

Dearest reader,

Thank you, firstly, for endeavoring to tackle this chapter. In it I try to deal with the history of nuclear weapons science, the cultural context of 1970s New York City, and opera. Addressing the nuclear problem has necessitated discussion about mass death. The subsequent attempts of aesthetic abstraction and my further attempts of critique will fall short of a justly ethical engagement of this trauma. Consider this a content warning and a prologue of my own shortcomings.

This is the first chapter I've written for my dissertation, "American Opera in the Nuclear Age." This chapter fits in like so:

1. Introduction [why opera?; opera's intimate public]
2. *Einstein on the Beach* and the Nuclear Event
3. Nuclear Spectacles: Television, Opera, Family
4. *Dr Atomic*; or, Nuclear Exceptionalism
5. Conclusion

I am seeking critique with regard to how this chapter is "working." Where does the writing "get hot"? (i.e., where is the writing working in terms of argument and/or style). Where the writing is not working, what questions do you have for me? Do I need to expand, revise, or delete in those moments?

This chapter is quite long, given the time and space needed to describe opera (staging, dramaturgy, libretto, music, production and reception history, etc.) so I've drummed up an arbitrary guide for you.

- If you have 15-20 minutes, please read pp 3-9 [which lays out the stakes of the chapter] and pp 41-47 ["Technology to End the Masses," a scene study]
- If you have 30-40 minutes, please add reading of pp 47-57 ["The Nuclear Event and Opera as History" and "No Opera after Hiroshima," these are conclusions to the chapter]
- If you have 40-60 minutes, please add reading pp 32-41 ["The Body on Repeat, Modernity on Trial" another scene study]
- If you have well over 60 minutes, please read the entire thing!

I also will not be offended by skimming practices as long as you feel you can contribute to a robust Q&A. I'm really curious to know how my work is being received beyond an audience of one (my advisor).

Happy reading,
abg [abgatdula@uchicago.edu]

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***Einstein on the Beach* and the Nuclear Event**

A low-pitched drone ushers in the audience, but they seem oblivious to the music. It is another noise accompanying the sounds of audience members as they shuffle into seats, polite greetings as bodies squeeze past one another, a delighted “hm” as fingers page through the playbill. Nevertheless, the solo organ drones on—A, G, C—on paper it veers toward harmony but in the busy opera house the drone is barely heard as such. Two figures make their way onto the stage without disturbing the ambience.

The static of televised transmission underscores footage at Camp David, where men in suits have piled into a press room shoulder to shoulder.¹ They leave a path through which President of the United States Richard Nixon and General Secretary of the Central Committee of the Communist Party of the Soviet Union Leonid Brezhnev make their entrance. In accordance with proper theatrical etiquette, the audience applauds when the two world leaders take their place at the front podium. As Nixon and Brezhnev proceed to sign “The Scientific and Technical Cooperation in the Field of Peaceful Uses of Atomic Energy” and “The Basic Principles of Negotiations on the Further Limitation of Strategic Offensive Arms,” the noisy feedback from televised transmission is again audible. Nixon and Brezhnev smile at the men surrounding them.

The two figures, a white woman and a Black woman, seat themselves at desks. They too smile outward at the onlookers, similar smiles of diplomatic self-satisfaction.

Before dawn, a small group of scientists and security guards drive out to the “red shack,” the trailer where they will electronically arm the nuclear weapon device being tested later in the day. Two scientists carrying special briefcases containing the proper

¹ Source: Navy Photographic Center Film Collection File ID: 1211-240-73 R6/11 Date: June 21, 1973
From the Richard Nixon Presidential Library
<https://youtu.be/fBAo2Aky74Y>

codes punch in the numbers to enable the weapon, buried at the bottom of a 1,050-foot-deep hole somewhere within the Nevada Test Site. The two scientists must enter the same briefcased codes at another “red shack” before the weapon can be fully armed.² Weapons testing day brings the laboratory community together as they await the weapon detonation that causes a subterranean shock to rip through the earth. After the low rumble of nuclear power, the scientists measure the crater left by the bomb. “And that was really awesome, standing there with this thing which was at least a hundred yards across,...all of a sudden show up in this gigantic movement of the earth.”³

The two figures begin to recite their own text, one of them reciting seemingly random numbers, the other, staring with a blank smile, reciting arbitrarily: “All these are the days my friends and these are the days my friends.”

This chapter will recount the nested histories of Philip Glass and Robert Wilson’s collaboration on the opera *Einstein on the Beach*, which premiered in 1976. Glass and Wilson are astute observers of their culture, and *Einstein* represents their relationship to the growing complications between society and technology, giving a snapshot of the American nuclear problem. Key scenes in the opera depict different technologies of the modern (and post-modern) age, using trains, spaceships, and air-conditioned supermarkets. These technologies in their own way constitute infrastructures of modernity: trains that collapse continental distances, spaceships that bring the universe down to earth, the supermarket that supports 24/7 consumerism. Added to them, and inseparable from them stands, at the apex of modernity’s technologies, the nuclear

² Hugh Gusterson, *People of the Bomb: Portraits of America's Nuclear Complex* (Minneapolis, MN: University of Minnesota Press, 2004). citing William Broad’s remembrance, ethnographic research of weapons scientists

³ *Ibid.*, 154. from his interlocutor Clark

weapon, which fundamentally reshapes state sovereignty and what it means to wage war.⁴

Einstein on the Beach asserts a variety of meanings, as embodied by performers, and provokes others experienced by audience members. To get at these meanings, I make recourse to an explicitly Marxist hermeneutic in order to move beyond “what *Einstein* means” to “how *Einstein* works.” Following Fredric Jameson’s methodology from *The Political Unconscious*, the chapter presents an interpretation of *Einstein on the Beach* that analyzes how this operatic object works as a socially symbolic act.⁵ Filled with representations and figures of science and technology, *Einstein* offers a particular political reading of its time. Glass and Wilson attempt a collective reading of the history in which their opera is situated.

Jameson is instrumental in thinking about the dialectical nature of ideology and utopia. I argue that Glass and Wilson represent technology as an ideology to be critiqued and a utopian belief. The dialectical nature of technology as both ideology and utopian belief can be distilled to a dialectic of technology as destruction and creation. The utopian promise of technology to provide a better life for civilization ignores (or represses) the dialectical component that realizes this “better life” as one in which people are brought together through ruin. This chapter will not only consider the ideology of technology in nuclear technoscience, Cold War strategies of proliferation, and globalizing financial markets but also offer an interpretation of musical minimalism

⁴ Elaine Scarry, *Thermonuclear Monarchy: Choosing between Democracy and Doom* (New York: W. W. Norton & Company, 2014).

⁵ Fredric Jameson, *The Political Unconscious: Narrative as a Socially Symbolic Act* (New York: Cornell University Press, 1981), 59. In this robust first chapter, essentially a what-not-to-do for Marxist hermeneutics and cultural studies, Jameson lays out several interpretive schemes and their inherent limitations, one of which is Althusser’s formula of the four levels of text based on one of the oldest analytical schemes from medieval theorists. I see my own engagement with these operatic objects as a sort of “anagogical” reading of the opera, moving beyond the literal, allegorical, and moral reading. The anagogical reading is meant as a sort of political reading to understand the collective meaning of history that a text presents and represents.

through the theory of rationalization.⁶ Thus, the chapter will center *Einstein on the Beach* within a constellation of cultural, ideological, political, and economic histories.

Aesthetics in a Postmodern Logic

Much scholarship has discussed *Einstein* within the contexts of postmodernism as a style—Jameson himself names Philip Glass in the famous “postmodernism” essay.⁷ Musical historiography has gone so far as to consider *Einstein* the epitome of operatic postmodernism.⁸ Focusing on postmodernity as a historical period will afford an engagement with the opera as a cultural object within a larger context— geopolitical, economic, and techno-scientific.

While the artistic content of postmodern art has its specificities, postmodern visual art takes two main forms: the collage and the installation. Jameson considers this the “volatilization of the individual art object.”⁹ In postmodern aesthetics, the various forms

⁶ The difference in my work to that of prior cultural studies work on musical minimalism is my own commitment to an explicitly Marxist hermeneutic. Much of the thinking of rationalization and musical minimalism has been set by Robert Fink, and my own understanding of musical minimalism is indebted to his work. Robert Fink, *Repeating Ourselves: American Minimal Music as Cultural Practice* (Berkeley: University of California Press, 2005).

⁷ Fredric Jameson, “Postmodernism, or the Cultural Logic of Late Capitalism,” *New Left Review* 146 (1984). Other scholarship denoting the opera as “postmodernist” in the stylistic sense; Susan Broadhurst, “Einstein on the Beach: A Study in Temporality,” *PERFORMANCE RESEARCH* 17, no. 5 (2012); Rob Haskins, “Another Look at Philip Glass: Aspects of Harmony and Formal Design in Early Works and Einstein on the Beach,” *Jems: Journal of Experimental Music Studies* (2005); Jelena Novak and John Richardson, eds., *Einstein on the Beach: Opera Beyond Drama* (Abingdon: Routledge, 2019); Nicholas Till, “Joy in Repetition: Critical Genealogies of Musical Minimalism,” *Performance Research* 20, no. 5 (2015).

⁸ It is generally understood, within the narrative of operatic history, that *Einstein on the Beach* was a dramatic abandonment of operatic style as it was solidified in the nineteenth century. The difference between *Einstein* and opera’s “canon” is then often rationalized as a difference due to postmodernism’s impact on Glass and Wilson. I am not interested in playing jury in the opera canon’s stylistic history, qualifying operas as “true” or “false” or “true but in a postmodernist way.” Richard Taruskin, *The Oxford History of Western Music* (Oxford ; New York: Oxford University Press, 2005). Carolyn Abbate and Roger Parker, *A History of Opera*, 2nd ed. (New York, NY: Norton, 2015).

⁹ Fredric Jameson, “The Aesthetics of Singularity,” *New Left Review* 92, no. 2 (2015): 109. In this essay, Jameson is thinking deeply about “visual art” and its relation to museum space. His objects include Damien Hirst’s piece *The Physical Impossibility of Death in the Mind of Someone Living*, Jenny Holzer’s projections, Robert Gober’s installations, and even contemporary “postmodern cuisine” such as gastronomic molecular dining. Jameson spends a fair amount of space in the essay on the museum as an institution that has largely fallen prey to postmodernity’s aesthetic logic—it is an institution that no longer houses art objects, per se, but becomes a space of

of arts and media are de-differentiated, and the artist strives for a collapse of genre and form. Furthermore, “art” as a universalized notion has disintegrated. An art object no longer seeks transcendence of historical time but rather becomes a singular event—take for example the Fluxus movement that follow Allan Kaprow’s 1950s Happenings. Jameson considers this kind of aesthetic temporality concomitant with the new temporality of global finance.

...the postmodern artistic singularity-effect, if you prefer, is of the same unique type as that unique one-time financial instrument called the derivative. Both are at least in part the result of the situation of globalization, in which multiple determinants in constant transformation, at different rates of speed, henceforth make any stable structure problematic, unless it is simply a pastiche of forms of the past. The world financial market is mirrored in the world art market, thrown open by the end of modernism and its Eurocentric canon of masterworks, along with the implicit or explicit teleology that informed it. Now, to be sure, anything and everything is possible, but only on condition that it embrace ephemerality and consent to exist but for a brief time, as an event rather than as a durable object.¹⁰

Anything and everything is possible, but only on condition that it embrace ephemerality and consent to exist but for a brief time. Brought up in the world of experimental theater, Robert Wilson’s aesthetic motivations are in a sense ephemeral—as all theatrical spectacle exists in its phenomenological and singular present. Breaking with aesthetic boundaries, he calls himself a visual artist working for the stage. Wilson’s theatrical works function as artistic installations in much the same way as the Happenings of the generation before him.

Jameson regards postmodernity’s temporality as a shrinking of time to a series of presents, and the human body remains after “the weakening of our phenomenological

art events. Even famous pieces such as the *Mona Lisa* or a Van Gogh become “brands” for which the museum institution can host an event.

¹⁰ Ibid., 122-23.

experience of past and future, the reduction of our temporality.”¹¹ In the world of finance capital, time is felt in the body as that perpetual present—not as a continuity but as a series of singularity-events.¹² Similarly, we might conceive, along with Robert Fink, minimalist music as positing a sort of perpetual present. Instead of a continuity of musical matter into a teleological whole, minimalist music can be considered a series of singularity-events. Glass’s notation makes reference to this kind of musical logic, and he indicates repetitions of measures or short phrases with “x2” “x4” “x8” (etc.) where measures in succession will have different amounts of repetitions—for example, the first four measures of “Dance 1” (Act II, Scene 1) are repeated “x8, x2, x8, x2” respectively. The rational logic behind Glass’s minimalist music pays attention at the level of the atomized measure, rather than the scene as a whole. In scenes such as Building (Act IV, Scene 1), tonal harmonic logic does not undergird the music, and the scene closes without a gesture toward a traditional cadence. The music simply stops.

Writing on the signifying logic of minimalist music, Fink characterizes minimalist music or process music as a “recombinant teleology,” one in which motion is driven to repeat rather than to conclude. The repetition of process music is not, he claims, “the negation of desire, but a powerful and totalizing metastasis. Minimalism is no more celibate than disco; processed desire turns out to be the biggest thrill of all.”¹³

Minimalist music, like disco, desires desire. It is a political stake that has no material outcome. Returning to Jameson’s argument on postmodernity’s temporality of the

¹¹ Ibid., 128.

¹² Ibid., 122.

¹³ Fink, *Repeating Ourselves*, 9. We might want to think about the difference between Fink’s posited “recombinant teleology” and Althusser’s own adage that “history has no telos.” i.e., what is the difference between a teleology unto itself and a lack of telos? A certain kind of rationalization make it possible to think both of these things are happening in postmodernity, and whatever that rationalization is seems to have the texture of musical minimalism.

singularity, minimalist music's recombinant teleology is a repetition unto itself—measures are repeated with seemingly no overall logic (“x8, x 2, x8, x2, x2, x2”) subject to the *feel* of the music in its perpetual present. Fink argues that a “true cultural hermeneutic of minimal music must do more than describe or analyze minimalism: it must attempt to make its emptied-out formal language *signify*.”¹⁴ His own analysis of musical minimalism's repetitious language signifies the “experience of self in mass-media consumer society.”¹⁵ This chapter will build upon Fink's analysis of consumerism in minimalist music and propose that both consumerism and minimalist music are part and parcel of a larger whole—one of a rationalized totality. By the 1970s, the rationalized totality has the texture of minimalism and disco and consumerism and finance capital, the grain of repetition *ad nauseam* until the body becomes numb to the nausea.

Einstein's Einstein

By 1974, after a year of building their collaborative relationship, Robert Wilson and Philip Glass agreed to create an opera. Wilson had previously produced “operas” under an idiosyncratic and explicitly non-musical definition of the genre and in keeping with opera's etymological root, which points to opera as opus or work. In a way, *Einstein* would be Wilson's first “true” opera, one that finally followed the inherent characteristic of the operatic genre in which music is constant. Wilson's early operas foregrounded the lives of historical figures-made-mythical-heroes, such as Joseph Stalin and Queen Victoria. In approaching their collaborative opera, Wilson again insisted on giving prominence to a historical figure. He first proposed Charlie Chaplin, then Adolf

¹⁴ Ibid., 18.

¹⁵ Ibid., 4.

Hitler. Glass, feeling the latter figure was “just too loaded,” countered with Mahatma Gandhi.¹⁶ Wilson, having no affective reaction to Gandhi, riposted with Albert Einstein.¹⁷ Thus, Einstein (1879-1955) became the center of the production’s ideation.

Albert Einstein was a theoretical physicist, winning the Nobel Prize in 1921 for his Theory of Relativity. He made tremendous breakthroughs in his field and was employed in universities throughout Europe. He published his first major contribution to the theory of relativity in the 1905 article, “On the Electrodynamics of Moving Bodies,” arguing “We have to take into account that all our judgments in which time plays a role are always judgments of *simultaneous events*. If, for instance, I say, ‘That train arrives here at 7 o’clock,’ I mean something like this: ‘The pointing of the small hand of my watch to 7 and the arrival of the train are simultaneous events.’”¹⁸ Time coordination had ramifications beyond theory. It would ultimately determine the unity of railroads for empire building and military prowess.¹⁹

In 1933, while on a visit to the United States, Adolf Hitler came to power, and Einstein chose to stay in America, later gaining citizenship. Prior to the onset of World War II, he endorsed a letter written by his fellow physicist, Leó Szilárd, warning then President Franklin D. Roosevelt about the potential for Germany to develop atomic bombs.²⁰ This letter encouraged President Roosevelt to start America’s own nuclear

¹⁶ Philip Glass, *Music by Philip Glass* (New York: Harper & Row, 1987), 29.

¹⁷ *Words without Music: A Memoir* (New York: Liveright Publishing Company, 2015).

¹⁸ Peter Galison, “Einstein’s Clocks: The Place of Time,” *Critical Inquiry* 26, no. 2 (2000): 367.

¹⁹ *Ibid.*, 364. Science historian, Peter Galison, conducts a cultural history of Einstein’s theory of relativity. He argues that studying the material histories around the theory prove the theory’s real-world ramifications. For example, the infrastructure of railroads was crucial to the German government’s deployment of their army. In order to coordinate better, coordinated time would synchronize nation-states and their modernizing endeavors (e.g., empire-building, etc.) Galison writes: “. . . the regulated coordination of *Einheitszeit* meant, alternately, imperial empire, democracy, world citizenship, and antianarchism. What they held in common was a sense that each clock signified the individual and that clock coordination came to stand in for a logic of linkage among people and peoples” (389).

²⁰ Albrecht Fölsing, *Albert Einstein: A Biography*, trans. Ewald Osers (New York: Viking, 1997). Fölsing, Albrecht. *Albert Einstein: A Biography*. Translated by Ewald Osers. New York: Viking, 1997.

program, which eventually resulted in the Manhattan Project, the top-secret defense program that would create the atomic bombs used to attack Hiroshima and Nagasaki, Japan.

Five years after the end of World War II and the catastrophic use of the atomic bomb, Einstein appeared on Eleanor Roosevelt's public television talkshow "Prospects of Mankind" to advocate for total nuclear disarmament. The episode aired in February 1950 and featured other prominent figures of the nuclear debate including Senator Brian McMahon, chairman of the Joint Congressional Committee on Atomic Energy; David Lilienthal, former chairman of the Atomic Energy Commission; and Dr. J. Robert Oppenheimer, director of the Institute for Advanced Study at Princeton and former director of the Manhattan Project. In Einstein's prepared address, which would later be published in the New York Times, he strongly rebuked the logic behind nuclear proliferation as a diplomatic stance: "The idea of achieving security through national armament is, at the present state of military technique, a disastrous illusion. . . . This mechanistic, technical-military psychological attitude had inevitable consequences."²¹ Einstein had an active role in both the start and proposed end of the nuclear weapons program in America. Gaining mainstream celebrity, he had an unexpected ability to connect to the general public as a leading figure in the sciences and would supercede even Enrico Fermi as the father figure of the nuclear age.

Glass remembered agreeing to the opera's Albert Einstein as an idea "that immediately clicked." He would later note:

As a child, Einstein had been one of my heroes. Growing up just after World War II, as I had, it was impossible not to know who he was. The emphatic, if catastrophic, beginning of the nuclear age had made atomic energy the most widely discussed issue of the day, and the gentle, almost saintlike originator of

²¹ Albert Einstein, "Dr. Einstein's Address on Peace in the Atomic Era," *The New York Times* 1950.

the theory of relativity had achieved the 1940s version of superstar status. ... For a time I, like many others of my generation, had been swept up in the Einstein craze. Perhaps Bob, growing up in Waco, Texas, had been too. In any case, it was a subject we both quickly warmed to.²²

Einstein had been one of my heroes. Einstein as a historical figure was imprinted on the mainstream cultural imaginary, even so far as to be a hero to the young Philip Glass. In Glass's remembrance of Einstein, he linked the "gentle, almost saintlike" historical figure to the historical event of the "emphatic, if catastrophic, beginning of the nuclear age." With Einstein, then, Glass imbued an ambivalent mythic persona, holding onto the opposed valences of catastrophe and gentleness. Though he had passed away in 1955, twenty years prior to Wilson and Glass's collaboration, Albert Einstein remained an important touchstone through whom the popular imaginary could understand the nuclear age and modernity's new technologies.

Once Wilson and Glass agreed upon their historical subject, they set to work. The first step in their creative process took on the matter of the work's title. Glass recounted that Wilson was largely responsible for it, though at first the title was "Einstein on the Beach on Wall Street."

Somewhere along the way the "on Wall Street" was dropped, but neither Bob and I remember when. "On the Beach" referred to the Nevil Shute novel from the 1950s, which takes place in Australia, when the world has experienced a World War III nuclear apocalypse.²³

In the title alone, Wilson had envisioned a pacifist critique of nuclear energy entangled with a broader critique of "Wall Street" or the rampant finance capitalism taking hold of

²² Glass, *Music by Philip Glass*, 29.

²³ *Words without Music: A Memoir*. However in his earlier memoir, Glass noted that neither he nor Wilson had read the novel or seen the film based on the novel. "Let me make a probably-not-very-important disclaimer. I had not read Nevil Shute's 1956 postnuclear, end-of-the-world novel, *On the Beach*. Neither, I believe, had Bob. Further, neither of us had seen the film. That doesn't mean that the title isn't connected to ours; it just means that any connection is an indirect one. However, what *Einstein on the Beach* might mean to people is very much connected to the associations they bring to it." *Music by Philip Glass*, 30.

America in the 1970s. Wilson emphasized the fact that this was not a historical but rather a political, mythic representation of Albert Einstein.²⁴ The creators counted on the associations that their audience would bring to the work instead of presenting their own explicit narrative.

Einstein on the Beach, thus depicts Einstein with striking familiarity: a figure dressed in a white button-down short-sleeve shirt, khaki pants, and black suspenders, sporting the famous Einstein hair with wisps of white tufts that would not lie flat. And yet Wilson and Glass represent Einstein as a liminal figure, never centering him in the action and leaving him speechless and songless. That dramaturgical liminality is also expressed spatially, with Einstein positioned downstage right, edging the proscenium and spotlighted on his own chair throughout. No other figure crosses Einstein's stage space even when the Einstein figure is absent. Glass notes:

Dramatically speaking, the violinist (dressed as Einstein, as are the performers on stage) appears as a soloist as well as a character in the opera. His playing position—midway between the orchestra and the stage performers—offers a clue to his role. He is seen, then, perhaps as Einstein himself, or simply as a witness to the stage events; but, in any case, as a musical touchstone to the work as a whole.²⁵

The staging denotes a distance or detachment between the Einstein figure and the main stage of operatic action. Wilson and Glass want to represent what Einstein "meant," and they seem to understand Einstein as a contemplative fellow, a rhetorical figure whose intricate mental workings are illustrated through the oftentimes frenzied action on the

²⁴ Mark Obenhaus, "Einstein on the Beach: The Changing Image of Opera," ed. Brooklyn Academy of Music (Los Angeles, Calif.: Direct Cinema, 1987).

²⁵ Philip Glass, "Notes On: Einstein on the Beach," *Performing Arts Journal* 2, no. 3 (1978): 64.

mainstage. Instead of communicating through text, the Einstein figure communicates through the violin, which has several solos in the musical score.²⁶

Though they nominally chose Einstein as a pseudo-hero for their opera, Glass and Wilson do not present a sanctimonious portrait. Instead, their Einstein figure is more subtly portrayed. Theirs is an Einstein of deep contemplation, exceptional in relation to his worldly context, concentrated on the intricate workings of motion through time. The Einstein figure's violin solos move with a rational order, sounding out the arcs of instrumental etudes, melodic scales that are notated like sine waves in musical space. In his own description of Albert Einstein, Roland Barthes writes,

Einstein's brain is a mythical object: paradoxically, it is the greatest intelligence which constitutes the image of the world's most perfected machine; the all too powerful man is separated from psychology, introduced into a world of robots; as we know from science-fiction novels, there is always something reified about a superman.²⁷

The Albert Einstein of Glass and Wilson is an homage to the utopian promise of technology, when scientists discovered universal truths, when rational thought could be easily depicted as ordered like the notes on a melodic scale, when Einstein was hero and superman and mythical object. Nevertheless, *Einstein on the Beach* attempts to contain the contradictions to this utopian promise of technology and will endeavor to critique Einstein "on the Beach" (i.e., the context of nuclear technoscience) and Einstein "on Wallstreet" (i.e., the context of globalizing markets in the late 1970s).

²⁶ Albert Einstein was an avid violin player. Anecdotes recall how Einstein used his violin playing as a sort of meditative or mindfulness activity. Reportedly, Bruno Nettle as a young boy would play chamber music with Einstein. It was often joked that Einstein could not count and was often "out of time" when playing with others. (Anecdotes shared with me from Philip Bohlman, private communication, 8 February 2021).

²⁷ Roland Barthes, *Mythologies*, trans. Richard Howard and Annette Lavers (2013), 100.

Funding Minimalism

The reason “Wall Street” was dropped from the title of *Einstein* was not noted, according to Glass’s memoirs, neither was the exact moment when.²⁸ Nevertheless, the repressed name had obvious social-critical implication. Funding new music in New York City was (and continues to be) a difficult endeavor. In a 1971 documentary interview, new music icons John Cage and Earle Browne recounted the complications navigating the financial and social institutions of New York City’s new music scene. For Cage, moving to New York City in the 1940s required the young composer to affiliate with the League of Composers, who helped fund Cage’s productions. More importantly, the League of Composers used their network to get an audience for his concerts. Providing a contrary anecdote, Cage recounted a performance that he funded himself and did not use any institutional network to help promote. He ultimately lost money because he overestimated the value of his name and did not sell enough concert tickets.²⁹ Earle Browne, in his interview, affirmed Cage’s sentiments by adding that it was difficult to pull off the avant-garde in New York City because it was expensive and the audience was “not good.”

Tom Johnson, writing for *The Village Voice*, offered another take on New York City’s new music scene. Himself a composer and performer in the scene, Johnson held a unique position in bringing the new music scene to *The Village Voice* audience.³⁰ In a collection of his reviews, Johnson reflected on the nature of the new music world in the 1970s.

²⁸ Glass, *Words without Music: A Memoir*.

²⁹ Hans G. Helms, "New Music," (1971). In this same interview, Cage admits to having a job outside of music in order to pay rent and buy food. He held a “day job” as an art director for a textile company.

³⁰ Tom Johnson, *The Voice of New Music: New York City, 1972-1982: A Collection of Articles Originally Published in the Village Voice*, Apollo Art About (Eindhoven, Netherlands: Het Apollohuis, 1989).

There are a lot of ideas in this little list, and they came from a lot of different individuals. But essentially they didn't come from individuals at all, but from a very large and rather nebulous group. Important artistic movements are not produced by individuals. They are produced when a number of talented people happen to be evolving in the same place at the same time. If the situation is right, their ideas cross fertilize, hybrids are formed, these produce other hybrids, the procreation of ideas accelerates, and gradually real breakthroughs become possible. One cannot really appreciate the phenomenon of Elizabethan poetry, for example, or cubist painting, or Bauhaus design, without considering the general context of the discoveries, and the music we are talking about here presents a similar situation.³¹

Important artistic movements are not produced by individuals. Though the reception history of *Einstein on the Beach* largely reified narratives of the individual—Philip Glass, Robert Wilson, Christopher Knowles, Lucinda Childs—the world in which *Einstein* could be made possible was comprised of a “very large and rather nebulous group.” Artists in search of (and with the material means for) making new music flocked to the city, which boasted an urban landscape with spaces for gathering, performing, experimenting, and in general relating with, to, and for one another. Places like the Kitchen and Judson Memorial Church supported an intermedial, experimental aesthetic ethos amongst its patrons.

In his “New Music: A Progress Report,” Johnson noted that as of 1974 there were “twice as many new music events in New York this season as there were only a couple of years ago, and on the whole they are better presented, more adventurous, and more diversified.”³² He admitted that audience attendance was still quite small but nevertheless considered the burgeoning of activity impressive, the latter for two main reasons. First, the city had drawn in a large population of composers and performers of new music. “They go to each other’s concerts, talk shop a lot, learn from each other, develop friendly competition, and establish higher and higher standards.” He

³¹ Ibid., 5.

³² Ibid., 63. January 3, 1974.

portrayed the scene as consisting of a rather fluid network, where artists from all backgrounds came to support and learn from one another. Secondly, the major performance spaces, “the Kitchen, WBAI’s Free Music Store, the Cubiculo, lofts, churches, and galleries,” provided the artists room to grow at no cost to them. The Center for New Music provided publicity “with spartan budgets,” while the New York State Council on the Arts sponsored and subsidized many experimental ventures.³³

The so-called downtown scene experienced, if only for a moment, a glimpse of Utopian art-making, where artists from all disciplines could cross-pollinate ideas amongst themselves, reveling in each other’s energies. Johnson mentioned the major governmental subsidies for the New York art scene, but that kind of civic-minded political support would soon dry up as New York City committed itself to becoming a “global city.”

Colloquially known as “Gotham City” in the post-War era as a symbol of urban crisis, New York City in the 1970s received a new image.³⁴ The rehabilitation effort was intended not just to represent New York as a global city but also to remake it as one. One symbol of New York’s pivot toward a new global order was the construction of the World Trade Center and the massive office plazas that surrounded it. David Rockefeller, president of Chase Manhattan Bank, and his brother, Nelson Rockefeller, governor of New York State, used their political and economic clout to promote the city’s growth. Despite a recession lasting from 1969 to 1977, punctuated by the 1975 fiscal crisis, the city’s economy rebounded through growth in the corporate and

³³ In the previously cited documentary, Earle Brown emphasized recordings as a necessary venture for the new music scene. Not only did it allow them to circulate their music beyond the ephemeral event, but it allowed them to submit those recordings to such institutions like the Guggenheim Fellowship. Technology (here, recording technology) was crucial to ensuring financial support. Helms, “New Music.”

³⁴ Joanne R. Reitano, *The Restless City: A Short History of New York from Colonial Times to the Present* (New York: Routledge, 2006).

consumer service sectors. As urban historian Reitano writes, "Gotham became a magnet for the ambitious and a haven for the rich."³⁵ The labor power needed to construct, support, and uphold the new corporate and consumer-heavy markets was provided in large part by a new influx of immigrants following the 1965 Immigration and Nationality Act (the Hart-Celler Act). This new population hailed from the Caribbean, Latin America, the Middle East, Russia, South Asia, East Asia, and Africa, in a certain way solidifying New York City's identity as a "global city."

Undergirding New York City's claim to global city status in a postmodern era was a new economy based in finance capital.³⁶ The infrastructure that supported finance capital came out of the international relations of "multinationalism," in turn largely structured around the Cold War's bifurcated world. Globalization "constituted the economic base of which, in the largest sense, postmodernity was the superstructure."³⁷ The globalized structure of capitalism also became the structure of funding and cultural capital for avant-garde art.

Musicologist Leah Weinberg studied the extensive cooperative networks behind *Einstein on the Beach's* art world, which included SoHo-based artists like Lucinda Childs, Andrew de Groat, Christopher Knowles, Samuel M. Johnson, the Philip Glass Ensemble musicians, and Mabou Mines actors, organizations like the Byrd Hoffman Foundation (Robert Wilson's arts foundation) and Performing Artservices, Inc., and French administrators like Michel Guy (French commissioner and close friend to Robert Wilson), Paul Puaux (director of Festival d'Avignon), and Ninon Tallon Karlweiss

³⁵ Ibid., 183.

³⁶ Jameson, "The Aesthetics of Singularity," 115. "...no description of the postmodern can omit the centrality of the postmodern economy, which can succinctly be characterized as the displacement of old-fashioned industrial production by finance capital."

³⁷ Ibid., 104.

(Glass's and Wilson's agent).³⁸ Weinberg explicitly outlined the finances, contributions, presenter fees, and ticket sales, revealing the enormous financial art world that sponsored *Einstein*.³⁹ The top three sources of U.S.-based income for *Einstein* were an individual donation from Christophe, François, and Dominique de Menil (\$77,000), a grant from the National Endowment for the Arts (\$60,000), and tickets sales from the Metropolitan Opera performances (\$75,000). The top three sources of Europe-based income for *Einstein* were the presenter fees at the Festival d'automne (\$79, 500) and Festival d'Avignon (\$55,500), and an individual contribution from the Schlumberger family (\$50,000).⁴⁰ Comparing the totals between the U.S.-based and European-based incomes, *Einstein* brought in more money from Europe than the U.S. Moreover, the funds from Europe were largely drawn from the government-subsidized festivals, while the funds from the U.S. were largely drawn from individuals and private foundations.

Along with the financial capital gained in Europe, *Einstein* depended on the cultural capital received abroad in order to solidify its stature back in the U.S. Philippe Gavi, writing for the French periodical *Libération*, enthused: "Every day newspapers relate events that readers will experience only through the reports that are made about them. So, 'Einstein on the Beach' is a far more important event than the Olympic games or Giscard's last speech. We wanted to go on record to stress that something very

³⁸ Leah G. Weinberg, "Opera Behind the Myth: An Archival Examination of 'Einstein on the Beach'" (PhD Diss., University of Michigan, 2016).

³⁹ *Ibid.*, 274. Weinberg's footnote: Figures based on "U.S. Contributions and Income" and "European Contributions and Income," Series I, Box 113, Folder: "EOB – Sources for Funding," Robert Wilson Papers 1969–1995, Rare Book & Manuscript Library, Columbia University in the City of New York.

⁴⁰ It might be important to note that the de Menil wealth, based in the U.S., is descendent of the Schlumberger family wealth (the "Europe-based" family). Ryan Dohoney, *Saving Abstraction Morton Feldman, the De Menils, and the Rothko Chapel* (S.I.: OXFORD UNIV PRESS, 2019).

important, very marvelous was taking place in the field of cultural creation."⁴¹ The week after Einstein's Avignon run (August 1976), a critic at *Le Monde* wrote

The fragmented duration of Mozartian opera (via recitatives, pauses within arias) and the continuum of the Wagnerian ceremony have substituted a freed temporal flow, stressed only by limitations (beginning and end) of the show, limits which, in the [Ring] Tetralogy, tend to be blurred. The public must be able to leave the auditorium to eat and sleep: basic amenities granted to the body. With this, one could perhaps think that Einstein on the Beach, recently created at Avignon . . . is part of the Wagnerian heritage. More precisely: Bob Wilson has taken apart Wagner and split him in two. On the one hand, the theoretical contribution, to exploit; on the other hand (negligible), the dramatic variable. Wilson indeed shows, in the most concrete way in the world, that opera is nothing other than time and space.⁴²

Opera is nothing other than time and space. Wilson was showered with praise for his historical contribution to the operatic canon. The international acclaim proved crucial in securing the invite to perform at New York's Metropolitan Opera later that year.

Wilson might have repressed the "On Wall Street" part of the original title precisely because of their dependence on cultural elites and financial magnates. Though Wall Street specifically did not play an integral part in funding this endeavor of new music and avant-garde art, the structure of globalized finance certainly proved essential to the success of *Einstein*. In a city experiencing an influx of capital, immigrants, and artists, New York provided a global stage for Glass and Wilson.

⁴¹ Philippe Gavi, "Bob Wilson: Architecte de l'instant: Cinq heures de travail sur le temps, l'espace et les images, sur tout," *Libération*, August 3, 1976, 10, Box: "1984 Next Wave Festival: Einstein on the Beach, Desert Music by Performance," Folder: "EOB Publicity," Hamm Archives. Quoted in Weinberg, "Archival Examination of Einstein," 90.

⁴² A. R., "Trois temps dans l'espace du théâtre musical," *Le Monde*, August 5, 1976, 9, Series I, Box 123, Folder: "EOB Le Monde 8/5/76"; Claude Baignères, "Einstein rêvé par Bob Wilson: fascinante invitation au voyage," *Le Figaro*, July 27, 1976, Series I, Box 123, Folder: "E.O.B. 7/27/76, 'Le Figaro,'" Robert Wilson Papers. Quoted in Weinberg, "Archival Examination of Einstein," 94.

Technology of/for the Masses

From 1945-1992, the United States averaged two nuclear tests per month for a total of 1149 nuclear detonations on (and under) American soil.⁴³ After the high-stake tensions of the Cuban Missile Crisis in 1962, a Limited Nuclear Test Ban Treaty was signed by the U.S., U.S.S.R, and U.K. on August 5, 1963, and approved by the U.S. Senate a month later. According to historian Paul Boyer, the public perceived this new treaty was perceived as a major step toward easing tensions between America and the Soviet Union.⁴⁴ But the signatory nations agreed to prohibit tests of nuclear devices only in the atmosphere, in outer space and underwater, which left a significant loophole for nuclear device and weapons testing. From 1963-1992, testing moved underground, and test sites in America used up lands in the Southwest desert state of Nevada.

This era of underground testing, lasting three decades from 1963 until 1992, was characterized as “embracing complexity” and “fetishizing production.”⁴⁵ Nuclear technoscience focused on creating “failsafe” weapons, which meant implementing ever more complicated structures of defense against an accidental deployment. These complex failsafes were put in place to avoid human error and “irrational” decisions—one weapons scientist even remarked, “These weapons will just barely detonate they’re so complicated.”⁴⁶ The discourse around nuclear weapons science had to accommodate these technological complexities, introducing new kinds of knowledge around time, such as the “shake” which is 1 / 100,000,000th of a second. A nuclear explosion spans 1 shake, with a complete chain reaction spanning 50-100 shakes. Converting nuclear time

⁴³ Joseph P. Masco, *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico* (Princeton, NJ: Princeton University Press, 2006), 68.

⁴⁴ Paul Boyer, *Fallout: A Historian Reflects on America's Half-Century Encounter with Nuclear Weapons* (Columbus, OH: Ohio State University Press, 1998), 108.

⁴⁵ Masco, *The Nuclear Borderlands*, 68.

⁴⁶ *Ibid.*, 76.

into felt “human” time, all the 1,149 detonations of nuclear testing in America combined would not add up to a single second of time.⁴⁷ The “tick” of a clock’s “tick-tock” lasts longer than all of the nuclear reactions that have ever occurred on American territory.

With an average of two nuclear tests per month, nuclear technoscience, while subject to geopolitical prohibitions, did not decline. On the contrary, diplomatic strategies of nuclear proliferation enabled a fetishization of production. The subterranean testing contributed to the sense that nuclear testing was “routine” or, as anthropologist Paul Gusterson writes, “ritual.”⁴⁸ Nuclear technoscience sublimated the traumatic spectacle of nuclear explosions, repressing the bomb by shoving it down *literally* below the surface. Subterranean testing fundamentally changed the bomb’s *aesthesis*—how the bomb was felt.⁴⁹ Anthropologist Joe Masco proposes the term “technoaesthetics” to understand the relation between the scientist and their technology. In the era of aboveground testing, nuclear weapons scientists could be blinded by light and burned by the heat of an atomic bomb. But in the era of subterranean testing, nuclear weapons scientists experienced a different relational pleasure to their work. Instead of witnessing the weapon’s detonation firsthand, the scientists learned about the efficacy of the bomb in its aftermath. The nuclear explosion might go off in a shake, but the scientists could not know the yield of the weapon’s detonation until days later, after radiochemical analysis of soil samples were tested and the size of craters left by the bomb were

⁴⁷ Ibid., 73.

⁴⁸ Gusterson, *People of the Bomb*.

⁴⁹ Masco, *The Nuclear Borderlands*, 4. “To approach nuclear technologies from the quotidian perspectives of tactile experience, focusing on how people experience an orientation in time and space, and an individual relationship with a national-cultural infrastructure, is to fundamentally rewrite the history of the nuclear age. ...interrogate the national-cultural work performed in the act of making so enormous a national project reside in the ‘unthinkable.’”

measured. The routinization or banalization of scientific procedure gave the scientists a sense that nuclear weapons science was ordinary work.

Gusterson's own anthropological study of nuclear weapons scientists followed the scientists' routine during nuclear weapons testing. His interlocutors considered testing day a hallmark in their scientific careers—after months of theoretical and engineering work, a scientist can put their weapon to the test. The major contributions to weapons development no longer focused on detonation efficacy or how big the explosion could be. Instead, scientists tested how well their failsafes worked. They practiced mastery over their nuclear technoscience by practicing the skill of predicting how the weapon would detonate. These scientists, Gusterson notes, learned to associate safety and well-being with the performed proof of technical predictability.⁵⁰ His interlocutors talked about their nuclear weapons as “beautiful” and referred to nuclear weapons testing with the language of “labor,” specifically with metaphors of birthing.⁵¹ By attending to this mythical birthing ritual, Gusterson was able to analyze the weapons scientists as a collective: “A weapon is destroyed, and a community is born.”⁵² The insular nuclear weapons science community was not the only collective to begin thinking “the nuclear” was ordinary; the American public as a larger whole began to be less interested in the nuclear problem.

Historian Paul Boyer offers four reasons why the atomic bomb declined in public discourse and awareness by the 1970s: the perception of reduced danger, the growing remoteness of the nuclear reality, the tranquilizing effect of the “peaceful atom,” and

⁵⁰ Gusterson, *People of the Bomb*, 160.

⁵¹ *Ibid.*, 153-61.

⁵² *Ibid.*, 163.

the arcane reassurance of nuclear strategy.⁵³ Geopolitical trends explain the perception of reduced danger and the reassurance of nuclear strategy. After missing nuclear war by a hair's breadth during the Cuban Missile Crisis, relations began to thaw between the U.S. and the U.S.S.R. Furthermore, Robert McNamara, then Secretary of Defense, postulated a deterrence theory, colloquially known as Mutually Assured Destruction. The rise of technocratic discourse around nuclear weapons and strategy seemed to assure the public that the nuclear strategy was sound.

Boyer's theory of the "remoteness of nuclear reality" relates to the shift toward underground testing but also speaks to the diversification of nuclear weaponry—there was more than the atomic or thermonuclear bomb to comprehend, there was also a growing infrastructure and system of technology around weapons science. Experts assured the public that technocrats had authoritative control over nuclear weapons and that nuclear technology would benefit society. President Dwight D. Eisenhower launched the "Atoms for Peace" program in 1953, and the first nuclear power plant was founded in 1957. By the 1970s (before the 1979 crisis at Three Mile Island), citizens had the use of nearly one hundred nuclear power reactors in the continental United States. Nuclear weapons science was research and development funded by the government, and only after the fact of its military use did the government make a concerted effort to return the technology back to civilian production. Nuclear power plants would now generate electricity for market consumption. The depoliticization of the nuclear problem

⁵³ Boyer, *Fallout: A Historian Reflects on America's Half-Century Encounter with Nuclear Weapons*, 114-17. Boyer notes that there were other significant issues that took hold of the American public, especially the Vietnam War. The rise of the New Left did not bridge the generational gap to take up the mantle of the National Committee for a Sane Nuclear Policy (SANE), and instead were focused on anti-War measures. India tested a nuclear device in 1974, which alarmed most Western nations with nuclear weapons, but it only stirred up a small resurgence in anti-nuclear movement and antipathy.

was made possible because nuclear technoscience was not only an ideology but also institutionalized as a commodity.

The ideology of technology rests on a dialectic of creation and destruction, both of which have serious political ramifications. The Manhattan Project proves the destructive force of technology, while the “Atoms for Peace” project propagates the belief in technological creation. Masco argues that it may be more useful to approach nuclear technology, and especially nuclear war, as phantasmagoria, “a spectral fascination that distracts attention from the ongoing daily machinations of the U.S. Nuclear complex.”⁵⁴ Nuclear technology appears to us in its most destructive or creative forms—because it is *made* to appear to us as such, with images like the mushroom cloud and the robust nuclear power plant. Tracing the logic of the dialectical semiotic square, there is more than merely creation and destruction, there is also non-creation and non-destruction. An example of technologies of non-destruction are the intricate technologies of failsafes, the mechanisms that weapons scientists build so that detonation becomes “nearly impossible.”⁵⁵ The infrastructures built around weapons science are examples of technological non-creation. Jessica Hurley considers these nuclear infrastructures—the highways, the nuclear waste protocols, etc.—the “nuclear mundane.”⁵⁶ Highways have historically segregated cities, nuclear waste protocols have taken place on Native American lands. Hurley argues that “the nuclear mundane is the slow violence of the atomic age; like all slow violence, it distributes its damage unevenly.”⁵⁷

⁵⁴ Masco, *The Nuclear Borderlands*, 4.

⁵⁵ Here I am referring back to Masco’s quote “These weapons will just barely detonate they’re so complicated.” *ibid.*, 76.

⁵⁶ Jessica Hurley, *Infrastructures of Apocalypse: American Literature and the Nuclear Complex* (Minneapolis, MN: University of Minnesota Press, 2020), 7.

⁵⁷ *Ibid.*, 14.

While there were concerted efforts to restructure nuclear technology for the masses, the masses will never have authority over nuclear technology. The technocratic gatekeeping distances the populous from truly grasping the immensity of nuclear technology—its destructive and creative potential, but also the less “phantasmagoric” technologies of non-destruction and non-creation. These less spectacular technologies—these infrastructures of and around nuclear weapons science—impact our everyday lives, though we are often made to remain ignorant to their effects. While we are kept at a distance from the technologies that always already destroy us, we fantasize about their promise. This promise of a utopian, technologically grounded future lay at the heart of modernity’s scientific impulse. Yet in the realization of the postmodern age, the desire for technology to fulfill society’s utopian desire dissipated, only to be remembered in nostalgic fragments and spectacular images. *Einstein on the Beach* was one such cultural object that attempted to represent the nuclear problem in its time, as the technological apex of modernity and as the ideological limit of the masses.

Infrastructures of the Event

The Manhattan Project was an unprecedented experiment in conducting technoscientific experiments. Scientists and military officials, driven by the impulse to outpace Hitler’s Germany, banded together to bring to fruition what was only theorized in quantum physics. At the end of their experiment they gave the world the atomic bomb. Though several years in the making, the atomic bomb was brought to general public awareness and revealed in its underlying technoscience in the same instant: 6 August 1945 at 8:15AM local time, in Hiroshima, Japan. What was unprecedented about the Manhattan Project’s scientific method was the ingrained secrecy. As journalist Robert Jungk wrote:

It was probably the first time in history that so brilliant a group of minds had voluntarily undertaken to adopt a mode of work and existence so unlike their normal way of life. They accepted as obvious the rule that they were to publish no more of their discoveries until after the war. They had themselves, after all, been the first to propose, even before the war, that secrecy should be maintained. But the military authorities went much further than this prohibition. They erected invisible walls round [sic] every branch of research, so that no department ever knew what any other was doing. Barely a dozen of the total number of some 150,000 persons eventually employed on the Manhattan Project were allowed an over-all view of the plan as a whole. In fact only a very small number of the staff knew that they were working on the production of an atom bomb at all.⁵⁸

No department ever knew what any other was doing. This division of labor, though familiar under capitalism's rationalization, implemented secrecy to an extreme degree. Only in the aftermath of the nuclear event was the technology disclosed to the world. Only after the history of the Manhattan Project was declassified did the world learn that the silence of secrecy and the steadfastness in scientific drive had apocalyptic potential.

Einstein on the Beach makes the audience spectators of the abstraction of infrastructure, rendering these divisions of labor and space as operatic material.

The ideology of technology, its promise for a technocratic utopia, left an uncanny aftershock: Technology could bring new life but it could also bring new forms of death at a scale and temporality never before experienced in human history. Nuclear technology brought unprecedented mass death. Though the immediate terror that the Manhattan Project wrought subsided, a sense of technology's uncanniness, its ability to summon up death, remains. The levels of operatic mediation can numb or awaken the audience to the critique of the nuclear problem, at its best the opera does both. The automaton-like performance in *Einstein on the Beach* is an instantiation of the uncanny.

⁵⁸ Robert Jungk, "'Swimming in Syrup' from *Brighter Than a Thousand Suns*," in *The Manhattan Project*, ed. Cynthia C. Kelly (New York: Black Dog & Leventhal Publishers, 2007). Robert Jungk was a journalist who published *Brighter than a Thousand Suns* in 1956, shortly after information was beginning to reach the public about the nature of the Manhattan Project.

The opening “Knee Play 1” exhibits the human automaton performer and represents the opera’s concern with rationalization, space, and the event. Moreover, the identification with the Knee Play characters brings the audience closer to an understanding of lifelessness in the wake of the nuclear problem.

The Knee Plays are conceived as the connective tissue (hence the name “knee”) for the four-act opera. In total, the opera has five Knee Plays. The opening Knee Play sets the tone for the opera as a whole. Thus, the Knee Plays serve an infrastructural function in the opera’s dramaturgy. In the musical score, Glass directs the organ player to begin playing when the house opens and the audience files in to their seats. The unceremonious opening thus undercuts the value of the opera’s “eventness.” *Einstein* fragments the operatic work into its component parts, exploding the unity of theatrical spectacle and implementing new dramaturgical devices to make the opera a marked event.⁵⁹ For example, the opera does not include intermissions between acts, and instead the program notes encourage audience members to come and go as they please.⁶⁰ Nevertheless, as several reviewers noted, audiences remained inclined to endure the entirety of the opera without pause.⁶¹ Like the performers on stage, the audience subjects itself to a regime of bodily discipline. Despite the intention to limit the traditional rituals that make an operatic event, Glass and Wilson maintained certain characteristics to mark operatic time as an exceptional time.

⁵⁹ In this way, *Einstein* is an example of the operatic genre evolving as a kind of anti-opera—specifically, anti-Wagnerian opera.¹ Wagnerian opera idealizes a totality of the artwork experience, one that historically required a pilgrimage to Bayreuth, an experience where all the media are coordinated toward a unified meaning.

¹ Thanks to David Levin for this insight, January 2020.

⁶⁰ Weinberg, “Archival Examination of Einstein,” 39.

⁶¹ New York Times critics Clive Barnes and Mel Gussow both note that no one took up the offer to move up and about during the premiere performance at the Met. Clive Barnes, “‘Einstein on the Beach’ Transforms Boredom into Memorable Theater,” *New York Times*, 23 Nov 1976; Mel Gussow, “‘Einstein’ Is a Science-Fiction Opera-Play,” *ibid.*, 28 Nov.

There are two Knee Play characters that enter stage right and seat themselves at desks. In the original performance, Lucinda Childs and Sheryl Sutton, two prominent avant-garde dancers, play these Knee Play figures.⁶² They stare blankly into the audience, sitting upright, arms bent like a plié, they behave like caricatures of animatronic figurines at an amusement park. Without any visual cues, they begin their recitations, though the audience continues to chatter. Sutton recites random numbers, while Childs delivers text:

Would it get some wind for the sailboat. And it could get for it is.
It could get the railroad for these workers. And it could be were it is.
It could Franky it could be Franky it could be very fresh and clean It could be a balloon.
All these are the days my friends and these are the days my friends.⁶³

⁶² It might be of significance to note that Sutton and Childs make a visually intriguing pair as Black and white women (respectively). In the 2012 revival, from which I derive much of my analysis, Wilson insisted on sticking as close as possible to the 1976/1984 original version. He thus auditioned many performers for the Knee Play character roles, but ended up casting Helga Davis, a Black performance artist, and Kate Moran a white multi-disciplinary artist with similar angular bone structure to Lucinda Childs. For the sake of narrative ease, I will refer to the Knee Play character played by Lucinda Childs as “Lucinda Childs” or “Childs” and the character played by Sheryl Sutton as “Sheryl Sutton” or “Sutton.”

⁶³ These are excerpts of the scene’s text written by Christopher Knowles. Robert Wilson lists among his major influence a “child living in an institution for brain-damaged children” by the name of Christopher Knowles.¹ Knowles, Wilson explains, counted for him alongside three modernist icons of performing arts: George Balanchine, John Cage, and Merce Cunningham. In a certain sense, Wilson deems Knowles an exceptional person with a disability. Describing Knowles as “a child who was living in an institution for brain-damaged children,” Wilson continues, “And the way he was arranging words and sounds was not unlike Mozart, like classical compositions, things placed not arbitrarily but for the content of the language but also very much for the sound and the sounding structure.”² Wilson relies on the discourse of exceptionalism to speak on behalf of Knowles. And of course the very notion of “speaking on behalf of” highlights the messy power dynamics between Wilson and Knowles. Musicologist Stephanie Jensen-Moulton’s archival work on disability and the postmodern aesthetic gives a more nuanced explanation of the relationship between Wilson and Knowles: “Wilson, knowingly or unknowingly, responded to a disability rights movement that urged Americans to bring their disabled brothers and sisters out of institutions and into daily life.”³ Jensen-Moulton writes about Wilson’s own likely identification with autism and considers Wilson and Knowles’ relationship as one of kindred spirits.

Certainly, Knowles’s text radiates in its own proposition of rational order. His syntax lacks normative grammatical logic—no subjects and predicates match—and his poetry abounds in obscure references to 1960s and 1970s pop culture such as Top 40 radio and daily cartoons.⁴ The sounding out of the text has its own lyricism, its own rhythmic drive that finds its central theme: “These are the days my friends.” The fragmentation in his text aligns with the kind of postmodern aesthetics prevalent in the downtown New York scene, of which Wilson and Glass were major figures.

¹ This text is drawn from Robert Wilson’s own words in the documentary about the making of *Einstein*. I think much is to be said about Wilson’s process of self-aggrandizing, myth-making in documenting his “influences.” Obenhaus, “Einstein: Changing Image.”

² *ibid.*

With this text, the Knee Play characters perform choreography that appears more banal rather than balletic. They mime typing, fingers tapping keys in the air. Childs' choreography, following Andrew de Groat's original, relishes in the ordinary, in the rational order of daily life. Not only typing but also walking and pointing will later make up the choreography in the entire opera. The music, too, follows a mundane order. The chorus in simple harmonic consonance sings up and down the melodic scale using either numbers or solfeggio syllables as text. These orderly gestures mimic if not mock the overly logical, determined nature of the period.

As the Manhattan Project divided its labor across various laboratories and enrichment centers across the continental United States, so too did Wilson divide his operatic stage according to performance labor. There is obviously the stage space, orchestra space, and the audience space. These are divisions inherited from the long operatic tradition. The Knee Play's opening stillness makes the stage and opera house feel large, giving an agoraphobic sense that maybe the space might be too large. The stage itself is further subdivided. The proscenium area, at the anterior edge of the stage

³Stephanie Jensen-Moulton, "Disability as Postmodernism: Christopher Knowles, Robert Wilson and *Einstein on the Beach*," (Forthcoming).

⁴Robert Fink, "*Einstein on the Radio*," in *Einstein on the Beach: Opera Beyond Drama*, ed. John Richardson and Jelena Novak (Abingdon: Routledge, 2019). Fink's careful archival research brings forth the intricate intertextuality with which Knowles wrote the libretto. "The opening scene's reference to Frankie Valli is followed directly by an unrelated image of childhood ("It could be a balloon"), and then by another apparent non-sequitur seemingly based in popular music of the late 1960s: "All these are the days my friends and these are the days my friends." However, this latter turns out not to be a mangled quotation of British folksinger Mary Hopkins's 1968 hit for Apple Records, with its mournful refrain, "Those were the days, my friend." That song did indeed chart on WABC, reaching the #1 position in October/November of 1968, but Chris Knowles was probably too young to have noticed it then. His reference was more likely to a short-lived cartoon series entitled *These Are the Days*, an animated look back at the way technology changed early twentieth-century rural America. The series, developed by the Hanna Barbera studios as educational television, and broadcast on ABC between September 7, 1974 and September 27, 1975, was filled with the kind of machinery and transportation systems in motion that have been hypothesized as particularly attractive to male teens on the autism spectrum (Baron-Cohen & Wheelwright 1999). The second-to-last episode, aired on September 20, 1975, was entitled "The Balloon." It seems to have been on Knowles's mind as he typed out the texts that would later appear at the opening of *Einstein on the Beach*. Further research is needed to determine how much of the transportation imagery in *Einstein's Knee Play 1* – getting wind for sailboats and finding a railroad for workers – can be traced back to plotlines from this Saturday morning children's show."

in front of the scrim, anchors the Knee Plays. There is a light that marks off the area where Childs and Sutton are seated, and it gives the impression of a cube at the right-hand corner of the stage, what critic David Cunningham sees as a symbol of a “fourth dimension” because a cube = x^3 .⁶⁴ On the left-hand corner of the stage, in this fourth dimensional space, sits a lone chair. Throughout the opera the lone chair remains in sight, and the Albert Einstein figure takes his seat there during his scenes. This spatial divide will often portray the relation of the main stage action as a distant scene to that of the foregrounded fourth dimensional space. It gives the impression that the main-stage action behind Einstein depicts his cerebral operations.

Wilson depends on lighting to delineate these divided areas. He first constructed the work according to the three main styles of painting, “portrait, still life, and landscapes.” For Wilson, these three styles offer different ways to structure and measure space, and he translates that into the boundary-making of the various scenes: the Knee Plays as portraits, the trial scenes as still lifes, the dance scenes as landscapes. Wilson then imbues his spatialized visions with certain kinds of energies.⁶⁵ The Knee Play certainly has a tranquility to it—the kind of tranquility of a swan on a lake, or of a person sitting for countless hours for a painting. Though placid on the surface, the bodies persist in a state of active physical engagement. Energy is equal to the product of mass with the speed of light (squared).

Lighting not only marks the boundaries of space but also marks the passing of time. The house lights do eventually dim, leaving the audience in the dark with the focus on the stage. When the orchestra pit fills, the lighting dims on the musicians, leaving them

⁶⁴ Richard Kostelanetz and Robert Flemming, *Writings on Glass: Essays, Interviews, Criticism* (New York: Schirmer Books, 1997), 154–55.

⁶⁵ Obenhaus, “Einstein: Changing Image.”

in an eerie blue glow. Thus, the first Knee Play serves to acquaint the audience with the material that structures the operatic event: divisions of space, light, and the laborious yet mundane physicality of the Knee Play characters, who represent an automaton-like uncanniness. As the Knee Play characters re-emerge in the following scenes, they give the audience a figure with whom to identify throughout the opera's narrative-less unfolding. Finally, the lack of lighting, complete darkness in the opera house and on the stage, marks the end of the first Knee Play. Lighting makes time and space physical entities on and off the operatic stage, and suddenly with the black out of the scene the opera becomes an opera. An event takes place.

The Body on Repeat, Modernity on Trial

Central to the opera's dramatical unfolding, the Trial scenes contain the most "action," involving all the performing forces and integrating the courtroom drama as a crucial narrative conceit. There are two trial scenes, Act I, Scene 2 and Act III, Scene 1, where the trial leads to a "prison" scene. The trial setting begets the question: who (or what) is on trial? Perhaps Albert Einstein is on trial, as a metonym of America's nuclear problem or as the harbinger of modernity, because he theorized events into simultaneity across space and time. Robert Fink argues certainly not Albert Einstein but rather, "Like most avant-gardists in post-war consumer society, Wilson and Glass have consistently positioned epistemic openness in their work against the closed, manipulative structures of advertising and mass media."⁶⁶ Perhaps, then, the culture industry is on trial. A different figure in the Trial, a businessman in a black suit holding a black suitcase, might refer to another, albeit repressed, institution on trial: Wall Street.

⁶⁶ Fink, "Einstein on the Radio," 39.

Taking all these into consideration, I argue that modernity itself is on trial. Modernity collapsed space and time, at whose expense? For whose gain? Moreover, a new order of capitalism enthralls with fantasies of consumerism and finance. According to Lyotard, the idea of modernity is closely bound up with the principle of novelty, of new ways of living and thinking.⁶⁷ The work of the “post” in postmodernity, then, is not one of temporal after-ness, but rather the work of *anamnesis*, *analyzing*, and reflecting. Instead of the therapist’s office, Glass and Wilson present the courtroom.

The first trial scene opens with stage hands setting the scene’s set pieces. Bleacher stands made of industrial metal piping are set on stage right, where the “jury” played by the chorus members will be situated. A similar structure sits upstage left, where the witness will eventually sit. Then, the characters file in like a ritualistic procession. The judges’ bench is positioned upstage center, over which a horizontal beam of light luminesces. The “fourth dimensional” spaces of the Knee Play square and Einstein’s seat remain on display. Setting a somber tone for the *mise-en-scène*, the music features a long organ drone on a low C with the flute arpeggiating an A-minor chord above. The chorus intones two notes, E and A (on solfege syllables “mi” and “la”). The dirge music accompanies the characters’ entrances like an introit accompanying the celebrant at a requiem mass. The courtroom becomes a sacred space, where truth illuminates and justice can prevail.

The first characters to enter include three figures in the standard uniform of white button-up shirt, khaki pants, and black suspenders and a figure dressed in a contrived Native American costume (a single feather as a head garb, a pattered shawl draping her whole body, and a scepter-like walking stick). This audience of modern men and a

⁶⁷ Jean-François Lyotard, "Defining the Postmodern," in *The Cultural Studies Reader*, ed. Simon During (London; New York: Routledge, 1999), 143.

pre-modern “Native” sit on benches at midstage left, facing the witness stand. The jury-chorus files in with two “stenographers” cast to look like replicas of Lucinda Childs and Sheryl Sutton, the doubling allows Sutton and Childs to perform more significant roles in the scene while a connection to the Knee Play characters persist. Sutton herself enters as the Lawyer character, and as she crosses the stage a central platform lights up parallel to the horizontal light beam above the judges’ bench. The two judges make their own entrance, and as they take their seats the Einstein figure takes his in his “fourth dimensional” space. Finally, Childs takes her position on the witness stand. The judges call to order “this court of common pleas.” When the dirge ends, the Wall Street man stands at the center of the stage. Before he can give any effective impression, he leaves center stage. The ceremonial entrances mark the scene as significant as if marking an important ritual, and yet the emptiness of the characters’ signification obfuscates meaning.

The Einstein figure begins a new series of music, and the Lawyer begins to recite Christopher Knowles’ text “Mr. Bojangles.”⁶⁸ This kind of layering recalls typical opera style where the orchestral music accompanies traditionally sung text. In this sense, the audience can imbue this character with an operatic convention. The character sings an aria, a form we understand. Though the content remains confounding, the Lawyer’s

⁶⁸ Fragments of the text quote the song, “Mr. Bojangles” made popular by the Nitty Gritty Dirt Band—a song about a down-and-out man that Knowles likely heard on Top 40 radio. Fink, writing on the influence of popular radio on Knowles’s libretto, observes: “The music-text relation in a 1970s-era theater where Einstein on the Beach was being performed was structurally similar to that obtained on a 1970s-era Top 40 station like WABC: in both, a stream of rhythmic, repetitive music met a stream of allusive, rhythmic, only indifferently signifying speech, the music and the talking each an independent creation, meant to be layered together only at the point of performance.”¹ Fink’s proposition assumes that text overlaying music constitutes a kind of “simultaneity event,” the kind of event that Einstein had theorized about with the coordination of clocks and time.

¹Fink, “*Einstein* on the Radio,” 34.

“aria” gives rise to a structure of feeling through which the audience can feel optimistic about the spoken truth. They can sense the gravity of justice in this courtroom.

The Old Judge then goes on to make his own speech.⁶⁹ “In this court, all men are equal. But what about all women? Are women the equal of men? There are those who tell us that they are.” With a derisive tone, the Old Judge does an impersonation of a woman at a women’s meeting like the 1977 National Women’s Conference held in Houston, Texas. The screech in his higher-pitched vocal impression lectures on “male chauvinist pigs” and the need for liberation. During his speech, the Wall Street man leaves the stage in annoyance. The Old Judge closes, continuing the vocal parody:

The woman's day is drawing near, it's written in the stars
The fall of men is very near, proclaim it from your cars.
Sisters, rise! Your flags unfurl! Don't be a little girl.
Say 'Down with men, their power must end: Women shall rule the world!'

If the ceremonial entrance marks this ritualistic space, then this first Trial scene brings to mind the carnivalesque. In the carnival’s topsy-turvy undoing of social order, the Old Judge would be played by a jester. Certainly, his speech marks him as a zany figure. The Young Judge follows with text from *Knee Play 1*, “Would it get some wind for the sailboat,” re-grounding the scene in the opera’s desire for cyclic returns and the recombinant teleology of repetition. Wilson’s dramaturgical choices continue to question the urgency of the opera’s social critique, which, in a way, marks Wilson as highly postmodern. The scene has set up the possibility of truth and justice in this trial, but because of the Old Judge’s parodic voicing of women’s liberation speeches and the

⁶⁹ In the original 1976 production, the Old Judge makes an address to Paris one of the “best liked cities on earth.” This speech includes comparisons between Paris and other global cities, including New York City. Paris boasts not only the most beautiful history and architecture but also the most beautiful women. Parisian women are “as intoxicating as good wine” with “burning kisses [that] are capable of melting the gold in a man’s teeth.” Perhaps, since the original 1976 production premiered in Avignon, France, this text written by the actor playing the Old Judge evokes a reverential stance toward the European audience. This speech was written and performed for the 1984 revival by the actor Samuel Johnson, and it is the speech performed in the recording of the 2012 revival.

near meaninglessness in the Young Judge's text, the scene undermines the optimism for the trial process. The audience must decipher the level of sincerity in both judges' assertions of truth. To lose faith in a justice system seems all too familiar to us now, but the Trial stages this radical pessimism for 1976 Avignon and New York City's bourgeois audience. The first courtroom scene comes to a close. The curtain falls on the trial, and the lights go dark. The music, however, continues *attacca* into the next Knee Play, leaving the audience with very little time and space in which to make sense of the scene.

The following Trial scene occurs two acts later (Act III, Scene 1). When the lights illuminate, the scene is set the same with the judges already seated at their bench. The other figures file in faster succession than the first Trial, as if they are all returning from a courtroom recess. The music that accompanies them sounds simpler than the initial courtroom dirge, it features only the organ drone with an arpeggiated A-minor chord. Lucinda Childs, playing the Witness, takes her position donning a stark white dress, in direct contrast to the others' standardized uniforms. She glides toward the center of the stage, meeting Sheryl Sutton's Lawyer, and they square off like cowboys at a shoot out. The Witness moves past the Lawyer and takes a reclining position on a central dais, while the Lawyer recedes into the background. The other half of the stage transforms into a jail scene, with two dancers dressed as prisoners. Childs begins reciting "Prematurely Air-Conditioned Supermarket."

I was in this prematurely air-conditioned supermarket and there were all these aisles and there were all these bathing caps that you could buy which had these kind of Fourth of July plumes on them they were red and yellow and blue I wasn't tempted to buy one but I was reminded of the fact that I had been avoiding the beach.

Like the Lawyer's speech in the first Trial scene, the Witness's speech is suggestive of the aria form. Here, we see a white woman dressed in white giving testimony in a

courtroom. The image has echoes of Schoenberg's *Erwartung*, where we delve into womanhood's hysteria brought upon by modernity's oppression. In other words, we see a femme fatale.

During this speech, the Lawyer begins reciting the Mr. Bojangles text from the previous trial scene, a sort of callback in a duet form. The music features a fast-paced organ—similar to Glass's first minimalist breakthrough piece, "Music of Changing Parts"—and the chorus sings in homophony: "1, 1, 2, 2, 3, 3, 1, 2, 3, 4" (etc.). Regarding this kind of automaton-like repetitions in performance, Robert Wilson asserts:

I'm the kind of director that's not afraid of repeating something over and over and over. . . I think the more mechanical we are, the more we do it, the more we understand about it. Many people think that it loses life, but I don't think so, I think you become freer. In this work, it's very formal. The gestures are counted repeated and rehearsed. People are afraid of that, counting numbers and learning it. But once one learns it and can do it without thinking so much about it, then one is free to think about other things.⁷⁰

For Wilson, this manner of performance opens up to a sort of transcendent truth.

Performers of Glass's music have recounted the physical labor required to meet performance expectations.⁷¹ In this courtroom, the desire for a shared truth is revealed

⁷⁰ Obenhaus, "Einstein: Changing Image."

⁷¹ In later interviews, instrumentalists and singers of Glass's ensemble give an account of the experience of performing this music.¹ [A soprano singer whose name I have to jot down the next time I'm in this archive] described her strategy for learning Glass's music as "learning by doing." She had to build stamina in order to perform the music well—with special attention to the kind of breathing necessary to produce the affected, vibrato-less sound that Glass desired. Furthermore, she claimed that "a lot of opera singers couldn't do it." To extrapolate on top of that, perhaps a lot of opera singers *wouldn't* do it because of the physical demands on the singer's body, which included strict bodily discipline and a denial of the voice's individuality (i.e., "no vibrato"). With the same commitment to the physical demands of the musical performance, the instrumentalists related similar problems with regard to the breath. The wind players [names??] had different strategies according to their individual needs. A [wind player] relied on circular breathing, which is a technique in which one creates a pocket of reserve air in the cheeks while intaking air through the nose. In this way, the wind player could continuously play the music without breaking Glass's unabating rhythmic patterns. The downside, however, was a loss of sound intensity. Despite Glass's instruction for circular breathing, another wind player prioritized a consistent sound, which would require breaks for breathing. To stop for breath, he had to be intentional in the imperceptibility of the break in sound but he asserted: "I take a breath when I need a breath. These impressions portray the difficulty in learning and performing this music. The labor that they give for the production is indeed physical labor, as they concede to the challenging specifications of performance execution."

through the incessant almost impenetrable repetition. But does repetition make such utterances the truth? In their collective call—"1, 1, 2, 2, 3, 3,"—they instigate a fantasy of rational order.

The Witness, our femme fatale, repeats her text forty-one times, changing the inflection, timing, and tone with each iteration. After the twenty-eighth repetition, the Witness begins a dance not unlike that of Salomé's Dance of the Seven Veils. The Witness's dance gestures toward the femme fatale narrative: desire for worldliness, succumbing to the male gaze, gamble one's own life, and finally losing the bet. During three more repetitions of the text, the Witness makes her way from the bed to the front of the Prison bars where she dances with various props. On the thirty-first repetition, she puts on a string of pearls. On the thirty-second repetition, she dances with a male partner who leaves on the thirty-third repetition. On the thirty-fourth repetition, she puts on men's clothing, a jacket and pants, over her white dress. Over repetitions thirty-five and thirty-six, she makes her way over to another a prop—a rifle—and it takes her two more repetitions to walk with the gun and mime its use. On the thirty-ninth repetition, she smoothly drops the gun and puts herself in handcuffs. With two more repetitions, she drops the handcuffs for a lollipop. As she finishes the forty-first repetition of "Prematurely Air-Conditioned Supermarket," she takes the lollipop with her off stage. *Einstein* follows operatic tradition and tragic convention and sacrifices the femme fatale in order to restore societal order. Yet in this postmodern reflection, the opera mimes through the femme fatale narrative with a tongue (and lollipop) in cheek

¹Peter Greenaway and Revel Guest, "Four American Composers: John Cage, Robert Ashley, Meredith Monk, Philip Glass; Das Völlige Gegenteil Gewöhnlicher Fernseh-Interviews," (Berlin: Absolut Medien GmbH, 2006).

tone, subverting the narrative necessity of the femme fatale. It seems tragedy is only possible in modernity.

The courtroom is deconstructed, leaving only the Witness seated alone behind the jail bars. By comparison with the previous scene, this one is barren. It features the singular figure seated on a ladder upstage left, at a distance from the audience's gaze. The visual concept evoked here is reminiscent of a Mark Rothko painting, a wash of flat gray in the background interposed by a beam of horizontal light. Wilson brings down an image of high modernism to the level of stage background. The female figure remains during her recitation, although the voice that is projected gives the impression of the acousmatic—a voice divorced from its source, the femme fatale's voided voice in a voided space. And yet, the entire proscenium is not completely vacant. The Einstein figure has taken his seat again in the fourth dimensional space.

The Witness begins to recite a new text, "I Feel the Earth Move," also by Christopher Knowles. The text opens with a strong assertion, "I feel the earth move,"—with its conventional subject-predicate structure in the affirmative present tense. The speech act here, a declaration, magnifies the speaker's gravity. The Witness, after testifying about the "Prematurely Air-Conditioned Supermarket" signals to the audience that individuals seeking justice against modernity's criminality will end up losing, jailed, and ostracized from society and the collective. The speaker continues: "I feel the tumbling down (tumbling down)," again repeating the rhetorical logic of the previous sentence. Then, the syntax starts to break down as the speaker moves away from the declarative speech act to a descriptive speech act. Knowles again: "There was a judge who/ like puts in a court. And the judge have like in what able jail what it could be a spanking. Or a/ whack. Or a smack. Or a swat. Or a hit." The speaker continues

describing images from the Trial scenes through unexpected fragments, though maintaining a critical *logos* in its rational articulation of sound.

This monologue is especially marked by its setting as a soliloquy. Remarkably, it is also the only scene in the entire 5-hour opera in which a soloist, who speaks text, is featured alone on the main stage. In operatic terms, this aria denotes a certain exceptionality in that the character makes themselves especially vulnerable to the audience. The dramaturgy here connotes isolation and independence but also individuality and subjectivity. In addition to the stage setting, the musical setting adds an element of alienation and distance. Orchestrated only for bass clarinet and soprano sax, this pared-down music follows a static pattern where the soprano sax plays triads over a repeating harmonic sequence and the bass clarinet drones on the notes C and G. The slight differentiations in the sax's melodic line are largely unremarkable. What is remarkable instead is the timbre of the soprano sax and bass clarinet sounding together. In the recording, the soprano sax has an exaggerated nasal sound whose timbre can be difficult to identify—a sound that escapes naming—and the performers exaggerate the abnormality of the timbres sounding together by playing slightly out of tune with one another. They underscore the Witness's "aria," sounding out the uneasiness and tension of the trial's outcome.

When all is said and done, the audience becomes witness to the Witness, who testifies to the emptiness of the courtroom proceedings. The narrative arc of the Trial scenes confront the audience with the possibility that a fantasy of justice concludes not in justice nor truth, but only a stillness and void. Einstein himself remains an unclear witness to the Witness. Perhaps, he identifies with the Witness, the figure finally put behind jail. Having ushered in the technology to synchronize time, Einstein is the patriarch of not only the nuclear age but also modernity, and so he mourns the

consequences of his findings. Perhaps, he mourns the Witness, the lone individual whose textual repetitions call out for a recognition of her bodily presence in a context of conformity. The audience must grapple with the emptiness of his presence. Did the Trial lead to justice? Did the Trial reveal some sort of Truth? In the collective analysis of modernity's impact there could be no transference in the courtroom. The Trial staged a complex simultaneity of events that amounted to no "history," no overt political narrative of the courtroom's winners and losers. An event without meaning is not history, but rather a trial of time. The Trial stages for the audience what it might feel like to "simply exist in time," as they desperately impose meaning onto the rupture of events unfolding.

Technology to End the Masses

The last scene of the opera, "Spaceship" (Act IV, Scene 3), offers the most overt critique of *Einstein on the Beach's* nuclear age. It confronts the audience with the reality of the bomb's present, reminding them that the nuclear problem is not history but rather reality. The unthinkability of the nuclear age requires mediated reckonings. Nuclear technoscience, with its capacity for complete destruction, can be alluded to in fragmented images—the rocket, the bomber plane, the blindingly brilliant flash. Through these snapshots, *Einstein* confronts the audience with glimpses of the Real, the unthinkable. The weapon at the foundation of an American national identity has the capacity to destroy all of America.

An ethereal soprano solo subsides, and the accompanying organ accelerates *attacca* into the scene. At the macro-level, the "Spaceship" scene is structured like a ternary form: the A section is characterized by the use of the entire stage and polyphonic orchestra, while the B section is characterized by the limited staging centering on

Einstein and an orchestra playing in unison with Einstein's solo violin. The repetition at a larger structural level allows for a sense of narrative reoccurrence.

At the micro-level of the A section, the bass line of the organ outlines a pseudo-chaconne thorough bass—F3, Db-3, A2, B2, E3—a bass line that dips down and climbs back up (the E3 acting as a leading tone back to F3). Regardless of what the upper voices—organ, woodwinds, voices, violin—are doing, this repeated thorough-bass line continues steadfast, infallibly circling back to F3. The use of a chaconne hearkens to another history, and in this scene it perpetuates the singularity of time. To listen for the repetitions of the chaconne keeps one “in time,” a recombinant present, an always already new moment.

Once a number of repetitions have passed, lights glow on the stage. Bulbs in vertical, horizontal, and diagonal lines create a backdrop for the action to come. The stage floor opens up, and a glass elevator, with a child confined inside, ascends. The bulbs on stage glow brighter and the chorus enters, chanting numbers and solfeggio syllables. The stage illuminates other figures: another glass elevator with a dancer entrapped, moving in perpendicular motion to the other glass elevator; dancers backlit by the glow of bulbs; a woman with a telescope; a dancer in the dark, with flashlights to announce their presence. This scene, “Spaceship” (Act IV, Scene 3), has an energy similar to that of “Train” (Act I, Scene 1) and the Trials (Act I, Scene 2; Act III, Scene 1), in that “Spaceship” similarly uses all the performing forces available and shows off the theater's stage technology.

At a nondescript moment amid all the orderly disorder on stage, the character of Albert Einstein takes his seat in his designated space, which borders the main stage. This creates a depth of perspective—Einstein in the foreground, stage action in the background—that in turn suggests a relation in the register of a fantasy or dream. When

Einstein begins playing, the music shifts, the chorus drops out and the instruments begin playing in unison with the violin solo. The music is no longer bound to the anchoring repetitions of the chaconne, and instead the ensemble plays a scalar pattern centering around the tonality of A minor, music that sounds like an *étude* exercise. It seems that Einstein's entrance introduces a rational order, one that hearkens to his symbol as a "goodly" (if not godly) technocrat.

While the scalar music perseveres, spoken text comes from the stage. Numerous unseen figures speak text fragments from previous scenes: "Would it get some," "wind," "would it get some wind for the sailboat," "would it." The acousmatic voices speaking the text layer on top of each other, voices that surge and jostle for wrest attention. The vocal babel overlaying the instruments' rational *études* heightens the scene's energy to a sort of schizo-vocalic level. The stage continues apace with its own visions of commotion and frenzy, the bulbs flash, the elevators clash, the numerous dancing figures rush through their pedantic gestures. Despite Einstein's violin solo's logical order, the scene culminates in a crescendo of chaos.

As in Einstein's theory of relativity, a given spatial relation to the event affects a viewer's understanding of the narrative onstage. Being at the center of the rupture creates a not-yet historical relation to the event, as fractures and fissures unfold in real, *felt* time. The violin solo's lack of meter adds to the sense that time unfolds without order. A desire to find the event's central rupture leads to desperate attempts at meaning-making, perhaps Einstein's repetition of the A-minor scale makes an effort to ground the scene. The repetitions are musical expressions of Lyotard's critique of postmodernity's relation with the past, where breaking from the past constitutes "a

manner of forgetting or repressing the past. That's to say of repeating it. Not overcoming it."⁷²

The curtain falls. The voices drop out, and only Einstein's violin solo and his accompanying ensemble carry on. Their unison playing, up and down the scalar pattern, demands unwavering attention, all ears directed to the numbing effects of the repetition. The stark emptiness of the stage relieves the hyper-activity, and all eyes fall on Einstein. Behind him, a rocket-shaped figurine rises. A spotlight follows the rocket's trajectory as it soars across the stage. The rocket evokes images of contemporary weapons science, including and especially nuclear weapons. There is a dark irony in the figurine's size—small rocket, big stage—that undercuts the seriousness of this symbolic evocation. On the one hand, the bomb commands the audience's full attention as it ascends across the stage. On the other hand, the bomb figurine is cartoonishly small and toy-like. Einstein appears like Gulliver, the stage is too big, the rocket is too small, never in the space at quite the right scale.⁷³ Regardless, the centralizing image is the rocket in its trajectory. The audience must reckon with the reminder that the nuclear problem subsumes chaos into complete nothingness. The nuclear bomb forecloses all imaginings of order and chaos and instead leaves distinct emptiness.

Once the rocket has disappeared from view, the curtain rises bringing back the pandemonium of the previous episode. Einstein's violin solo ends abruptly, and the music centered around the bass-line chaconne repeats. The chorus chants on solfège syllables following the harmonic patterns of the chaconne. Several minute changes to

⁷² Lyotard, "Defining the Postmodern," 143.

⁷³ Ibid., 144. Lyotard's original quote: "Our demands for security, identity and happiness, coming from our condition as living beings and even social beings appear today irrelevant in the face of this sort of obligation to complexify, mediate, memorize and synthesize every object, and to change its scale. We are in this techno-scientific world like Gulliver: sometimes too big, sometimes too small, never at the right scale. Consequently, the claim for simplicity, in general, appears today that of a barbarian."

the scene occur: there are more lightbulbs flashing; a spotlight now shines on the previously shadowed dancer, who continues walking a diagonal line while waving flashlights around; occasionally a man flies across the stage following the same trajectory as that of the rocket. While this sequence continues, the Einstein soloist inconspicuously steps off stage. Chaos outlasts order, and the technocratic desire for meaning remains in vain.

The action continues at full tilt while the two Knee Play characters, Childs and Sutton, appear from trap doors on the stage floor. They gaze out into the audience with wonder as if stepping into a new world, a new dimension of reality. Ascending from the trap doors, they crawl in unison from the stage space into the Knee Play space. Once they've cleared the liminal threshold that demarcates these two spaces, a scrim falls. At this moment, the chorus drops out, and the instruments alone continue with a chromatic scalar passage played very quickly in unison. The frantic Flight-of-the-Bumble-Bee-esque musical line causes the lights on the stage to flicker and flash in a way that is practically seizure-inducing. The chorus re-enters briefly, and almost immediately all music comes to an abrupt close as "Spaceship" ends.

The scene transitions into the next, "Knee Play 5," which itself hearkens back to "Knee Play 1." The lights on the stage fade, underscored by an organ drone, and the Knee Play characters remain foregrounded on the stage. With some theatrical stage magic, the scrim is lit up to reveal an image behind the Knee Play characters. The image is the second representation of nuclear technology—an image of the epicenter of an explosion with a bomber plane in the top corner. Text around the image reads like nuclear pseudo-science: "Bomber withdraws 10 miles; black goggles protect crew's eyes from blindingly brilliant flash" and "molecules broken up into their constituent atoms, when the matter they comprised ceases to exist as such: called 'vapourising' or

'atomising.'" This second moment of symbolizing the atomic bomb is again relegated to the status of an iconic sign.

With regard to the proposed ternary form of the scene's narrative structure, the return of the initial A sequence turns time into history, into something cyclical. What was once felt as disorderly mayhem—schizo-vocalic utterances overlaying frenzied stage action and methodical violin playing—is now understood as a cause, the effect of which included the silencing of voices and the repressing of the onstage spectacle. A kind of ternary form or recapitulation of the initial sequence marks the time that has passed as "eventful" time—history in that sense. By repressing the collective's disorder, a political narrative presents itself: Einstein thinks the bomb, he reflects on its worldly presence, he broods about its material impact. Quieting the fantasy of the main stage—the visions of order and disorder, the perpetual motion of peoples and things—enables the allegorical reading of Einstein. He represents the individual's contemplation and reckoning of the nuclear problem. The overt sign of the rocket, a metonym for nuclear technoscience, enables an anagogic reading of *Einstein on the Beach*.⁷⁴ It serves as a reminder that the nuclear problem cannot be solved by individuals alone, and further that we are not yet out of the woods, so to speak. The nuclear problem remains the present reality, and yet it seems all we can do is to attune ourselves to its presence. Like devout worshippers waiting for the apocalypse, we attend to the technology that brings about the end of masses.

⁷⁴ Here I am thinking about Jameson following Althusser following the four levels of medieval reading (literal, allegorical, moral, anagogical). To think the anagogical reading, in my understanding, is to commit to the political reading or the collective meaning of history.

The Nuclear Event and Opera as History

In the history of the nuclear age, there are numerous events that could be regarded as “nuclear events”: the first self-sustaining nuclear chain reaction, Chicago Pile-1 (2 December 1942); the Trinity nuclear test (16 July 1945); the bombing at Hiroshima and Nagasaki (6 August 1945, 9 August 1945); the Soviet Union’s First Lightning Test (29 August 1949). Robin Wagner-Pacifici, poses the crucial question: What is an event?⁷⁵ Following Alain Badiou’s theory, is an event a rupture, a kind of singularity? Or, following Gilles Deleuze’s theory, is an event one of ongoing history, a perpetual “eventness,” a sort of “becoming”? Beyond this initial event dialectic (“rupture” and “becoming”), Wagner-Pacifici adds an analytic vocabulary for the emergence, formation, and mobility of events.⁷⁶ The “event” is made by social processes: rationalized narratives to explain the event’s emergence and formation, political motivations to mobilize events. Overall, the relation to an event is always *made* by individuals, institutions, and other kinds of collectivities.⁷⁷ *Einstein on the Beach* offers a narrative of one such relation to the nuclear event.⁷⁸

Given its relative tardiness to any major nuclear event (over thirty years after Hiroshima, nearly fifteen years since the Cuban Missile Crisis), *Einstein on the Beach* seems temporally out of sync. The historical distance, however, allows Wilson and Glass to tell a history of the nuclear age as an ongoing event, a perpetual “eventness.”

⁷⁵ Robin Erica Wagner-Pacifici, *What Is an Event?* (Chicago ; London: The University of Chicago Press, 2017).

⁷⁶ *Ibid.*, 9.

⁷⁷ *Ibid.*, 16.

⁷⁸ One could consider *Einstein*’s acceptance into the Metropolitan Opera as itself an event in the history of operatic canon. Paradoxically, in order to break into the institutional mainstream, *Einstein* broke from traditional opera. In this way, *Einstein* evolves as a kind of anti-opera—specifically, anti-Wagnerian opera.¹ Where Wagnerian opera sought a totality of the artwork experience, an experience where all the media are coordinated toward a unified meaning, *Einstein* fragments the operatic work into its component parts, exploding the unity of theatrical spectacle and doing no more than hint at a hermeneutic convergence.

¹ Thanks to David Levin for this insight.

Instead of representing the bomb as a force of annihilating destruction, Wilson scales the bomb to the level of a child's toy, so that watching the meager rocket figurine traverse the stage arouses multiple reactions: humor, disturbance, alertness, mere dispassionate interest. Instead of indicting Albert Einstein for his role in ushering in modernity's collapse of space and time, they present a benevolent mythic figure intent on neither creating nor destroying life but rather on contemplating it. Anthropologist Joseph Masco writes of the national-cultural work performed in the act of making the nuclear problem a quotidian experience, and he urges a careful interrogation of the nuclear problem to "fundamentally rewrite the history of the nuclear age."⁷⁹ *Einstein* offers opera's intimate public an historical narrative without conclusions.⁸⁰ In that way, it is an accurate history of the nuclear age.

Furthermore, *Einstein* stages an ambivalence toward the ideology of technology. According to Jürgen Habermas, advanced capitalist societies invest in technology as a social good because science and technology are also realms of control and domination.⁸¹ In response to both Max Weber and Herbert Marcuse, Habermas thinks through the political domination of science and technology, arguing:

The progressive 'rationalization' of society is linked to the institutionalization of scientific and technical development. . . . Not only the application of technology

⁷⁹ Masco, *The Nuclear Borderlands*, 4.

⁸⁰ I hope to flesh out the intricacies of opera as an institution versus opera as a genre in the introductory chapter of the dissertation. Suffice it to say, my engagement with the term "intimate public" derives from Lauren Berlant's formulation of an intimate public. Berlant argues that in the contemporary United States, there is no public sphere: "the intimate public sphere of the U.S. present tense renders citizenship as a condition of social membership produced by personal act and values, . . . no longer valuing personhood as something directed toward public life." Opera's intimate public then, as I see it, includes the citizens of opera: beyond the musicians, performers, audience members, and operaphiles, there are the individuals who make up opera's administrative bureaucracy, a necessary implementation due to the lack of state and public funding and the evermore desperate need for private funding. Those private donors are, as I see it, the power brokers of opera's intimate public because their tastes and desires are catered to by the institutions of opera. Lauren Berlant, *The Queen of America Goes to Washington City: Essays on Sex and Citizenship* (Durham, NC: Duke University Press, 1997), 5.

⁸¹ Jürgen Habermas, "Technology and Science as Ideology," in *Toward a Rational Society* (Cambridge, UK: Polity Press, 1987), 85. "...the rationality of science and technology is immanently one of control: the rationality of domination"

but technology itself is domination (of nature and men)—methodical, scientific, calculated, calculating control. Specific purposes and interests of domination are not foisted upon technology ‘subsequently’ and from the outside; they enter the very construction of the technical apparatus.⁸²

Nuclear weapons science is the clearest and perhaps most extreme example of the ideology that technology ensures political domination. Elaine Scarry claims nuclear weapons fundamentally restructure political sovereignty, as democratic nations become authoritarian “thermonuclear monarchies”—above all, the United States of America.⁸³ Masco claims that the nuclear age engenders new forms of political consciousness, such as the so-called “thermonuclear monarchy,” under which society copes with new understandings of what it means to live in a world under constant nuclear threat. *Einstein* presents its audiences with one such way to live in the nuclear age and that is to simply be present in it, to attend to the repetitions of incessant nuclear threat. The utopian promise of technology to provide a better life for civilization ignores (or represses) the dialectical component that realizes this “better life” as one in which people are brought together through ruin.

This chapter has proposed the dialectic of destruction and creation to understand the ideology of technology in away that can be mapped onto the dialectic of events, their rupture and becoming. On the one hand, nuclear technology is destructive and thus nuclear events are ruptures in history generating new forms of historical narratives. The bombing of Hiroshima fundamentally changed the parameters of what it means to wage war. The historical event known as war will have to forever take into account the possibility of complete and total human destruction. On the other hand, nuclear technology has created new forms of energy production and thus nuclear war

⁸² Ibid., 82.

⁸³ Scarry, *Thermonuclear Monarchy: Choosing between Democracy and Doom*.

“events” are merely instances of an overarching “nuclear event” that is the nuclear age. Each nuclear test, then, is no longer a singular event but rather part of a cumulative one. Understanding the nuclear event as an ongoing event also better accounts for the accumulative aftereffects of nuclear technology, such as fallout and radiation.

The need to define the nuclear event as either a rupture or an ongoing event has political consequences. Emphasizing the nuclear event as one of rupture has historically resulted in more immediate political action. For example, the near-event of the Cuban Missile Crisis led to more aggressive international policy aimed at nuclear non-proliferation. Emphasizing the nuclear event as a rupture necessitates a round-the-clock “readiness” for nuclear war. The United States’ nuclear infrastructure persists vigilantly, prepared to authorize the use of nuclear weapons. Paradoxically, this ever-readiness also emphasizes the nuclear event as ongoing. Fourteen Ohio-class submarines, each carrying the equivalent of 4000 Hiroshima blasts, patrol the world’s oceans at all times.⁸⁴ Everyday infrastructure, like the interstate highway, is built to accommodate the “apocalypse in progress.”⁸⁵ The ongoing nuclear event has hit historically oppressed communities the hardest, with test sites emitting radiation that impacts indigenous lands and nuclear waste sites being built near poor communities.⁸⁶

⁸⁴ Ibid., 7.

⁸⁵ Hurley, *Infrastructures of Apocalypse: American Literature and the Nuclear Complex*, 2.

⁸⁶ Joseph Masco’s anthropological work with the indigenous communities around the Los Alamos National Laboratory has emphasized the anti-nuclear activism of indigenous peoples in that area. Before the move to underground testing, aboveground testing was made a national spectacle with the bombing on the Marshall Islands. Masco, *The Nuclear Borderlands*.

Jessica Schwartz’s own anthropological and activist work has focused on centering these voices who continue to call for reparations. Jessica A. Schwartz, “A ‘Voice to Sing’: Rongelapese Musical Activism and the Production of Nuclear Knowledge,” *Music and Politics* 6, no. 1 (2012); “Matters of Empathy and Nuclear Colonialism: Marshallese Voices Marked in Story, Song, and Illustration,” *Music and Politics* 10, no. 2 (2016).

One example of nuclear waste hitting poor communities is just around the corner from the University of Chicago. In what is now Wolf Lake in Hammond, Indiana, the labs at the University of Chicago and Argonne National Laboratory dumped their nuclear waste.

Within the nuclear event's opposing forces—rupture and destruction, “ongoing” creation—*Einstein* comments on what it takes for opera's intimate public to live amidst these existential vacillations. *Einstein's* lack of narrative suggests a non-political stance on the ideology of technology as destruction or creation. At the very least, it implicitly affirms non-destruction as a “pacifist” critique of nuclear technology. Wilson centers the technology of clocks and trains in his visual representation of Albert Einstein. In the nuclear age, new language about time accounts for the novel temporalities—the shakes of nuclear explosion, the centuries of nuclear radiation. Clocks can now be configured and coordinated to these infinitely small increments of time. Furthermore, the clock becomes a symbol of the nuclear event's existential dread. The Bulletin of the Atomic Scientists' “Doomsday Clock” counts down the seconds until “midnight”—a euphemism for the complete and total global annihilation caused by nuclear weapons.

These clocks are technologies of neither destruction nor creation, and yet they are necessary technologies in the nuclear age. The prevalence of the clock symbol in Robert Wilson's stage design speaks to its widespread presence. Clocks in *Einstein* make reference to the rationalization in this long middle—neither destruction nor creation, neither rupture nor its opposite. Clocks give a sign to the kinds of political attachment that opera's intimate public might feel. The political attachment feels like acceptance-without-question. *Einstein* tells a history of its nuclear moment when the strategy of non-proliferation has failed not only to reign in nuclear weapons science but also to act as a general stopgap in modernity's seemingly endless speeding up. In both content and form, Wilson and Glass's opera historicizes the nuclear problem of its day.

No Opera after Hiroshima

The nuclear age proposes a new rationalization of time and space, which influences the temporal and spatial possibility for *Einstein on the Beach* to enter the mainstream opera house. Nuclear radiation exemplifies the distortion of time and space in the nuclear age, because sickness appears much later than the initial exposure. Joseph Masco calls this a “temporal ellipsis” that breeds an affective atmosphere of anxiety.⁸⁷ He adds that “radiation paranoia” is a result of the diminution of space in the nuclear age, because radiation can travel far distances following global weather patterns. These new regimes of temporal and spatial reality lead to a profound repression in the nuclear age, and “individuals either numb themselves to the everyday threat, or are conditioned to separate themselves from their own senses.”⁸⁸ Masco further identifies the correlation between theoretical space and time and geopolitical machinations.

If securing “time” was the objective of the Cold War weapons program, Los Alamos weapons scientists pursued this goal through a complicated logic of technological determinism, in which the future was increasingly foreshortened in the name of producing a present-oriented space for political action. As explicitly a temporal project, the technoscience of nuclear deterrence simultaneously collapsed global space so efficiently during the Cold War that living on the brink of nuclear conflict quickly became naturalized as the very foundation of national security.⁸⁹

The future was increasingly foreshortened in the name of producing a present-oriented space for political action. It takes only a “shake” to set off a nuclear explosion, but it takes a millennia to clear nuclear radiation. The future is defined by the shakes, but the present is destroyed for millennia. With an unfinished ending, the history of the nuclear age befits the aesthetics of minimalist music where a recombinant teleology suffocates desire. The repetition of both process music and the nuclear problem contains a political

⁸⁷ Masco, *The Nuclear Borderlands*, 32.

⁸⁸ *Ibid.*

⁸⁹ *Ibid.*, 48.

stake that has no material outcome. Political action determines nuclear policy according to nation-state boundaries, but fallout knows no bounds. Furthermore, nuclear policy has excluded the voices of those whose land is destroyed by nuclear tests.⁹⁰ A policy of mutually assured destruction built infrastructures of the apocalypse, infrastructures that would amount to totalizing doom. Thus, the infrastructure was always at the ready to deploy the end of the world as we knew it—the end was made our present.

Einstein offers one engagement of the subject within the nuclear age's proposed space and time. The stage is delineated according to spaces of action, and the texture of minimalist music produces a recombinant temporality—a series of singularity events rather than a single teleologic event. The rationalization of time echoes that of postmodernity's volatile temporality as theorized according to its volatile financial markets.⁹¹ Additionally, *Einstein's* production history provides an example of the necessity of globalized finance to fund and support the arts in an increasingly neoliberal economy.

Nuclear weapons science exemplifies the dialectical nature of technology as destruction and creation, from atomic bombs to nuclear power plants. This dialectic, while attempting to contain these opposing forces, also allows for technologies of non-creation and non-destruction. *Einstein on the Beach* influences the relation to the nuclear age through its narrative arrangement and social critique. It offers a way to make meaning in the aftermath of events that preclude meaning. Its understanding of society

⁹⁰ Again, I am citing Schwartz, "A "Voice to Sing".": "Matters of Empathy and Nuclear Colonialism.". Though I would like eventually to include more citations from the indigenous perspectives of both the Native American peoples in and around New Mexico and Pacific Islanders displaced by the United States' testing.

⁹¹ Jameson, "The Aesthetics of Singularity," 120. "For I have been arguing that at the very heart of any account of postmodernity or late capitalism, there is to be found the historically strange and unique phenomenon of a volatilization of temporality, a dissolution of past and future alike, a kind of contemporary imprisonment in the present—reduction to the body as I call it elsewhere—an existential but also collective loss of historicity in such a way that the future fades away as unthinkable or unimaginable, while the past itself turns into dusty images and Hollywood-type pictures of actors in wigs and the like."

and technology conveys ambivalence, toggling between the ideological understanding that technology both creates and destroys. Albert Einstein's role as the mythic figurehead of technoscience gives Glass and Wilson numerous symbols with which to understand technologies of non-creation and non-destruction. Wilson's fixation on clocks throughout the opera symbolizes Einstein's theory of relativity and the relation between time as measured and time as felt. As the measurement of time reaches infinitely smaller increments, Wilson and Glass experiment with the feeling of time, pushing the boundaries of the possibilities of human-time in the opera house. In its depictions of technologies of non-creation and non-destruction—Einstein's clocks and trains—it offers one way to attend to the ideology of technology. In the liminal space between creation and destruction, there are anchors by which to bide one's time seeking neither the "better life" posited by technological creation nor the apocalyptic preparations necessitated by technological destruction.

The mid to late 1970s witnessed diplomatic strategies of mutually assured destruction and the inequities of nuclear infrastructure. I would argue, however, *Einstein's* representation of technology does not take an overt ethical stance. Habermas blames a "technocratic consciousness" for the "repression of 'ethics' as such as a category of life."⁹² Moralizing in such a way would put *Einstein* in a category of historical narrative, describing good and bad, but *Einstein* does not attempt such a narrative. Wilson and Glass's explicit aesthetic project aspires to a non-narrative representation of Einstein in the nuclear age. *Einstein* attempts to understand the event in its time rather than the event as the past—what Jameson considers the "postmodern artistic singularity-effect" because the event remains a rupture, a not-yet historicized

⁹² Habermas, "Technology and Science as Ideology," 112.

moment. Perhaps, there can be no opera after Hiroshima.⁹³ Confronting the great human atrocities of WWII, the apex of modernity's warfare, also requires confronting the ideas, science, and technology that made those atrocities emergent rather than unexpected conclusions. The idea, then, that there is no "opera" after Hiroshima means that there is no way to historicize the events of Hiroshima (metonym for nuclear weapons and complete annihilation). There is no "high art" that could capture the collapse of space and time in the explosion of the nuclear bomb. No convention of dramatic narrative (melodramatic, tragic, operatic, or otherwise) that could fully encapsulate the essence of instantaneous mass death.

By 1976, this kind of grasping-for-the-present took hold of numerous branches of life—from new globalized financial markets to the discotheques, from old ideas of the collective to new conceptions of the individual. Nuclear technology had demanded constant attention to the past and future: what power would the historical archive have when all of human life could be annihilated?⁹⁴ The whiplash of history would come to a caesura in the era when nuclear technology would be repressed, literally consigned to the subterranean level. In that moment of pause, *Einstein* took up space, re-coordinating time. Foregrounding nuclear technology's essential relation to power, *Einstein* depicted the ordinariness of life in the midst of globalizing threats. It centered relative time, when the fission of nuclear energy and the globalizing world are calibrated in different temporalities, when the delineation of stage space and the illumination of stage lights set the opera in place, and when the pointing of the small hand of the clock to 7 and the arrival of the train are simultaneous events.

⁹³ Here I want to riff off of Adorno's adage that there is no poetry after Auschwitz.

⁹⁴ Jacques Derrida, "No Apocalypse, Not Now (Full Speed Ahead, Seven Missiles, Seven Missives)," *Diacritics* 14, no. 2 (1984).

Works Cited

- Abbate, Carolyn, and Roger Parker. *A History of Opera*. 2nd ed. New York, NY: Norton, 2015.
- Barnes, Clive. "'Einstein on the Beach' Transforms Boredom into Memorable Theater." *New York Times*, 23 Nov 1976.
- Barthes, Roland. *Mythologies*. Translated by Richard Howard and Annette Lavers. 2013. 1957.
- Berlant, Lauren. *The Queen of America Goes to Washington City: Essays on Sex and Citizenship*. Durham, NC: Duke University Press, 1997.
- Boyer, Paul. *Fallout: A Historian Reflects on America's Half-Century Encounter with Nuclear Weapons*. Columbus, OH: Ohio State University Press, 1998.
- Broadhurst, Susan. "Einstein on the Beach: A Study in Temporality." *PERFORMANCE RESEARCH* 17, no. 5 (October 2012): 34-40.
- Derrida, Jacques. "No Apocalypse, Not Now (Full Speed Ahead, Seven Missiles, Seven Missives)." *Diacritics* 14, no. 2 (1984): 20-32.
- Dohoney, Ryan. *Saving Abstraction Morton Feldman, the De Menils, and the Rothko Chapel*. [in English] S.l.: OXFORD UNIV PRESS, 2019.
- Einstein, Albert. "Dr. Einstein's Address on Peace in the Atomic Era." *The New York Times*, 1950.
- Fink, Robert. "Einstein on the Radio." In *Einstein on the Beach: Opera Beyond Drama*, edited by John Richardson and Jelena Novak, 15-48. Abingdon: Routledge, 2019.
- . *Repeating Ourselves: American Minimal Music as Cultural Practice*. Berkeley: University of California Press, 2005.
- Fölsing, Albrecht. *Albert Einstein: A Biography*. Translated by Ewald Osers. New York: Viking, 1997.
- Galison, Peter. "Einstein's Clocks: The Place of Time." *Critical Inquiry* 26, no. 2 (2000): 355-89.
- Glass, Philip. *Music by Philip Glass*. New York: Harper & Row, 1987.
- . "Notes On: Einstein on the Beach." *Performing Arts Journal* 2, no. 3 (1978): 63-70.
- . *Words without Music: A Memoir*. New York: Liveright Publishing Company, 2015.
- Greenaway, Peter, and Revel Guest. "Four American Composers: John Cage, Robert Ashley, Meredith Monk, Philip Glass; Das Völlige Gegenteil Gewöhnlicher Fernseh-Interviews." Berlin: Absolut Medien GmbH, 2006.
- Gussow, Mel. "'Einstein' Is a Science-Fiction Opera-Play." *New York Times*, 28 Nov 1976.
- Gusterson, Hugh. *People of the Bomb: Portraits of America's Nuclear Complex*. Minneapolis, MN: University of Minnesota Press, 2004.
- Habermas, Jürgen. "Technology and Science as Ideology." Translated by Jeremy J. Shapiro. In *Toward a Rational Society*, 81-122. Cambridge, UK: Polity Press, 1987.

- Haskins, Rob. "Another Look at Philip Glass: Aspects of Harmony and Formal Design in Early Works and *Einstein on the Beach*." *Jems: Journal of Experimental Music Studies* (2005).
- Helms, Hans G. "New Music." 1971.
- Hurley, Jessica. *Infrastructures of Apocalypse: American Literature and the Nuclear Complex*. Minneapolis, MN: University of Minnesota Press, 2020.
- Jameson, Fredric. "The Aesthetics of Singularity." *New Left Review* 92, no. 2 (2015): 101–32.
- . *The Political Unconscious: Narrative as a Socially Symbolic Act*. New York: Cornell University Press, 1981.
- . "Postmodernism, or the Cultural Logic of Late Capitalism." *New Left Review* 146 (1984): 53-92.
- Jensen-Moulton, Stephanie. "Disability as Postmodernism: Christopher Knowles, Robert Wilson and *Einstein on the Beach*." Forthcoming.
- Johnson, Tom. *The Voice of New Music: New York City, 1972-1982: A Collection of Articles Originally Published in the Village Voice*. Apollo Art About. Eindhoven, Netherlands: Het Apollohuis, 1989.
- Jungk, Robert. "'Swimming in Syrup' from *Brighter Than a Thousand Suns*." In *The Manhattan Project*, edited by Cynthia C. Kelly. New York: Black Dog & Leventhal Publishers, 2007.
- Kostelanetz, Richard, and Robert Flemming. *Writings on Glass: Essays, Interviews, Criticism*. New York: Schirmer Books, 1997.
- Liotard, Jean-François. "Defining the Postmodern." In *The Cultural Studies Reader*, edited by Simon During, 142–45. London; New York: Routledge, 1999.
- Masco, Joseph P. *The Nuclear Borderlands: The Manhattan Project in Post-Cold War New Mexico*. Princeton, NJ: Princeton University Press, 2006.
- Novak, Jelena, and John Richardson, eds. *Einstein on the Beach: Opera Beyond Drama*. Abingdon: Routledge, 2019.
- Obenhaus, Mark. "Einstein on the Beach: The Changing Image of Opera." edited by Brooklyn Academy of Music, 58 min. Los Angeles, Calif.: Direct Cinema, 1987.
- Reitano, Joanne R. *The Restless City: A Short History of New York from Colonial Times to the Present*. New York: Routledge, 2006.
- Scarry, Elaine. *Thermonuclear Monarchy: Choosing between Democracy and Doom*. New York: W. W. Norton & Company, 2014.
- Schwartz, Jessica A. "Matters of Empathy and Nuclear Colonialism: Marshallese Voices Marked in Story, Song, and Illustration." *Music and Politics* 10, no. 2 (2016).
- . "A 'Voice to Sing': Rongelapese Musical Activism and the Production of Nuclear Knowledge." *Music and Politics* 6, no. 1 (2012).
- Taruskin, Richard. *The Oxford History of Western Music*. Oxford ; New York: Oxford University Press, 2005.
- Till, Nicholas. "Joy in Repetition: Critical Genealogies of Musical Minimalism." *Performance Research* 20, no. 5 (2015): 134-37.

Wagner-Pacifici, Robin Erica. *What Is an Event?* Chicago ; London: The University of Chicago Press, 2017.

Weinberg, Leah G. "Opera Behind the Myth: An Archival Examination of 'Einstein on the Beach'." PhD Diss., University of Michigan, 2016.