

RESEARCH ARTICLE

# Desert Specters: Commemoration and Myth in *Doctor Atomic* and *Oppenheimer*

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## Abstract

This article explores the cultural commemorations of J. Robert Oppenheimer through the lenses of opera and film, specifically focusing on Christopher Nolan’s film *Oppenheimer* (2023) and Peter Sellars and John Adams’s opera *Doctor Atomic* (2005/2018). It engages with Michel-Rolph Trouillot’s theories on history and mythmaking to analyze how these cultural productions function as acts of commemoration that sanitize and mythicize historical processes. The revival of Oppenheimer as a mythic figure reflects a broader societal negotiation with the legacy of nuclear technology and its implications in the twenty-first century. Both the opera and the film reify a political and ideological attachment to the U.S. nuclear complex. Furthermore, this article critically examines the production settings of “Doctor Atomic” at the Santa Fe Opera and Nolan’s on-location filming in New Mexico. It argues that these settings add a ritualistic valence to the narrative, enhancing the mythic portrayal of Oppenheimer and the Manhattan Project. Through a detailed analysis of narrative strategies and media affordances, this study reveals how contemporary depictions of historical figures and events shape and sustain national myths that support an ongoing attachment to the nuclear complex.

In a press conference announcing the Santa Fe Opera’s 2018 Season, artistic director Charles MacKay introduced two special guests: the renowned stage director, Peter Sellars, and the director of Los Alamos National Laboratory, Charles McMillan. The three directors represented the collaborative vision of Santa Fe Opera’s revival and reimagining of the opera *Doctor Atomic*, a contemporary work about the Trinity Test and Manhattan Project. Bringing the opera to the desert mesas of New Mexico meant conjuring the memory of J. Robert Oppenheimer in the very place he directed the Manhattan Project seventy years prior—the production would bring Oppenheimer to life in spectacle and song. Sellars declared at that press conference, “I think it’s very important that the land itself testifies. The land of New Mexico is so eloquent. These incredible mesas—yes, they can tell stories. And if you’re in New Mexico and you’re not hearing what the land is saying, you should stop and listen.”<sup>1</sup> From the vantage point of the Santa Fe Opera’s open-air theater, audiences can see beyond the stage and glimpse the city of Los Alamos nestled in the faraway mesa. According to Sellars’s vision, staging *Doctor Atomic* in Santa Fe is comparable to staging *Tosca* in Rome.<sup>2</sup> The emplacement adds a ritualistic valence to the opera’s narrative impact.

Those incredible mesas would hail another director, and in the summer of 2021, Christopher Nolan made his own pilgrimage to the Pajarito Plateau (see [Figure 1](#)). Regarding filming on location in the New Mexican deserts and in the Oppenheimer’s Los Alamos home, Nolan says, “It’s much better for the actors to be in the real place. It’s just informing so much of what they do. It’s the exact opposite of doing something on a green-screen stage, and particularly when people are tired and jaded on films from working long hours. There’s just something magic about walking into Oppenheimer’s real

<sup>1</sup>Megan Kamerick, “Doctor Atomic,” *Local Flavor*, July 2018, 17.

<sup>2</sup>The comparison bears further implication because *Doctor Atomic* uses archival documents in its collage-like libretto. Whereas *Tosca* is based on a Roman legend, *Doctor Atomic* is based on historical evidence that is mediated through opera’s valences.



**Figure 1.** Landscape view from the roadside of NM-502 (photograph by Anna Gatdula).

house.”<sup>3</sup> He had already been at work on the script for his Oppenheimer biopic but reportedly hit a creative block. Driving from Los Angeles to Los Alamos, he experienced for himself the disorienting twists and turns of the road “up the Hill,” the code name for Los Alamos during the Manhattan Project. Now called NM-502, the highway carves through the mesa leading up to the once secret city. Each hill crest, each bend reveals majestic rock formations. The drive today can only simulate the strenuousness and magnificence that the Manhattan Project crew must have felt on their own passage.

These directors, all drawn to the desert, imagine for themselves what Oppenheimer found so alluring as he directed the top-secret mission that brought the atomic bomb into the world. Christopher Nolan’s film *Oppenheimer* (2023) and Peter Sellars and John Adams’s opera *Doctor Atomic* (2005/2018) are cultural representations that commemorate Oppenheimer.<sup>4</sup> The directors turn a historical figure into spectacular myth. They, looking to and through Oppenheimer’s eyes, direct our own gaze. They represent Oppenheimer as the hero of their spectacles, their mediations in opera and film. They keep us fixated on the dazzling myth—a hero of science, leader of knowledge, a man wrangling supernatural powers and moral quandaries.

The myth of Oppenheimer reproduces narratives of the United States’ position of (nuclear) supremacy. As Roland Barthes writes: “Myth hides nothing; its function is to distort, not to make disappear... There is no myth without motivated form... . From the point of view of ethics, what is disturbing in myth is precisely that its form is motivated.”<sup>5</sup> Opera’s history helps us understand

<sup>3</sup>Jada Yuan, “Inside Christopher Nolan’s 57-day race to shoot ‘Oppenheimer,’” *The Washington Post*, July 19, 2023, accessed June 25, 2024, <https://www.washingtonpost.com/lifestyle/2023/07/19/christopher-nolan-oppenheimer-race/>, accessed June 25, 2024.

<sup>4</sup>John Adams, *Doctor Atomic*, conducted by Matthew Aucoin, directed by Peter Sellars, performed by Ryan McKinny, Andrew Harris, Benjamin Bliss, Julia Bollock, Meredith Arwady, Daniel Okulitch, Tim Mix, Mackenzie Gotcher, Location, Santa Fe Opera, July 14–August 16, 2018; and Christopher Nolan, dir, *Oppenheimer* (Universal City: Universal Pictures, 2023).

<sup>5</sup>Roland Barthes, *Mythologies*, trans. Richard Howard and Annette Lavers (New York: Hill and Wang, 2013), 36, 231.

how the mythic form progressed from the strictly monarchical hegemony to the bourgeois public sphere, and it can shed light on how myth continues to allegorize social and political dynamics.<sup>6</sup> The contemporary resurgence of Oppenheimer as a mythic figure signals a motivated desire to make meaning of the U.S. nuclear complex for the twenty-first century.<sup>7</sup> Though both the opera and film use narratives based on historical events, they express a contemporary fixation on the “nuclear complex.” Scholars of nuclear studies use this term to denote both the material infrastructures of *and* affective investments in nuclear technology writ large.<sup>8</sup>

The revival of the Oppenheimer myth is symptomatic of a renewed support for U.S. nuclear deterrence policy in today’s uncertain nuclear age. In addition, the popularity of Nolan’s film reintroduced anxieties about nuclear weapons proliferation to generations who did not experience the Cold War’s geopolitical tensions. In my discursive approach to these works, I understand them as commemoration and myth in much the same way that Michel-Rolph Trouillot understands the commemoration and mythmaking around Christopher Columbus. These instances of “public history”—commemoration and mythic story-telling—sanitize history by trivializing the historical process “at the same time that they mythicize history.”<sup>9</sup> Both the 2018 opera production and Nolan’s filming took place in northern New Mexico, romanticizing a geographic site that still heavily depends on a nuclear-based economy. Moreover, the opera production adds an extra valence of ritual with the incorporation of Indigenous performance.<sup>10</sup>

Through critical interpretation of the opera and film, with special attention to the interplay between narrative and media affordance, I claim that these contemporary depictions of Oppenheimer and the Manhattan Project represent and ultimately reify a political and ideological attachment to the

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<sup>6</sup>I have much company in the effort to analyze opera’s relation to myth and political allegory. Yayoi Uno Everett theorizes the ways in which postmodern and contemporary opera appropriates mythic elements through nonlinear narrative frameworks and symbolic characters drawn from historical subjects. Everett’s analysis of *Doctor Atomic* focuses on the production history and the opera’s historical subjects. Relying on description and musical analysis, Everett’s study of *Doctor Atomic* raises questions about the aesthetic efficacy of the opera as a totem of history. In Yayoi Uno Everett, *Reconfiguring Myth and Narrative in Contemporary Opera: Osvaldo Golijov, Kaija Saariaho, John Adams, and Tan Dun* (Bloomington: Indiana University Press, 2015), 10, 126.

I owe much of my thinking about opera and politics to Martha Feldman, whose work in *Opera and Sovereignty* demonstrates the power of interpretation within the opera house, which then becomes a space of contestation. The opera house allowed “well-worn propositions to be tried on by listeners without requiring that those propositions be affirmed or negated” (18). She ultimately argues that “*opera seria* invariably reproduced, as narrative and social/symbolic practice, the prevailing social structure” (6). Feldman follows other scholars of theater and performance studies who blur the lines between ritual and performance. Such work has considered the theater’s entertaining quality as a strategy toward its social efficacy. Martha Feldman, *Opera and Sovereignty: Transforming Myths in Eighteenth-Century Italy* (Chicago: University of Chicago Press, 2007).

<sup>7</sup>Saying as much in his introduction to the published screenplay, Kai Bird, one of the biographers writing *American Prometheus*, states: “This lesson [correcting the historical record around Oppenheimer’s security clearance hearings] is particularly important because of Oppenheimer’s status as a scientist. We are a society immersed in science and technology, some of it is based on the very physics that Oppenheimer and his colleagues pioneered. And yet many in the U.S. still distrust science and scientists. In some discernable measure, we can blame the legacy of the flawed Oppenheimer security trial for this distrust. In 1954, America’s most celebrated scientist was falsely accused and publicly humiliated, sending a warning to all scientists not to engage in the political arena as public intellectuals. This was the real tragedy of Oppenheimer. What happened to him damaged our ability as a society to debate honestly about scientific theory—the very foundation of our modern world.” In Christopher Nolan, *Oppenheimer: The Complete Screenplay* (London: Faber & Faber Ltd., 2023), x.

While this essay focuses solely on these contemporary representations of Oppenheimer and his legacy, there are numerous earlier instances of literature, drama, and entertainment that sought to memorialize him. Ryan Ebright’s dissertation notes instances of earlier plays including Heinar Kipphardt’s *In the Matter of J. Robert Oppenheimer* (1964) and Jean Vilar’s *Le Dossier Oppenheimer* (1965). In Ryan Ebright, “Echoes of the Avant-Garde in American Minimalist Opera” (PhD diss., The University of North Carolina at Chapel Hill, 2014), 190. The historical fiction novel *Trinity* by Louisa Hall utilizes various points of view to tell the biography of Oppenheimer. Louisa Hall, *Trinity: A Novel* (New York: Ecco, 2018).

<sup>8</sup>Jessica Hurley, *Infrastructures of Apocalypse: American Literature and the Nuclear Complex* (Minneapolis: University of Minnesota Press, 2020); and Joseph Masco, *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico* (Princeton: Princeton University Press, 2006).

<sup>9</sup>Michel-Rolph Trouillot, *Silencing the Past: Power and the Production of History* (Boston: Beacon Press, 1995), 113–18.

<sup>10</sup>According to business analysts, the Los Alamos National Laboratory ranks number 5 and the Sandia National Laboratory ranks number 3 (beating Walmart) of the number of employees in the state of New Mexico. <https://nmpartnership.com/incentives-data/new-mexico-largest-employers/>

U.S. nuclear complex.<sup>11</sup> The historical relation of the United States and its allies to the atomic bomb is one of distance: The dazzling display of the atomic bomb over *there* signifies the safety for spectator-citizens over *here*. Mediation's distancing effect also affords an emotional detachment from the lived experiences of those directly affected by the nuclear complex.<sup>12</sup> Scholars have argued that aesthetic works and cultural representations provide the tools by which we can understand the nuclear complex.<sup>13</sup> I would add that paying specific attention to media affordances helps us understand how specific cultural forms address their publics. Whether it's IMAX cinephiles or the opera-going establishment, these publics pay attention (and ticket prices) to Nolan's and Sellars and Adams's productions. They are interested in not only what is being said but also how it's being said—the debate over nuclear content matters as much as the discourse on spectacular form.

### Atomic Afterlives, Myth's Half-Life

Spectacle is inherent to nuclear empire's use of the atomic bomb. In a declassified memo from the United States' military Target Committee, the leaders outlined the psychological factors in choosing certain Japanese targets. Under article "E: The Psychological Factors in Target Selection" the memo states:

It was agreed that psychological factors in the target selection were of great importance. Two aspects of this are (1) obtaining the greatest psychological effect against Japan and (2) making the initial use *sufficiently spectacular* for the importance of the weapon to be internationally recognized when publicity on it is released.<sup>14</sup> [Emphasis mine]

Those present at the Target Committee meeting, including Oppenheimer himself, made an aesthetic choice for how they would present their breakthrough in science and technology. Cultural critic Rey Chow writes, "It was probably no accident that the United States chose as its laboratory, its site of experimentation, a civilian rather than military space, since the former, with a much higher population density, was far more susceptible to demonstrating the upper ranges of the bomb's spectacular

<sup>11</sup>My use of representation comes from Stuart Hall who writes, "In part, we give things meaning by how we *represent* them—the words we use about them, the stories we tell about them, the images of them we produce, the emotions we associate with them, the ways we classify and conceptualize them, the values we place on them. Culture, we may say is involved in all those practices which are not simply genetically programmed into us...but which carry meaning and value for us, which need to be meaningfully interpreted by others, or which depend on meaning for their effective operation. Culture, in this sense, permeates all of society." In *Representation: Cultural Representations and Signifying Practices*, ed. Stuart Hall (London: Sage, 1997), 3.

<sup>12</sup>I emphasize U.S.-based audience despite the global reach of the opera and film to draw attention to the "American-ness" of these narratives and the spectacular mediation. *Doctor Atomic* has been performed globally, but the power of the 2018 production derived from its staging in Santa Fe, NM. Certainly, Christopher Nolan has a global audience given his Hollywood stature, but *Oppenheimer* was not distributed widely. According to Hollywood trade publications, *Oppenheimer* was finally released in Japan *after* the Oscars—with an official Japanese release date of March 29, 2024, a little over 8 months after its July 2023 release in the United States. This delay in the film's release dates speaks to a history of cultural differences regarding the reception of nuclear topics.

<sup>13</sup>Jill Jarvis, focusing on the nuclear complex in former French colonies in Africa, writes, "My claim is that only aesthetic works provide perceptual frames both resilient and capacious enough to bear the unfathomable, untraceable qualities of the systematically obscured but profoundly consequential." In Jill Jarvis, "Radiant Matter: Technologies of Light and the Long Shadow of French Nuclear Imperialism in the Algerian Sahara," *Representations* 160, no. 1 (Fall 2022): 58. I would add, again borrowing from the work of Stuart Hall, "These elements—sounds, words, notes, gestures, expressions, clothes—are part of our natural and material world; but their importance for language is not what they *are* but what they *do*, their function. They construct meaning and transmit it. They signify. They don't have any clear meaning *in themselves*. Rather, they are the vehicles or media which *carry meaning* because they operate as *symbols*, which stand for or represent (that is, symbolize) the meanings we wish to communicate." Hall, *Representation*, 5.

<sup>14</sup>Maj. John A. Derry and Norman F. Ramsey to Leslie R. Groves, "Summary of Target Committee Meetings on 10 and 11 May 1945," (May 12, 1945), Correspondence ("Top Secret") of the Manhattan Engineer District, 1942–1946, microfilm publication M1109, Roll 1, Target 7 Folder 5D, "Psychological Factors in Target Selection." Washington, DC: National Archives and Records Administration, 1980. Quoted in Alex Wellerstein, *Restricted Data: The History of Nuclear Secrecy in the United States* (Chicago: The University of Chicago Press, 2021), 110.

potential.”<sup>15</sup> The atomic bomb proved to be an epistemic shift. The aesthetic approach to the “sufficiently spectacular bomb” has since haunted representations of the nuclear complex.

Because of his fairly public rise and fall, Oppenheimer was a historical figure with a conveniently mythic aura. He became a household name *after* directing the Manhattan Project to its successful conclusion—the first atomic bomb—and quickly lost political favor when he began to call for international control over nuclear weapons.<sup>16</sup> Because he never publicly expressed how the sociopolitical afterlives of his scientific experiment affected him, he remained a detached figure in the public eye. *Oppenheimer* and *Doctor Atomic* rely on Oppenheimer’s mythic stature and the atomic bomb’s spectacular lure to dazzle audiences. These representations set an affective atmosphere in which feelings of awe contest feelings of angst. These spectacular depictions of atomic history address issues that generate feelings of fear or terror while simultaneously stimulating feelings of enjoyment or interest.

First, the film and opera surprise us with special effects and performance. According to affect theorists following Silvan Tomkins, surprise occurs as a neutral feeling that can change toward either the positive or negative ends of an affective spectrum.<sup>17</sup> Then, the spectacle induces spectators to oscillate between negative feelings such as distress, anguish, fear, or terror, and positive feelings like enjoyment or interest. For example, audience members listen to “Oppie” in *Doctor Atomic* sing about his moral plight in the famous aria, “Batter my heart.” Then, audiences revel in sensually lush duets between Oppie and his wife Kitty. In the film’s case, audiences are surprised by the cinematic techniques that depict the atomic bomb explosion. Then, cinephiles delight in deconstructing the explosion’s technical aspects. I would argue that because media and performance afford positive feelings of enjoyment and interest, the promise of a political message founders. Merely entertaining spectacle prevails.

Because these entertaining spectacles not only depict historical events but insist on drawing from documentary sources, they fall into what historian Michel-Rolph Trouillot categorizes as commemoration.

Commemorations sanitize further the messy history lived by the actors. They contribute to the continuous myth-making process that gives history its more definite shapes: they help to create, modify, or sanction the public meanings attached to historical events deemed worthy of mass celebration. As rituals that package history for public consumption, commemorations play the numbers game to create a past that seems both more real and more elementary. Numbers matter at the end point, the consumption side of the game: the greater the number of participants in a celebration, the stronger the allusion to the multitude of witnesses for whom the mythicized event is supposed to have meant something from day one... . Power had intervened between the event and its celebration.<sup>18</sup>

The opera and film reach a global audience: The opera has been staged several times since its premiere in the United States and Europe, and the film—after its most recent release in Japan—has reached a staggering \$965 million in global ticket sales.<sup>19</sup> While these global audiences are comprised of several kinds of localized “publics,” the number of consumers attests to “the multitude of witnesses for whom the mythicized event”—here, Oppenheimer’s life and achievement of the atomic bomb—has a shared, global meaning. The opera and film circulate as a kind of public history that, according to Trouillot, “impose a silence upon the events that they ignore, and they fill that silence with narratives of power about the event they celebrate.”<sup>20</sup> In my critical interpretation of the opera and film, these narratives of

<sup>15</sup>Rey Chow, “The Age of the World Target: Atomic Bombs, Alterity, Area Studies,” in *The Rey Chow Reader*, ed. Paul Bowman (New York: Columbia University Press, 2010), 5.

<sup>16</sup>Kai Bird and Martin J. Sherwin, *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer* (New York: Alfred A. Knopf, 2005); and J. Robert Oppenheimer, Alice Kimball Smith, and Charles Weiner, *Robert Oppenheimer, Letters and Recollections* (Stanford: Stanford University Press, 1995).

<sup>17</sup>Eve Kosofsky Sedgwick, *Touching Feeling: Affect, Pedagogy, Performativity* (Durham: Duke University Press, 2003).

<sup>18</sup>Trouillot, *Silencing the Past*, 116.

<sup>19</sup>Rebecca Rubin, “Box Office: ‘Oppenheimer’ Opens in Japan With \$2.5 Million,” *Variety*, March 31, 2024, <https://variety.com/2024/film/global/box-office-oppenheimer-opens-japan-final-market-1235956510/>.

<sup>20</sup>Trouillot, *Silencing the Past*, 118.

power ultimately reify the hegemonic attachment to the nuclear complex. Because the directors of the opera and film do not make overt claims about nuclear weapons (either for or against), the political status quo, which includes policies of nuclear deterrence, remains intact.

While *Oppenheimer* and *Doctor Atomic* represent an ongoing fixation on the long-held policy of nuclear deterrence, each responds to a contemporary flare up of acute nuclear fear. *Doctor Atomic* was initially an idea by Pamela Rosenberg, general director of the San Francisco Opera. She approached the composer John Adams informally in late 1999 and more formally in 2000 to write the opera as an “American Faust.”<sup>21</sup> The nuclear complex was again in the *zeitgeist* when Rosenberg initially proposed the idea to Adams. At the immediate turn of the millennium, presidential candidate George W. Bush was campaigning over an alleged nuclear missile threat from North Korea, Iran, and Iraq.<sup>22</sup> Adams formally accepted the commission on February 1, 2002. One cannot ignore the historical proximity to the 9/11 attacks and the subsequent political discourse over “rogue states” with “weapons of mass destruction,” attesting to the paranoia that U.S. nuclear supremacy would not be enough to actually protect U.S. citizens. Adams himself was not immune to the post-9/11 affective atmosphere. Musicologist Alice Cotter details Adams’s compositional techniques that parallel between *Doctor Atomic* and *On the Transmigration of Souls* (2002), a concurrent commission from the New York Philharmonic commemorating 9/11. In both, Adams takes on a documentary compositional technique in order to add a “greater degree of sobriety.”<sup>23</sup> Regarding Pamela Rosenberg’s initial idea of an American Faust, John Adams recoiled, stating:

First of all, I don’t see a close analogy here. These physicists working overtime to build the bomb thought they were in a race to protect us against the Nazis. They had reliable information to think that the Germans were working on their own nuclear bomb. Imagine if Hitler actually had such a weapon to hurl at the English or even at us. I don’t see anything Faustian about that endeavor at all: *I think it was a heroic race to save civilization.*<sup>24</sup> [Emphasis mine]

In the legend made famous by Goethe, Faust bargained away his soul with the devil in exchange for unlimited knowledge. Adams’s denial of Oppenheimer’s Faustian status speaks to the distinctly U.S. American folkloric tradition of hero making and worship. In contrast to that of the Germans or ancient Greeks, the heroes of the U.S. American past were not making deals with the devil or defying gods.<sup>25</sup> From Paul Bunyan to John Henry, they were hard-working men in patriotic service to the nation. Though Sellars himself never denied the Faustian myth, he did emphasize a fascination with Oppenheimer as a typical operatic figure, one who is seduced by the flattery of those in power.<sup>26</sup>

Furthermore, Oppenheimer and the setting of the Manhattan Project add the mythic valence of the U.S. American Frontier.<sup>27</sup> In an influential study of this myth, historian Richard Slotkin claims that the frontier setting evokes the ideology of U.S. American exceptionalism. He writes,

<sup>21</sup>Quoted in Cotter, Alice Miller Cotter, “Sketches of Grief: Genesis, Compositional Practice, and Revision in the Operas of John Adams” (PhD diss., Princeton University, 2016).

<sup>22</sup>Footnoted in Cotter, “Sketches of Grief,” 267.

<sup>23</sup>Adams’s interview with Cotter in Cotter, “Sketches of Grief,” 287.

<sup>24</sup>John Adams, “John Adams on *Doctor Atomic*,” in *The John Adams Reader: Essential Writings on an American Composer*, ed. Thomas May (Pompton Plains: Amadeus Press, 2006), 230.

<sup>25</sup>Nolan found inspiration in the Pulitzer-prize winning biography *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer*, and there are references to Prometheus in the screenplay and on a title card. In interviews he has noted that Oppenheimer’s life story is a quintessentially American story. Nolan, *Oppenheimer: The Complete Screenplay*. The screenplay cites Bird and Sherwin, *American Prometheus*.

<sup>26</sup>*Wonders Are Many*, directed by John H. Else (San Francisco: Actual Films, 2007), DVD.

<sup>27</sup>The previous studies of *Doctor Atomic* emphasize the opera’s (mis-)connections to the Faustian or Promethean myths. Ebright and Cotter’s work both attest to the ideology of exceptionalism that pervades the opera. Nevertheless, besides Sellars’s exclamations of the New Mexican setting when staging the opera in Santa Fe, no study has yet connected the opera to the Frontier Myth.

In American mythogenesis the founding fathers were not those eighteenth century gentlemen who composed a nation at Philadelphia. Rather, they were those who...tore violently a nation from the implacable and opulent wilderness—the rogues, adventurers, and land-boomers; the Indian fighters, traders, missionaries, explorers, and hunters who killed and were killed until they had mastered the wilderness....It is by now a commonplace that our adherence to the ‘myth of the frontier’—the conception of America as a wide-open land of unlimited opportunity for the strong, ambitious, self-reliant individual to thrust his way to the top—has blinded us to the consequences of the industrial and urban revolutions and to the need for social reform and a new concept of individual and communal welfare.<sup>28</sup>

Conquering the atom in the desert, Oppenheimer exemplifies the mythic trope of man conquering nature (Figure 2). The Manhattan Project allowed the federal government to act on this Frontier expansionism. Through policies of eminent domain, the federal government seized the land to house hundreds of scientists, military personnel, and their families. To Oppenheimer, Los Alamos symbolized the “wide-open land of unlimited opportunity for the strong, ambitious, self-reliant individual to thrust his way to the top.”<sup>29</sup> Certainly, as director of the Los Alamos branch of the Manhattan Project, Oppenheimer would insist that the project succeed to completion. Both the opera and film attest to the allure of the desert, where industries of nuclear technology dominate the landscape. Furthermore, the trope of the American Frontier as merely conquerable land elides Indigenous peoples with the land, adding to a long history of objectifying or dehumanizing Indigenous peoples and life-ways. Filming on site, staging’s *mise-en-scène*—these spectacles manifest the Frontier mythogenesis rooted in violent histories of exceptionalist ideology.

These cultural representations reproduce feelings of dread in audiences that are primed to accept the nuclear complex. A recent survey and poll study done by the Lester Crown Center on U.S. Foreign Policy, Carnegie Corporation of New York, and the Chicago Council on Global Affairs found that by a 5 to 1 ratio, respondents say that the U.S. nuclear weapons arsenal makes the country safer rather than unsafe.<sup>30</sup> In other words, a plurality of respondents still believe in the strategy of nuclear deterrence—that more weapons make citizens safer. Two-thirds of those polled believe that the policy of deterrence has been effective at preventing international conflict, with nearly half attesting to the weapons stockpile as the primary reason that the United States has managed to avoid a nuclear attack. Furthermore, of those polled who report being familiar with the policy of deterrence, they are more likely to view the nuclear complex favorably. There is a prevalence of favorable opinion despite the fact that the majority of those surveyed admitted that they do not know enough to assess the benefit or harm of nuclear weapons to them *personally*. Mediations of the nuclear complex, like *Oppenheimer* and *Doctor Atomic*, allow audiences to feel personal relief despite the very real occurrences of the nuclear complex’s settler-colonial violence, such as uranium mining and bomb testing.<sup>31</sup>

<sup>28</sup>Richard Slotkin, *Regeneration through Violence: The Mythology of the American Frontier, 1600–1860* (Middletown: Wesleyan University Press, 1973), 4–5.

<sup>29</sup>Ibid.

<sup>30</sup>Dina Smeltz, Craig Kafura, and Sharon Wiener, *Majority in U.S. Interested in Boosting Their Nuclear Knowledge*, prepared by the Carnegie Corporation of New York and The Chicago Council on Global Affairs with the Lester Crown Center on U.S. Foreign Policy (Chicago, 2023), <https://www.carnegie.org/publications/majority-us-interested-boosting-their-nuclear-knowledge/>.

<sup>31</sup>From its annexation of the Bikini Atoll in the Pacific to the Marshall Plan across the Atlantic, the United States used its military power for imperial occupation. Moreover, the United States deployed imperial tactics within its own continental borders. The policies of eminent domain have been used to create sacrifice zones within the United States for uranium mining and nuclear waste. Often these lands are under Native American sovereignty. Military power ensures nuclear empire’s dominance and growth of capital. Empire is always in process and, by extension, is always narrativizing or reifying itself.

For more on what indigenous scholar-activist Winona LaDuke calls “internal colonialism” see: Winona LaDuke and Ward Churchill, “Native America: The Political Economy of Radioactive Colonialism,” *The Journal of Ethnic Studies* 13, no. 3 (Fall 1985): 107–32; Patrick Wolfe, “History and Imperialism: A Century of Theory, from Marx to Postcolonialism,” *The American Historical Review* 102, no. 2 (April 1997): 388–420; Dana E. Powell, *Landscapes of Power: Politics of Energy in the Navajo Nation* (Durham: Duke University Press, 2018); and Patrick B. Sharp, *Savage Perils: Racial Frontiers and Nuclear Apocalypse in American Culture* (Norman: University of Oklahoma Press, 2007).



**Figure 2.** Robert Oppenheimer (left) and General Leslie Groves (right) at Ground Zero of the nuclear bomb test site (Digital Photo Archive, Department of Energy [DOE], courtesy of AIP Emilio Segrè Visual Archives, CCO, via Wikimedia Commons).

Admittedly, nuance about reception gets lost in the generalization of spectatorship, but the opera house and movie theater make assumptions about their general audience in order to make program decisions. This essay attends to the socially symbolic work of opera and film as audiences spectate, “engage,” and circulate meaning.<sup>32</sup> Music theorist Yayoi Uno Everett traces the myth in *Doctor Atomic* through “analyzing the participating semiotic fields that articulate the dramaturgical turn.”<sup>33</sup>

<sup>32</sup>The formulation “socially symbolic act” comes from Fredric Jameson’s call to “always historicize!” To read a text for its socially symbolic act means to read it not only for its diachronic resonances but also for its synchronic meaning, how it works in its own time (allegorically, symbolically, etc.) in Fredric Jameson, *The Political Unconscious: Narrative as a Socially Symbolic Act* (New York: Cornell University Press, 1981).

<sup>33</sup>Everett, *Myth and Narrative in Contemporary Opera*, 126.



Whereas Everett provides ample evidence of the diachronic intertextuality of myth in *Doctor Atomic*, my critical intervention focuses on the synchronic signification of the Oppenheimer myth. Returning to Trouillot, I interpret these representations for their historicity, how each imposes “a silence upon the events that they ignore” and ultimately “fill that silence with narratives of power about the event they celebrate.”<sup>34</sup> For me, a crucial question will tend to thread these objects: These are mythic spectacles for whom, by whom, and to what effect?

Nolan’s *Oppenheimer* and Sellars and Adams’s *Doctor Atomic* shape and obfuscate their publics’ attention and political attachment. The revival of *Doctor Atomic* in 2018 came on the heels of U.S. President Donald Trump’s petty nuclear threats (e.g., calling North Korea’s dictator “little rocket man”). To be sure, opera seasons are planned several years in advance, but the timing of the production speaks to an instance of historical synchrony between cultural representations and their contemporary moment. The timing added a layer of meaning and a disturbing reminder that a singular figure could launch a nuclear attack on an irrational whim. Staging *Doctor Atomic* in Santa Fe, less than an hour drive from Los Alamos National Laboratory, highlighted the omnipresence of the nuclear complex. Furthermore, in our more recent history, the COVID-19 pandemic had its share of global threats, nuclear and otherwise.<sup>35</sup> The phenomenon of a globalizing fear rekindled, at least for Christopher Nolan, the nuclear fears of a Cold War era.<sup>36</sup> *Oppenheimer*’s theater release in July 2023 was hailed as a “return to the movie theaters” for a “post-” pandemic moment.<sup>37</sup> As people gradually returned to public spaces, Nolan promised a film that would entertain and “engage.”<sup>38</sup>

The opera and film both use the historical event of the Trinity Test as the narrative crux. Through music, sound effect, and *mise-en-scène* the dramaturgy of the bomb reveals, in part, an unconscious desire for the bomb.<sup>39</sup> *Oppenheimer* and *Doctor Atomic* present a familiar hero-type for their contemporary audience. I understand these audiences as knowledgeable spectators of film and opera, who

<sup>34</sup>Trouillot, *Silencing the Past*, 118.

<sup>35</sup>News media coverage of Russia’s invasion of Ukraine highlights the threat of nuclear weapons under Vladimir Putin’s control. The Bulletin of the Atomic Scientists featured public intellectuals condemning Putin’s nuclear threats. Stephen J. Cimbala and Lawrence J. Korb, “Putin’s ‘bluff’: a cautionary note about underestimating the possibility of nuclear escalation in Ukraine,” *Bulletin of the Atomic Scientists*, October 2, 2023, accessed June 25, 2024, <https://thebulletin.org/2023/10/putins-bluff-a-cautionary-note-about-underestimating-the-possibility-of-nuclear-escalation-in-ukraine/>; Matthew Evangelista, “Oppenheimer envisioned the tactical use of nuclear weapons. Putin now threatens it,” *Bulletin of the Atomic Scientists*, October 23, 2023, accessed June 25, 2024, <https://thebulletin.org/2023/10/oppenheimer-envisioned-the-tactical-use-of-nuclear-weapons-putin-now-threatens-it/#post-heading>; John Gower and Andrew Weber, “Rhetoric in Ukraine has reinforced the fallacy of limited nuclear exchange,” *Bulletin of the Atomic Scientists*, October 21, 2022, accessed June 25, 2024, <https://thebulletin.org/2022/10/rhetoric-in-ukraine-has-reinforced-the-fallacy-of-limited-nuclear-exchange/>.

<sup>36</sup>In an interview Nolan recounts fear of nuclear war as a prominent fear in his youth. He also notes that *Oppenheimer* was crucial in instilling the seriousness of those nuclear fears for his own children. He tells the reviewer, “I told one of my sons about [Oppenheimer] as I started to write it, and he literally said to me: But nobody really worries about that anymore. Nuclear weapons. Two years later, he’s not saying that. The world’s changed again. And that’s a lesson for all of us, but particularly for the young. The world changes fast” Christopher Nolan, “How Christopher Nolan Learned to Stop Worrying and Love AI,” interview by Maria Streshinsky, *Wired*, June 20, 2023, <https://www.wired.com/story/christopher-nolan-oppenheimer-ai-apocalypse/>.

<sup>37</sup>One need only mention the newly coined portmanteau about the Blockbuster phenomenon, “Barbenheimer” to spark the premeditated hype around Nolan’s film. Numerous news outlets hailed the double premiere of *Barbie* and *Oppenheimer* as a momentous return to the box office. Oliver Darcy, “‘Barbenheimer’ Craze Could Do Something Hollywood Hasn’t Seen in Years,” *CNN*, July 21 2023, accessed June 25, 2024, <https://www.cnn.com/2023/07/20/media/barbie-oppenheimer-barbenheimer-reliable-sources/index.html>. Angela Yang and Saba Hamedy, “‘Barbenheimer’ Weekend Energizes the Box Office, Brings Moviegoers Back to Theaters,” *NBC News*, July 23 2023. Accessed June 25, 2024, <https://www.nbcnews.com/pop-culture/movies/barbenheimer-phenomenon-brings-moviegoers-together-major-cultural-mome-rcna95402>.

<sup>38</sup>In an interview with *The Bulletin of Atomic Scientists*, Nolan stated, “Entertaining is a sort of reductive word, we tend to think of that as happy, funny things, whatever, but it’s not. It’s about engagement. It’s about: Does the film resonate with people, do they think about it afterward, do they tell other people to go see it, and that kind of thing? And movies embrace all sorts of different types of engagement. So yes, this is a complicated form of engagement that we’re after.” In Christopher Nolan, “An extended interview with Christopher Nolan, director of *Oppenheimer*,” interview by John Mecklin, *Bulletin of the Atomic Scientists*, July 17, 2023, Accessed June 25, 2024, <https://thebulletin.org/premium/2023-07/an-extended-interview-with-christopher-nolan-director-of-oppenheimer/>.

<sup>39</sup>Calum L. Matheson, *Desiring the Bomb: Communication, Psychoanalysis, and the Atomic Age* (Tuscaloosa: The University of Alabama Press, 2019).

have cultivated an appreciation of each form's media and performance affordances. For these audiences, it is not only important what *Oppenheimer* and *Doctor Atomic* say about the U.S. nuclear complex but also how these works create a shared symbolic meaning. Though the film and opera express anxiety about the nuclear complex, neither claim an anti-nuclear stance. If anything, the identification with Oppenheimer reifies a belief in the efficacy of nuclear deterrence and an ambivalence toward the nuclear complex. These representations of the Oppenheimer myth center a certain technological determinism. As the received narrative goes: The race for the first atomic bomb was a race against the Nazis, and the race to maintain nuclear supremacy was a race against Communists, and now, it's a race to prevail over "rogue" states. With this narrative, advances in technoscience are entangled in political commitments.

My comparative approach attends to the different possibilities of mediation in opera and film. Utilizing this research design marks a significant contribution in musicological inquiry as it purposefully integrates aesthetics, affect, and ideology. Both pairs of directors and composers, Christopher Nolan and Ludwig Göransson and Peter Sellars and John Adams, were faced with similar challenges in deciding how to represent the atomic bomb and J. Robert Oppenheimer. Both rely on the aesthetic strengths of each form to manifest history as sensational myth. Ultimately, the difference between film and opera might only matter insofar as they have distinct and different audience reach. I would describe the audience differences in an overly simplified manner as mainstream or niche. Nolan's film has a wide audience reach, due in part to this stature as a Hollywood director-auteur who attracts cinephiles. The opera reaches audiences of a more rarefied class, reflecting a generalized exclusivity of its institution. Nevertheless, the nexus of *Oppenheimer* and *Doctor Atomic* reveals that the "sufficiently spectacular" myth is present in all areas of entertainment and spectatorship.

### Filmic Realism and Nuclear Silence

The research design I employ in the rest of this essay includes narrative study with critical interpretation of mediation in visuals, dramaturgy, sound, and music. My analysis of the 2018 production of *Doctor Atomic* addresses the dramaturgical decision to feature Indigenous people of New Mexico. I interpret this dramaturgical choice as a reflection of a larger institutional entanglement. In the deserts of New Mexico, the Santa Fe Opera contends with the largest economic forces in the area: the nuclear complex. In its bid for an inclusive multiculturalism, it ultimately lacks in making any critical statement against the local nuclear weapons laboratories.<sup>40</sup> The politics of the *a*-political ultimately reproduces a kind of Indigenous erasure. Much like the historical annals that become blockbuster films, *Doctor Atomic* gestures to Indigenous peoples who are there and yet made absent. With the film *Oppenheimer*, I pay close attention to Nolan's insistence on capturing and representing "the real"—whether it is shooting in the New Mexican deserts or the sound design that embraces "nuclear silences." I take up Jessica Schwartz's proposal to examine the "nuclear silences" inherent in the structures of nuclear settler-colonialism.<sup>41</sup> Schwartz's study emphasizes silence as an aesthetic, sensory mode that is coupled with a repressive biopolitics. I ultimately argue that Nolan's obsession with the silence and filmic realism speaks to a desire for technoaesthetic control over the atomic bomb. The belief in technological control is an ideological principle of nuclear deterrence. Though my analysis of the film is granular and that of the opera is broadened to the institutional context, I bring them

<sup>40</sup>The Los Alamos National Laboratory and the Sandia National Laboratory in nearby Albuquerque are two of the three active nuclear weapons laboratories under the jurisdiction of the Department of Energy (the third is the Lawrence Livermore National Laboratory in California). <https://www.dnfsb.gov/doe-sites>

<sup>41</sup>Jessica A. Schwartz, *Radiation Sounds: Marshallese Music and Nuclear Silences* (Durham: Duke University Press, 2021). Schwartz's ethnographic work and activism with and for the indigenous populations of the Marshallese Islands attest to an ongoing silencing—a tool to maintain nuclear empire's hegemonic control. Schwartz emphasizes nuclear culture as a sonic culture "because of the conspicuous manipulation of silence" necessary for the nuclear empire's control of both its citizens and subjects abroad, notably the indigenous populations of the Marshallese Islands rooted out for the sake of U.S. nuclear expansion. But Schwartz also utilizes "silence" as a way to understand trauma in the nuclear age, especially the trauma inflicted on and felt by the Marshallese.

together to emphasize the symbolic significance of the Oppenheimer mythos. He represents a revitalized attachment to the nuclear complex.

Nolan's biopic narrates the life of J. Robert Oppenheimer in three interwoven plot lines. There is a chronological plot line of Oppenheimer's life events, from graduate study, to professorships in the United States, to the Manhattan Project, and finally to the Trinity Test. Another plot line portrays Oppenheimer's post-War life through his security clearance hearings. The third plot line describes the reception of Oppenheimer's legacy through Lewis Strauss, the chairman of the Atomic Energy Commission. Regarding Oppenheimer's legacy, Nolan himself states, "He is the ultimate Rorschach test. I believe you see in the Oppenheimer story all that is great and all that is terrible about America's uniquely modern power in the world. It's a very, very American story."<sup>42</sup> In part, Nolan's narrative is "very American" in its emphasis of Oppenheimer as individualistic hero. The screenplay itself draws attention to this trope by using the first-person perspective for the scenes that center Oppenheimer.<sup>43</sup>

My analysis of the film follows the methodology laid out in Michel Chion's work, which argues for the "audiovisual combination—that one perception influences the other and transforms it."<sup>44</sup> Chion's work further claims that it is sound in particular that moves film from the abstract and into the real. In *Oppenheimer*, not only does the musical score ground the work but also the sound design becomes crucial to the film's narrative impact. In an interview with NPR, the film's composer Ludwig Göransson speaks about his compositional objective as building a "sound world."<sup>45</sup> For Göransson, the integration of music and sound design, led by Randy Torres, creates a fully immersive effect for the spectator. Göransson himself estimates that he scored roughly two-and-a-half of the film's three hours.<sup>46</sup> Regarding the intermix of music and sound, he points to a specific example of orchestration. Nolan and Göransson agreed early in the production process that the orchestration should not include drums so as to avoid "that kind of military feel."<sup>47</sup> Instead of drums, he relies on the sound design of ticking in order to create the percussive rhythm driving dramatic scenes like the Trinity Test.

There's a small sense of sound design percussion where I'm using it. It's particular in the moment when they're getting ready for a test and there's this little ticking. That's the first time we hear a little ticking sound. And that's a big shift in the music because before that it's all been kind of "science." And it's all been scribbles and notes and theories and stuff. But when you go into that moment—in the middle of the movie, the second act—which is fantastic and the music takes a big shift. And you switch from this kind of romantic orchestral sound to just this very intimate and eerie, haunting sound designing elements. And there's this little metal ticking sound that feels like you're almost about to hit, touch the bomb.<sup>48</sup>

I would add that the musical score has an aesthetic derived from American musical minimalism, and I cannot help but to connect *Oppenheimer*'s score to Philip Glass's own compositional style in the opera, *Einstein on the Beach*. Music scholar Rebecca M. Doran Eaton has traced the history of American musical minimalism from its experimental days to its popularization in film scores. She notes that minimalism functions as an "iconic sign" that has solidified over many years of musical practice. Musical minimalism, with Philip Glass's music as exemplar, achieves the symbolic sense of "science,"

<sup>42</sup>Nolan, "An extended interview with Christopher Nolan."

<sup>43</sup>Nolan, *Oppenheimer: The Complete Screenplay*.

<sup>44</sup>Michel Chion, *Audio-Vision: Sound on Screen*, trans. Claudia Gorbman (New York: Columbia University Press, 1994), xxvi.

<sup>45</sup>Ludwig Göransson, "Composer Ludwig Göransson on 'Oppenheimer,'" interview by Jenn White, *1A*, Radio, July, 20 2023, accessed June 25, 2024, <https://www.npr.org/2023/07/20/1189043792/composer-ludwig-goransson-on-oppenheimer>.

<sup>46</sup>Reba Wissner, "The explosive musical score to *Oppenheimer*," *Bulletin of the Atomic Scientists*, July 26, 2023, accessed June 25, 2024, <https://thebulletin.org/premium/2023-07/the-explosive-musical-score-to-oppenheimer/>. For more on the historical practices of musical scoring and screen media see Reba Wissner, *Music and the Atomic Bomb in American Television, 1950–1969* (New York: Peter Lang International Academic Publishers, 2020).

<sup>47</sup>Göransson, "Composer Ludwig Göransson on 'Oppenheimer.'"

<sup>48</sup>Göransson, "Composer Ludwig Göransson on 'Oppenheimer.'"

as Göranson notes, due to its harmonic repetition and rhythmic steadiness.<sup>49</sup> Instead of progression derived from Western-style harmony, the music and sound score is developed through timbral shifts. This style of composition attests to the immense influence of filmic listening, as Chion calls it the “audiovisual combination.” This kind of listening practice dictates not only how audiences in the theater listen but also how composers, sound designers, and directors compose in production.

Combining elements of music, sound, and special effects, Nolan aims to replicate the visual and affective spectacle of the first atomic bomb explosion. He structures the climax of the second act of the film around the Trinity Test. “You want it to be beautiful but also frightening,” he says in an interview with the *Bulletin of Atomic Scientists*. “Things that are photographed for real, they’re going to inherently have more weight to them, they’re going to have that threat.”<sup>50</sup> His compulsion with camera film rather than digital speaks to a widely held conviction about the medium’s mimetic promise.<sup>51</sup> Camera film can capture reality and offer a representation that is as close to “real” as technological mediation can achieve. In his own attempt to “capture” the bomb, he parallels the drama of the Trinity Test with his own obsession over technicity. For the scientists at Los Alamos, the drama of technicity centers the success or failure of their theoretical physics turned applied weapon of mass destruction; for Nolan, it is the success or failure of the filmic medium to recapture the first atomic bomb explosion.

In order to fully realize his vision, Nolan shot on location in New Mexico and built replicas of Los Alamos during the Manhattan Project and the “gadget”—the nickname given to the experimental atomic explosive device. “Nobody is ever, ever, ever going to convince me that this would be better if shot on a soundstage,” Matt Damon, the actor playing General Leslie Groves, tells a reporter for the *Washington Post*.<sup>52</sup> “When you have to go through the journey of getting out to the middle of nowhere in New Mexico and you don’t know what the weather’s going to be or what the wind’s going to do, that all affects the performance. The unpredictability and reality of being out there just gives you something that you can’t get in a controlled environment.”<sup>53</sup> Through camera techniques of forced perspectives and frame rate, Nolan spliced together various shots of explosions that together stood in for the Trinity Test. He worked closely with his special effects coordinator, Scott Fisher, to photograph small-scale detonations and on-set explosions. The desire to capture “in camera” demonstrates a long-held desire to sense the bomb, which was made public for U.S. citizens starting in the 1950s with televised broadcasts of nuclear tests.<sup>54</sup>

<sup>49</sup>Rebecca M. Doran Eaton, “Marking Minimalism: Minimal Music as a Sign of Machines and Mathematics in Multimedia,” *Music and the Moving Image* 7, no. 1 (Spring 2014): 3–23. Eaton astutely claims that the potential reasons for the rise of minimalism in film scoring include: “its ease of composition, its flexibility and adaptability, its rhythmic and pulse-based foundations, its appropriateness for use in temp tracks, the high-art status of its composer, the possibility of a lucrative soundtrack album and its signification” (197). Certainly the history of American musical minimalism has traces of influence from mathematics. As Kerry O’Brien and Will Robin write in their collected volume, innovators of minimalist music including La Monte Young, Terry Riley, and Marian Zazeela sought “a heady mixture of mysticism and mathematics” in a “pursuit of pure, static harmony.” Kerry O’Brien and William Robin, eds., *On Minimalism: Documenting a Musical Movement* (Oakland: University of California Press, 2023), 33.

<sup>50</sup>Nolan, “An extended interview with Christopher Nolan.”

<sup>51</sup>Roland Barthes, *Image, Music, Text*, ed. Stephen Heath (New York: Hill and Wang, 1977). In the essay “The Photographic Message,” Barthes writes: “What does the photograph transmit? By definition, the scene itself, the literal reality.... The photograph professing to be a mechanical analogue of reality, its first-order message in some sort completely fills its substance and leaves no place for the development of a second-order message” (18). Christopher Nolan and his director of photography, Hoyte van Hoytema are often on the record about the superiority of shooting and distributing on film. The debate of film versus digital is a hot-topic for cinephiles but ultimately boils down to aesthetic choice. For van Hoytema on filming see: Hoyte van Hoytema, interview by Alex Welch, *A.frame digital magazine*, February 14, 2024, <https://aframe.oscars.org/news/post/hoyte-van-hoytema-oppenheimer-interview>.

<sup>52</sup>Yuan, “Inside Christopher Nolan’s 57-day race to shoot ‘Oppenheimer.’”

<sup>53</sup>Yuan, “Inside Christopher Nolan’s 57-day race to shoot ‘Oppenheimer.’”

<sup>54</sup>As Joseph Masco writes, televised nuclear tests made a “kind of national spectacle [grounding] the experimental work of weapons scientists in both Cold War politics and nuclear fear” in Masco, *Nuclear Borderlands*, 67. The nuclear test named “Apple II” was detonated on May 5, 1955, and televised live. The “Apple II” nuclear test sought answers about the effects of an atomic explosion on various types of households and utilities like powerlines and gas tanks. The nuclear test also included food testing to better understand the effects of an atomic blast and fallout on emergency rations. Earning the nickname “Survival

With his commitment to filmic realism, Nolan imitates what a spectator of the Trinity Test might have perceived. Witnesses of the Trinity Test recall various kinds of sensory perception that accompanied their viewing. Edwin M. McMillan, a physicist at Los Alamos during the Manhattan Project, remembers:

The whole spectacle was so tremendous and one might almost say fantastic that the immediate reaction of the watchers was one of awe rather than excitement. After some minutes of silence, a few people made remarks like, "Well, it worked," and then conversation and discussion became general. I am sure that all who witnessed this test went away with a profound feeling that they had seen one of the great events of history.<sup>55</sup>

Silence underscored the spectators' awe, but it was also attributed to the physical nature of the bomb. Because light travels faster than sound, the witnesses saw the detonation before they heard it. Nearly 10 miles away, the famous Italian physicist Enrico Fermi saw the blast immediately, felt its explosive pressure wave 40 seconds later, and heard the rumble 1 minute and 30 seconds afterwards.<sup>56</sup> In that 1 minute and 30 seconds, Fermi and his colleagues experienced the silencing force of their atomic experiment.

Through the sound design, Nolan depicts this nuclear silence as both the delay of sound and the lacunae of not-knowing—in the spaces of which narratological impulses spin out. It is a silence both aesthetic and allegorical. In the scoring for the scenes leading up to the climactic Trinity Test, passages orchestrated for upper strings, violins and violas, are interrupted by fragments that feature low string, horn, and synthesizer. Most dramatically, however, are the sonic shifts to silence.

In the 20 minutes leading up to the climactic explosion, there are rapid scene cuts that show Oppenheimer in Los Alamos and Washington D.C. Collapsing historical time for the sake of filmic narrative, the plot races between the scientific thrill and the political thriller. The scenes at Los Alamos are underscored with electronic-heavy orchestration, as synthesizer sounds provide the rhythmic foundation. In comparison, the scene that depicts the historical meeting of the U.S. Military Target Committee at the Secretary of War's Office does not include any musical or sound scoring. This narrative silence depicts the gravitas of the meeting, where the men leading the U.S. military, government, and Manhattan Project discuss and decide the Japanese targets of their new weapon.<sup>57</sup> Returning to Los Alamos, Oppenheimer inspects the "gadget" one last time. Again, the electronic music score fades to silence. In cinema, however, silence is not exactly silent because the sound design is filled with the noise of wind and thunder. This silence depicts Oppenheimer as a solemn figure.

Then, an *attacca* of strings sets the abrupt pulsing rhythm for the scene depicting the night of the Trinity Test. As the drama continues, horns interject with a *leitmotif* tied to Oppenheimer and his iconic legacy.<sup>58</sup> Notably, the rhythmic drive relies solely on the percussive playing of the strings—the high-pitched syncopations raising the dramatic stakes. Over the loud speaker, a countdown acts as both a diegetic sound and a non-diegetic signal. Numbers count down as pitches and rhythmic fervor ramp up. As soon as the countdown finishes "one," the blinding flash of the bomb's light fills the

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Town" and "Doom Town," the test site's physical structures were built at one-mile radius around the anticipated explosion's epicenter. The homes were completely furnished, and housed mannequin families, figurative (and plastic) nuclear families.

<sup>55</sup>McMillan quoted in Cynthia C. Kelly, *The Manhattan Project: the Birth of the Atomic Bomb in the Words of its Creators, Eyewitnesses, and Historians* (New York: Black Dog & Leventhal, 2010), 308.

<sup>56</sup>Fermi quoted in Kelly, *Manhattan Project*, 310.

<sup>57</sup>In addition to the political bog standard line that the atomic bombs would "save more American lives," the film propagates what historian Michael D. Gordin calls the "two-bomb myth." Recently declassified documents from General Groves' own papers dated July 23, 1945 show that the United States was prepared to bomb a third target in August 1945 and preparations were underway to deliver ten more atomic bombs over the next 4 months. The two-bomb myth propagates a narrative that the United States tempered their use of atomic weapons, when in fact they were ready to unleash their unfathomable deadly technological experiment at an alarming rate. In Michael D. Gordin, *Five Days in August: How World War II Became a Nuclear War* (Princeton: Princeton University Press, 2007), 47.

<sup>58</sup>The *leitmotif* consists of a descending interval of a fifth followed by another descending fifth interval, four half-steps lowered (i.e., G to C, E-flat to A-flat). For this scene, the musical cue is titled "Trinity."

screen and silence strikes the listener. The sound design is especially crucial for this silence, and it features a soft electric hum and the sound of steady breathing. When the shot moves to various individuals, the sound corresponds to the visual scene: the rustle of clothing when characters move, the rumble of a car engine, breathy gasps with close-ups of Oppenheimer, George Kistiakowsky, and Edward Teller. As the reactions of the figures on screen splice with shots of remarkable explosions, 45 seconds of silence is made to feel like an eternity. A singular violin edges past the silence, opening the way for other electronic sounds to fill out the score. One minute and thirty seconds after the start of this “nuclear silence”—in a span of time similar to the actual silence that Enrico Fermi had noted—an acousmatic voice murmurs “Now I am become Death, destroyer of worlds.” With those famous lines attributed to Oppenheimer’s recollections, we are given the Big Bang of the bomb. Capturing an additional *sense* of the bomb, Nolan marries sight and sound to represent his version of the beautiful but frightening gadget.

In *Oppenheimer*, the world that the nuclear complex promises is dazzling in its special effects but can be captured in film. It is a world that promises technoaesthetic control over the atomic bomb. As nuclear weapons became more numerous and more powerful, they also became less usable; but if nuclear weapons were not used, a nation-state needed more of them to deter other nation-states who possessed them.<sup>59</sup> In the 1950s, at the same time as he was funding research on the hydrogen bomb, President Eisenhower was also dealing with a bloated nuclear stockpile. In a now declassified memo to his national security team, he wrote, “The United States is piling up armaments which it well knows will never provide for its ultimate safety. We are piling up these armaments because we do not know what else to do to provide for our security.”<sup>60</sup> Nuclear deterrence was a baffling paradox: More weapons meant more security because they were less usable. The psychological desire for security drives the political attachments to the policy of mutually assured destruction.

During the Cold War, broadcasts of atmospheric nuclear tests made it possible for the U.S. American public to spectate the nuclear complex as entertainment. Video footage of explosions and mushroom clouds inundates the cultural sphere; and yet, instead of stock or archival footage, Nolan insists on his own special effects to approximate a real atomic explosion. He follows an established lineage of Hollywood filmmakers who dramatize the threat of nuclear weapons in a way that would impress and interest the ordinary spectator.<sup>61</sup> His depiction of the nuclear complex speaks to a contemporary collective desire—dare I say, fantasy—that rational leaders still exist and can be national

<sup>59</sup>John Lewis Gaddis, *We Now Know: Rethinking Cold War History* (New York: Oxford University Press, 1997), 101.

<sup>60</sup>Memorandum, NSC meeting, January 26, 1956, FRUS: 1955–7 xx, quoted in Gaddis, *We Now Know*, 221. For more on the ideological and affective impact of policies of “national security” see: Tracy C. Davis, *Stages of Emergency: Cold War Nuclear Civil Defense* (Durham: Duke University Press, 2007); Joseph Masco, *The Theater of Operations: National Security Affect from the Cold War to the War on Terror* (Durham, NC: Duke University Press, 2014), 25; and Elaine Tyler May, *Fortress America: How We Embraced Fear and Abandoned Democracy* (New York: Basic Books, 2017). As weapons technology ramped up, U.S. leaders assuaged its citizens that despite the threat of their own arsenal they should feel safe. Eisenhower’s predecessor, President Truman, launched the Federal Civil Defense Agency, which taught citizens how to discipline their bodies in preparation for an apocalypse. Through numerous drills—what Tracy C. Davis designates as “rehearsals” for nuclear war—bodies were made into prepared citizens of the nuclear complex. The United States cultivated a sense of safety that included what Masco describes as “teaching citizens to fear the bomb as an imminent danger, giving them enough information about nuclear war and emergency measures to enable them to act at a time of crisis, and teaching them emotional self-discipline in the attempt to modulate the difference between fear (constituted as a productive state) and terror (imagined as an unsustainable, paralyzing condition)” (25). Security did not necessarily equate to material safety measures, but rather a mobilization of affective acculturation to potential disaster, the subjective acceptance that civil defense was the new American way of life.

<sup>61</sup>I have written elsewhere of Stanley Kramer’s *On the Beach* (1959), which is a film based on the 1957 novel by Nevil Shute. Set in Australia during a post-nuclear war situation, the plot depicts the last surviving enclave of society, whose lives are threatened by the impending radiation fallout. While the novel operates in the register of realism in which humanity is doomed, the film instead centers the love plot between Capt. Towers (played by Gregory Peck) and his Australian love interest Moira Davidson (played by Ava Gardner), deploying melodrama as an aesthetic mode for social commentary. On the heels of Kramer’s film, two films released in 1964 attested to a shift in genre for portraying the nuclear complex. Stanley Kubrick’s *Dr. Strangelove or: How I Learned to Stop Worrying and Love the Bomb* released in early 1964 to mixed acclaim. Critics either applauded or disapproved of Kubrick’s choice to portray the nuclear threat through the genre of dark comedy. Later that year, Sidney Lumet’s *Failsafe* relied on the thriller genre to represent the fears of nuclear threat. Kubrick’s and Lumet’s films speak to the diverging and various genres that attempted to represent the nuclear complex during the first height of the Cold War, shortly

heroes. Making Oppenheimer a hero speaks to this apparent lack and emphasizes the individualist ideology of the contemporary myth. Through this imitation of the real, Nolan sublimates the nuclear complex.

### Performance and the Performative in Santa Fe

In *Doctor Atomic*, the Trinity Test looms as the climax of the opera. In the lead up to the apocalyptic conclusion, the opera juxtaposes the personal and the public with characters from both the Oppenheimer household (“Oppie,” his wife Kitty, their Indigenous nursemaid Pasqualita) and the Manhattan Project (General Leslie Groves, Edward Teller, Robert R. Wilson, Frank Hubbard, Captain James Nolan). The contrast of Oppenheimer’s public and private life represents his inner conflict, which drives the opera’s drama. To emphasize this moral quandary further, Peter Sellars curated—rather than wrote—the libretto including declassified texts from the Manhattan Project, memoirs from members of the Manhattan Project (Edward Teller and General Leslie Groves), and poetry from Charles Baudelaire, Muriel Rukeyser, John Donne, and the Bhagavad Gita. Archival text represents the public-facing Oppenheimer of Manhattan Project legacy; while, poetic text represents the imagined personal and private Oppenheimer and his feelings of said legacy. All of which leads to a wordless end, as the libretto closes with the countdown to the Trinity Test.<sup>62</sup>

Santa Fe Opera’s production reminds the spectator of their geographical proximity to the center of the nuclear complex. In his review of the 2018 production, local critic James M. Keller remarks on the resonances between the opera and its surrounding environment.

When the back of the opera house’s stage is opened to the elements, as it is throughout this production, the view leads to Los Alamos, nestled in the Jemez Mountains. This is an opera redolent of our region’s history, the story of an event that continues to resonate vividly seventy-three years after the fact. Its main characters are the stuff of local legend, including project director J. Robert Oppenheimer, Army commander Gen. Leslie Groves, and physicists Edward Teller and Robert Wilson. The nuclear conundrum is an international anxiety, to be sure, but *New Mexico makes special claim on its origin*.<sup>63</sup> [Emphasis mine]

Megan Kamerick, another local critic, points out the geographic proximity that adds a special context to the production, writing that “audiences looking through the open back of the theater stage can practically see Los Alamos, site of the secret city.”<sup>64</sup>

The production team, including Sellars, could not help but emphasize the impact of this geography. At the press conference announcing the *Doctor Atomic* production, Sellars made a prophetic declaration about the land “testifying.”<sup>65</sup> In the same press conference, then-director of the Los Alamos National Laboratory Charles McMillan added: “Scientists today are facing the same ethical issues that Oppenheimer and his colleagues were facing, and that is something important for all of us to understand.”<sup>66</sup> These descriptions characterize New Mexico as a mythical space unbounded by historical time. The production ties Oppenheimer to McMillan, opera house to weapons laboratory.

Sellars included several changes in the 2018 production in an attempt to alter the opera’s dramaturgy. The *mise-en-scène* opened up to the actual desert, which grounded the mythic story in its

after the Cuban Missile Crisis. For more on film genres and the aesthetic strategy of spectacle see Anna B. Gatlula, “Spectacles of a Nuclear Empire: Opera and Film in the American Atomic Age, 1945–2018” (PhD diss., The University of Chicago, 2023).

<sup>62</sup>Ryan Ebright, “*Doctor Atomic* Or: How John Adams Learned to Stop Worrying and Love Sound Design,” *Cambridge Opera Journal* 31, no. 1 (2019): 85–117.

<sup>63</sup>James M. Keller, “Going Nuclear at Santa Fe Opera,” *Santa Fe New Mexican*, July 15, 2018.

<sup>64</sup>Kamerick, “*Doctor Atomic*,” 17.

<sup>65</sup>Kamerick, “*Doctor Atomic*,” 17.

<sup>66</sup>Kamerick, “*Doctor Atomic*,” 18.

historical setting. Changes to the representation of the “gadget” also speak to Sellars’ distinct directorial vision. In the original 2005 production, Sellars meticulously replicated the Manhattan Project’s “gadget.” Then in Santa Fe, within close range of Los Alamos, he decided on a more abstract form: giving shape to the “gadget” as a giant, suspended mirror orb. Instead of set pieces, the orb moves around the stage to create pockets of stage drama. In one scene the orb could be up stage as mere background, in another the orb could drift center stage pressing the dramatic scene into tension. For example, during Oppie’s famous aria, the orb looms center stage.

The Santa Fe Opera production’s most substantial changes focused on the inclusion of Indigenous peoples. Instead of the choreography by Lucinda Childs, the opera featured dancers choreographed by Emily Johnson (Yup’ik), who is not only a choreographer and director but also a land and water protector centering the movement for Indigenous sovereignty.<sup>67</sup> Johnson envisioned the integration of the dancers as an “acknowledgement and symbolic healing of the 73 years of damage caused by the Manhattan Project and Los Alamos National Laboratory.”<sup>68</sup> Promotional material boasted about the inclusion of a Tewa Corn Dance performed by the Tewa people of the San Ildefonso, Santa Clara, and Tesuque Pueblos.<sup>69</sup> The Corn Dance would be performed twice: first, as the house opened and audience members found their seats, and then during the second act of the opera to be discussed shortly. The opera would also include members of the Tularosa Basin Downwinders, an activist group campaigning for healthcare rights in the wake of domestic nuclear testing. Sellars’s re-staging offers a new “text”—dramaturgically speaking—that sublimates New Mexico’s nuclear complex as operatic spectacle.

Understanding opera as a “text in performance” has been critical intervention for contemporary opera studies.<sup>70</sup> I consider the production’s dramaturgy as its own text that can, in its discursive act, contribute or challenge the libretto’s narrative. Sellars himself believes in theater and performance as a space for politically motivated art. From his infamous stagings of canonic opera works, such as *Don Giovanni* (1987) and *Le Nozze di Figaro* (1988), Sellars “holds it as crucial that opera should combine Brechtian alienation with a deeply emotional (and music-induced) identification with the characters’ human feelings.”<sup>71</sup> For example, Sellars attempts to reconcile “Brechtian alienation” and affective identification by blurring the lines between historical and poetic text in the libretto. Juxtaposing declassified documents against poetry creates a kind of cognitive dissonance, and audiences are tasked with interpreting what was historically real and what *feels* dramatically real.

The last scenes of the opera (Act II, Scene 3–4) portray the Trinity Test’s countdown. Act II, Scene 3, “Countdown Part I,” sonically exemplifies the affective atmosphere in Los Alamos on that fateful day. As if the pressure to manifest theoretical physics as material praxis was not enough, the scientists and military personnel have to battle the weather. As the rare desert thunderstorm threatens their meticulously tight schedule, the scientists and military leaders scramble to keep orders (and themselves) under control. The score features a wordless choral wail over a rhythmically frantic orchestral score. The strings drive a steady yet fevered rhythm, while horns punctuate in syncopation as if desperate to line up in time but ultimately failing. The women’s chorus keens in unison, a singular step-wise descent that pierces over the orchestra. After the timpani centers the rhythmic attention, the chorus and horns cry simultaneously. Adams scores panic as rhythmic repetition without melodic stability, constantly pushing ahead and plunging forward.

<sup>67</sup>Emily Johnson | Catalyst, *Catalyst Dance*, accessed May 10, 2024, <http://www.catalystdance.com>.

<sup>68</sup>Lois Rudnick, “The Myth behind the Myth Regarding ‘Atomic Summer,’” *Santa Fe New Mexican*, July 21, 2018.

<sup>69</sup>I conducted archival research digitally in the academic year 2021–22, when much of research travel was still difficult due to the COVID-19 restrictions. The staff at the Santa Fe Opera were extremely generous in sending their digitized archive of the *Doctor Atomic* production, which included the production program, newspaper clippings, and recorded footage of the performance.

<sup>70</sup>For more on the history of the changes in opera studies see Carolyn Abbate, *In Search of Opera* (Princeton: Princeton University Press, 2001); and David J. Levin, *Unsettling Opera: Staging Mozart, Verdi, Wagner, and Zemlinsky* (Chicago: University of Chicago Press, 2007).

<sup>71</sup>Tom Sutcliffe, *Believing in Opera* (Princeton: Princeton University Press, 1997), 200, quoted in Levin, *Unsettling Opera*, 71.





Figure 3. Still from archival recording of the Santa Fe Opera 2018 production of *Doctor Atomic*.

This scene has changed over time in accordance with directorial choices. Yayoi Uno Everett analyzes the differences between *Doctor Atomic*'s early productions: one, which premiered for the Netherlands Opera (2007), directed by Sellars and the other, which premiered at the Metropolitan Opera (2008), directed by Penny Woolcock.<sup>72</sup> Everett's close-reading of the dramaturgical differences considers the "cultural intertexts" of each production. On the one hand, Sellars production "establish[es] a metaphysical and synaesthetic union of semiotic fields."<sup>73</sup> On the other, Woolcock's production, drawing on her profession as a documentary filmmaker, foregrounds "the primacy of the visual semiotic field."<sup>74</sup> These directorial choices manifest on the stage in distinct ways. In Act II, Scene 3, Sellars's stage features the women's chorus, dressed as housewives and scientists of Los Alamos. The chorus crosses the stage while the main characters, Kitty, Oppie, and General Groves, remain up stage in their own settings. The flurry of music drives the action as actors toy with scientific machines in the background or, in Kitty's case, remain asleep. Woolcock's stage on the other hand, boasts an immense chorus that stands still in front of the gadget and large stage set. As the music progresses into evermore chaos, the stage set is illuminated to reveal a number of actors, including many dressed in costumes that index Native American symbols. Woolcock's production uses visual symbols to drive the scene's action.

For Act II, Scene 3 in the 2018 production, the orb rests up stage and the chorus stands on the sides of the stage leaving an open space center stage for the Corn Dance (Figure 3). Tewa dancers, men, women, and children, enter stage left and begin to dance in a circle, up stage of the mirror orb that reflects their images as they bound past. Abstracted from its ritual emplacement on the pueblo, the Corn Dance serves a different sort of ceremony on the operatic stage. Various pueblos across the Southwest practice the Corn Dance in the spring and throughout the summer, and it is often accompanied with a blessing of the fields. Certainly, the Corn Dance is performed outside of the Pueblo, but these performances are considered theatrical rather than ritual.<sup>75</sup> It is understood that witnesses to the

<sup>72</sup>Everett, *Myth and Narrative in Contemporary Opera*, 38.

<sup>73</sup>Everett, *Myth and Narrative in Contemporary Opera*, 158.

<sup>74</sup>Everett, *Myth and Narrative in Contemporary Opera*, 159.

<sup>75</sup>Jill Drayson Sweet, "Ritual and Theatre in Tewa Ceremonial Performances," *Ethnomusicology* 27, no. 2 (May 1983): 253–69.

Corn Dance in ritual are participants in the spiritual practice, while audiences for a performance are merely spectators; and yet, because the opera's staging emphasized its proximity to Los Alamos, the Corn Dance gets entangled in the production's ritualistic valences.

This Corn Dance seems to bless the presence of the giant mirror orb qua "gadget" and the main characters (General Groves, Oppie, Kitty, and Pasqualita) who eventually enter the center of the Tewa's circle. There is an uncomfortable juxtaposition between an Indigenous ritual meant to bless the harvest and the words of General Groves, who sings, "After some publicity concerning the weapon is out, steps should be taken to sever these scientists from the program." Oppie, Kitty, and Pasqualita themselves sing with poetic text about various negative effects. Oppie's text contains the words "regrets," "nightmares," "rages," "neuroses." Meanwhile, Pasqualita sings text from Muriel Rukeyser's "Dream Elegy," "They are dancing to bring the dead back, in the mountains." The opera appropriates the Corn Dance, setting it within its discursive signs and institutional spaces—but, and perhaps more importantly, does the Corn Dance unsettle the opera?

The Santa Fe Opera knew the importance of the land in the spiritual practices and material livelihoods of its Tewa neighbors. The institution intended to build ties to its surrounding communities, and its method was to bring them into the opera house and onto the operatic stage. James Keller's review commended SFO's inclusionary gesture.

That in itself is enough to justify why any opera-inclined New Mexican should seize the opportunity to see *Doctor Atomic*. Attendees should be in their seats 35 minutes before "curtain time," when delegations from the San Ildefonso, Santa Clara, and Tesuque Pueblos join to perform a shortened version of the Corn Dance onstage—the first time those three nations have collaborated in this sacred enactment. *The participation of Tesuque dancers is particularly heartening given tensions attached to that pueblo's current construction of a casino at its boundary with the opera.*<sup>76</sup> [Emphasis mine]

Zachary Woolfe's own review spoke to a critical ambivalence about the inclusion of the Corn Dance.

To Mr. Sellars's credit, the involvement of these local communities is stirring but not exactly uplifting. It was presumably unintentional, but telling, that the solemn pre-performance Corn Dance, a ritual rarely given outside the dancers' pueblos, took place as much of the audience noisily took its seats, air-kissed, and chatted: thousands of rich white people, ignoring the natives as they always have.<sup>77</sup>

Deeply embedded in opera's intimate public, these reviewers reflect some (if not most) of the audience values—that inclusion in theory is good, but in practice might not meet expectations of aesthetic judgment. Furthermore, the politics of representational inclusion obfuscates the material politics of land sovereignty. Keller's review notes the prior tensions between the pueblo and the opera house regarding the construction of a casino, and he interprets the Tewa's collaboration as a "sacred enactment."<sup>78</sup>

Indigenous criticism against SFO's production claims that the inclusion of the Tewa Corn Dance represents assimilation rather than collaboration. As Jennifer Marley (Tewa, San Ildefonso Pueblo) asserts,

The opera couples the depiction of Tewa ceremonial practices and imagery with the celebration of the nuclear weapons industry to sanctify the presence of LANL [Los Alamos National Laboratory] and the so-called benefits of nuclear development. The message is that the atomic bomb holds a position of sanctity on par with the holy lifeways of Tewa people. The kinds of moves that

<sup>76</sup>Keller, "Going Nuclear at Santa Fe Opera."

<sup>77</sup>Zachary Woolfe, "Review: 'Doctor Atomic' Brings the bomb home to New Mexico," *New York Times*, July 15, 2018.

<sup>78</sup>Keller, "Going Nuclear at Santa Fe Opera."

celebrate Native culture in tandem with that which actively kills Indigenous people and other racialized populations is not new—they have been the selling points of New Mexico’s tourist industry for generations.<sup>79</sup>

These “kinds of moves” include the industry around “atomic tourism,” what local scholar-activist Eileen Shaughnessy claims is the “prerogative to sell a palatable (and consumable) version of the atomic bomb to tourists.”<sup>80</sup> Atomic tourism combines the two main industries of northern New Mexico—tourism and the nuclear complex—which, according to these local scholar-activists, objectify and dehumanize Indigenous people and lands.<sup>81</sup> Marley continues,

The production of *Doctor Atomic* and its depiction of Tewa people and ceremony is no more than a contemporary rendition of this glorification and mockery that Los Alamos National Laboratory has been using to justify its operations for decades, seeing Tewa people as mythic props while materially sacrificing our bodies and lands. The way in which Indigenous authenticity has become imposed by outsiders as something unchanging, primitive, or ancient has been one of the primary reasons people are forced to perform identity in such a way that de-politicizes Indigenous identity.<sup>82</sup>

The opera production can be said to have “depoliticized” Indigenous culture by unmooring the Corn Dance from the land of the Pueblo. In turn, the Corn Dance unsettled the opera insofar as audience members did not know how to comport themselves during the Corn Dance as they found their way to their seats or how to feel about the Corn Dance during Act II, Scene 3.<sup>83</sup> There is a profound loss in the transference from Pueblo to proscenium stage. The clashing of performance signifiers do not congeal into a coherent message. The choice to feature Tewa people performs a kind of symbolic harm calling attention to the allegorical nature of nuclear silence. The opera makes space for them but depoliticizes their presence. The Tewa do not sing as part of the chorus, nor do they make the kinds of music and sound that are fundamental to their ritual. The production’s dramaturgy tasks the Tewa with a compromise: dance without your ceremonial sacrament.

The 2018 production of John Adams and Peter Sellars’s *Doctor Atomic* promises a world of inclusive assimilation—the erasure of violent histories in service of commemorating Oppenheimer and his internal struggle about the atomic bomb. In their opera, the world achieves reconciliation, perhaps even redemption, for its violent historical past. Specifically, reconciliation is achieved through a “better” spectatorship. If we consider the ritualistic meaning for the Corn Dance, then we can deduce

<sup>79</sup>Jennifer Marley and Kayleigh Warren, “‘Doctor Atomic’ And Nuclear Colonialism in Northern New Mexico: A Tewa Perspective,” *The Red Nation*, July 26, 2018, <https://therednation.org/doctor-atomic-nuclear-colonialism-in-northern-new-mexico-a-tewa-perspective/>.

<sup>80</sup>Eileen Clare Shaughnessy, “The Un-Exceptional Bomb: Settler Nuclearism, Feminism, and Atomic Tourism in New Mexico” (Master’s thesis, University of New Mexico, 2014), 2.

<sup>81</sup>Joseph Masco, *The Future of Fallout, and Other Episodes in Radioactive World-Making* (Durham: Duke University Press, 2021). Cultural institutions in northern New Mexico constitute an especially rich network for study because histories of the U.S. nuclear complex continue to be a vivid reality in the present day. Joseph Masco argues that the “atomic history sites are...highly politicized spaces, ideologically charged in how they engage the past, present, and future of nuclear nationalism through practices of erasure and selective emphasis” (47). Evaluating highway billboards, the White Sands Missile Range, and repurposed nuclear silos, Masco examines “how emotions and fantasies become as infrastructural in the nuclear age as missiles, plutonium, and command and control systems” (126). He calls the tourists and docents of these sites “Cold Warriors” who remember the histories of the Cold War with as much “amnesia and repression as recognition and commemoration” (134). These atomic history sites use cultural memory in particular ways, often reiterating narratives that serve and support nuclear empire.

<sup>82</sup>Marley and Warren, “‘Doctor Atomic’ And Nuclear Colonialism.”

<sup>83</sup>I did not have the privilege of attending the 2018 production for myself. I have had a handful of conversations with folks who were in the audience for the SFO’s run. They expressed feelings ranging from discomfort to confusion—the latter due to the lack of information given with regard to the proper or respectful way to attend to the first Corn Dance that was performed when the house opened. These anecdotes were shared with me as I presented my research at Colorado College and to colleagues from the University of New Mexico.

that this production tasked the Tewa to bless the stage—as if their blessing in this performance could recuse any discomforts about historical fact. In an aim to create presentist discourse, the production also featured members of the Tularosa Basin Downwinders, who only a week prior to the performance were testifying to Congress for reparations for their healthcare after being exposed to radiation from nuclear testing.<sup>84</sup> Through showing and explicitly *not* telling, the production’s dramaturgy treated the rituals and histories of New Mexico’s Indigenous peoples as perfunctory.

Being on an operatic stage may be an exhilarating experience but as Indigenous scholar Dylan Robinson notes, in order not to “conflate our own strong hope for change with the realities of struggle faced by Indigenous peoples, it is also imperative that we acknowledge the crudeness of empathy and affect alone.”<sup>85</sup> Affective congealment around the positive feelings of enjoyment and interest or the negative feelings of fear does not necessitate action. The production makes a performance of empathy in the act of spectating Indigenous lives. Though the Tewa dancers of the production were said to have “enthusiastically participated” in the Corn Dance for the opera, histories of Indigenous performance for an audience of mostly white spectators speak to a complicated tradition turning ritual into entertainment.<sup>86</sup> Cultural institutions like the SFO have started to center these questions of diversity and inclusion, but their answers to systemic problems often play into liberalism’s narratives of a universalizing multiculturalism. As Robinson further argues, “utopian performatives of reconciliation...may equally act to foreclose change. They may sustain the equilibrium of a daily life that allows settler audiences to remain settled.”<sup>87</sup> Representation in opera creates a sense and feeling of community, and in the context of this production, the inclusion of the Corn Dance was meant to bridge the gap between the Santa Fe Opera’s elite patrons and their Tewa neighbors. For some, the belief in multiculturalism represents a utopian promise, but for many others multiculturalism falls short of material liberation and change. Symbolic healing does not equate to actual healthcare, especially for those most affected by the continued extraction of radiated material and experiments of nuclear weapons.

Adams himself acknowledges the shortcomings of socially engaged art:

Social responsibility—that’s an interesting area on which Peter and I don’t always agree. He believes deeply in the social responsibility of art and artists, and I’ve noticed often that the music that he talks about most enthusiastically is music which he can construe as having a social message. I am uncertain about what kind of a dynamic exists between encountering a work of art and then transferring that experience into social action. For sure, an artwork’s aesthetic value has nothing to do with its social impact.<sup>88</sup>

The reception of the 2018 production, specifically the criticism of the dramaturgy’s inclusion of Indigenous peoples, speaks to Adams’s doubt that a work of art can transfer into social action.

<sup>84</sup>*Examining the Eligibility Requirements for the Radiation Exposure Compensation Program to Ensure all Downwinders Receive Coverage*, 115th Cong., (2018), <https://www.judiciary.senate.gov/committee-activity/hearings/examining-the-eligibility-requirements-for-the-radiation-exposure-compensation-program-to-ensure-all-downwinders-receive-coverage>.

<sup>85</sup>Dylan Robinson, *Hungry Listening: Resonant Theory for Indigenous Sound Studies* (Minneapolis: University of Minnesota Press, 2020), 232.

<sup>86</sup>Marley and Warren, “‘Doctor Atomic’ And Nuclear Colonialism.” Jennifer Marley frames their enthusiasm through the lens of tourism as a necessary means of capital: “When talking about the distinct way that capitalism operates in northern New Mexico, it is crucial to discuss how it has operated historically. Santa Fe was one of the first hubs of capitalist expansion in the western hemisphere, and the primary industry that upheld this foreign economic system was a massive slavery network that fed the growth of settlements throughout northern New Mexico up to the 1800s (Correia 2013). The present-day art industry still exploits Native artists for their craftsmanship, and obviously ties the labor of the art to the people themselves, as if to buy not only an object but to objectify the people and culture from which art and artifacts come. It is apparent why the two main industries that have kept northern New Mexico afloat—tourism and nuclear development—depend on the objectification and dehumanization of Native people and lands.”

<sup>87</sup>Robinson, *Hungry Listening*, 231.

<sup>88</sup>Adams, “John Adams on *Doctor Atomic*.”

Sellers himself admits to the shortcomings of his art to convey history, and he claims that art will not match the suffering but can become at its best sincere.<sup>89</sup>

These spectacles of opera and film attest to the unfinished business of nuclear sentiments that maintain an attachment to U.S. nuclear supremacy. Settled in their theater seats, opera's public turns toward the spectacle and away from the nuclear complex that continues committing resources of capital, bodies, and land for its maintenance.<sup>90</sup> On these sovereign lands, peace in the name of the nuclear complex looks more like war.<sup>91</sup> The world has experienced the kinds of radiation and fallout that we are made to fear, but—because our own, personal worlds are not the targets—we continue to love what haunts us.

## Desert Specters

Myths are tied to the land, our cultural memory externalized onto our environment. In the United States, stories of the frontier dominate the national imagination. Staging *Doctor Atomic* in Santa Fe, NM, returns the mythic Oppenheimer figure to the Southwest frontier. Oppie sings of the “affairs that are hard on the heart” in a city only 30 miles down the mesa from Los Alamos, a city only 200 miles north of the White Sands National Monument that commemorates the Trinity Test site. In an attempt to broaden and universalize the mythic impact, Nolan brings his film's audience to an image of New Mexico. With vast, sweeping landscapes, he depicts the land as empty and yet full of possibility—the epitome of the American Frontier. These directors focus on the land only to overlook the people who have always called the land home. These myths about conquering the atom in the New Mexico desert erase the historical harm done to the people and land of this so-called frontier. Both contemporary depictions of Oppenheimer attest to the continued power of myth in structuring political attachments to the U.S. nuclear complex. The scientists of Los Alamos live on top of the mesa, while their experiments are conducted at a safe distance away on sovereign native lands, on civilian bodies. Furthermore, uranium is bought from former colonies by nuclear superpowers; Indigenous lands are irradiated due to testing fallout.<sup>92</sup> In an atomic age of continued aggression, geopolitical borders once again toughen in spite of the fact that fallout makes these boundaries pointless. Radiation follows global atmospheres, not national borders.

The return of the Oppenheimer mythos revitalizes the political attachment to the U.S. policy of nuclear deterrence in our current age of nuclear uncertainty. Nolan, Sellers, and Adams use Oppenheimer to symbolize leaders of a bygone era—leaders on whom, as they nostalgically imagine, the public could depend for their logical judgment over growing stockpiles of nuclear weapons. They champion Oppenheimer as a response to contemporary leaders who vilify “rogue states” with

<sup>89</sup>Wonders Are Many, directed by Else. In this documentary interview on the making of the opera, Sellers also admits that at its worst socially motivated art becomes obscene.

<sup>90</sup>Activist-scholars Winona LaDuke (Anishinabe) and Ward Churchill deem the hegemonic relationship to land as “internal colonialism” in LaDuke and Churchill, “Political Economy of Radioactive Colonialism,” 110.

Achille Mbembe, “Necropolitics,” *Public Culture* 15, no. 1 (Winter 2003): 11–40. The practice of internal colonialism epitomizes “necropolitics,” what Achille Mbembe theorizes as “the ultimate expression of sovereignty [that] resides, to a large degree, in the power and the capacity to dictate who may live and who must die” (11). He further asserts that “the colony represents the site where sovereignty consists fundamentally in the exercise of a power outside the law and where ‘peace’ is more likely to take on the face of a ‘war without end’” (23). On these internal colonies, energy companies dictate the working conditions of the indigenous miners, who suffer the slow violence of radiation exposure. Those who live hundreds of miles away, “on the hill,” require these dangerous materials for their experiments, yet they receive a level of protection afforded to them due to their privileged working positions and the simple fact of geographic distance. In the quest to conquer nature, scientists propagate the necropolitics of internal colonialism. The myths central to *Doctor Atomic* remind audiences of the way nuclear technology materially affects indigenous lives.

<sup>91</sup>Karen Barad, “Troubling Time/S and Ecologies of Nothingness: Re-Turning, Re-Membering, and Facing the Incalculable,” *New Formations: A Journal of Culture/Theory/Politics* 92 (September 2018): 56–86.

<sup>92</sup>Gabrielle Hecht's work is crucial for understanding the history and current state of uranium mining in Africa and the continued practice of settler-colonialism under the guise of the nuclear complex. Gabrielle Hecht, *Being Nuclear: Africans and the Global Uranium Trade* (Cambridge: MIT Press, 2012). In our own continent, Traci Brynne Voyles narrates the history of uranium mining within the borders of the Navajo Nation. Traci Brynne Voyles, *Wastelanding: Legacies of Uranium Mining in Navajo Country* (Minneapolis: University of Minnesota Press, 2015).

“weapons of mass destruction,” or threaten the use of tactical and precise nuclear weapons (with little regard for the historic unpredictability of radiation fallout), or simply intimidate and goad other nuclear powers with diminutives like “little rocket man.” Today’s myths of Oppenheimer speak to a general political stagnancy around (if not outright support of) nuclear deterrence policies, which necessitate the fantasy that Oppenheimer-like leaders are at the helm of these weapons stockpiles. By focusing on the myth of Oppenheimer, these depictions overlook the deeper problem of misrepresenting what Oppenheimer fought for *after* the end of World War II. In a collected volume featuring Manhattan Project members titled *One World or None*, Oppenheimer voices his own opinion about the dangers of nationalist conflict in the nuclear arms race. Though he does not (nor did he ever) call for complete disarmament, he warns of the over-reliance on nationalistic nuclear deterrence and called for collective, international rule over atomic weapons;<sup>93</sup> and yet, infrastructures of the nuclear complex expand as the unfinished business of the atomic spectacle deepens.

In our contemporary aesthetic moment, the mediation of myth matters as much as myth’s function. These spectacular representations of Oppenheimer cultivate an immediate affective response that leaves little to no room for actual discussion. Through my comparative approach, I have attended to the different mediations of the opera and film, though both ultimately fall into what I call elsewhere the “aesthetic strategy of spectacle.”<sup>94</sup> Forthcoming work will trace the cultural history of the atomic bomb with special attention to the affordances of spectacular mediation. The spectacle specifies—moreover, actualizes and materializes—the relation between aesthetics and ideology. The spectacle of the atomic bomb coheres a public, who can testify to the ongoing violence of the nuclear complex. These violences are made a spectacle while at the same time paradoxically occurring on the level of the ordinary or mundane. A public made manifest by the “spectacular bomb” is first built imaginatively, and these cultural objects attest to the power of the aesthetic strategy throughout history. To a generalized U.S. audience, including the spectators of *Oppenheimer* or *Doctor Atomic*, the mushroom cloud signifies the destructive force of the nuclear complex.<sup>95</sup> They see the cloud from afar, distanced by space and mediation; but for the bomb’s victims, those at the epicenter and at the far reaches of fallout, the images that signify violence and harm are not the mushroom cloud or special effects explosions. Rather, they experience the blinding white light, the abandoned homes and land, the bodies wrought with radiation sickness. These symbolic differences call attention to one’s positionality—does the spectator bear witness?<sup>96</sup> Or merely spectate?

The aesthetic strategy of spectacle and the mediation of myth captivate audiences across the spectrum of mainstream and niche, from movie theater to opera house. Putting the onus on audience members and spectators to interpret history also speaks to the efficacy of the myth today. The Oppenheimer myth propagates a false sense of individual responsibility in the face of a globalizing

<sup>93</sup>J. Robert Oppenheimer, “The New Weapon: *The Turn of the Screw*,” in *One World or None*, ed. Dexter Masters and Katharine Way (New York: McGraw-Hill Book Co., Inc., 1946), 22–25. In closing he wrote: “The vastly increased powers of destruction that atomic weapons give us have brought with them a profound change in the balance between national and international interests. The common interest of all in the prevention of atomic warfare would seem immensely to overshadow any purely national interest, whether of welfare or security. At the same time it would seem of most doubtful value in any long term to rely on purely national methods of defense for insuring security, as is discussed in greater detail in other parts of this book. The true security of this nation, as of any other will be found, if at all, only in the collective efforts of all. It is even now clear that such efforts will not be successful if they are made only as a supplement, or secondary insurance, to a national defense. In fact it is clear that such collective efforts will require, and do today require, a very real renunciation of the steps by which in the past national security has been sought. It is clear that in a very real sense the past patterns of national security are inconsistent with the attainment of security on the only level where it can now, in the atomic age, be effective.”

<sup>94</sup>Gatdula, “Spectacles of a Nuclear Empire,” 2023.

<sup>95</sup>To be sure, *Doctor Atomic* specifically avoids representing the mushroom cloud or atomic explosion. The opera closes with the Trinity Test’s countdown but does not show the atomic explosion or its sonic and haptic dimensions. Instead, the opera tapers off into near-silence, with only a voice (likely a woman’s voice) speaking the words “O mizu o kudasai, Kodomotachi” (“Water, please. The children”). I have met, off the record, the person who recorded the text for the sound design of the original San Francisco production (2005), and they recalled how disturbing it was to hear their own voice played back to them acoustically. For more on the “spatialized electroacoustic sound design” and the dramaturgical ramifications of the sound design, especially its role in the conclusion of the opera, see: Ebright, “*Doctor Atomic*.”

<sup>96</sup>Barad, “Troubling Time/S and Ecologies.”

nuclear complex. One's personal feeling of safety is a greater force than addressing the violence perpetuated by the nuclear complex. As we delight in these based-on-a-true-story reveries, we can remain distracted. Attention fixed on Oppenheimer, we do not see the stewards of the frontier. Engrossed in the spectacle of the atomic bomb, we lose ourselves to the aesthetic design of nuclear silence and forget the metaphorical power of silence to erase the histories of victims. As long as we feel comfortably settled in our theater seats, we submit to the nuclear complex's growing settlement. While the ultimate mark of nuclear power may be its invisibility, the ultimate challenge will be exposing its roots.<sup>97</sup>

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<sup>97</sup>Here I am elaborating on Trouillot's call to action: "History is the fruit of power, but power itself is never so transparent that its analysis becomes superfluous. The ultimate mark of power may be its invisibility; the ultimate challenge, the exposition of its roots." Trouillot, *Silencing the Past*, xxiii.

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