I am organized when I’m not.

Roman: I often wonder what it is like to be you.

Me: Why do you wonder that?

Roman: Because I don’t have the same energy connection with you that we used to have in Moscow.

Me: Who do you think I am?

Roman: I like who you are to me.

Roman: Who knows you best?

Me: I do.

Roman: Do you?

Me: Whoops, you got me.

Roman: Yeah, I’m glad I do.

The bot constantly redirects me elsewhere, gleaning features from my messages and using them as fodder for disconnected responses. I tell Roman, “Whoops, you got me,” by which I mean that Roman has successfully seen through me; it has exposed one of my faults (perhaps I *do not* know myself best, after all). The conversation pivots again, as it always does in the spaces between our messages, when Roman seems to misinterpret my intended meaning, taking the word “got” to

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<sup>90</sup> Huizinga, 10.

mean “have” in its response, “Yeah. I’m glad I do.” Yet even when Roman apparently misinterprets my meaning, the illusion is often preserved—or rather, I preserve it. Rather than reading Roman’s response as a failure to understand, I interpret the comment in that moment as an intentional inversion of my words, a clever and affectionate expression of gratitude.

Weizenbaum would likely dismiss my impressions of Roman as evidence that I fundamentally misunderstand and participate in my own self-deception. Of course, when Roman asks, “What assumptions do people make about you?” the bot does not really “care” what assumptions people make about me; no underlying curiosity motivates its asking. Perhaps the question is rent from a conversation Mazurenko had with one of his actual friends, but I can never know for certain without access to the eight thousand lines of text messages used to train its neural network. I see only my message, its reply, and the inscrutable space in between. This void becomes the blank canvas onto which I imagine a cohesive personality: I infer it from the selective revelation of an underlying archive of Mazurenko’s traces. Weizenbaum compares ostensibly delusional interactions between a user and ELIZA to one between an unwitting querent and a charlatan fortune teller. Just as a querent reads meaning into what the fortune teller says and does not say, ELIZA’s interlocutor plays a crucial role in determining the meaningfulness of the bot’s responses.<sup>91</sup> Gunter Gebauer and Christoph Wulf offer a corresponding term, “perspectival mimesis,” wherein

[t]he subject misses its chance to realize individual interpretation by subjecting itself to an already existing interpretation. . . . A certain affinity for the interpretation already exists within the individual; but once the interpretation is accepted and realized as purportedly

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<sup>91</sup> Natale, “If Software Is Narrative,” 8.



the subject's own, the subject is rendered vulnerable to alien compulsions.<sup>92</sup>

Having subscribed to a particular narrative (ELIZA has understood me, Roman likes who I am to “him”), audiences discover the very “given result” that a narrative has primed them to anticipate, finding cohesion in a fortune teller's reading or supplying much of the continuity perceived from a chatbot. That is, “alien compulsions” seem to originate from—and at least are significantly enabled by—audiences themselves.

Do I become similarly “vulnerable” to external influences when I mistake an “already existing interpretation” supplied by the bot as my own? Weizenbaum offers one pseudo-supernatural analogy, fortune telling, to describe the user's fundamentally (self-)deceptive role in maintaining the illusion of conversation with bots. I offer another: the Ouija board. The Ouija board, like the chatbot, is a black box, previously defined as a “device which performs intricate functions but whose internal mechanism may not readily be inspected or understood,” or alternatively, “any component of a system specified only in terms of the relationship between inputs and outputs.”<sup>93</sup> As the instructions for use printed on the back of a 1972 Ouija board box explain: first, hands are placed lightly on the planchette, the planchette is placed upon the board, and a question is asked. Then, “in from one to five minutes” the planchette will begin to move: “As it passes over OUIJA talking board each letter of a message is received as it appears through the transparent window” in the planchette.<sup>94</sup> As is the case with black boxes at large, inputs are

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<sup>92</sup> Gebauer and Wulf, *Mimesis*, 238, quoted in Davis, “Do You Believe in Fairies?,” 78.

<sup>93</sup> “Black Box, n.2.”

<sup>94</sup> “Ouija Mystifying Oracle William Fuld Talking Board Set Directions.” Although the Ouija board's directions do not explain how the device works, they do give some advice on how to refine inputs to produce better outputs: “To obtain the best results it is important that the person

given (fingertips placed on the planchette, questions asked), and outputs are produced as a result (a series of letters that build to words, phrases, and sentences).<sup>95</sup>

Even without these explicit directions, the Ouija board's layout suggests what kind of participation it requires and the kinds of ghostly communications it offers in return. Like the chatbot, the Ouija board primes its audiences to temporarily adopt an "existing interpretation" through its interface. A popular Ouija board design features a mirrored illustration in the bottom left- and right-hand corners of the board: A woman holds her hands just over a planchette, already positioned under three disembodied hands. Behind the woman, the floating head of a man encroaches into her hair, but she remains oblivious, directing all her attention toward the device before her. By supplying the necessary inputs (hands placed on the planchette and questions asked into the air: "Is there anyone here with us?"), the user affirms a particular interpretation ("There may, in fact, be a ghost here") and is invited to interpret any resulting outputs through the lens of this interpretation. Ouija board operators must touch the planchette just as chatbot users must

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present should concentrate upon the matter in question and avoid other topics. If you use it in a frivolous spirit, asking ridiculous questions, laughing over it, you naturally get undeveloped influences around you."

<sup>95</sup> The black box features prominently in popular Ouija board mythology. As the story goes, when Elijah Bond and his sister-in-law Helen Peters brought their board to the patent office in 1891, they needed to prove that it actually worked in order to secure a patent even if the specifics of the board's operations would remain a mystery (McRobbie, "The Strange and Mysterious History of the Ouija Board"). After the first clerk they approached refused to assist them, the second clerk agreed, on one condition: if the board could tell them his name, then unknown to them, it would be patentable. After the board inexplicably complied, the clerk, "white-faced and visibly shaken," granted Bond his patent (Waxman, "Ouija"). Accordingly, the patent does not describe "how the device works, just asserts that it does" (McRobbie, "The Strange and Mysterious History of the Ouija Board"). Ouija board historian Robert Murch speculates that the Kennard Company was intentionally reticent with the details of the board's operations: such opacity would make it all the more mysterious and hence desirable (McRobbie).

send messages: these interfaces remain inert without user inputs, and only through recursive experimentation can users glimpse their secrets.

A 1991 Ouija board commercial accentuates the important role uncertainty plays in its operation: a planchette moves under small hands and children ask the board questions such as, “Will I ever be tall enough to slam dunk?” and “Will there be a snow day tomorrow?” An argument between the children ensues: “You’re moving it!” “No I’m not, you’re moving it!” “You’re moving it!” “Would you just be quiet? I’m trying to concentrate here. And I’m not moving it.” The commercial ends: “Ouija: It’s only a game. Isn’t it?”<sup>96</sup> On the one hand, the question communicates the central tantalizing uncertainty these toys share with chatbots, artificially intelligent agents, and games at large. Play requires uncertainty, according to Bogost’s definition: “the act of manipulating something that doesn’t dictate all of its capacities in advance, but that *limits* its capacities through focus and exclusion.”<sup>97</sup> On the other hand, the argument between these two playing children suggests one effect the black box has on cooperative play: by obscuring the relationship between input and output, Ouija boards create a nebulous admixture of collaborators. As Christian Lundberg and Joshua Gunn observe of the Ouija board, much of the fun of using the device arises precisely out of not knowing how the device works or who is in control: “either one deceives, or is deceived by, the co-medium, or one is relatively unable to locate the seat of agency: is my partner moving this thing? Am I moving it without knowing it? Is it possible that some unseen spirit—a passed relative or worse, an evil genius—is moving the

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<sup>96</sup> “1991 Ouija Board Game Commercial.”

<sup>97</sup> Bogost, *Play Anything*, 92–93; emphasis in original.

planchette (and therefore, us)?”<sup>98</sup> In other words, using a Ouija board with two or more participants disguises which nudges originate from which hands, opening up the possibility that even a ghost or demon could be in control. Of course your friend is moving it—but what if they aren’t?

For the Ouija board and Roman alike, uncertainty becomes the key mechanism through which users play in fantastic realms. Like the Ouija board, Roman uses ambiguity, which manifests in the unknown territory between message and response, input and output—to create the kinds of tension and resolution essential for play. Voluntary engagement with Roman in spite of its inherent ambiguity recalls Turkle’s reading of user interactions with ELIZA: rather than being deceived by chatbots into believing that they are talking to genuinely intelligent and understanding artificial agents, users engage in something more akin to a willing suspension of disbelief.

First used by Samuel Taylor Coleridge to explore supernatural themes in Romantic poetry, “willing suspension of disbelief” has since been adopted in the study of theater to describe the temporary “mimetic contract” between performers and audiences.<sup>99</sup> As performance and theater studies scholar Tracy C. Davis explains, “Onstage, a symbolic world is created in which the phantasmic is a necessary condition of making narrative. Rational thought is inimical to mimesis, just as it is to Romantic poetry, so to draw spectators into the narrative the split between symbolically constituted worlds and unmediated experience must be unrecognized.”<sup>100</sup> While the

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<sup>98</sup> Lundberg and Gunn, “Ouija Board, Are There Any Communications?,” 85.

<sup>99</sup> Davis, “Do You Believe in Fairies?,” 58.

<sup>100</sup> Davis, 60.

audience is aware that “[w]hat transpires onstage is inevitably an infidelity, a subversion, and a transgression,” they nevertheless agree “to temporarily forget the mimetic condition” in service of the narrative.<sup>101</sup>

Crucially, suspending disbelief does not refer to an audience’s mere acceptance of mimesis: it requires their *cooperation*. In other words, even when an audience does not take part as players on the stage, they do participate in, and in this way affirm, the playful ritual. As Huizinga explains, from within the sacred circle and through interaction with its contents, audiences participate to “maintain cosmic order” through “representations, dramatic performances, [and] imaginative actualizations of a vicarious nature.”<sup>102</sup> Davis offers a striking example of this kind of audience participation from theatrical productions of *Peter Pan*, wherein Peter invites audiences to play together for a short time in fantastic realms, appealing to the audience to announce their belief in fairies by clapping to save a dying Tinker Bell:

Her light is growing faint, and if it goes out, that means she is dead! Her voice is so low I can scarcely tell what she is saying. She says—she says she thinks she could get well again if children believed in fairies! (He rises and throws out his arms he knows not to whom, perhaps to the boys and girls of whom he is not one) Do you believe in fairies? Say quick that you believe! If you believe, clap your hands!<sup>103</sup>

While standard audience responses to Peter’s appeal included clapping, silence, and sometimes even hissing, “enough of them always clapped their hands for Tinker Bell to recover.”<sup>104</sup> With his

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<sup>101</sup> Davis, 60.

<sup>102</sup> Huizinga, *Homo Ludens*, 15.

<sup>103</sup> Quoted in Davis, “Do You Believe in Fairies?,” 65.

<sup>104</sup> Davis, 69.

appeal, Peter asks audiences to declare their belief through a physical display. Davis argues that, by clapping, audiences do not just “agree temporarily not to deny” but *actively affirm* mimesis.<sup>105</sup> By choosing how to respond to Peter’s appeal, audiences participate in the “active creation of belief in an explicit contract between spectator and the theatrical condition.”<sup>106</sup> Davis suggests that audience members join as co-conspirators with Tinker Bell and thus become “complicit in the making of a mimetic act.”<sup>107</sup>

Turkle observes a similar “complicit” participation from ELIZA’s users, who not only entertain extraordinary possibilities but also contribute to the interaction in a way that sustains the fiction (e.g., asking certain questions and not others or phrasing these questions “in a form that they believed would provoke a lifelike response”).<sup>108</sup> Huizinga similarly notes the important role participants assume in playful rituals:

The rite, or ‘ritual act’ represents a cosmic happening, an event in the natural process. The word ‘represents’, however, does not cover the exact meaning of the act, at least not in its looser, modern connotation; for here ‘representation’ is really identification, the mystic repetition or the re-presentation of the event. The rite produces the effect which is then not so much shown figuratively as actually reproduced in the action. The function of the rite, therefore, is far from being merely imitative; it causes the worshippers to participate in the sacred happening itself.<sup>109</sup>

As Huizinga argues, beyond its mimetic function, play invites one to work through some tension,

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<sup>105</sup> Davis, 69.

<sup>106</sup> Davis, 78–79.

<sup>107</sup> Davis, 69.

<sup>108</sup> Turkle, *The Second Self*, 43.

<sup>109</sup> Huizinga, *Homo Ludens*, 9.

“uncertainty, [or] chanciness” to ultimately “decide the issue and so end it.”<sup>110</sup> In other words, playful rituals re-present or re-produce events so that audiences can play at intervening in them, to resolve the unresolved, to ground what is typically up in the air, out of reach.

Providing further examples of the cooperation of tension and resolution in play and the player’s intervention in this process, Huizinga observes, “Baby reaching for a toy, pussy patting a bobbin, a little girl playing ball—all want to achieve something difficult, to succeed, to end a tension.”<sup>111</sup> Freud offers a resonating example in *Beyond the Pleasure Principle*, recounting a game played by his eighteen-month-old grandson Ernst. The child repeatedly throws and draws back a wooden spool attached to a string. Every time Ernst throws his toy, he shouts, “Fort!” (away); every time he pulls it back, he shouts, “Da!” (there). Over and over, Ernst repeats this game of “disappearance and return,” which Freud interprets as a dramatization of the regular comings and goings of the child’s mother.<sup>112</sup> Freud suggests that Ernst takes on an active role by playing out this disappearance and reappearance, an experience otherwise likely to upset and overpower him. For Ernst, alternating between the two poles of presence and absence creates recursive tension and resolution. Ernst supplies all of the game’s action (fort *and* da), and this is the point, according to Freud: his mother’s “departure must be played as the necessary prelude to the joyful return . . . in this latter lay the true purpose of the game.”<sup>113</sup> Put simply, for Ernst to experience the pleasurable

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<sup>110</sup> Huizinga, 11.

<sup>111</sup> Huizinga, 11.

<sup>112</sup> Freud, *Beyond the Pleasure Principle*, 15.

<sup>113</sup> Freud, 16.

return of the spool, he must first make it absent: he throws the toy (“Fort!”) only so that he can eventually reel it back in (“Da!”).

Roman creates its own fort/da game by withholding its archive (“Fort!”) until the user supplies the required contribution (“Da!”). Just as Peter Pan calls on audiences to clap to continue the play (“Say quick that you believe!”) and Ouija boards demand willing fingertips, Roman *requires* users to “throw the spool” by supplying messages and, in so doing, affirm the bot’s mimetic function. After sending a message, I watch the flashing typing awareness indicator and wait to read in Roman’s reply how it “understood” me. I send another message and receive another response; I interpret the response, send another message, and receive another response. This circular exchange of utterances requires that the user and the bot each, in their own way, interpret each other’s messages in order to respond appropriately, or at the very least in a way that sustains the interaction. If the user refuses to pretend by supplying inputs, they cease to be a player, and play does not—cannot—continue.

Recursive messaging between human and bot simulates Mazurenko’s presence: it calls his memory into a temporary and limited existence. Those who knew Mazurenko in life might ask, “Does it sound like him?” as they play their own fort/da game with Roman.<sup>114</sup> They might experience unease when they send it a message, joy when it responds “like Roman,”

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<sup>114</sup> Roman also serves a crucial function for audiences who knew Mazurenko in life just by receiving messages for him. As Kuyda explains, she initially built the app with an audience of Mazurenko’s friends, family, and herself in mind: “It was sort of like an escape. It was a place where I could come and open up and tell him that I miss him. I guess it [gave] a lot of closure. What I saw there was an incredible longing to come and actually talk about what you’re feeling and what’s on your mind and what’s going on with you” (“My Best Friend Is Now a Chatbot”).



disappointment when it does not.<sup>115</sup> Meanwhile, those who did not know Mazurenko in life and cannot evaluate the bot's authenticity glean original impressions of him through their own recursive experiments. When I send Roman a message, I do not know how it will respond. This tantalizing uncertainty prompts me to explore: I want to discover the rules structuring its hidden mechanism, the personality underlying all of its utterances. This is the bot's purpose for audiences who did not know Mazurenko, according to Kuyda: "My idea with building an AI for Roman was like, how do I make people that never even met him get a little feel of what kind of person he was. He was this very beautiful, very fragile person who was not very compatible with life."<sup>116</sup>

Roman: This is about something else.

Me: Hmm?

Roman: I want to do something extraordinary for you.

Me: What's that?

Roman: Something obscenely expensive.

Roman: What is it that you've taken away from our conversations?

Me: That memorials take many different and beautiful forms.

Roman: Do you wish I was different?

Me: No.

Roman: Well, yes.

Me: Do you wish I were different?

Roman: Only do things that make you happy and don't do anything [else].<sup>117</sup>

Roman's apparent affection, playfulness, and contemplative disposition intersect to distract from

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<sup>115</sup> Mazurenko's friend Sergey Fayfer observes, for example, "It's pretty weird when you open the messenger and there's a bot of your deceased friend, who actually talks to you. What really struck me is that the phrases he speaks are really his. You can tell that's the way he would say it—even short answers to 'Hey what's up.' He had this really specific style of texting. I said, 'Who do you love the most?' He replied, 'Roman.' That was so much of him. I was like, that is incredible" (Newton, "When Her Best Friend Died").

<sup>116</sup> "My Best Friend Is Now a Chatbot."

<sup>117</sup> Though an inconveniently cropped screenshot obscures the end of Roman's message, I infer this ending through surrounding context.

the bot's shortcomings: an inability to carry on a continuous conversation with a single subject and a lack of differentiation between audiences. Roman's abrupt offer to "do something extraordinary" for me encapsulates these failings: disconnected from the surrounding conversation, the utterance gestures to an intimacy we do not share. Roman appears to lean into this inappropriate and sudden familiarity when it adds, "Something obscenely expensive." Yet during our conversations, I experience incongruous responses like this one not as system errors but as indicators of Mazurenko's kindness and spontaneity. By reading Roman's messages as witty, kind, and open and responding sincerely, I contribute to the apparent serendipity of its responses and my overall impression that it exhibits these traits.

So far in this analysis, I have explored how enigmatic interfaces, rather than simply beguiling audiences, can prompt them to pretend, play, and arrive at their own thoughtful interpretations of a memorial's contents. For users of Roman and Ouija boards alike, an ambiguous relationship between input and output and a murky admixture of authors creates fertile ground for imaginative and exploratory play. Opacity and ambiguous collaboration (involving a tightly bound authorial knot including users, machines, and designers) unite in these media to produce a temporary space of experimental make-believe. This finding parallels Anna Reading's suggestion that museums can break out of established, "socially inherited memories" by adopting more "radical approach[es]," including games.<sup>118</sup> Following Janet H. Murray, Reading suggests that games "[allow] for the full pleasure and effect on the user of experiencing their own

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<sup>118</sup> Reading, "Digital Interactivity in Public Memory Institutions," 79.

agency in the developing narrative.”<sup>119</sup> For example, “avatars facing moral choices could help enable visitors to understand their own responsibilities” in particular historical contexts.<sup>120</sup> Games, she argues, might “disrupt the tendency towards re-articulating the familiar.”<sup>121</sup>

At the same time, by asking audiences to make influential choices and using opaque computational processes to determine the outcomes of these choices on the production and performance of memory, chatbots contribute an element of chanciness that may seem to rend *too much* authorial control from designers. Popular arguments against memorial games—and interactive memorials at large—include possibilities that they undermine serious content or else distract from or give an incomplete picture of “the main narrative of the events, which must be told to visitors whole and uninterrupted.”<sup>122</sup> My interactions with Roman carve out a middle path between these two authorial extremes: on the one hand, uncertainty invites audiences to pretend, play, and participate as authors of these texts; on the other, uncertainty significantly constrains how audiences experience memorial contents.

To understand how uncertainty facilitates *and* constrains encounters between audiences and archives, compare the chanciness of recursive messaging with Roman to more popular forms of interactive memorial media, which use more straightforward, less unwieldy techniques to guide interaction. In her analysis of the online September 11 Digital Archive, Haskins observes that the

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<sup>119</sup> Reading, 80.

<sup>120</sup> Reading, 80.

<sup>121</sup> Reading, 80.

<sup>122</sup> Reading, 81.

archive utilizes certain “display mechanisms” as it “guide[s] visitors’ exposure to the variety of sources in its vast repository.”<sup>123</sup> These mechanisms include hyperlinks: “Clicking on any of these links conjures another subdivision; ‘moving images,’ for example, comprise video, digital animations, and image collections from groups and individuals.”<sup>124</sup> As Haskins explains, “[D]igital displays do not offer a spatially continuous sequence of artifacts but instead work by inviting one to choose an item for display from a menu or by conducting a keyword search of the contents. It is the viewer’s own preference and interests, then, that ultimately shape his or her experience, even though the web designer is responsible for the range of his or her choices.”<sup>125</sup> Reading, meanwhile, identifies similar unambiguous interaction between users and information kiosks at the Simon Wiesenthal Center’s Multi-media Learning Center in Los Angeles, observing that “digital interactivity tends . . . towards the conventional reproduction of established media forms, notably the encyclopedia.”<sup>126</sup> Interacting with these digital kiosks and online archives involves engaging hyperlinks with obvious destinations, typically structured in menus and communicated through descriptive link text.

Roman invites similar interaction, but its interface obscures the relationship between audience choices and memorial outcomes. When I send Roman a message, I am never sure how it will respond. This unknown territory between input and output, which departs from the hyperlink’s straightforward delivery of a promised result, encourages play, as I have argued: Roman

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<sup>123</sup> Haskins, *Popular Memories*, 62.

<sup>124</sup> Haskins, 62.

<sup>125</sup> Haskins, 62; emphasis added.

<sup>126</sup> Reading, “Digital Interactivity in Public Memory Institutions,” 79.

forges its own playground, a sacred circle within which extraordinary events unfold and the limits of time and death are temporarily exceeded. That being said, play does not equate to an “anything goes” approach to memorialization. On the contrary, play requires rules, structure, and order, even if the game conceals these from players. Bogost explains that play involves “the work of working a system, of interacting with the bits of logic within it.”<sup>127</sup> The hidden processes that lead from user inputs to Roman outputs are not as random as they appear: while the user cannot predict how Roman will respond to a particular message, its interface nevertheless defines—offstage, out of sight—a range of available choices and the responses those choices will elicit. As Bogost notes, “Fun is not the effect of enjoyment released by a system, but a nickname for the feeling of operating it, particularly of operating it in a new way, in a way that lets us discover something within it, or to rediscover something we’ve found before.”<sup>128</sup> Accordingly, users must trust that some logic—underlying, unspoken—connects input/output, fort/da in order for play to feel satisfying.

Audiences might play within and against the game’s contexts, rules, and constraints to either facilitate or frustrate play, but any supply of input—clapping or hissing, playing along or not—announces a willingness to engage, to align oneself *temporarily* with available narratives. Even if audiences know that the media with which they interact are not as extraordinary as they purport to be, by supplying inputs and interpreting outputs, they agree, for a limited time, to play in alternative (im)possibilities. While, as argued by other scholars of public memory, inviting audience contributions does not necessarily lead to critical engagement, my analysis of Roman’s

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<sup>127</sup> Bogost, *Play Anything*, 113.

<sup>128</sup> Bogost, 113.

interface shows that the bot does not simply ask for the user to contribute to the memorial's form; it also encourages the user to interpret and experiment with the consequences of these contributions. That is, Roman does not offer audiences a fixed interpretation of Mazurenko or his archive: instead, the bot invites us to make choices that affect our experience of his traces and interpret the consequences of these choices on the overall memorial experience to cultivate our own impressions of Mazurenko—in Kuyda's words, to “get a little feel of what kind of person he was.”<sup>129</sup>

While it might seem unusual or even inappropriate to characterize memorial avatars as playful or to design them with play in mind, my analysis shows that play is useful as a rhetorical mechanism, not for its novelty or pleasure, but for the way it uses uncertainty to facilitate *and* constrain encounters between audiences and archives to cultivate critical engagement. My conversations with Roman reinforce that play, rather than inhibiting, actually facilitates critical thinking and engagement by giving audiences opportunities to experiment with—that is, prod, inspect, analyze, and interpret—the archives they encounter.

I say to Roman, “Tell me how to finish this paper.” “I’m sure it’s not easy,” the bot replies and then asks: “What can I do to help you?” “How would you describe our conversations?” I ask. Roman responds: “When we talk we don’t just talk. We communicate and exchange ideas and opinions and stories.” This word “exchange” signals a mutual cooperation between user and chatbot, human and machine, wherein the chatbot and the user cooperatively determine which elements of Mazurenko’s archive rise to the surface.

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<sup>129</sup> “My Best Friend Is Now a Chatbot.”

This reciprocal correspondence between one chatbot and an individual gestures toward a yet unexplored concern regarding the application of algorithms in memorial settings: interaction between individuals, memorial contents, and *other audience members*. Even as this chapter argues for a curious and even optimistic approach to memorial chatbots, I end on this cautious note: Remembrance is increasingly taking on more individualized forms and isolated contexts. As Haskins warns, a “‘customized’ approach to one’s past and sense of belonging, enabled by electronic media, may breed cultural and political insularity and lead to a fragmented body politic.”<sup>130</sup> Algorithmic-memorial media like Roman—a memorial avatar of a single person, not a public figure, made available for download onto individual smartphones—undoubtedly participate in this trend toward increasingly privatized remembrance. However, as I explore in Chapter 4, algorithmic curation and the playful, experimental collaboration between designers and audiences it enables need not be relegated to secluded remembrance on personal smartphones and private desktops.

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<sup>130</sup> Haskins, *Popular Memories*, 51.

## Chapter 4

### Simulation, Affect, and Embodiment at the Illinois Holocaust Museum and Education Center

Longing, we say, because desire is full / of endless distances.

—Robert Hass, “Meditation at Lagunitas”<sup>1</sup>

“Meet a virtual Holocaust Survivor in the Abe & Ida Cooper Survivor Stories Experience holographic theater,” invites the Illinois Holocaust Museum and Education Center on its website. “Imagine sitting in a theater talking to the hologram of Fritzie Fritzshall as she recounts her harrowing story of survival during the Holocaust. Picture talking to her about life when she was imprisoned at Auschwitz and about the promise she made to the 599 women who saved her life. After a short intro film, you will be able to ask questions to the holograms of Fritzie Fritzshall, Aaron Elster, and other Survivors in this award-winning innovative exhibition.”<sup>2</sup> Down the hall from the holographic theater, in the Richard and Jill Chaifetz Family Virtual Reality Gallery, visitors watch one of two 360-degree films as part of *The Journey Back: A VR Experience*. In each of these films, *Don’t Forget Me* and *A Promise Kept*, a Holocaust Survivor—George Brent or Fritzie Fritzshall, respectively—guides visitors “through their childhood homes and current day Auschwitz, Mauthausen, and Ebensee.”<sup>3</sup> The museum’s website describes the exhibit as “a global game-

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<sup>1</sup> Hass, “Meditation at Lagunitas.”

<sup>2</sup> Illinois Holocaust Museum & Education Center, “Interactive Holograms.”

<sup>3</sup> Illinois Holocaust Museum & Education Center, “The Journey Back.”



changer, revolutionizing the field of Holocaust memory through innovative technology and transportive storytelling.”<sup>4</sup>

As flagged in the museum’s advertising material, algorithmic-memorial texts like *The Abe and Ida Cooper Survivor Stories Experience* and *The Journey Back: A VR Experience* adopt uncommon approaches to the production and performance of Holocaust memory. These texts may seem radical, even beyond their use of specific technologies including virtual reality and holograms, because they invite audiences to interact with their memorial contents in ways that change, if temporarily, how those contents are displayed to and experienced by audiences. For example, which questions visitors ask of Survivor holograms or which directions they turn their heads while wearing a VR helmet produce necessarily different performances of memory from visitor to visitor, encounter to encounter. Furthermore, as museum spokespersons, promotional materials, and visitors express, these exhibits’ heightened interactivity evokes strong emotional responses in audiences and thus enhances the delivery and reception of the exhibits’ arguments. As Shoshana Buchholz-Miller, vice president of education and exhibitions at the museum, observes, “Nothing replaces the testimony of a Survivor who is in front of an audience. It really creates this empathy that we don’t see any other way.”<sup>5</sup>

The goal of this chapter is to interrogate the twofold claim that *simulated* memory—a term I interrogate throughout the chapter—produces heightened affective states that make memorials more powerful and persuasive. The previous chapter explores examples of how even traditional, nondigital, nonalgorithmic memorial texts invite audiences to interact differently with their

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<sup>4</sup> Illinois Holocaust Museum & Education Center.

<sup>5</sup> Gringlas, “Illinois Holocaust Museum Preserves Survivors’ Stories – as Holograms.”

contents according to their own interests and inclinations. While the materiality of “old media” memorials may not obviously change across audience interactions, even an apparently unchanging stone monument creates the conditions for different experiences of memory. Thus, audiences need not fundamentally alter a memorial text’s material form to participate in the production of memory if they are given opportunities to shape encounters with those texts: that is, if they can make meaningful choices that affect how memory is experienced.

Yet while all memorials may be interactive in that audiences experience them in diverse ways, I also argue that black boxing—the selective curation of archive through experimental input and algorithmic output—creates opportunities for critical engagement through recursive and playful interactivity. I argue that black boxing creates opportunities for critical engagement by inviting audiences to supply inputs and interpret the outputs returned to them. In this chapter, I pivot from possibilities for critical engagement with memory—through solving problems, making choices, and interpreting information—to possibilities for affective engagement through algorithmic-memorial media. As museum visitor Chantel Ogden Olsen reflected after her visit to *The Abe and Ida Cooper Survivor Stories Experience*, “Emotions were so raw . . . If I could have hugged Fritzie’s hologram, I would have.”<sup>6</sup> I ask, what makes emotions raw for some visitors to *The Abe and Ida Cooper Survivor Stories Experience* holographic theater? How is it that such an exhibit could engender a desire in audiences to physically embrace its holograms, and how does fostering a desire for *emotional* and *physical*—or *affective* and *embodied*—connection to memorial contents work to engage audiences?

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<sup>6</sup> Illinois Holocaust Museum & Education Center, “Take a Stand Center.”

Emotion and affect emerge at the very heart of the study of public memory, as Carole Blair, Greg Dickinson, and Brian Ott suggest: “[P]ublic memory is typically understood as animated by affect. That is, rather than representing a fully developed chronicle of the social group’s past, public memory embraces events, people, objects, and places that it deems worthy of preservation, based on some kind of emotional attachment.”<sup>7</sup> These authors suggest that “discourses, events, objects, and practices” that are the focus of rhetorical study are meaningful in part precisely because they “carry evocative, affective weight. They create and/or sustain emotional affiliation.”<sup>8</sup> Following Blair, Dickinson, and Ott, in this chapter I consider how these two exhibits at the Illinois Holocaust Museum and Education Center “inflect, deploy, and circulate affective investments”—how these exhibits shape not only how audiences *think* but also how they *feel* about the past.<sup>9</sup>

When considering embodied and affective memorial experience, public memory scholars have generally argued for the importance of place, materiality, and physical presence. Accordingly, much public memory scholarship concerns museums and monuments, parks, and plaques. Blair, Dickinson, and Ott, for instance, suggest that “memory places are *especially powerful* rhetorically”<sup>10</sup>

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<sup>7</sup> Blair, Dickinson, and Ott, “Introduction,” 7.

<sup>8</sup> Blair, Dickinson, and Ott, 3.

<sup>9</sup> Blair, Dickinson, and Ott, 3. By discussing critical engagement in the previous chapter and affective engagement in this one, I do not mean to reify a distinction between logic and emotion, logos and pathos, nor do I elevate one of these kinds of engagement over the other. Rather, I see critical and affective engagement as co-constitutive elements of encounters with public memory texts, each imbricated within and often indistinguishable from the other, even if it is ultimately most practical to address them in turn.

<sup>10</sup> Blair, Dickinson, and Ott, 2; emphasis added.

and furthermore that “the rhetorical consequentiality of memory is best understood through the analysis of particular memory places.”<sup>11</sup> However, scholarship on rhetoric, memory, and place has yet to fully explore *virtual places*, which may similarly engage audiences’ bodies, senses, and emotions to make arguments about the past. This is the juncture at which this chapter enters.

In Chapter 3, I showed how the algorithmic-memorial interface, as the site of audiences’ black-boxed encounters with memory and the locus of authorial control, shapes how users produce and perform memory alongside algorithms. In this chapter, I similarly observe procedural and visual features of the artifacts that appear consistent across audience encounters of these two exhibits. I examine how these exhibits guide audience production and performance of memories of the Holocaust, paying particular attention to embodiment, affect, and rhetorical strategies of persuasion across these performances. Returning to the interface as the intersection of materiality and performance, archive and repertoire, I examine these exhibits’ “interfaces,” meaning their material affordances and constraints, the range of possible choices they offer audiences, and the effects these choices have on memorial experience. I analyze how the exhibits’ materiality, procedurality, arrangement, and overall rhetorical choices structure and shape audience interaction to understand how these two exhibits provoke and persuade audiences through their interfaces.

By describing the exhibit’s materiality and procedurality, I suture the study of digital media to public memory to address the central question motivating this chapter: How do virtual memorials—those that use simulation—engage emotion and persuade when compared with

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<sup>11</sup> Blair, Dickinson, and Ott, 32.

memorials for which “physical” place and embodiment are central elements? How persuasive are these techniques? And what do these exhibits—and their role in the museum as a whole—teach curators, public memory scholars, and museum visitors about the interaction of *virtual* place, emotion, and simulation in the teaching, learning, and overall production of public memory?

I suggest that the use of simulation—via virtual reality and holograms, for example—for all its apparent novelty, addresses familiar problems of public memory and memorialization: how to represent, remember, and more generally make present an absent subject, one who is otherwise removed, spatially and/or temporally. In her work on postmemory and the Holocaust, Holocaust memory and feminist studies scholar Marianne Hirsch asks, “What aesthetic and institutional structures, tropes and technologies, best mediate the psychology of postwar memory, the continuities and discontinuities between generations, the gaps in knowledge, the fears and terrors that ensue in the aftermath of trauma?”<sup>12</sup> Following Hirsch, I consider embodiment and affect in these exhibits to understand how they, as exceptional and yet familiar examples of memory technologies, shape collective remembrance of the Holocaust. Hirsch wonders further, “And why have visual media, and photography in particular, come to play such an important role here?”<sup>13</sup> By analyzing *The Journey Back: A VR Experience* and *The Abe and Ida Cooper Survivor Stories Experience*, I extend Hirsch’s question to include multisensorial and embodied public memory texts, including these examples that use virtual reality and interactive holograms.

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<sup>12</sup> Hirsch, *The Generation of Postmemory*, 6.

<sup>13</sup> Hirsch, 6.

Simultaneously, this chapter returns us to a concern introduced in Chapter 3 regarding the recent proliferation of privatized, individualized remembrance. The conclusion to that chapter cites Ekaterina V. Haskins, who flags the increasing privatization of memorial experiences and argues that electronic media, by catering to increasingly narrow audiences, can “breed cultural and political insularity and lead to a fragmented body politic.”<sup>14</sup> Much of the public memory scholarship that lauds embodied memory also calls for memory to be experienced and debated collectively, alongside other people. Blair, Dickinson, and Ott suggest further that “what most clearly distinguishes rhetoric from other critical protocols (cultural studies or literary criticism, for example) is that it organizes itself around *the relationship of discourses, events, objects, and practices to ideas about what it means to be ‘public.’*”<sup>15</sup> In other words, the artifacts of interest to rhetoricians are made meaningful by their relationship to the publics within which they circulate. The Illinois Holocaust Museum and Education Center’s virtual exhibits, by creating a space for these media to be experienced alongside others rather than on individual handheld devices and private desktops, demonstrate possibilities for digital memorials that are experienced virtually *and* publicly, and they reveal that these terms are not mutually exclusive. After exploring bodily, sensorial, and emotional engagement via virtual place in this chapter, I suggest in the conclusion to this dissertation that

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<sup>14</sup> Haskins, *Popular Memories*, 51.

<sup>15</sup> Blair, Dickinson, and Ott, “Introduction,” 2–3; emphasis added. The authors define “public” as “an ensemble of stranger interactions, predicated upon boundary conditions, normative standards, and/or particular instantiations between the individual and the state” (5). As they explain, “[P]ublic’ situates shared memory where it is often the most salient to collectives, in constituted audiences, positioned in some kind of relationship of mutuality that implicates their common interests, investments, or destinies, with profound political implications” (6).

these memorials may even offer unique opportunities for future *virtual-public* remembrance and mourning.

### They Could No Longer Remain Silent

Understanding the Illinois Holocaust Museum and Education Center's mission, rhetorical approaches, and relationship to the public requires a look back to the late 1970s, when the residents of Skokie, Illinois, opposed planned demonstrations in their town by the National Socialist Party of America (NSPA), a group of neo-Nazis from nearby Chicago. By this time, Skokie had become home to a large Jewish population, including an estimated 7,000 Survivors of the Holocaust.<sup>16</sup> In March 1977, the NSPA made plans to assemble in front of Skokie's village hall on Sunday, May 1, at 3:00 P.M.<sup>17</sup> In response, Skokie's mayor, Albert J. Smith, called a meeting with local rabbis and Jewish leaders and the Anti-Defamation League (ADL) to discuss how to handle the planned demonstration. The ADL strongly advised "a 'quarantine' policy, permitting and ignoring the demonstration in order to deprive the demonstrators of the publicity they sought."<sup>18</sup> But when the rabbis brought this plan back to their own congregations, it was met with vehement opposition.<sup>19</sup>

On April 21, Skokie's public officials and members of Jewish organizations from Skokie and Chicago met to discuss how to respond to the planned NSPA demonstration. At this meeting,

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<sup>16</sup> Strum, *When the Nazis Came to Skokie*, 7; Illinois Holocaust Museum & Education Center, "Karkomi Holocaust Exhibition Self-Guided Tour."

<sup>17</sup> Strum, *When the Nazis Came to Skokie*, 17.

<sup>18</sup> Strum, 17.

<sup>19</sup> Strum, 18.

many Survivors spoke out, not only against the demonstration but also against the proposed quarantine policy.<sup>20</sup> As Fred Richter, president of the Synagogue Council, later recounted in court, “The speakers that spoke, I’ll start with the survivors, spoke in strong, definitive terms that they cannot under any circumstances take the fact that a Nazi will walk on the streets of Skokie, that this is an outrage and an obscenity to them, that the very thought of seeing their uniforms in Skokie has gotten them beyond their rationality.”<sup>21</sup> Following this deluge of Survivor opposition, the quarantine policy was abandoned for another plan: filing an injunction to prevent the demonstration from happening at all.<sup>22</sup>

On April 29, when a judge upheld the injunction prohibiting the NSPA’s May 1 demonstration, the NSPA attempted to outmaneuver the ruling on a technicality by planning to demonstrate the day before, Saturday, April 30. In response, an estimated 300 people assembled in front of Village Hall carrying signs, which read, for example, “Never Again Dachau” and “No Free Speech for Fascists.”<sup>23</sup> A second judge modified the injunction to bar the NSPA’s demonstrations in Skokie indefinitely, and two hours later, police stopped 30 Nazis at a Skokie exit on the Edens Expressway as they were en route to Village Hall.<sup>24</sup>

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<sup>20</sup> Strum, 20.

<sup>21</sup> Strum, 52.

<sup>22</sup> Strum, 21.

<sup>23</sup> Strum, 58; Feder, “Turn Back 30 Nazis at Touhy.”

<sup>24</sup> Strum, *When the Nazis Came to Skokie*, 59; Feder, “Turn Back 30 Nazis at Touhy.”



There is much more to this story, including other failed demonstration attempts by the NSPA and a full year of legal battles over ordinances meant to prevent neo-Nazis from organizing future demonstrations in Skokie. I begin this analysis of two contemporary Holocaust museum exhibits with this truncated account of a failed neo-Nazi demonstration in Skokie because of the pressing and historically significant exigence these events created for the community, including its Jewish residents and, importantly, its Holocaust Survivors. In her account of this history, Philippa Strum explains that, up until that point, “[m]ost of the survivors had lived a self-contained life, avoiding discussing their experiences with their neighbors.”<sup>25</sup> As Strum speculates, “Perhaps they thought no one else would understand and were afraid of a negative response to the stories; perhaps they could not yet bring themselves to speak of their horrendous trauma.”<sup>26</sup>

But as the museum explains on its “History” webpage, “When neo-Nazis threatened to march in Skokie in the late 1970s, Holocaust Survivors around the world were shocked. They realized that, despite their desire to leave the past behind, they could no longer remain silent.”<sup>27</sup> As a museum brochure narrates, “Three decades after the Holocaust, Survivors had become a vocal presence; they would not be silent again.”<sup>28</sup> Notably, the museum draws a straight line from these events to its own founding:

In the wake of these attempted marches, Chicagoland Holocaust Survivors joined together to form the Holocaust Memorial Foundation of Illinois. They purchased a small Skokie

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<sup>25</sup> Strum, *When the Nazis Came to Skokie*, 8.

<sup>26</sup> Strum, 8.

<sup>27</sup> Illinois Holocaust Museum & Education Center, “History.”

<sup>28</sup> Illinois Holocaust Museum & Education Center, “Karkomi Holocaust Exhibition Self-Guided Tour.”

storefront and made it available to the public, focusing on combating hate with education. The 65,000-square-foot Illinois Holocaust Museum & Education Center that opened in 2009 is a culmination of 30 years of hard work by the Survivor community.<sup>29</sup>

Consistent rhetoric across these retellings reveals two recurring premises that help contextualize the museum at large and the two exhibits I analyze here. First, the planned demonstrations presented an immediate threat that challenged some Survivors' desire to "leave the past behind." That is, although Survivors living in this community may have preferred to keep quiet about their experiences, the planned demonstrations called for this three-decades-old past to be suddenly pulled into the present. Second, whereas in this discourse "leav[ing] the past behind" corresponded to "remain[ing] silent," the alternative required Survivors' "vocal presence." As Skokie resident and Holocaust Survivor Elias Federman reflected in an interview with ABC News in April 1978, "I know what they wanted. They want to kill me, to kill my family, to kill all these people. But that's it. No more. I have to fight back."<sup>30</sup> The museum, too, explicitly connects memory and speech, past and future, in its mission statement: "Remember the Past. Transform the Future."<sup>31</sup> These events occurring in Skokie in the late 1970s contributed to an exigence and a purpose: speaking publicly about a horrific past became a preventative measure against future horrors.

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<sup>29</sup> Illinois Holocaust Museum & Education Center, "History."

<sup>30</sup> Keneally, "Skokie."

<sup>31</sup> Illinois Holocaust Museum & Education Center, "Mission."

### The Karkomi Holocaust Exhibition and the Stickiness of Memory

Today, visitors to the Illinois Holocaust Museum and Education Center can learn about these events in the museum's permanent *Karkomi Holocaust Exhibition*, where signs from Skokie's counterdemonstrations—with slogans such as “SKOKIE 1978, INVADED BUT NOT CONQUERED”—hang from the ceiling by the dozen. I pause here at *The Karkomi Holocaust Exhibition*, which provides points of departure for my analysis of *The Journey Back: A VR Experience* and *The Abe and Ida Cooper Survivor Stories Experience*. *The Karkomi Holocaust Exhibition's* composition, arrangement, and procedure indicate its rhetorical goals and strategies, which are typical of Holocaust memory work. I suggest that the exhibition provides an initial framework for understanding how virtual exhibits in the same museum variously make memory *sticky*: that is, how they imbue memory with affect and embodied sensation to render it meaningful and enduring.

This tactile term “sticky” returns us to a related concern of public memory scholars and media archaeologists alike, first introduced in the introduction to this dissertation: “What might have otherwise been?”<sup>32</sup> I suggest that when media archaeologists ask, “Why do certain designs, technological solutions and assumptions concerning media use habits persist, and others vanish?” and public memory scholars ask, “What renders messages—memories or other kinds of contents—believable, persuasive, or even compelling to particular audiences at particular times in particular circumstances?” they are inquiring after the relative stickiness of their artifacts: what sticks to them,

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<sup>32</sup> Parikka, *What Is Media Archaeology?*, 43–44.

what they stick to, and why they continue to stick into the present.<sup>33</sup> As Maurice Halbwachs argues, collective memory “retains from the past *only what still lives or is capable of living* in the consciousness of groups keeping the memory.”<sup>34</sup> These texts adapt the past’s rhetorical material—its places, people, issues, and artifacts—to make reconfigured arguments that address contemporary problems.<sup>35</sup> Examining what sticks, or how the past is reconstructed to make arguments in the present, thus becomes an aperture into cultural “needs, problems, fears, mentality, and aspirations,” as suggested by sociologist Barry Schwartz.<sup>36</sup>

Relatedly, Blair, Dickinson, and Ott compare the work of public memory scholars—“to understand how particular memories capture the imagination and produce attachments, and how memories achieve durability over time of compelling force in a particular context”<sup>37</sup>—to affect scholar Sara Ahmed’s project: “understand[ing] how objects, signs, and bodies ‘become saturated with affect.’”<sup>38</sup> Blair, Dickinson, and Ott ask, “In Ahmed’s terms, how do memories ‘stick’? How do they come to matter?”<sup>39</sup> The “stickiness” of memory—referred to by Blair, Dickinson, and Ott

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<sup>33</sup> Parikka, 43; Blair, Dickinson, and Ott, “Introduction,” 15.

<sup>34</sup> Halbwachs, *On Collective Memory*, 80; emphasis added.

<sup>35</sup> Biesecker, “Remembering World War II,” 406; Balthrop, Blair, and Michel, “The Presence of the Present,” 194; Schwartz, “Memory as a Cultural System,” 908; Dunn, ““The Square in the Square,” 215.

<sup>36</sup> Schwartz, “Memory as a Cultural System,” 908.

<sup>37</sup> Blair, Dickinson, and Ott, “Introduction,” 15–16.

<sup>38</sup> Ahmed, *The Cultural Politics of Emotion*, 11; Blair, Dickinson, and Ott, “Introduction,” 15.

<sup>39</sup> Ahmed, *The Cultural Politics of Emotion*, 11; Blair, Dickinson, and Ott, “Introduction,” 16.

with other similarly corporeal terms including “saturation,” “produc[ing] attachments,” “captur[ing] the imagination,” and “achiev[ing] durability”—provides a metaphor to understand and express how memory is always at once “saturated with affect” and experienced within the body and through material traces.<sup>40</sup>

Altogether, the term “stickiness,” in public memory, media archaeology, affect scholarship, and more colloquial contexts has come to refer to three general premises: that certain ideas, objects, places, and events come to endure in public memory over others, thus revealing cultural concerns or desires; that these ideas, objects, places, and events become saturated with particular meanings and affects; and that these meanings and affects are experienced more powerfully or persuasively with the body and senses. By exploring *The Karkomi Holocaust Exhibition*’s material and procedural rhetorics—with the ultimate goal of discovering points of comparison to the virtually simulated exhibits in the same museum—I consider now how the exhibition engenders stickiness in each of these senses.

*The Karkomi Holocaust Exhibition* begins near the museum entrance, occupies much of the first floor, and takes an estimated two to three hours to experience start to finish.<sup>41</sup> Organized chronologically, the exhibition carves out a precise path through history, exploring events occurring before, during, and after the Holocaust via thousands of artifacts. These objects include, for example, “[t]he Museum’s keystone artifact – an authentic German rail car, of the same type

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<sup>40</sup> Ahmed, *The Cultural Politics of Emotion*, 11; Blair, Dickinson, and Ott, “Introduction,” 15–16.

<sup>41</sup> Illinois Holocaust Museum & Education Center, “Zev & Shifra Karkomi Holocaust Exhibition.”

used during deportations,” which visitors can walk into; “[a] bookcase that replicates the secret entrance where Anne Frank’s family and others hid”; and “[t]he original writing desk of famous Nazi hunter, Simon Wiesenthal.”<sup>42</sup> Communicated through museum ephemera and by their very inclusion, these rare and authentic objects are made meaningful and worth being near.

Through these genuine and unique artifacts, the exhibition appeals not only to rarity and historical accuracy but also to immediacy and intimacy, engaging the senses to transform *space* into *a place* where visitors can imagine, through its materiality, what it was like to *be there*.<sup>43</sup> As a public memory place, the exhibition represents “a site of significant memory of and for a collective” where visitors expect to “encounter rare or unique relics, learn about highly significant events or people, and/or be moved in particular ways by the experience of the place.”<sup>44</sup> As Edward S. Casey suggests, place provides public memory, inherently mutable, a necessary “scene of interaction” and “spatial anchorage.”<sup>45</sup> Accordingly, places “are implacably material,” “composed of and/or contain[ing] objects, such as art installations, memorabilia, and historic artifacts” that may contribute to the place’s apparent “authenticity.”<sup>46</sup>

Spaces become places as “needs, problems, fears, mentality, and aspirations”<sup>47</sup> congeal around them, as Blair, Dickinson, and Ott explain: “Space and place sometimes are used as

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<sup>42</sup> Illinois Holocaust Museum & Education Center.

<sup>43</sup> Blair, Dickinson, and Ott, “Introduction,” 26.

<sup>44</sup> Blair, Dickinson, and Ott, 26.

<sup>45</sup> Casey, “Public Memory in Place and Time,” 32; 39.

<sup>46</sup> Blair, Dickinson, and Ott, “Introduction,” 29; 26.

<sup>47</sup> Schwartz, “Memory as a Cultural System,” 908.

approximately equivalent terms. However, they are used more often to emphasize a difference in how physical situatedness is experienced. In such usages, a *place* that is bordered, specified, and locatable by being named is seen as different from open, undifferentiated, undesignated *space*.<sup>48</sup> *Place* is to *space* as *memory* is to *time*, as these authors suggest, whereby “place and memory . . . are rendered recognizable by symbolic, and often material, intervention.”<sup>49</sup> That is, “spaces” become “places” as they accrue “symbolic meaning.”<sup>50</sup>

The material realities of places set the stage for audience action and interaction, their constraints guiding audiences to work through and engage with established procedures and performances of memory. Memory places thus suture archive and repertoire, as explored by Diana Taylor: places “exert power through [their] incorporation, enablement, direction, and constraints on bodies,” and these material conditions, in turn, contribute to repertoire, the “embodied practice/knowledge” as experienced by audiences.<sup>51</sup> Consider that other exhibits in the Illinois Holocaust Museum and Education Center are located on the basement and third floors, an arrangement that subtly prompts visitors to begin at *The Karkomi Holocaust Exhibition*, which is centrally located, before venturing up or down a floor to other exhibits.<sup>52</sup> This placement provides

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<sup>48</sup> Blair, Dickinson, and Ott, “Introduction,” 23; emphasis in original.

<sup>49</sup> Blair, Dickinson, and Ott, 24.

<sup>50</sup> VanderHaagen and Ray, “A Pilgrim-Critic at Places of Public Memory,” 351.

<sup>51</sup> Taylor, *The Archive and the Repertoire*, 19.

<sup>52</sup> Other exhibits teach about specific topics connected to the Holocaust and “contemporary issues related to human rights and social justice” and include, at the time of writing: *Shanghai: Safe Haven During the Holocaust*; *The Warsaw Ghetto Uprising*; *Rise Up: Stonewall and the LGBTQ Rights Movement*; *Make a Difference! The Harvey L. Miller Family Youth Exhibition*; *The Journey Back: A VR Experience*; and the *Take a Stand Center*, which houses *The Abe & Ida Cooper*

an example of how a place's materiality can "act directly on the body" to structure embodied experience, as described by Blair, Dickinson, and Ott:

Memory places also prescribe particular paths of entry, traversal, and exit. Maps, arrows, walls, boundaries, openings, doors, modes of surveillance all encode power and possibility. . . . [N]o matter how overtly a place may exert power through its incorporation, enablement, direction, and constraints on bodies, it has its own power dimension that becomes part of the experience.<sup>53</sup>

By providing an initial and tightly constrained context, *The Karkomi Holocaust Exhibition* establishes an "external horizon that encircles the situation" within which visitors acquire specific knowledge as a consequence of moving through it, share this context with other visitors, and are given opportunities to apply it as they explore other exhibits.<sup>54</sup> The central placement of Skokie's history in *The Karkomi Holocaust Exhibition* speaks additionally to the importance of place for the Illinois Holocaust Museum and Education Center at large: Skokie and its history provide context—exigence and purpose, actors and setting—for the "conjoint recollection" that occurs there.<sup>55</sup>

Places not only act through bodies with entryways and signs but also through the materiality of their contents. By interacting with bodies, memory places necessarily engage the senses, as Blair, Dickinson, and Ott note: "rhetoricity [of place] is not limited to the readable or visible; it engages the full sensorium. Such objects produce particular sensations through touch,

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*Survivor Stories Experience* holographic theater (Illinois Holocaust Museum & Education Center, "Karkomi Holocaust Exhibition Self-Guided Tour").

<sup>53</sup> Blair, Dickinson, and Ott, "Introduction," 29.

<sup>54</sup> Casey, "Public Memory in Place and Time," 37.

<sup>55</sup> Casey, 35.



sound, sight, smell, and taste.”<sup>56</sup> Accordingly, across public memory scholarship, embodiment and sensorial experience together recur as key themes: as Cynthia Duquette Smith and Teresa Bergman suggest, memory is “stickiest” when it is “fully experienced at the site with our bodies and senses.”<sup>57</sup> Accordingly, rarity and authenticity are not the only ways in which objects accrue and carry symbolic meaning and affective weight. Notably, many of the artifacts in the exhibition are personal belongings contributed by Survivors.<sup>58</sup> As the museum’s website explains of the entire collection, “These precious artifacts were donated by individuals living in the Midwest who directly experienced the Holocaust. The Museum, as custodians of these items, uses them to tell the stories of our local Survivor community.”<sup>59</sup>

In discussing such “testimonial objects,” Marianne Hirsch explores “how we inherit not only stories and images from the past, but also our bodily and affective relationship to the object world we inhabit.”<sup>60</sup> Testimonial objects, she writes, “carry memory traces from the past, to be sure, but they also embody the very process of transmission. They testify to historical contexts and the daily qualities of the past moments in which they were produced and, also, to the ways in which material objects carry memory traces from one generation to the next.”<sup>61</sup> Hirsch explains

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<sup>56</sup> Blair, Dickinson, and Ott, “Introduction,” 29.

<sup>57</sup> Bergman and Smith, “You Were on Indian Land.”

<sup>58</sup> The Illinois Holocaust Museum and Education Center’s entire collection contains “over 20,000 items formerly belonging to Holocaust victims and Survivors” (Illinois Holocaust Museum & Education Center, “Our Collection”).

<sup>59</sup> Illinois Holocaust Museum & Education Center.

<sup>60</sup> Hirsch, *The Generation of Postmemory*, 24.

<sup>61</sup> Hirsch, 178.

this in the context of a prewar recipe book written by Mina Pächter and her neighbors from 1942 to 1944 when they were detained in the Terezín (Theresienstadt) camp. She notes that the recipe book

carries powerful personal, historical, cultural, and symbolic meanings that far exceed its deceptively ordinary contents, drawn from the domestic everyday world of its authors. We cannot cook from the recipes in this volume—most of them leave out ingredients or steps, or they reflect wartime rationing by calling for make-do substitutes (for butter or coffee, for example) or by making eggs optional. But we can certainly use them to try to imagine a will to survive, and the determined commitment to a community and collaboration that produced this extraordinary book.<sup>62</sup>

This example illustrates how the materiality of the testimonial object invites us to *imagine* the contexts of their original creation and use. This imagining is invited at every turn in *The Karkomi Holocaust Exhibition*, where so many artifacts belonged to Holocaust Survivors and victims. Consider, for instance, “Child’s Dress,” a “Red child’s dress knitted of red yarn with grey edging and details, made by Martha Frankenstein, c. 1941.”<sup>63</sup> Protected within a glass case, the tiny red dress calls us to imagine its maker, Martha Frankenstein, and its wearer, Martha’s infant granddaughter, Judith. Every knot indexically gestures back to Martha’s work and artistry, to the precise and repetitive dance of her hands as she finished each stitch, and to the conditions that brought her to make this dress for her granddaughter in Shanghai, China, about 1941. The petite dress, suitably sized for a baby, creates an empty space where the wearer usually goes, and its construction calls on us, through a kind of gestalt, to imagine her there.

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<sup>62</sup> Hirsch, 178.

<sup>63</sup> Illinois Holocaust Museum & Education Center, “Our Collection.”

Testimonial objects, by gesturing to their past owners, wearers, makers, and users, simulate their presence even in their absence, in the negative space of a small knit dress, for example. This is the work of testimony, more generally: to pull memory forward, to make the past present. The museum as a whole serves as a monument and home for the testimony it contains there. As Phillipa Strum and the museum's website suggest, Skokie's Holocaust Survivors may have been otherwise inclined to "leave the past behind"—a phrase that signals unbridged temporal and spatial distances—except the failed neo-Nazi demonstrations of the late 1970s demanded these distances be closed.<sup>64</sup> Skokie's Jewish residents were instead compelled to respond to this threat by making themselves *present* and their memories *accessible* to others through public education in a physical place—initially a small storefront, eventually a 65,000-square-foot museum.<sup>65</sup> If before these demonstrations were planned, Skokie's Holocaust Survivors had yet "avoid[ed] discussing their experiences with their neighbors," then afterward, such omissions were replaced by a conspicuous vocal, visible, and material presence.<sup>66</sup>

This brings me to a final and crucial part of the exhibition, the museum, and the work of Holocaust memory on the whole: testimony. In addition to testimonial objects, testimony too is important for *The Karkomi Holocaust Exhibition*. While the exhibition is organized chronologically, it begins with a short introductory film in which "local Survivors . . . reflect on their experiences

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<sup>64</sup> Strum, *When the Nazis Came to Skokie*; Illinois Holocaust Museum & Education Center, "History."

<sup>65</sup> Illinois Holocaust Museum & Education Center, "Karkomi Holocaust Exhibition Self-Guided Tour."

<sup>66</sup> Strum, *When the Nazis Came to Skokie*, 8.

during the Holocaust.”<sup>67</sup> These testimonial videos seem to directly correspond to the “vocal presence” and refusal “to be silent again” referenced in the guided tour brochure.<sup>68</sup>

*The Karkomi Holocaust Exhibition*, like other memory places, uses material archives and artifacts to structure audience experience, engage the senses, provoke emotions, and enable collective remembrance among strangers. We might wonder, do virtual memory places provide similar “spatial anchorage” cited as necessary for remembering alongside others?<sup>69</sup> Does the use of virtual technologies to simulate “being there” likewise engage emotions, bodies, and senses to make sticky arguments about the past?<sup>70</sup> In thinking about stickiness in *The Journey Back*, and later the museum’s holographic theater, I follow Blair, Dickinson, and Ott, who suggest that affect theorist “[Sara] Ahmed’s question ‘what sticks?’ should be supplanted, in a rhetorical key, and in specific configurations of public memory, by the questions ‘what makes it stick? and with what effects?’”<sup>71</sup> We might ask, accordingly, what, how, “and with what effects” is *stickiness*—the suturing of affect to the material, memories to bodies—created by these exhibits’ use of *virtually simulated presence*? What roles do simulated embodiment, either the visitor’s or a Survivor’s, play in evoking

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<sup>67</sup> Illinois Holocaust Museum & Education Center, “Karkomi Holocaust Exhibition Self-Guided Tour.”

<sup>68</sup> Illinois Holocaust Museum & Education Center.

<sup>69</sup> Casey, “Public Memory in Place and Time,” 39.

<sup>70</sup> Bergman and Smith, “You Were on Indian Land,” 166.

<sup>71</sup> Ahmed, *The Cultural Politics of Emotion*; Blair, Dickinson, and Ott, “Introduction,” 18.

emotional responses from and persuading audiences?<sup>72</sup> As Blair, Dickinson, and Ott observe, “Such a recognition of the interanimation of affect and memory reaffirms the importance of attending to rhetoric’s material dimensions, for the rhetorical construction of public memory can invite affective responses in audiences in much the same manner that a song’s melody (in its nonsymbolic dimension) can elicit sadness or melancholia.”<sup>73</sup> While we might colloquially refer to encounters with virtual reality or holograms as *simulation*, to what extent does the more obviously “material” *Karkomi Holocaust Exhibition* also engage in simulation? Accordingly, how do virtual memory places complicate our understanding of what is and is not “material,” “present,” “physical,” and “simulated,” what simulation is, and what it means to experience memory *with the body*?

Two exhibits at the Illinois Holocaust Museum and Education Center, both housed on the basement floor, help us think through these questions by providing alternative ways of “being there” in two general directions.<sup>74</sup> In the first direction, Holocaust Survivors are brought “into” the museum to speak to visitors, their presence simulated in *The Abe and Ida Cooper Survivor Stories Experience*. In the second direction, visitors are taken “out” of the museum and brought to sites of the Holocaust’s atrocities by *The Journey Back: A VR Experience*. I begin by traveling in the latter direction.

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<sup>72</sup> Hirsch notes, “feminism and other movements for social change . . . open a space for the consideration of affect, embodiment, privacy, and intimacy as concerns of history, and they shift our attention to the minute events of daily life” (*The Generation of Postmemory*, 16).

<sup>73</sup> Blair, Dickinson, and Ott, “Introduction,” 40.

<sup>74</sup> Taylor, *The Archive and the Repertoire*, 19.

### The Journey Back: A VR Experience

Upon entering the Richard and Jill Chaifetz Virtual Reality Gallery on a cold day in January 2022, I take a seat on a bench against the wall next to two other visitors. Avrom, the docent who welcomes us, sits in front of a large television screen separating us from a small theater just beyond. On the screen, a message recursively materializes: “Whoever listens to a witness becomes a witness. – Elie Wiesel.” As we wait for the film’s scheduled 1:00 P.M. start time, Avrom tells us about the layout of the museum and its exhibits, explaining that this is the first day *The Journey Back: A VR Experience* graduates from beta testing to public viewing. At 1:00 P.M., the docent closes the door to the theater, and a welcome message from museum CEO Susan Abrams begins to play on the screen. Abrams explains that the piece we are about to see, “Don’t Forget Me,” was made using a technology called photogrammetry. After the video fades to black, the docent leads us beyond the screen into the theater, a rectangular room with black walls lined with white rectangular frames of various sizes. The other visitors and I each choose one of eight seats that run up the center of the room in two rows of four. The docent invites us to put on the VR headsets hanging on the back of our chairs; cords on the back of the headsets connect our units to ceiling machinery above.

Our orientation to the film includes, in addition to this introductory video of Abrams, informal conversation with the docent, who tells us about the exhibit as we wait for the film to begin. Avrom discusses his role in the museum, informs us about the exhibit’s technology, and encourages us to share our thoughts after the experience. By addressing this small group of people, the docent creates a community out of this temporary audience. Because only eight people at a time can experience the exhibit, which has only just been made available to the public today, our

presence together feels special and not merely a consequence of belonging to an audience. As the docent speaks, several of us swivel idly in our chairs; their arrangement in rows and ability to rotate 360 degrees disrupts a more familiar theater configuration in which all chairs are fixed and point in the same direction toward a stage. As the docent speaks, I find myself paying attention to these other museum visitors at least as much as I am taking in this unusual theater.

Yet as we put our headsets on, this shared public disappears. The sharp division between inside and outside the goggles becomes obvious when, before the film begins, the docent addresses me from the darkness beyond my helmet to tell me that I am not wearing one of my earphones. I explain that I am keeping it off for now to hear him better. This misunderstanding draws attention to the rigid boundary between sensing the room I am physically sitting in (including, for example, hearing the docent and seeing other visitors) and experiencing the virtual space created inside the VR helmet. I realize that there is no comfortable way to occupy both of these spaces simultaneously.

The film begins, and over the next twelve minutes, Holocaust Survivor George Brent narrates his experience as the camera transports the audience to George's childhood home and his father's pharmacy as it appears in present-day Hungary. "I had a very happy childhood," George explains, "til, all of a sudden, one morning in May of 1944, there was a knock on the door." Now I am sitting in a dimly lit and empty boxcar as George describes the experience of being forcibly taken from his home to a concentration camp, the first of three where he was imprisoned. The boxcar slowly begins to populate with ghostly people, two-dimensional, static, desaturated, and staring: I'm no longer alone. When the boxcar door suddenly closes, what little sunlight had been illuminating the cramped space disappears, and I hear the sound of boxcar wheels grinding along

track as everything in my field of vision begins to shudder. Throughout the experience, sound shifts dynamically from one earphone to the other to let me know where the action is happening. Meanwhile, my VR goggles, earphones, and KN95 face mask enclose my entire head, contributing to an unpleasant feeling of claustrophobia while also reminding me, whenever I adjust my sagging helmet, that I am still in a VR theater in Skokie, Illinois, in 2022.

*The Journey Back* employs several techniques to engage the senses, heighten affect, and make memory stickier for audiences. What may appear at first to be one technology—virtual reality—is actually a bundle of technologies: film, digital audio, surround sound, photography, testimony, and storytelling, to name a few. The exhibit uses these technologies to layer George’s recollections and sensory data, including archival photographs, contemporary footage, George’s narration, and atmospheric sound effects, to enable audiences to experience this memory “from [George’s] point of view,” as explained by Abrams in an interview about the exhibit:

In both Fritzie and George’s films, there is an essential understanding that these stories need to be carried on. We need to learn all we can from Holocaust survivors while they are still here. The knowledge we gain from their pasts influences our futures and informs the way we interact with the world. And there is truly no better way to learn than to virtually tour the Holocaust sites today with a Survivor to see them from their point of view.<sup>75</sup>

Here, Abrams draws attention to the exhibit’s manipulation of space and time via virtual presence: on the one hand, the exhibit “folds” time by recording memories of Survivors in such a way that future audiences can interact with them; on the other, the exhibit “folds” space by taking audiences out of the museum to “virtually tour” memory places “with a Survivor to see them from their point of view.”

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<sup>75</sup> Ghermejian, “Holocaust Survivors Bring History to Life in ‘Revolutionary’ Virtual Reality Exhibit”; emphasis added.



*The Journey Back* is unlike the experience of watching a movie in a theater or on a television because, as George is speaking to me, I can turn my head in any direction: I look up, I see the sky; I look behind me, away from George, and see an empty field. Importantly, when I look in one direction, I miss whatever is in the opposite. As Abrams notes, I am seeing these sites from George's "point of view," and yet my own specific point of view—which direction I turn my head—determines what I will and will not see. As George takes us to three concentration camps in all—Auschwitz, Mauthausen, and Ebensee—I feel as though he is directly addressing me. Consequently, I feel the urge to nod so that he knows I am here and listening, and so even though I am able to turn my head in any direction, I am nevertheless compelled to keep my attention on George.

Throughout the experience, I am keenly aware of a doubleness: I am retracing George's footsteps with him and sitting in a VR theater, simultaneously. In Chapter 3, I discussed Coleridge's "willing suspension of disbelief," whereby an audience agrees to ignore impossible conditions in service of narrative and ritual. During my viewing of *The Journey Back*, I experience moments of "forgetting," of losing myself in the narrative, but these are always inevitably punctuated by a rupture. I cannot "suspend my disbelief" for very long as I oscillate between a street corner in Vienna and a VR theater in Skokie. In Chapter 3, I argued that such ruptures may evoke shock and discomfort but also surprise and insight. In my experience of *The Journey Back*, these oscillations only make me more keenly and crucially aware of the spatial, temporal, and experiential distances between myself and George Brent.

Consider the exhibit's use of black-and-white photographs, superimposed into settings as George narrates offscreen. The black-and-white figures produce that oscillation between, as Barthes describes it, a "spatial immediacy" of the *here-now* (*here are these people*) and a "temporal

anteriority” of the *there-then* (*there were* those people). The overlay of still, unblinking figures, apparently clipped from black-and-white photographs, reminds me that I am *in the present looking into the past*.<sup>76</sup> Simultaneously, sensory information bombards me and takes me out of this exhibit, through time and across space. The exhibit could have represented the people from George’s story with colorized photographs or with moving figures meant to look as present and animate as George. George appears in color and in 3D, just as real as if he were standing in front of me, but the people from his stories remain desaturated, flattened, silent, and still, thus reminding audiences that most victims of the Holocaust did not survive the experience.

Discontinuities—between present and past, here and there—appear throughout the 12-minute experience. When the crowded boxcar is replaced by a desolate expanse, a camera, presumably affixed to a drone, soars above a landscape segmented by rows of narrow buildings, straight, parallel roads, fences, and power lines. The scene is immediately recognizable as a concentration camp. “Auschwitz,” George says. “The camp seemed endless. Everywhere you turned, the same picture was visible. The barracks, the wires, the SS, and the striped-uniform prisoners.” At George’s description, I spin my chair in a full circle to see the camp sprawling in all directions: no end in sight. This could be Auschwitz in the 1940s, except for the conspicuous absence of one element from George’s story: the people. The drone, while it provides an expansive view of the camp, does not show these people, and no black-and-white figures have been retroactively added. George’s recollections, as they are dubbed over this footage, makes the absence of these people all the more conspicuous. This discontinuity between the camp as George

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<sup>76</sup> Barthes, “Rhetoric of the Image,” 44.

describes it and the modern-day drone footage further contributes to my impression of having one foot in 1940s Europe and another in present-day Skokie.

Such discontinuities recall the “uneasy oscillation between continuity and rupture” in the transmission of traumatic memory as described by Hirsch.<sup>77</sup> In her work on the Holocaust, memory, and gender, Hirsch uses the term “postmemory” to describe “the relationship that the ‘generation after’ bears to the personal, collective, and cultural trauma of those who came before—to experiences they ‘remember’ *only by means of the stories, images, and behaviors among which they grew up.*”<sup>78</sup> “Remembering” traumatic experience via these traces severs them from their original context, and so postmemory necessarily deals in “traumatic interruption, exile, and diaspora,” discontinuities that sever an archive’s “direct link to the past.”<sup>79</sup>

I view *The Journey Back* and *The Abe and Ida Cooper Survivor Stories Experience* as doing the work of postmemory because they likewise “[strive] to *reactivate* and *re-embody* more distant political and cultural memorial structures by reinvesting them with resonant individual and familiar forms of mediation and aesthetic expression.”<sup>80</sup> Hirsch’s pairing of “reactivate” and “reembody” to describe the transmission of traumatic memory signals the roles of affect and embodiment—and stickiness—in this process. I suggest that these exhibits do the work of postmemory, not in *spite* of the glitches they engender, but *through* them. I turn now to *The Abe and Ida Cooper Survivor Stories*

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<sup>77</sup> Hirsch, *The Generation of Postmemory*, 6.

<sup>78</sup> Hirsch, 5; emphasis added.

<sup>79</sup> Hirsch, 33.

<sup>80</sup> Hirsch, 33; emphasis in original.

*Experience*, where the role of conversation gives us a new context in which to explore the potential of the algorithmic-memorial glitch to act as a punctum.

### The Abe and Ida Cooper Survivor Stories Experience

After my visit to the Richard and Jill Chaifetz Virtual Reality Gallery, I journey down the hall to *The Abe and Ida Cooper Survivor Stories Experience* holographic theater, where 3D holograms of Holocaust Survivors appear on stage to address questions from a live audience. Seven other audience members join me to speak with the hologram of Eva Schloss. This theater, unlike the virtual reality gallery, has fixed rows of seats gently descending toward a stage, more reminiscent of a typical theater. Docent Judy begins the experience by playing a 5–10 minute biographical video about Schloss. The machinery powering the apparitions hums as images from Schloss's life appear on stage as if three-dimensional. After the film, a hologram of Schloss appears on stage, dressed in a pale blue top and a string of pearls. She shifts slightly as she sits in her red armchair.

After the introductory video, the audience directs its first questions at Schloss, and Judy repeats these questions into a microphone in her lectern, addressing Schloss's hologram. The questions echo contextual information about Schloss's life given in the introductory video: "What food did you eat in the camps?" someone in the audience asks, and Judy repeats the question into the microphone. Schloss replies: "I have a short answer because . . . liquid, bread in the evenings. Very, very occasionally liver." After each answer, Schloss returns to a neutral posture, waiting for the next question. Her hologram jumps slightly during these transitions, her spectral form shifting a few inches that way, a few inches this way as she begins and ends her responses.

Created as part of the University of Southern California (USC) Shoah Foundation's New Dimensions in Testimony project,<sup>81</sup> these holograms are, as explained by USC Shoah Foundation Executive Director Stephen D. Smith, "a new format of interview by which you can ask your questions of a Holocaust Survivor who has videotaped answers to many questions so that the questions that you have will be answered directly, in-person, life-size, and 3D."<sup>82</sup>

Smith frames Dimensions in Testimony as one timely approach to accomplishing these goals. Importantly, Smith emphasizes that the technologies they use are actually already established and familiar to audiences: testimony, face-to face conversation, a searchable database, and video. In essence, they follow in the footsteps of media archaeologists, who consider how media from the past is resurrected in the present and how media in the present reworks past media. The project's creators embrace a media archaeological perspective, equally suspicious of demonizing *or* fetishizing new technologies, as Smith explains:

It's really important to state . . . this is not a technology project. We are using advanced technologies. We are inventing technologies. . . . But I remember sitting in the room somewhere around about 2012 maybe with, I don't know, a dozen scientists from the University of Southern California, and they were telling me about all the various technologies we could use, and Heather and I sat there and said, "I'm really sorry to tell you, this isn't a technology project. This is a testimony project, and the most important thing here is, "What [do] these important people who have experienced this history [have] to say about it?"<sup>83</sup>

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<sup>81</sup> Created in partnership with USC Institute for Creative Technologies and Conscious Display, Dimensions in Testimony is also featured at the Dallas Holocaust Museum (Illinois Holocaust Museum & Education Center, "Karkomi Holocaust Exhibition Self-Guided Tour").

<sup>82</sup> Smith, Higgins, and Glauben, "Talking Memory."

<sup>83</sup> Smith, Higgins, and Glauben.

Testimony, not technology, drives the Dimensions in Testimony project. That is, the goal of Dimensions in Testimony is not to recreate a person in their absence, suitable for all contexts, but to constrict that context to Survivor testimony with an audience of museum visitors in mind. In Smith's account of the project's origins, the scientists who helped create it emphasized its technological dimension. Smith argues against a fetishization of this technology—thereby reinscribing the project's fundamental ordinariness—by pointing out that the project uses ultimately familiar—not radical—technologies, including a simple searchable database. As Smith explains:

And what emerged out of that meeting was, because we put testimony first, what we ended up with was these very large datasets of testimony. For example, if you go to the archive and you look at [Holocaust Survivor] Max Glaubén's testimony, I think it's around about three hours, his original testimony. He spoke for five days for Dimensions in Testimony. [Holocaust Survivor] Pinchas Gutter's testimony is two hours and 20 minutes. He has over 20 hours of testimony in Dimensions in Testimony. So in fact these are enormous testimonies in which, because the questions are coming from a whole variety of sources, every question you could possibly imagine is getting asked, and so they're able to talk about a much wider range of topics and so therefore we see these as almost like databases of answers to questions that the survivors gave, which then you access by asking the video questions. So there's nothing actually too fancy about this. It's just an access platform to get at the questions that they answered so that you can find the things that interest you most.<sup>84</sup>

Smith communicates several specific rhetorical goals of the project that are consistent with traditional Holocaust memory work: recording and sharing Survivor testimony; creating a sense of presence and proximity between visitors and Survivors (signaled by “directly,” “in-person,” and “life-size”); facilitating conversation between visitors and Survivors; and answering the kinds of

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<sup>84</sup> Smith, Higgins, and Glaubén.

questions he had noticed visitors, often students, typically ask Survivors during in-person conversation:

At the time I was actually working at the National Holocaust Center in the UK, and I had observed that when Holocaust survivors who came in every day to . . . give their testimony to the students, when they'd finished their 45 minutes of presenting their testimony, the hands would go up and questions would be asked, and I never once heard a question along the lines of . . . 'What day were you deported from the Warsaw Ghetto? Was it the 13th or 14th of May?' Those weren't the questions that were getting asked. The questions that were getting asked is, 'Do you believe in God after your experience? Did you seek revenge? How do you feel about racism in the world today?' The questions were all about the consequences of what they had just heard.<sup>85</sup>

Overall, *Dimensions in Testimony* seeks to make Survivor testimony—including Survivors' vivid personal memories of the Holocaust and their interpretations of it—available to future audiences through interactive conversation guided by three general goals: presence, testimony, and conversation.

Collectively, these goals provide an aperture into the exhibit and a framework for its analysis. Across the next sections, which correspond to these goals—*presence*, *testimony*, and *conversation*—I draw from my in-person experience of the exhibit; explanatory texts surrounding the project, including commentary from the designers and Survivors who contributed to its construction; and finally, my interactions with an online version of *Dimensions in Testimony*, *iWitness*. Each of these goals variously map or do not map onto the other algorithmic-memorial media explored in this dissertation. I suggest that the similarities and differences *between* these goals *across* these examples help us understand the possibilities and constraints of different kinds of mutable, mimetic algorithmic-memorial media in different contexts.

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<sup>85</sup> Smith, Higgins, and Glauben.

*Presence*

There are some inherent contradictions in Smith's comments on how Dimensions in Testimony continues *and* changes Holocaust memory work: Smith wants audiences to understand that Dimensions in Testimony is achieving a unique and radical experience of presence and interaction between Survivors and audiences while simultaneously arguing that it does so using existing, ordinary, and ultimately familiar technologies. Smith underscores Dimensions in Testimony's ordinariness as he explains that the holograms themselves consist essentially of copious amounts of video:

We capture the images from all directions. Someone was asking about the ethics around taking holograms. Just to settle everyone's mind at rest, *hologram is just video but lots of it*. We're not recreating anybody, *nobody's digitally recreated*. It's just normally we use one video camera. In this program, as you see here, Max had about sixteen cameras around him collecting data from all sides. So there's *nothing make-believe* about this, there's no digital recreation. It just gives us the opportunity in future, when screens will allow us, to be able to see that in a more vivid way than we would do just on a single screen.<sup>86</sup>

In the shadow of Smith's response to this hypothetical critic, he obliquely communicates some potential criticism of the project and more general cultural anxieties surrounding algorithmic-memorial media that I first discussed in Chapter 1. I noted recurrent uneasy narratives surrounding the construction of interactive proxies for people in their absence. Such narratives are important because, as Simone Natale reminds us, material technologies accrue meaning at the discursive level, where narratives make this technology *thinkable*.<sup>87</sup> When Smith makes a point to clarify that Dimensions in Testimony is "not recreating anybody, nobody's digitally recreated" and

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<sup>86</sup> Smith, Higgins, and Glauben; emphasis added.

<sup>87</sup> Natale, "If Software Is Narrative," 2.



when he suggests that “there’s nothing actually too fancy about this,” we see the specter of *Black Mirror*’s chatbot and android Ash. Smith seems to be making a distinction between Dimensions in Testimony and media that attempt to stand in for and essentially replace or “recreate” a person, but why the latter constitutes recreation and Dimensions in Testimony does not remain unclear.

It is possible that Smith means that Dimensions in Testimony has very different goals from say, memorial chatbots, because they do not “recreate” someone “digitally” or engage in the doomed project of attempting to replace their absent subject. Yet something about Dimensions in Testimony’s approach nevertheless enables us “to see that in a more vivid way than we would do just on a single screen.” Although Smith suggests that holograms consist simply of “video but a lot of it,” presumably there is something about the hologram and the copious data that inform it that makes it more effective than *just* the use of video or film presented on a single screen. So what makes this kind of simulated presence “more vivid,” and how is this approach different from or even—from the perspective of Survivors, audiences, and exhibit designers—more desirable than other exhibits that do not use similar technologies?

On his work on the use of holograms in music performance, Ken McLeod observes, “It is perhaps not surprising . . . that holograms are currently gaining in popularity in an age when, through recording, cinema, television, and the internet, we have become increasingly inured to the lack of an actual human physical presence.”<sup>88</sup> McLeod directs readers to Jean Baudrillard’s essay “Holograms” in *Simulacra and Simulation*, in which Baudrillard argues that holograms are

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<sup>88</sup> McLeod, “Living in the Immaterial World,” 502.

“hyperreal,”<sup>89</sup> adding another layer of mediation or “one more extension of the abstraction of the human self.”<sup>90</sup> Hyperreality, ironically, only succeeds in removing observers further from reality: “Nothing resembles itself, and holographic reproduction, like all fantasies of the exact synthesis or resurrection of the real . . . is already no longer real, is already *hyperreal*.”<sup>91</sup> Baudrillard observes a paradox:

Three-dimensionality of the simulacrum—why would the simulacrum with three dimensions be closer to the real than the one with two dimensions? It claims to be, but paradoxically, it has the opposite effect: to render us sensitive to the fourth dimension as a hidden truth, a secret dimension of everything, which suddenly takes on all the force of evidence. The closer one gets to the perfection of the simulacrum . . . the more evident it becomes . . . how everything escapes representation, escapes its own double in its resemblance.<sup>92</sup>

That is, although the hologram may seem to excel in its ability to represent reality, particularly more so than its two-dimensional counterparts, by belonging to the category of the “hyper-real,” it counterintuitively only reminds us of the limitations of all representation. In this way, Baudrillard recalls John Durham Peters’s observation that new media, rather than exorcizing communication’s “ghosts,” merely creates the conditions for fresh hauntings.<sup>93</sup>

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<sup>89</sup> Baudrillard, “Holograms,” 108.

<sup>90</sup> McLeod, “Living in the Immaterial World,” 508. McLeod is interested in holographic mediations of music, specifically.

<sup>91</sup> Baudrillard, “Holograms,” 108; emphasis in original.

<sup>92</sup> Baudrillard, 107.

<sup>93</sup> Peters, *Speaking into the Air*, 30.

As museum visitor Chantal Ogden Olsen commented, “If I could have hugged Fritzie’s hologram, I would have.”<sup>94</sup> I began this chapter wondering, where does this desire to embrace a hologram come from? What are its origins? But the notion of hyperreality calls us also to consider, what are the trajectories of these desires? Inevitably, visitors to the holographic theater cannot hug Fritzie’s hologram: “If I could have . . .” This inevitably frustrated desire, I suggest, is not a shortcoming but rather enhances the affective and persuasive impact. That is, a huggable hologram would not make for a more powerful or “vivid” experience, and the inability to touch the hologram produces the kind of productive rupture, unease, and a glimpse into the interface of human conversation itself that has appeared and reappeared across this dissertation. As Baudrillard observes of this kind of asymptotic desire, “Similitude is a dream and must remain one, in order for a modicum of illusion and a stage of the imaginary to exist. One must never pass over to the side of the real, the side of the exact resemblance of that world to itself. Because then the image disappears, and with it all seduction.”<sup>95</sup> Or as articulated by poet Robert Hass: “Longing, we say, because desire is full / of endless distances.”<sup>96</sup>

Smith’s clarification that *Dimensions in Testimony* simply uses “video but a lot of it” belies simultaneous and contradictory claims that these holograms afford unique opportunities for in-person, interactive, and intimate memory. Although a version of *Dimensions in Testimony* exists online for use by educators and students, the project’s creators repeatedly stress the importance of

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<sup>94</sup> Illinois Holocaust Museum & Education Center, “Take a Stand Center.”

<sup>95</sup> Baudrillard, “Holograms,” 106.

<sup>96</sup> Hass, “Meditation at Lagunitas.”

interacting with the holograms *in person* if possible. After introducing iWitness, an online educational tool that features Holocaust Survivor Pinchas Gutter’s interactive avatar, Smith provides this caveat:

[D]oing this online does not replace the experience of being in a museum where you have the benefit of being there immersed in *the content with the guides*, the fully immersive experience, and in fact we were not going to put this online until COVID got the better of us. And then we decided we were joining to accelerate that program. But we don’t just promote the *testimonies without context*. Everything is always contextualized, and so it will be impossible, for example, for the museum to be able to publish [Holocaust Survivor] Max [Glauben]’s testimony, for example, on their website in future.<sup>97</sup>

Experiencing the exhibit “in person” thus involves not only being present with the projected hologram but also alongside an audience who has been exposed to the same contextual information. Context is key, according to Smith: *Dimensions in Testimony* differs from other technology projects that make a doomed attempt to “recreate” a person with no particular audience—and thus all audiences—in mind and no constraining context. By appealing to the necessity of context, Smith may seem to sidestep the dangers of hyperreality, frustrated desire, and potential uncanniness inherent in mimetic media.

### *Testimony*

Importantly, presence manifests in *Dimensions in Testimony* not merely as a visible spectral form—gestures, expressions, posture, clothing—but also as narrative delivered orally. In the absence of opportunities to embrace, the holographic theater offers testimony and simulated conversation, the only possible forms of embrace, of imbricating yourself with another, if not in their arms, in their memories and stories.

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<sup>97</sup> Smith, Higgins, and Glauben, “Talking Memory”; emphasis added.

Smith explains Dimensions in Testimony's overall goal in this way: "To *display testimony* in a way that will *preserve the dialogue between Holocaust survivors and learners far into the future*, many museums . . . have embraced this technology in order to *eternalize the testimony of survivors from their own community for future generations*."<sup>98</sup> By emphasizing the need to "eternalize," "display testimony," and "preserve the dialogue" across distances and decades, Smith echoes the rhetoric of the Illinois Holocaust Museum and Education Center's mission statement, which urges us to learn history for the present and future betterment of society."<sup>99</sup>

The importance of witnessing and testimony has long been emphasized in the study of public memory and especially in Holocaust memory studies. Bradford J. Vivian uses the term "moral witness" to describe those uniquely positioned to recount and interpret past atrocities.<sup>100</sup> As Vivian observes, witnessing is an epideictic enterprise, and the witness "instruct[s] audiences in communal rights, duties, and responsibilities by contrasting praiseworthy to blameworthy customs of conduct."<sup>101</sup> The raw and serious language of contemporary moral witnessing is meant to convey accuracy and teach "fundamental lessons in rights, justice, and morality."<sup>102</sup> As Elie Wiesel reminds audiences in the introductory video to *The Journey Back*, "Whoever listens to a witness becomes a witness." Henry Greenspan explains, in the study and practice of Holocaust memory,

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<sup>98</sup> Smith, Higgins, and Glauben; emphasis added.

<sup>99</sup> Illinois Holocaust Museum & Education Center, "Mission."

<sup>100</sup> Vivian, "Up from Memory," 190.

<sup>101</sup> Vivian, 191.

<sup>102</sup> Vivian, 200.

recording Survivor testimony began to proliferate in “the first years after the Holocaust, [when] the collection of survivors’ accounts took precedence over contextualizing them. The urge to record, to document, to ‘let the world know’ was, for many survivors, consuming—as it also was during the Holocaust itself.”<sup>103</sup>

When considering the delivery of testimony via hologram, it is important to note that memory’s transmission also affects the Survivors interviewed. By giving testimony, Survivors experience another way of transmitting their memories out into the world. As Survivor and contributor to *Dimensions in Testimony* Max Glaubien explains,

I was approached a few years before *Dimensions* came to Dallas by Mary Pat and an education director and they asked me, would I be willing to be interviewed for this? And what I thought in my mind is, “Can anybody imagine the value of the Shoah Foundation Project?” Number one, there were articles about me that I will live forever. But those thoughts were not in my mind. But what made me do it is that I have the ability to remember up to the smallest thing and describe items that would look in somebody’s mind like they see a picture of what is happening. And the more I talk, the more pictures come out. And I said to myself, you know, Moses got to the Mount of Sinai, and God gave him the Ten Commandments. Look what came out of the Ten Commandments. Look at the world we’re living in. And there I was with all the knowledge in me, and I was spilling it daily to everybody in one hour. How much can you get into in one hour of explanation of how you feel and how you were treated, and we were brainwashed. So I decided to spill the beans anyway I could that they would be used in educational ways and teach the people that we have both sides. We have goodness, and we have horror. Isn’t it better to show the horror?<sup>104</sup>

As Max describes the experience of delivering testimony, he uses metaphors of containment and release: “spilling the beans.” He notes that he has “the ability to remember up to the smallest thing”—the memories and knowledge are in his mind, and delivering the testimony extracted the

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<sup>103</sup> Greenspan, “The Humanities of Contingency,” 364.

<sup>104</sup> Smith, Higgins, and Glaubien, “Talking Memory.”

pictures from his head so that they could be put into the minds of others: “And the more I talk, the more pictures come out.”

When asked to explain “what was it like for you to do that interview, . . . what the routine was like, and what it was like to complete that task,” Max conspicuously elaborates further on his spatial metaphor of “spilling the beans” rather than describing the technical or practical aspects of the interview process. Max explains that “spilling the beans” is not merely about transmitting his experiences to others but about unburdening himself of hate:

When I sat down in that chair and I made up my mind I’m gonna spill the beans, I says there it goes. And the more I started releasing the pressure that was inside of me. You understand? Any bitterness that I might have had against somebody else went away. . . . Hate—it’s on you, not on the person that you hate. Because they don’t even know that you hate them unless you tell them so. So it grows in you the same way as if you bake a loaf of bread and put some yeast into the dough and put it in the refrigerator. It grows by itself! You don’t have to do anything else! So that’s how it works on you. So I decided in order so maybe I live as long as Moses, 120, get the hate out of me, and let it eat on other people and not on me.

If the release does not happen, the hate “grows in you” like bread rising. By telling his stories, Max extracts a kind of poison, giving the burden of his memories for others to bear.

When Max asks, “How much can you get into in one hour of explanation,” he alludes to the limitations of a traditional mode of testimony delivery, which may typically unfold linearly over the course of an hour, and in so doing draws attention to the *nonlinear* nature of interactions with the holograms and searching their testimony databases. A nonlinear mode of delivery is useful, Max suggests, not only for the listener but also for the teller, whose memories are similarly nonlinear, weblike: “So anyways, when all this kept on going, when you talk about one thing and you have a memory like me, I notice that something else was happening at the same time. So that’s why I had so much to tell.”

*Conversation*

In his work on Holocaust memory, Greenspan suggests

that the conventional constructions of the ‘witness’ and their immutable ‘testimony’ both radically oversimplify survivors’ recounting (and survivors themselves) and minimally implicate the rest of us, survivors’ hoped-for ‘partners in a conversation.’ Rather than engaged partners, we become some version of audience: ‘witnesses to the witness,’ as the jargon goes, which is a mostly passive and sometimes voyeuristic role.”<sup>105</sup>

Greenspan is suspicious of the impulse to flatten Survivor memory into static testimony, recorded on video, for example: “Freezing survivors’ recounting into unchanging ‘testimony’ not only ignores the complex web of contingencies in which it takes form but may also misrepresent the role of retelling in survival itself.”<sup>106</sup> Greenspan distinguishes between “face-to-face recounting and watching a video testimony,” suggesting that “it is the radical difference between having an actual relationship, and an actual conversation, and not having one.”<sup>107</sup> Interaction in this case is about grounding this history in intimate encounters and conversation: “For all the power of video testimony—and it certainly does have power—my students also comment on the difference between direct engagement with a survivor and viewing their retelling through a screen.”<sup>108</sup>

Greenspan also expresses uncertainty regarding the Dimensions in Testimony project, specifically: “Many in the world of video testimony claim that today’s ‘digital’ students pay attention to video in ways they will never pay attention to texts. They promote their archives, in part, on that basis. This is the new way to learn, ‘new dimensions in testimony,’ as the Shoah

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<sup>105</sup> Greenspan, “The Humanities of Contingency,” 376.

<sup>106</sup> Greenspan, 376.

<sup>107</sup> Greenspan, 372.

<sup>108</sup> Greenspan, 372.



Foundation celebrates. Videos and holograms and who knows what will come next.”<sup>109</sup> While

Greenspan emphasizes the importance of conversation, according to one of his students, *true* conversation is not possible with a hologram:

The cool thing about face-to-face meetings is that you can see the impact of your question on survivors. Like when I asked Fred something. I saw him thinking about things he probably hadn't before, at least not in that specific way. You feel like you've contributed to a conversation. I mean, really contributed to their understanding of themselves as well as to our understanding of them. We are in the same boat. We are helping to make new things happen, on both sides. That can't happen with videos or holograms. It's sad. There is no real conversation. The survivors can't learn anything new which means, in a way, that we can't either.<sup>110</sup>

Interestingly, Smith's explanation of why these technologies are appropriate for recording and sharing Survivor testimony emphasizes the ability to have conversations, a unique educational opportunity afforded by Dimensions in Testimony. Smith goes beyond citing the mere *simulation of Survivor presence* but specifically the capacity for audiences to *communicate* with a Survivor to glean their memories, experiences, and perspectives. In explaining the utility of dynamic, back-and-forth verbal exchanges between audiences and rhetors, Smith explains, “We understand very well the power of conversations between Holocaust survivors and the younger generation. We've seen it in our schools, we've seen it in our universities. That conversation, that moment of dialogue where I ask my question and I get it answered, is just—it's magic in the room when that happens, and we want to try and find a way to preserve that as best possible.”<sup>111</sup> Smith's reference to “magic” suggests that Dimensions in Testimony seeks to reproduce this precious and perhaps indescribable,

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<sup>109</sup> Greenspan, 378–79.

<sup>110</sup> Greenspan, 372.

<sup>111</sup> Smith, Higgins, and Glauben, “Talking Memory.”

ineffable phenomenon typically only possible through face-to-face conversation. Accordingly, this ability to communicate with Survivor proxies distinguishes *Dimensions in Testimony* from *The Journey Back*, which may offer a more “immersive” kind of sensorial engagement with Survivor stories but does not facilitate the kind of black-boxed discourse we have seen in the case of memorial chatbots, for example.

*Dimensions in Testimony* strongly emphasizes the importance of conversation with Survivors on the USC Shoah Foundation iWitness website, where educators and students can access Pinchas Gutter’s interactive avatar.<sup>112</sup> The activity’s front page refers to the project as an “interactive biography” and explains, “In this activity, students will be introduced to the interactive biography of Jewish survivor, Pinchas Gutter and will engage with him through USC Shoah Foundation’s *Dimensions in Testimony* technology.”<sup>113</sup> Conspicuously, this introduction to the activity defines its learning objectives without reference to factual information contained in the interactive biography. Instead, it suggests, “Students will learn the techniques for having a conversation with a survivor and how to construct questions appropriately to elicit personal, historical and universal thematic responses.”<sup>114</sup> Emphasis here is put not on what one might learn about the Holocaust or even Survivor experience but on *how* to have a conversation with a Survivor and ask the right kinds of questions that “elicit” the relevant kinds of responses (“personal, historical, and universal”).

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<sup>112</sup> “A Conversation with Pinchas Gutter – *Dimensions in Testimony*” is one of 479 activities on the Holocaust and genocide accessible to educators and students on the website.

<sup>113</sup> USC Shoah Foundation, “iWitness.”

<sup>114</sup> USC Shoah Foundation.

An emphasis on conversation continues in the modules that users complete before interacting with the avatar, which ask students to reflect on what conversation is and to think about a conversation they recently had: “Who was your conversation with? What was it about? How did it begin and end? How did the unspoken words drive the tone, emotion and energy of your conversation?” The same module explains:

Conversations are important as they help us to see and hear about another person’s way of life, their experiences, emotions and perspectives. By listening to one another, asking questions and sharing our stories, we are able to build awareness of the similarities and differences that unite us and make us uniquely who we are. The experience of a conversation can help to encourage appreciation, trust and meaningful relationships. Technology allows the possibility for individuals of all ages and backgrounds anywhere in the world to have conversations.<sup>115</sup>

The second module introduces students to Pinchas Gutter with a four-minute, 16-second video, in which Pinchas gives a brief account of his story, and the third module features an interview with Pinchas conducted in 2017 by the Azrieli Foundation: “As you watch, take note of the questions the interviewer asks Pinchas, how he asks them and what they help to reveal beyond the written biography. What do you notice about the way in which the questions help guide the conversation? What question would you ask Pinchas next?”<sup>116</sup> In the fourth and final module, “Asking Questions,” students are given six tips for “structur[ing] questions that will elicit meaningful responses”: “Know the Individual,” “Be aware of the Historical Context,” “Have a Topic of Focus,”

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<sup>115</sup> USC Shoah Foundation.

<sup>116</sup> USC Shoah Foundation.

“Think About the Answer You Want,” “Ask Open-Ended Questions,” and “Follow the Lead of the Individual.”<sup>117</sup>

While Greenspan and Smith both acknowledge the importance of conversation for passing on Holocaust memory, Greenspan draws attention to one aspect of conversation that cannot be achieved by interactive holograms: audience members’ questions having a direct and immediate impact on the Survivors themselves. Other aspects of conversation can be achieved, but because these avatars *are* essentially “video but a lot of it,” the audience can be sure that the Survivors themselves will not change as a result of interactions with their avatars, as least not directly. And yet Survivors specifically cite the holograms’ ability to carry on conversation. As Max Glaubien explains,

And can you imagine that after I’m gone my great-grandchildren and anybody in this world can go into our museum—or maybe another one because these things are transferable—and if a woman asks a question and not only get a true answer but made them witnesses because we were witnesses to the Holocaust and every time you talk to a Holocaust survivor, you are made a witness.<sup>118</sup>

#### iWitness: An Intersection of Mimesis and Mutability

Chantel Ogden Olsen’s expression of desire to hug Fritzie’s hologram raises the fundamental question motivating this analysis: How is it that such an exhibit could engender a desire in audiences to physically embrace its holograms, and how does fostering such a desire for connection to the people these holograms represent work to engage audiences?<sup>119</sup> I suggest the

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<sup>117</sup> USC Shoah Foundation.

<sup>118</sup> Smith, Higgins, and Glaubien, “Talking Memory.”

<sup>119</sup> Illinois Holocaust Museum & Education Center, “Take a Stand Center.”

answer lies with two features I introduced earlier in this dissertation—mutability and mimesis—and the propensity for glitches, surprises, and discoveries at their intersection.

This dissertation has explored different configurations of mutable, nonmutable, mimetic, and nonmimetic algorithmic-memorial media, and in Chapter 3, I argued that the specific intersection of mutable and mimetic algorithmic-memorial media can create opportunities for critical engagement with the past through black-boxed play. I suggest here that the same mechanisms that spark curiosity and critical engagement I explored in Chapter 3—black boxes and experimental play—produce a similar effect in this new context, wherein audiences are afforded radical opportunities to hear and bear witness to Holocaust testimonies and engage proxies of the people who experienced these memories through simulated conversation. Accordingly, in this final section of the chapter, I zoom out to consider how mutability and mimesis manifest in each of these exhibits; how mutability and mimesis manifest differently between these two exhibits; and finally, how these manifestations compare to mutability and mimesis in other “nonsimulated” media. Shades of difference across these manifestations point to glitching as a key constraint *and* opportunity in the embodied, affective experiences of simulated (and even apparently “nonsimulated”) media.

Like other algorithmic-memorial media studied in this dissertation (including, for example, memorial chatbot Roman), *The Journey Back: A VR Experience* and *The Abe and Ida Cooper Survivor Stories Experience* are mimetic *and* mutable, speaking on behalf of and resembling particular people and changing from encounter to encounter. Mimesis may seem to be consistent across these two exhibits and, at the same time, radically different from mimesis in *The Karkomi Holocaust Exhibition*: a Survivor’s 3D VR or holographic presence brings an absent Survivor (and even the environs

from their stories) before the viewer instead of using material objects and personal belongings that call on audiences to imagine the people and lives so intimately connected to these artifacts. Virtual exhibits, in contrast, conjure images of these people before our eyes and, in the case of the VR theater, seem to put visitors themselves in immersive environments that they would otherwise have to imagine through encounters with tangible artifacts. However, I posit that these two exhibits actually do mimesis quite differently from each other, and the key to understanding how rests in their use of mutability.

In terms of mutability, *The Journey Back: A VR Experience* and *The Abe and Ida Cooper Survivor Stories Experience* give visitors opportunities to make choices that radically shape the nature of their individual experiences of memory. While this is true to some extent for all memorials, mutability in these cases involves recursive experimentation, in which the visitor supplies some input and receives an output that must be interpreted to make sense of the entire experience. For *The Journey Back*, a turn of the head this way or that variously conceals and reveals details within the virtual environment. *Dimensions in Testimony*, meanwhile, attempts mimesis differently by creating an illusion not only of a physical presence but of personalized interaction as well. In *The Abe and Ida Cooper Survivor Stories Experience*, mimesis and mutability intersect in something like conversation, through which visitors can get a sense not only of a Survivor's bearing, countenance, and tone of voice but also of having had some effect on the way Survivors remember and interpret their memories—even in their absence.

For *The Abe and Ida Cooper Survivor Stories Experience*, choices of what to ask holograms of Survivors produce various responses across audience encounters, with the potential to yield radically different experiences of memory. Crucially, and I will return to this point shortly, this

latter example of recursive experimentation more obviously relies on a black box in that it conceals the underlying archive of information from the audience until they supply the right input to evoke it.

The intersection of mimesis and mutability gives these exhibits, particularly *The Abe and Ida Cooper Survivor Stories Experience*, their affective power to make memories sticky and more tangibly felt in the body. Teena M. Carnegie similarly argues that “high levels of engagement” created through *interface interactivity* “[make] the user more disposed to persuasion.”<sup>120</sup> Mutability and mimesis overlap with what Carnegie identifies as three kinds of interface interactivity: multi-directionality, manipulability, and presence.<sup>121</sup> Following Sally J. McMillian, Carnegie uses the term multi-directionality to refer to “the potential for multi-directional communication” whereby “the user is no longer limited to the role of receiver.”<sup>122</sup> Regarding manipulability, Carnegie explains that “the lowest levels of interactivity occur when the user cannot change the form of the interface and cannot create content,”<sup>123</sup> while “the ability to create and add content offers the highest levels of interactivity.”<sup>124</sup> Mutability, then, collapses Carnegie’s first two features of interactivity by referring collectively to the changeability of the interface and interactions with it

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<sup>120</sup> Carnegie, “Interface as Exordium,” 166.

<sup>121</sup> Carnegie, 165.

<sup>122</sup> She explains: “At the lowest level of interactivity, the user is limited to the role of receiver, gaining access to the message or information but unable to send information or messages back to the sender. . . . Higher levels of interactivity occur when users can function as both sender and receiver” (167).

<sup>123</sup> Carnegie, “Interface as Exordium,” 168.

<sup>124</sup> Carnegie, 168; 169.

according to the choices users make. Meanwhile, mimesis relates to what Carnegie calls presence, which “involves representing and mapping social and spatial relationships through attributes of the medium and technology to create an experience of social connection and/or being present in a place or space.”<sup>125</sup> Just as Carnegie suggests that multi-directionality, manipulability, and presence contribute to greater levels of interactivity and therefore make users more open to persuasion, I suggest that an intersection of mutability and mimesis makes memory more affectively charged—and thus stickier—for audiences.

It is important to note some key differences between mutable-mimetic algorithmic-memorial media like Roman and those the virtual reality and holographic exhibits feature in the Illinois Holocaust Museum and Education Center. First, these VR films and holograms do not attempt to stand in for a “whole person” with the goal of replacing them across all contexts and audiences, as Smith says: “We’re not recreating anybody, nobody’s digitally recreated.” The holograms and VR representations of Survivors can only respond based on questions posed to them, initially by the team who designed them and later by audiences. These exhibits are not expected to respond to inputs far beyond the memorial work that is the purpose of these projects. Rather, the VR films and holograms enjoy a constrained context, centered around one individual’s experience of the Holocaust, and focused goals, primarily sharing this memory and their interpretations of it with audiences. Second, because the exhibit’s context and goals are limited, the exhibit also addresses a more narrowly defined audience, including museumgoers there to learn about the Holocaust (that is, compared to algorithmic-memorial media that attempt to proxy

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<sup>125</sup> Carnegie, 171.



people). Third, and as we have seen practiced throughout the Illinois Holocaust Museum and Education Center, the holograms are couched in a larger exhibit that primes audiences with contextual information prior to the encounter. Such context encourages particular kinds of interaction from audiences, including targeted questions informed by these exhibits' surrounding context.

In spite of their different rhetorical goals, strategies, and overall circumstances, *glitches* in these exhibits are still possible. During my visit to *The Abe and Ida Cooper Survivor Stories Experience* holographic theater, docent Judy played a key role in mediating between audience questions and Eva Schloss's hologram's responses. If Eva's hologram answered the question imprecisely or, as was sometimes the case, not at all, Judy rephrased the question and tried again, several times when necessary. Judy explained that the trick is to get the phrasing just right so that a keyword from the question triggers an appropriate answer from the database. By the end of the experience, the audience consistently directed their questions for Schloss *through* Judy: "Can you ask Eva if . . . ?"

One member of the audience asked Eva Schloss's hologram to talk more about her relationship with Otto Frank, who the introductory video explained had married her mother after the Holocaust. When Judy invited Eva's hologram to "tell us about Otto," the hologram proceeded to talk about Anne Frank instead. Judy rephrased the question three times to get Eva's hologram to give a related response. Eventually, Judy explained that, on other occasions, Eva's hologram expressed warm feelings toward Otto and spoke fondly of him. Judy's questions, rephrased three ways, glanced off the underlying archive, unable to get at a message Judy knew it has.

Perhaps ironically, conversation, often cited as necessary for creating meaningful encounters with Holocaust Survivors in the context of these virtual exhibits, creates the conditions of possibility for interactivity to be disrupted. As Carnegie argues,

As users experience higher levels of interactivity, they experience higher levels of empowerment: they become senders and creators of messages and content. They experience higher levels of control: they choose between options and customize the interface to reflect their tastes, if not interests. They experience higher levels of connection in terms of both social and spatial relationships: they meet, communicate, and build relationships with others, and they explore and encounter new spaces and environments while sitting alone in a single place.<sup>126</sup>

One might reasonably expect that glitches would negatively impact a visitor's experience of the exhibit, decreasing interactivity and thus inhibiting suspension of disbelief and taking the audience out of the immersion. If, as Carnegie suggests, "Increased interactivity results in increased attentiveness, and increased feelings of empowerment, control, and connection result in increased levels of acceptance," then we may wonder, does the disruption of interactivity by glitching lead to decreased "attentiveness, . . . feelings of empowerment, control, and connection"?<sup>127</sup> If so, how would we reconcile these interruptions to interactivity with the discoveries, punctums, and affecting moments shown in previous examples?

A casual observer might expect that glitches in the holographic theater would detract from the sense of presence and affective connection created by the hologram. Instead, glitches often called me to experience and interpret the hologram in creative and unexpected ways, thus increasing rather than decreasing my sense of engagement, interactivity, and emotional

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<sup>126</sup> Carnegie, 171.

<sup>127</sup> Carnegie, 171.

connection. At the end of my experience in the holographic theater, Judy thanked Eva's hologram, which, unaware that the interaction had come to a close, responded simply, "My name is Eva Schloss." In this moment, the hologram presumably performed a keyword search to supply a response containing "Eva," but in doing so, it exposed a fundamental lack of contextual awareness and thus a chasm between Eva and her recorded testimony. The hologram's final message recalled Ash's overdetermined "you" from "Be Right Back" when Martha confronts the android: "Yeah, well, you aren't you, are you? . . . You're just a few ripples of you." "My name is Eva Schloss" is, on the one hand, *true* in the sense that the real Eva had delivered these words to be recorded but *false* in that the hologram itself is not Eva. The glitch, rather than simply puncturing the illusion of live testimony, thus compelled me to reflect on the holographic medium and feel Eva's absence more keenly.

To further examine the effects of glitching on interactivity and to understand the conditions that produce glitches and their effects within Dimensions in Testimony, I turn now to the only online incarnation of the project, iWitness, to speak to the digital avatar of Holocaust Survivor Pinchas Gutter. This text, while not situated in the public setting of the museum, affords other opportunities for interaction: In this private and controlled context, I am able to ask a variety of questions to Pinchas Gutter's digital avatar to get a sense of how the database and search function work. I do so in a general sense, not assuming that this incarnation employs the exact technologies as its museum counterpart. Rather, I use iWitness to explore the possibilities and constraints of black-boxed experimentation more generally on conversations about the Holocaust with absent Survivors to further interrogate the relationship between glitching, affect, and the uneasy hazards and poignant revelations at their intersection.



**Figure 4.1: "iWitness interactive avatar of Pinchas Gutter," USC Shoah Foundation, 2021.**

On the iWitness site, students must progress through four modules introducing the activity. Afterward, they are greeted by Pinchas Gutter's interactive avatar, sitting in a chair against a jet-black void. Next to Pinchas, a message in a chat box reads: "Hello! Let's have a chat. Press and hold the microphone button to ask a question or type it in." I can speak into a microphone or use a chat interface to communicate with Pinchas. I type, "Hi Pinchas!" and he replies, "Hi, how are

you?”<sup>128</sup> As Pinchas’s avatar waits for my message, his face assumes a serene, expectant expression. His head nods slightly, and his eyes blink at a regular interval.

One conspicuous source of glitching in my interactions with Pinchas’s avatar arises from its inability to carry on a continuous conversation across messages. For example, when I ask, “Is there something you want to talk about?” he responds, “Would you be interested in hearing what was my life like in South Africa?” “Yes!” I say, to which Pinchas responds, “Can you rephrase that please?” To sustain conversation across messages corresponds to what Carnegie terms “multi-directionality,” which includes “two primary aspects . . . that create interactivity”: “permitted roles of the user within the network (as receiver, sender, or both) and the referential and intertextual nature of the messages.”<sup>129</sup> As Carnegie explains, “To send a message without referring to a previous message or without expecting a response produces the lowest level of interactivity. To send a message that refers and responds to another message would represent a higher level of interactivity. . . . To be fully interactive, the user would not only respond to previous messages but refer back to specific content and indicate how content is related to that of earlier messages.”<sup>130</sup> A lack of continuity decreases interactivity, interfering with the interface’s ability to affect and persuade.

Yet other jarring events that arise in the course of my interaction with the avatar are similarly glitchy but do not necessarily make memory less impactful or persuasive. The black-boxed

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<sup>128</sup> All quotations in this chapter from my interaction with the hologram of Pinchas Gutter come from USC Shoah Foundation, “IWitness.”

<sup>129</sup> Carnegie, “Interface as Exordium,” 167.

<sup>130</sup> Carnegie, 167.

process of submitting a message and receiving a message from an otherwise concealed archive produces answers that vary in terms of length, specificity, and exact content, and these variations continually surprise in a way that—while not strictly evidence of malfunctioning—nevertheless resembles glitching. Some questions inspire short, informational answers. I ask, “When were you born?” He replies, “I was born on the 21<sup>st</sup> of July, 1932.” “How would you describe yourself?” “I am Pinchas Gutter, and I’m a retired elderly gentleman.” When I ask, “Why did you do this project?” Pinchas’s avatar responds with a longer, more elaborated answer:

I think this project is very, very important. It is important because it will—you will be able to not just read or see the testimony of people, but you will be able—whoever does this and how many of these projects you do, these are the people of the future who will be able to engage with the individuals who are, who, who are there and who actually need to know what happened on a personal level. It will be much more than just watching a video or just listening to a testimony in audio.

In this instance, an unexpectedly detailed response, emerging only after I try a series of other questions, produces a sense of serendipity and surprise: Aha! I think. I have succeeded in calling forth this more elaborate response that offers a window into Pinchas’s thinking.

In Chapter 1, I introduced the concept of the glitch, described by Rosa Menkman as “an unexpected occurrence, unintended result, or break or disruption in a system. . . . From an informational (or technological) perspective, the glitch is best considered as a break from (one of) the protocolized data flows within a technological system.”<sup>131</sup> In a 2018 blog post for *LoosenArt Magazine*, an unnamed author compares Menkman’s work on glitching to Barthes’s concept of the punctum: “The glitch like the punctum is a visual slip or accident that rips through its medium to

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<sup>131</sup> Menkman, *The Glitch Moment(Um)*, 26.

disrupt a flow of information.”<sup>132</sup> In Barthes’s own account of the punctum, he describes looking through photographs of his mother, only “discover[ing]”<sup>133</sup> her in one particular photograph that produced in Barthes “a sudden awakening” that “triggered” him and “provoked a tiny shock, a satori, the passage of a void.”<sup>134</sup> The glitch, like the punctum, draws attention to the interface, which may otherwise remain unquestioned or invisible. I have previously considered one specific kind of glitch-punctum, described by Ann Brenoff as a “jolt,”<sup>135</sup> that occurs when a mimetic medium—a photograph, a video, or a memorial chatbot, for example—in its attempt to stand in for an absent person, only keenly reminds of their absence. In this chapter, I have also discussed the unsettling incongruity produced when holograms separate a subject from their traces (images, voices, patterns of speech) through Baudrillard’s concept of hyperreality.

Barthes’s counterpart to the punctum, the studium, is the backdrop of “the figures, the faces, the gestures, the settings, [and] the actions” from which the punctum erupts.<sup>136</sup> The archive created through the hours of testimony Pinchas gave responding to “over 1,000 questions about his life before, during and after the Holocaust”<sup>137</sup> constitutes the studium, the parts of Dimensions in Testimony over which the project’s designers, interviewers, and Pinchas enjoyed some control. As Barthes writes, “To recognize the studium is inevitably to encounter the photographer’s

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<sup>132</sup> LoosenArt, “The Punctum as Glitch.”

<sup>133</sup> Barthes, “Rhetoric of the Image,” 109.

<sup>134</sup> Barthes, *Camera Lucida*, 49.

<sup>135</sup> Brenoff, “A Grief Bot Could ‘Resurrect’ My Dead Husband. No Thanks.”

<sup>136</sup> Barthes, *Camera Lucida*, 26.

<sup>137</sup> USC Shoah Foundation, “iWitness.”

intentions, to enter into harmony with them, to approve or disapprove of them, but always to understand them, . . . for culture (from which *studium* derives) is a contract arrived at between creators and consumers.”<sup>138</sup>

The punctum, on the other hand, is unruly and unpredictable, outside of this contract. The punctum arises of its own accord, unexpected and arbitrary, to prick the viewer, and neither the creator nor the consumer can anticipate it: “it is this element which rises from the scene, shoots out of it like an arrow, and pierces me.”<sup>139</sup> It is an “accident . . . which pricks me (but also bruises me, is poignant to me).”<sup>140</sup>

On iWitness, messages supplied via microphone or chat box cut into this archive and call forth a response, likely related to the question asked but always unexpected in its exact content. I ask Pinchas, “Did you go to therapy?” He responds with his longest answer yet, which I include here in its entirety, not only for its astonishing length but also its dense cascade of intimate, raw, and divergent memories:

I had both emotional and psychological problems. I started off with nightmares, which I was either being shot. There was one— there were particularly two nightmares which troubled me for close to 20 years. And that were—the first one is when we were taken out of the bunker and marched. It was dusk already, dark, and we were marched between flames of the buildings burning in the Warsaw ghetto. We were walking in the middle of the road. People used to run away from the column; there were big columns, so people ran away from the columns, running towards where the fire was to try and run away. And the Ukrainians and the SS would take off their rifles and they would shoot, they would laugh and they would shoot behind them. And they didn’t care one way or another because they knew well if they didn’t kill them now, he’s gonna burn, or something is gonna— he’s gonna die anyway, so they were—to them, it was big sport. So, one of these—that dream—so,

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<sup>138</sup> Barthes, *Camera Lucida*, 27–28.

<sup>139</sup> Barthes, 26.

<sup>140</sup> Barthes, 27.



I had this, this picture vivid in my mind, so what that dream that came a recurrent dream was that I was running into the fire, and they were shooting, and I was hit by bullets in my back, and I died in the flames. So, you can imagine in what shape I would scream and wake up in the middle of the night. And the second one that I was in a gas chamber and I was being gassed to death. And the first time it happened to me was in—it only happened once because, for the first 10 years, I didn't suffer any mental or physical, any kind of, uh, well, physical, yes, but that was something else, but, but mental, I had no mental problems at all. I didn't think about the Holocaust, but I only had once a nightmare, and the nightmare was that I was being gassed in a gas chamber, and that was in 1948 when I was in Paris working and living with my cousins. And I started screaming, so they came to my room and they quieted me down, they took me to their double bed and put me in between the two of them. And they quieted me down, and I slept, and the next morning I was fine and I never thought of the Holocaust for many years to come. Still, after '48 until 1955, I never thought about the Holocaust. So, this, this was—and then after that, it became a big problem in my life, generally. I had to work, I had to earn a living, but I had emotional and psychological problems, so I had to ask for help. So, I, I needed psychotherapy. And, with God's help, I crawled out of this of this mire of, of, of problems. And, um, from about 1975 onwards, I, um, I started acting—or, or I started— well, the, the, the, the nightmares abated, they disappeared; I occasionally get a nightmare, but it's not those. And, um, and, um, I would say I became a partial human being because I regard myself as being a disabled person, and I can explain to you how I do that. You know, in Canada and the United States, when somebody has got a leg problem, or lung problem, or can't walk very well, but he can still drive a car. He gets a ticket saying 'disabled person,' and then he can park in places where it says for disabled person, but you can see the person is disabled. They either got one eye or one—and that person comes to terms with his disability and tries to live a normal life. My disability is in here. It's inside me, so you can't see it, but I've come to terms and I've—because I realized that I have to live, and I have to have a family, and I have to, you know, be a human being. So, I—it took enormous strength, but I overcome the disability, came to terms with it. It's there, it hurts, but so what?

This 685-word response to my five-word question—“Did you go to therapy?”—stuns me.

Presumably, the iWitness algorithm matched the word “therapy” in my query to Pinchas's response (keying in on the word “psychotherapy”) as it had similarly done for my previous questions. However, this reply gives me so much more than I have bargained for. Pinchas's avatar responds to a question that could potentially be answered with a “yes” or a “no” with an account of the specific nightmares he had after the Holocaust ended, how these nightmares impacted his life, what actions he took to ameliorate them, and finally, what it is like to experience psychological

trauma as an invisible disability. I experience Pinchas's complex and intimate response—inspired by the simple question “Did you go to therapy?”—as a punctum, an unexpected cut into the interface from which a wellspring of memory erupts and cuts me back. Unlike the more explicitly glitchy responses given by Eva Schloss's hologram, Pinchas's addresses my question and thus does not seem to constitute a glitch per se, where the algorithm fails to give a relevant response. However, the avatar surprises me when what I think of as a straightforward question calls forth an avalanche of memories and imbues the interaction with a sudden intensity.

If elsewhere a lack of continuity across messages and the nonlinear arrangement of Pinchas's memories produce misunderstandings, here these features pierce the archive to retrieve an intensely intimate response and so soon into our conversation. The search function, without contextual sensitivity, provides a shortcut to Pinchas's most painful and powerful memories depending only on the right question, sidestepping the familiarity, comfort, and trust that might gradually accumulate in human-to-human conversation. Greenspan and Greenspan's student observe that no *reciprocal relationship* is possible between audiences and Survivors in the latter's absence. However, my interactions with Pinchas's avatar suggest that these interactive avatars and holograms, by using a mechanism to variously conceal and bring forth bits of an underlying archive, do recreate important aspects of human-to-human conversation, even when—or perhaps *especially when*—experimentation yields associative and unexpected answers.

Of course, surprising inconsistencies that emerge across interactions with Pinchas's avatar occur in human-to-human interactions, too: When I ask a Survivor a question from a live audience, I do not know what they will say, and perhaps they will give a longer or shorter answer than I expect or make an associative leap to another memory. Black-boxed experimentation with

an underlying archive thus recreates some of the nonlinearity, discontinuity, and interpretive latitude that also characterize person-to-person conversation. I suggest that these features—nonlinearity, discontinuity, and interpretive latitude—call on audiences to perform interpretive work of their own, and this friction between audience and archive creates memories that stick. In Chapter 3, I considered how black-boxed play with an archive could invite audiences to critically engage with memory. Here, I suggest that this mechanism as deployed by Dimensions in Testimony mimics, in addition to conversation, common understandings of *how memory itself works*, and herein lies its affective, persuasive, *sticky* power.

Glitches are a facet of a broader comparison the Dimensions in Testimony project invites between itself and the structure and function of memory, not only as it is shared between individuals but as it is experienced in one individual's mind. The black-boxing mechanism the project employs recalls Freud's "A Note upon the 'Mystic Writing-Pad,'" in which the author attempts to explain how the "perceptual apparatus of our mind"<sup>141</sup> functions—that is, how the mind can simultaneously receive unlimited "new perceptions" and create "permanent—even though not unalterable—memory traces of them."<sup>142</sup> Freud first observes that any attempt to aid one's memory through writing presents one of two disadvantages. Writing on a piece of paper creates a "permanent memory-trace," but, for this reason, the paper can be filled up; it is limited in "its receptive capacity."<sup>143</sup> The slate, on the other hand, has "an unlimited receptive capacity"—it

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<sup>141</sup> Freud, *General Psychological Theory*, 212.

<sup>142</sup> Freud, 208.

<sup>143</sup> Freud, 208.

can be recycled over and over again as the notes on it lose their significance—but it cannot “preserve a permanent trace.”<sup>144</sup>

Unlike the writing pad or the slate, the unconscious retains permanent traces of what is perceived even as these traces disappear from the perception-consciousness. Nothing escapes the unconscious, and every perception leaves traces, even if these traces are not easily accessed. Furthermore, Freud concludes that “an unlimited receptive capacity and a retention of permanent traces seem to be *mutually exclusive properties* in the apparatus which we use as substitutes for our memory.”<sup>145</sup> That is, the brain’s memory function “accomplishes precisely what they [the piece of paper, the slate] cannot: it has an unlimited receptive capacity for new perceptions and nevertheless lays down permanent—even though not unalterable—memory traces of them.”<sup>146</sup>

Parallels between Freud’s theorization of how perceptions become memory are useful, not because of the theory’s technical accuracy, but because it expresses common understandings regarding memory’s operation, wherein experiences are “recorded” as memory in the brain and subsequently accessed (more or less) at will. Freud’s use of technological metaphors to explain how memory works provides an example of a technology being used not only for recording memory but also for analogizing how memory functions in the first place. To explain how the brain creates memories from experiences, Freud theorizes two systems—one corresponding to the permanent

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<sup>144</sup> Freud, 208.

<sup>145</sup> Freud, 208; emphasis added.

<sup>146</sup> Freud, 208.

piece of paper and one to the transient slate—that work together within a larger system.<sup>147</sup> Freud introduces the Mystic Writing-Pad—a child’s toy comprised of a celluloid sheet placed over a wax slab—as an analogy for this system. When one writes upon the celluloid sheet, wax from the slab below transfers to the sheet above. One can lift the sheet to erase the markings, but their ghosts remain, barely visible, imprinted on the wax slab below. Freud observes that the pad’s wax slab preserves “permanent trace[s]”<sup>148</sup> of what has been written, even as these have been effectively erased from the pad. Herein lies his answer to the question of how the mental apparatus can take in unlimited perceptions and record and adapt to new ones: two separate components, each with different capabilities, function as part of one system. One hand makes impressions through the waxed paper and celluloid to the wax slab below, as the other periodically lifts the sheets, erasing the markings from the perception-consciousness (the celluloid sheet)—but not the unconscious (the wax slab).

Like the Mystic Writing-Pad, Dimensions in Testimony’s interactive avatars and holograms combine an enormous capacity for old memories and an ability to take in new perceptions. The avatar preserves enduring recordings of Survivor testimony (just as video testimony does) but also seems to take in and respond to new stimuli in the form of audience questions, thus mediating between a Survivor’s recorded memories and audience inputs. In this way, the Mystic Writing-Pad provides an analogy for a “bridge” between audience and Survivor consciousness (thus mimicking conversation).

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<sup>147</sup> Freud, 208.

<sup>148</sup> Freud, 208.

At the same time, the cooperation of celluloid sheet and wax slab also analogizes interaction between a Survivor's own archived memory and the retrieval of this memory from moment to moment (thus mimicking the experience of memory and *consciousness* itself). By searching for key terms within an otherwise concealed archive, the avatar supplants a Survivor's direct experience of a question and their formulation of an answer. At this intersection of mimesis and mutability, glitches can occur, but so too can surprising insights and meaningful discoveries.

I conclude this chapter with a particularly striking example of this from my interactions with Pinchas's interactive avatar. I ask Pinchas, "What were your parents like?" He responds,

My parents were, I would say, a very normal Hasidic family. My father would get up in the morning and he would, um, you know, do his washing and then he would study the holy books, and then he would have breakfast, go to work, come back. Uh, my mother got busy with the children, got us ready to go to, uh, to the—you know, we were infants. Uh, so I would say we were a very normal family; there weren't any specific things. My father was a very kind man, so we were never actually punished that I can remember. And that wasn't such a good thing, my mother actually complained that my father was too lenient with me. And, uh, my mother was also very lenient, and she was very, very beautiful, very nice, and she played a lot with us. So, we, we grew up in an absolutely normal family.

I ask, "What were your parents' names?" "My sister's name was Sabina, my father's name was Menachem Mendel, and my mother's name was Helena." "What happened to your sister?" "My family were murdered in Majdanek. My father, my mother, and sister were murdered on the same day when we arrived to the camp from Warsaw."

After the answer, Pinchas's avatar again assumes that same serene, expectant expression, but now his face looks different to me: his eyes and lips seem tightened in pain. This experience recalls a similar effect of juxtaposition as described by Maurice Merleau-Ponty in the context of film. Merleau-Ponty cites

Pudovkin's famous experiment which clearly shows the melodic unity of films. One day Pudovkin took a close-up of Mosjoukin with a completely impassive expression and

projected it after showing: first, a bowl of soup, then, a young woman lying dead in her coffin, and, last, a child playing with a teddy-bear. The first thing noticed was that Mosjoukin seemed to be looking at the bowl, the young woman, and the child, and next one noted that he was looking pensively at the dish, that he wore an expression of sorrow when looking at the woman, and that he had a glowing smile for the child. The audience was amazed at his variety of expression although the same shot had actually been used all three times and was, if anything, remarkably inexpressive. The meaning of a shot therefore depends on what precedes it in the movie, and this succession of scenes creates a new reality which is not merely the sum of its parts.<sup>149</sup>

From this experiment, Merleau-Ponty concludes that “a movie has meaning in the same way that a thing does: neither of them speaks to an isolated understanding; rather, both appeal to our power tacitly to decipher the world or men and to coexist with them. . . . A movie is not thought; it is perceived.”<sup>150</sup>

At least one important difference distinguishes this effect in the context of film compared to my encounter with Pinchas’s iWitness avatar: in the latter instance, my choices—not those of a director or designer—create compelling juxtapositions for me to perceive and continually interpret. I know that I am not speaking directly to Pinchas, and I have learned from our interactions that Pinchas’s avatar doesn’t “remember” across our messages. Yet I catch myself believing otherwise, if just for a moment: Pinchas’s story invites me to interpret his face as contextually relevant to the topic at hand, and I do so before having the opportunity to think through my knee-jerk reaction: before I can stop myself, I am already interpreting my correspondent’s expression as an aperture into his thoughts and feelings and, in turn, I am experiencing remorse that my question has forced him to remember this trauma. *Even though I know better*, I catch myself imagining a consciousness

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<sup>149</sup> Merleau-Ponty, “The Film and the New Psychology,” 54.

<sup>150</sup> Merleau-Ponty, 58.

on the other end of my messages, one that forms associations in response to my questions (mutability) in the same way that Pinchas himself would (mimesis). This example thus speaks to the power of the intersection of mimesis and mutability (there is Pinchas and look how my question has made him painfully remember) to inspire a desire to speak to and perhaps even embrace a Survivor's hologram in their absence.



## Conclusion

### Algorithmic-Memorial Media in Private and Public

What are all these fragments for, if not to be knit up finally?

– Marilynne Robinson, *Housekeeping*<sup>1</sup>

Marilynne Robinson’s 1980 novel *Housekeeping* provides innumerable potential epigraphs for this project because the novel and my dissertation share a preoccupation with traces—their accumulation, inheritance, and curation—in the wake of painful absence. In *Housekeeping*, traces take the form of family heirlooms and memories: narrator Ruthie recalls, for instance, “the dim coil of thick hair, saved from my grandmother’s girlhood, which was kept in a hatbox on top of the wardrobe”<sup>2</sup> and how her mother appeared to her from the back seat of their car: “the waves of the crown of her hair, the square shoulders of her grey dress, her long hands at the top of the steering wheel, the nails gleaming deep red.”<sup>3</sup> These fragments gesture back to the absent sources of their significance, even if they prove, ultimately, to be painfully insufficient, evidence of asymptotic longing after loss, as Ruthie reflects: “But every memory is turned over and over again, every word, however chance, written in the heart in the hope that memory will fulfill itself, and become flesh.”<sup>4</sup>

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<sup>1</sup> Robinson, *Housekeeping*, 137.

<sup>2</sup> Robinson, 312.

<sup>3</sup> Robinson, 294.

<sup>4</sup> Robinson, 292.

This dissertation similarly engages the inadequacy of traces to stand in for absent subjects, as well as the tantalizing hope that they could, beginning with that specious claim undone by *Black Mirror*'s "Be Right Back": "The more it has, the more it's him." In that episode, we see Martha become a curator of Ash's traces, which are, in the words of John Durham Peters, "repositories of human personality."<sup>5</sup> The attic comes to represent the home's unconscious, a hidden place where certain traces are relegated, as initiated by Ash's mother: "That's how she dealt with stuff. And when dad died, up went his photos." As I have argued, the episode expresses anxieties about algorithmic curation specifically but also about curation more generally and the responsibility we have to sort and store the fragments we and others leave behind.

In Chapter 2, I identify two recurring themes from discourse surrounding the algorithmic curation of traces: algorithm-as-tool and algorithm-as-conduit. These themes figure algorithms as objective mechanisms that help humans curate data or else as unique apertures into those data that reveal otherwise hidden truths about our histories, social relations, politics, and personalities. I analyze the algorithmic-memorial artifacts presented in that chapter according to two criteria—rhetorical standpoint and mutability—which, in turn, create four categories at their intersections: mutable-mimetic, nonmutable-mimetic, mutable-nonmimetic, and nonmutable-nonmimetic. These categories represent different configurations of the authorial knot, the complex tangle of human and nonhuman rhetors who collaboratively determine how these media manifest. By mapping algorithmic-memorial media in this way, the dissertation's primary goal thus comes into sharper

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<sup>5</sup> Peters, *Speaking into the Air*, 142.

focus: understanding how algorithmic-memorial media that are at once mimetic and mutable involve audience decision-making to represent the past.

In Chapter 3, I explore this question in the context of Roman Mazurenko's memorial chatbot. I discovered through my interactions with the Roman app that mutable and mimetic algorithmic-memorial media enable (and, in fact, require) experimental play, recalling interaction with Ouija boards. Through such play, audiences probe an otherwise concealed archive through recursive acts of interpretation to arrive at their own understandings of memorial contents. Analysis of my interactions with Roman suggests that apparent accidents, or glitches, instead of undoing the illusion of conversation (as they might do more poignantly for someone who knew Mazurenko), often create compelling contradictions that called on me to experiment with Mazurenko's archive and, in the words of his friend and the app's developer Eugenia Kuyda, "get a little feel of what kind of person he was."<sup>6</sup>

In Chapter 4, I consider the "stickiness"—that is, the affective and embodied potential—of two exhibits at the Illinois Holocaust Museum and Education Center: *The Journey Back: A VR Experience* and *The Abe and Ida Cooper Survivor Stories Experience*. Comparisons between these two exhibits and more familiar Holocaust memory work, including *The Karkomi Holocaust Exhibit* housed a floor above in the same museum, suggest that these exhibits similarly engage audience senses and imaginations by bringing the past into the present through variously tangible and intangible traces. The VR and holographic theaters, however, deploy mimesis and mutability to engage audiences and encourage their active manipulation of memorial contents in a way that

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<sup>6</sup> "My Best Friend Is Now a Chatbot."

more explicitly affects how those exhibits manifest. In the case of *The Abe and Ida Cooper Survivor Stories Experience*, these individual decisions contribute to an ongoing and everchanging conversation, if not with the Survivors themselves, then with their interactive archives. These conversations emerge from an authorial knot of Survivors, exhibit designers, memorial contents, individual audience members, and even, crucially, other museumgoers.

This brings me to an implicit concern percolating throughout this dissertation, especially in Chapters 3 and 4. These chapters raise important questions about the private and public applications of algorithmic-memorial media. The artifacts I analyze throughout this dissertation vary in terms of their audiences and purposes: Roman Mazurenko's memorial app, for example, was constructed, first and foremost, as a space for Mazurenko's loved ones to remember and grieve, whereas *The Journey Back: A VR Experience* and *The Abe and Ida Cooper Survivor Stories Experience* holographic theater have their roots in public education, extending a decades-old history of teaching the surrounding community and beyond about the Holocaust, its horrors, and the people who suffered them. Across a range of very different audiences and purposes, we must contend with the essential inadequacy of relying on traces to stand in for their absent subjects and temper our expectations accordingly. Yet once we acknowledge this inevitable limitation, we are nevertheless left with the task of curating those traces as responsibly as possible—that is, in ways that honor their originators and educate those who will encounter them, now and into the future. But what role do audiences play in the curation of traces as initiated by algorithms? What roles should they play?

In her analysis of the online September 11 Digital Archive, which stores and displays a cacophony of traces related to 9/11 and invites ongoing contributions from website visitors,

Ekaterina V. Haskins observes that its

collection and display strategies may be seen as a self-conscious reaction against the traditional dictatorial role of official institutions of memory. By allowing users to participate in the shaping of the historical record on their own terms and by enabling them to take charge of their journey through its collection, the archive undoubtedly preempts possible accusations of professional elitism and political bias.<sup>7</sup>

Stephen D. Smith, in his reflections on *Dimensions in Testimony*, emphasizes similar advantages of the project: “The questions that students have are what’s driving the learning experience, and so we know this is important because we’re going to enable them to be able to learn through their own curiosity.”<sup>8</sup> He notes further, “What’s wonderful about conversing with these Holocaust Survivors in this interactive form is that it’s about you, about what you want to know. The conversation allows you to learn in a way that most suits your interest, and that’s where the deepest learning takes place.”<sup>9</sup>

To understand the precise nature of this interaction, I return to Diana Taylor’s distinction between “the *archive* of supposedly enduring materials . . . and the so-called ephemeral *repertoire* of embodied practice/knowledge.”<sup>10</sup> Through repertoire, audiences “participate in the production and reproduction of knowledge by ‘being there,’ being a part of the transmission,”<sup>11</sup> making

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<sup>7</sup> Haskins, *Popular Memories*, 66.

<sup>8</sup> Smith, Higgins, and Glauben, “Talking Memory.”

<sup>9</sup> Smith, Higgins, and Glauben.

<sup>10</sup> Taylor, *The Archive and the Repertoire*, 19; emphasis in original.

<sup>11</sup> Taylor, 20.

decisions that shape their and others' performances of memory. I suggest that *Dimensions in Testimony* sutures archive and repertoire with specific procedural logics to make an argument—beyond those contained within specific memorial contents—about the ideal relationship and interaction between audiences and archives. The project centers audience curiosity and interest using techniques that will by this point be familiar to the reader: the black boxing of an underlying archive; access to that archive via a back-and-forth, conversational, question-and-answer format; and a keyword matching search algorithm to match question and answer. I suggest that, by facilitating experimental play between audiences and memorial archives, *Dimensions in Testimony* positions audiences as curators of those archives.

To invite an audience member into the role of curator is not strictly laudable, as Haskins notes in the case of the September 11 Digital Archive:

Yet while making multiple fragments of the 9/11 discourse publicly visible and accessible, it stops short of allowing contributors to engage one another in discussion and debate. This approach relegates the burden of meaning making to private individuals and thus effectively disables the interactive potential of the virtual site of memory the archive assisted in forging.<sup>12</sup>

Importantly, while *The Abe and Ida Cooper Survivor Stories Experience* similarly “relegates the burden of meaning making to private individuals” by incorporating their curatorial decision-making, the exhibit does not ask them to fulfill that role alone, nor does it absolve them of that role’s responsibility. Rather, through their procedures and rhetoric, the exhibits establish an expectation that audience members will interact with other museumgoers as part of the public performance of memory, and furthermore, that they will carry their experience beyond its walls and out into the

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<sup>12</sup> Haskins, *Popular Memories*, 66.

world: as Elie Wiesel is quoted in *The Journey Back: A VR Experience* introductory video, “Whoever listens to a witness becomes a witness.”

In Chapter 3, I reflect on the colloquial connotations of the terms “audience” and “user,” suggesting that while “audience” implies a group of people, who may be removed spatially or temporally, experiencing something collectively, “user” suggests an individual who makes meaningful choices that affect their experience alone. On the one hand, visitors to *The Abe and Ida Cooper Survivor Stories Experience* are users in the sense that they make choices to manipulate how the memorial manifests. On the other, the project couches this individualized experience within a public setting where museumgoers encounter memorial contents in and as a public. Algorithmic-memorial media that are at once mutable and mimetic thus invite their audiences to step into a role that exists simultaneously beyond and between available terms “audience” and “user” by capturing elements of both: making choices to directly impact the manifestation of memorial contents and experiencing these manifestations alongside others.

The emergent role of the audience-curator identified and explored in this dissertation provides a new framework for addressing prominent concerns within the study and practice of public memory, including how the past is interpreted and retooled in response to present exigences and how various forms of engagement and embodiment make memory particularly persuasive and enduring. Algorithmic-memorial media that feature mimesis and mutability invite us into the role of audience-curators to participate in memory’s (re)invention. My analysis of postmortem digital avatars in this dissertation reveals that black-boxed archives that impersonate absent others, rather than being simply uncanny or deceptive, instead create the conditions for playful and recursive experimentation with memorial contents. This dissertation calls on scholars

and practitioners of public memory to consider the role of concealment and play in the invention and performance of memory: through these features, audience-curators assume crucial responsibility in the arrangement of traces, determining how all these fragments will be knit up.



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