THE UNIVERSITY OF CHICAGO

SONGS OF SCIENCE:

MUSICAL WORLDING IN THE AMERICAN SPACE AGE

A DISSERTATION SUBMITTED TO

THE FACULTY OF THE DIVISION OF THE HUMANITIES

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

DEPARTMENT OF MUSIC

BY

ELIZABETH ALVARADO

CHICAGO, ILLINOIS

JUNE 2020

For Saoirse, my SF child who shows me what is possible to make, to be.

Table of Contents

Acknowledgements

This dissertation would never have materialized without the support of a generous community of thinkers, feelers, and givers. While the COVID-19 pandemic has drastically altered the conditions in which we live, work, and imagine, these last couple of months have been marked a magnification and continuation of support I was already receiving. My parents, Karen and Ray Alvarado provided a home in a moment of transition, unlimited childcare, domestic care, and the reminder that growth and fresh understanding are always possible in relationships new and old alike. My sister Christine MacCarroll has always been a pillar of strength, and has provided nourishment for my body and spirit over and over again in moments of crisis. She comes from a line of healers in my extended family, who take laughter seriously and provide it freely.

I am grateful for the many forms of intellectual and emotional support I received from each member of my committee. Since my entry into the university, Berthold Hoeckner has helped shape my scholarly community, from his film seminars, to teaching assistantships, to our reading group. He has seen this dissertation mutate into many different forms and has been a tireless interlocutor, meticulous editor, and continual advocate. I owe Jennifer Iverson a debt of gratitude for her immense intellectual and personal support, for long conversations, draft reviews, and all the words I needed to hear. A big thank you to Seth Brodsky for totally getting the weirdest aspects of my work, for thinking with me through the shapes and forms of writing, and for the many juicy words. Finally, thank you to Martha Feldman for trusting my imagination while pointing out clear and elegant ways to make an often-unwieldy word-machine run.

I have often counted my riches in friendships; my reading group has been a place where I have had some of the most satisfying and challenging conversations with some of my favorite people. Thank you, Dan Wang, Chaz Lee, Zach Loeffler, Tien-Tien Jong, Lindsay J. Wright, Patrick Fitzgibbon, Brad Spiers, Andrei Pohorelsky, Amy Skjerseth, and Berthold Hoeckner—for your close readings, insight, and humor. I have navigated the last decade with the fierce love and intellectual example of a few fellow brilliant women: Laura Shearing Turner, Lindsay J. Wright, and Kate Pukinskis, thank you for the work retreats, the nourishment (edible and emotional), the long talks, singing with guitars, and harmonizing with appliances. Finally, thank you to my three-year-old daughter Saoirse, who fuels my heart-engine with hilarious jokes, songs about life's banalities, and endless kisses.

Abstract

This dissertation investigates the relationship between American mass-media soundscapes and everyday experiences of scientific meaning and truth-value during the Space Race. Agitated by seismic social and political shifts, the years between 1957 and 1975 provide fertile ground for investigating slippages between environment, aesthetics, and social practice. I look at objects that seem imbued with the shifting spatial-temporalities of a nation whose self-ascribed spiritual calling to protect and revere nature met the rapid capitalist-technological innovations of the Space Age. Amidst technological acceleration, social revolutions, and science fiction lore from Roswell to Area 51, media sounds and stories came to embody an inability to reconcile the known and the unknown, the visible and the invisible, the present and the future. By tracing an emerging sonic vocabulary through various genres and media products, my dissertation illustrates how sound worlds inscribed the political fantasies of an unstable society craving the presumed stability of knowledge.

My methodology incorporates approaches from anthropology and affect theory, which seek to draw out naturalized social patterns that have faded into the invisible background of everyday life. Seeking to understand how sound worlds—understood as both the sounds of the world and as composer-created "worlds of sound"—contribute to "worlding," or the creation of the world through both creative and "rational" processes of community consensus. I take stock of a range of cultural products in order to look across different types of boundaries. My case studies follow narrative threads through the following research themes and topics: (1) satellite radio transmissions and sonically mediated scientific discourse; (2) sound and music as aids to empirical "truth" in acoustics pedagogy and popular science recordings; (3) the standardization of new electronic sounds popularized by radio drama, science fiction film, and space lounge music; and (4) musical

representations of nature, the natural sciences, and technological development in oceanographic documentaries. In this way, a comparative study of media and bodies of scholarship are brought into conversation, through analysis of disparate genres. The inherently interdisciplinary nature of my project bears application to musicology, sound studies, cultural studies, film studies, and philosophies of science.

Above all, I am interested in exploring how these products reflect and transform philosophies of what it means to be human during an era that has been described as the Anthropocene on one hand, and posthuman on the other. Following Donna Haraway's cyborgian call to explore "transgressed boundaries, potent fusions, and dangerous possibilities," I ask how dynamics of consensus formation in mid- to late-twentieth century American soundscapes have informed social perspectives in ways that prime listeners to mix science fiction and social reality. Like *lieux de memoire*, the audio media I analyze are at once archive and cultural memory—archive of a technological-aesthetic moment and memory that harbors the public continuities of history and the private discontinuities of recollection. In such a way does sound slip between being an index of lived reality and a signifier of imagined places, scientific possibilities, and utopia. By pursuing the subtle mystery of that slippage, I argue that the sonic explorations and experiences particular to this time and place imbricate the Romantic uncanny of the unknown with the certainty promised by positivism. Ultimately, I describe lineages of sound and music that serve various political agendas, asking how we can seek out, accumulate, and carry with us alternative epistemologies.

List of Figures

*All photos are by the author

Introduction: Songs of Science and Other Sonic Fictions

> [W]e have no choice but to propose the most daring utopia, which is today, to begin with, not Earthly Paradise but the prevention of Hell on Earth.
>
> —Darko Suvin, *Defined by a Hollow*

Even before the COVID-19 global pandemic blossomed like an interminable fungus in my last months of writing this dissertation, I could feel reality edging toward an apocalyptic imaginary. In July of 2019 I moved back to El Paso, Texas where I had grown up. I was leaving a difficult marriage and as a single mother graduate student couldn't afford rent in the University of Chicago's Hyde Park neighborhood, much less the childcare. And so I put all my belongings in storage and returned to the house in which I grew up with a couple of suitcases, a boxful of books, and my two-year old daughter in tow. It was a physical and emotional upheaval that required a different kind of labor than I had become accustomed to in the hallowed halls of the great university, but it was a welcome one. I felt privileged to have this place to escape to, this house that as a little girl I had watched my parents build. In many ways, it was my first cosmos, the space that shaped "all subsequent knowledge of any space, of any larger cosmos."[1]

A few weeks after our arrival, on August 3rd, a 21-year-old man named Patrick Crusius drove 660 miles from East Texas to El Paso, walked into a Walmart with a semi-automatic weapon and opened fire with the aim of stopping a "Hispanic invasion." Twenty-three people were killed and twenty-three injured. Some called it the deadliest anti-Latinx attack in recent U.S. history, but we all knew that we have been attacked for centuries in more or less apparent ways, through border policy,

[1] This quote is borrowed from John R. Stilgoe, describing the work of Gaston Bachelard in the forward to Bachelard's *The Poetics of Space: The Classic Look at How We Experience Intimate Places* (Boston: Beacon Press, 1969), viii. This idea informs my second chapter which theorizes the sonically conceptualized connection between the space of the home and outer space.

through the effects of environmental racism, through the genocidal violence against our Indigenous ancestors and comrades, through the sexual assault of brown female bodies evidenced in "rape trees"—trees found across the Southwest United States adorned with lingerie to signify acts of sexual assault to Latina immigrants. The shooting made it painfully clear to me that this act of violence, like so many others, encompassed our history, our cosmos, our future. This was the event that catalyzed my Borderscapes chapter.

In the ensuing weeks and months, El Pasoans grieved in the way they are accustomed to—by singing. Juan Gabriel's 1984 ballad "Amor eterno," which he wrote in honor of his mother has always been a beloved song for grieving among the Xicanx community. At the victims' vigils, wakes, and funerals, the song would materialize in spontaneous eruptions and the crowd who had gathered would join in, a chorus of transcendent love asserting a defiant transnational presence. It was a powerful symbol for the moment because it signifies deeply for many on an individual level, recalling specific loved ones who have passed away. In its representation of all the people and relationships that had been lost to everyone present, it also came to signify the community as a whole—to borrow John Coltrane's phrase, "When the singer says 'I' the audience hears 'we.'"[2] Here my grief for my grandpa and my neighbor's grief for her friend are woven together in musical solidarity as a grief offering to the victims of the shooting. At the same time, the song binds us to a shared cultural history, giving us an identity to latch onto that is both the same as and different from the identity that Patrick Crusius wanted to eradicate from what is currently known as the United States. In this way, our grief comes to represent who we are, not only because it is a shared piece of culture that has

[2] Quoted in Susan McClary, *Conventional Wisdom: The Content of Musical Form* (Ernest Bloch Lectures), 47.

saturated our lives, but because we are so used to grieving that performing grief means performing identity.

Almost immediately, the response to the tragedy was manifested as pride in our resilience, made explicit in the slogan "El Paso Strong," which was displayed on storefronts, billboards, t-shirts, stickers, and murals all over town. But as everyone slowly forgot about the tragedy, on a national level first, and then on a local one, El Paso Strong rang hollow in my ears like that other signifier for political apathy, "thoughts and prayers." If tragedy galvanizes those present in the moment, "Amor eterno" was perhaps too cathartic. I wonder: where is the border between reparative and destructive fantasy?

This question guides my dissertation, which offers a nondiachronic account of three techno-political worlding concepts. Starting with sound and music in the Space Age in Chapter 1, I then describe Anthropocene worlding through nature documentaries in Chapter 2, and finally first world/third world borderland relations in Chapter 3, thus tracing a conceptual continuum from utopia to dystopia. I start with two assumptions: first that Euro-American capitalist thought has been operating under a science-fiction worldview for the last century, and second that sound and music—primarily, but not limited to Western European art music—has helped shape this worldview as part of a social totality.

The Science Fiction Worldview

I follow a number of critical theorists who have described a science fiction worldview as one that uses aesthetic, affective, and narrative forms to produce a "cognition effect," by emulating

scientific structures and making claims to rationality.[3] Here, positivist science fiction's strategies to produce a suspension of disbelief can be reproduced within social reality, thus collapsing the distinction between possible worlds and our own. Today, this distinction is more and less apparent depending on where you look. For example, the Sigma group, whose motto is "Science Fiction in the National Interest" was started by a group of science fiction writers who proposed the Strategic Defense Initiative to Ronald Reagan in the early 1980s. This "science fiction think tank" claims to possess "uncommon capabilities to address existing and future issues of national concern" and has advised the US Department of Homeland Security on such issues as the "War on Terror."[4]

But this collapse has been part of a historical process. As China Miéville points out, the genre of science fiction was initially prone to debates over the extent to which it should be based in scientific fact. This debate "pre-exists the genre proper, and is inherited by it, as evidenced by Jules Verne's irritation at H.G. Wells' straight-faced flim-flam as compared to his own supposed scientific accuracy." For this reason, Verne felt that Wells' work should be excluded "from a rigorous literature of extrapolation."[5] Miéville argues that this debate is still evident in major studies on the genre, which science fiction and critical theorists from Darko Suvin, to Frederic Jameson, to Carl Freedman, understand to have some basis in a cognitive, logical framework. Yet while not only is much of the "science" in science fiction unprovable, many of the "nova" commonly deployed in

[3] Darko Suvin, a foundational figure in science fiction theory, described "cognition" and "estrangement" as the genres twin effects. Whereas cognition anchors the reader in scientific reality, science fiction also estranges the reader from her own world, thus opening up a space for critical distance. Carl Freedman later described this function as a "cognition *effect*," thus highlighting its basis in language rather than known science. See Darko Suvin, *Defined by a Hollow* (New York: Peter Lang AG, 2010); and Carl Freedman, *Critical Theory and Science Fiction* (Middletown: Wesleyan University Press, 2000).

[4] See "What is Sigma?." Sigma—The Science Fiction Think Tank. Accessed April 16, 2020. http://www.sigmaforum.org.

[5] China Miéville, "Afterword/ Cognition as Ideology: A Dialectic of SF Theory," in *Red Planets: Marxism and Science Fiction*, ed. Mark Bould, China Miéville (Middletown: Wesleyan University Press, 2009), 233.

science fiction have been ruled impossible by modern science. For Miéville, this proves that the cognition effect is precisely that—an "effect," or a trick of language done "by someone to someone."[6]

Orthogonal to the "cognition" debate, science fiction has long been theorized as a vehicle for mass hopes and dreams. In the prologue to *The Human Condition* (1958), Hannah Arendt draws a comparison between the recent launch of *Sputnik 1* and science fiction:

> Here, as in other respects, science has realized and affirmed what men anticipated in dreams that were neither wild nor idle. What is new is only that one of this country's most respectable newspapers finally brought to its front page what up to then had been buried in the highly non-respectable literature of science fiction (to which, unfortunately, nobody yet has paid the attention it deserves as a vehicle of mass sentiments and mass desires).[7]

It was precisely as a vehicle of mass sentiments and mass desires that Darko Suvin became interested in science fiction in the 1960s when he started publishing his foundational essays on the genre.[8] For Suvin, science fiction was inherently engaged in a dialectic with utopia's social possibilities, and hence he labeled utopia "the sociopolitical subgenre of science fiction" in order to illustrate that imagining is prior to praxis.[9] In his words, "[t]he understanding that the sociopolitical cannot change without all other aspects of life also changing has led to SF becoming the privileged locus of

---

[6] Miéville, "Afterword," 235.

[7] Hannah Arendt, *The Human Condition*, 2nd ed. (Chicago: The University of Chicago Press, 1998), 1-2. The newspaper she alludes to is *The New York Times*, in which Sputnik 1 was referred to as the first "step toward escape from men's imprisonment on earth," a sentiment that she attributes to our desire to leave the earth (and our human condition) behind.

[8] Major parts of Suvin's first theoretical book on science fiction, *Od Lukijana do Lunjika* (1965) ("From Lucian to Lunik"—published in his native Croatian"), were later reworked for the foundational book *Metamorphoses of Science Fiction* published in 1979. His formally experimental 2010 book, *Defined by a Hollow* is also frequently cited in science fiction theory literature. Darko Suvin, *Metamorphoses of Science Fiction* (New Haven: Yale University Press, 1979); Darko Suvin, *Defined by a Hollow: Essays on Utopia, Science Fiction and Political Epistemology*, 1 edition (Oxford ; New York: Peter Lang AG, Internationaler Verlag der Wissenschaften, 2010).

[9] Suvin, *Defined by a Hollow*, 42.

utopian fiction in the twentieth century…This means that utopian fiction is, today and retrospectively, both an independent aunt and dependent daughter of SF."[10] Critical to this relationship is their shared categorization as "literature of cognitive estrangement," which Phillip Wegner summarizes as "the ability to view the present moment through a critical, distancing eye."[11] The act of engaging with utopian material, be it a novel or another form of media, thus creates "an ongoing feedback dialogue" with the reader who imagines possible worlds always in relation to her own.

In the 1960s and 70s, "New Wave" science fiction authors like Ursula K. Le Guin and Samuel Delany began experimenting with form and content as a way to break with the white, patriarchal, positivist SciFi of the Golden Age pulps as exemplified by John W. Campbell's magazine that started as *Astounding Stories* in 1937 and ended as *Analog* in 1960.[12] For new wave authors, formal experimentation was integral to a thematic realignment with radical social concerns. In this way, new wave science fiction sought to estrange the reader in large part from the standard science fiction tradition. In his 1978 essay, "About 5,750 Words" new wave science fiction author Samuel Delany argued that form and content were in fact one and the same inasmuch as "meanings (*content* or *information*) are the *formal relations* between sounds and images of the objective world."[13] He described how the process of reading allowed meaning to unfold word by word, each new micro-linguistic encounter altering the scene, building new worlds out of the excess meaning produced from each encounter with metaphor. For Delany, science fiction's estranging quality started with the

[10] Ibid. 383.
[11] From Philip Wegner's introduction to *Defined by a Hollow*, xix.
[12] Incidentally, Campbell enthusiastically supported L. Ron Hubbard's work, publishing his 1950 book *Dianetics*, which became the basis of Scientology.
[13] Samuel Delany, "About 5,750 Words" in *The Jewel-Hinged Jaw: Notes on the Language of Science Fiction*. 1978. (Middletown: Wesleyan University Press, 2009), 1-15.

relationship between word and image, and it was the manipulation of this relationship that allowed readers to produce images of alternative futures. Or put differently, like science fiction, metaphor gains power in proportion to its estranging quality.

Carl Freedman similarly accounts for science fiction's long-time exclusion from the literary canon by arguing that it is more a matter of style finding its complementary theoretical approach. For Freedman, not only is style a "privileged category in the analysis of any literary kind," it is also responsible for the privileging of genre within the canon.[14] Where certain styles are linked to specific schools of critical thought—for instance symbolist poetry and Derridean deconstruction, or high modernist drama/fiction and the Frankfurt School and Althusserian Marxism—"every kind of reading implicitly or explicitly privileges its own canon."[15] Here, reading as critical activity becomes integral to the creation of new literature. Freedman posits that science fiction has been neglected by scholars within major critical movements largely because of its stylistic basis, which infuses banal everyday language with strings of neologisms. Because these neologisms often designate domestic technologies, the Otherness of the world is accentuated precisely through its alien normalcy. Yet while this normalized language assured accessibility and consequently facilitated vast distribution, it also reflected a larger political orientation towards techno-capitalist expansion as both a worldview and a circumstance of everyday life.

It was precisely the collapse of this estranging quality into an everyday framework that has concerned critical theorists. The same fusion of form and content that allowed Delany and others to build worlds which allowed readers to view their own with a critical distancing eye, can be used to

[14] Carl Freedman, *Critical Theory and Science Fiction*. 1st ed. (Middletown: Wesleyan University Press, 2000), 30.
[15] Freedman, *Critical Theory and Science Fiction*, xvi.

produce a cognition effect. Just as language can produce dialectical tension between our own world and possible worlds, it can also serve hegemonic ideology by insisting on a particular conceptual agenda that encompasses the form and content of everyday reality. As I discuss in my third chapter, "Borderscapes," science fiction's inherent relationality makes it "a vexed and ambivalent field" (to borrow Judith Butler's phrase) in which utopias and dystopias can be caught up in the service of vastly different political ideologies.[16] In this way, the science-fiction worldviews I discuss largely undermine the goal of new wave science fiction, which is to fuel social change by estranging a reader from her own world.

This critique itself has a long historical lineage. In 1964, Theodor Adorno, bored with technology, asserted that the fulfillment of certain prior dreams amounted to a similar collapse in distinction between science fiction as social utopia and a science fiction worldview:

> I would like to remind us right away that numerous so-called Utopian dreams—for example, television, the possibility of traveling to other planets, moving faster than sound—have been fulfilled. However, insofar as these dreams have been realized, they all operate as though the best thing about them had been forgotten—one is not happy about them. As they have been realized, the dreams themselves have assumed a peculiar character of sobriety, of the spirit of positivism, and beyond that, of boredom.[17]

Ernst Bloch agreed, noting that "mechanical materialism can have no Utopia" since "[e]verything is… mechanically present."[18] For Bloch and Adorno it is specifically the material integration of positivism into a capitalist mindset that causes both material and utopian depreciation.

---

[16] Judith Butler, *The Force of Nonviolence: The Ethical in the Political* (New York: Verso, 2020), 10.
[17] Ernst Bloch and Theodor Adorno, "Something's Missing: A Discussion Between Ernst Bloch and Theodor W. Adorno on the Contradictions of Utopian Longing" in *The Utopian Function of Art and Literature: Selected Essays*, trans. Jack Zipes, Jack Mecklenberg (Cambridge: The MIT Press, 1988), 1.
[18] Ibid. 12.

Since then, numerous authors and theorists have discussed this collapse. Frederic Jameson describes a larger historical pattern in which older genres, "released like viruses from their traditional ecosystem, have now spread out and colonized reality itself."[19] Istvan Csicsery-Ronay Jr. asserts that science fiction in particular "has ceased to be a genre of fiction *per se*, becoming instead a mode of awareness about the world," stimulated by "the development of science-fictional habits of mind" that produce "a kind of awareness we might call *science-fictionality*."[20] Eric S. Rabkin asserts that "science fiction is…the most influential cultural system in a time like ours" and suggests that "the object of science fiction criticism might be not only film and novel and play but also nonfiction, biography, policy studies, and even science itself," concluding that science fiction produces a "cultural system."[21] And Donna Haraway contends that "the boundary between SF and social reality is an optical illusion."[22] Among these authors alone, there is a diverse array of practices and formal relationships that signal this collapse, from the hegemonic synchronicity of mass media and capitalism (Jameson) to specific aesthetic codes (Csicsery-Ronay Jr.) to community and fan-based consensus formation (Rabkin) to gender critique of knowledge systems (Haraway). Yet all agree that some kind of critical distance is missing between techno-scientific fantasy-objects and consumers' mode of awareness about the world.

For Carl Freedman, science fiction and critical theory potentially serve the same ends insofar as they both "insist upon historical mutability, material reducibility, and utopian possibility," and

---

[19] Frederic Jameson, *Postmodernism, or, The Cultural Logic of Late Capitalism* (Durham: Duke University Press, 1992), 371.
[20] Istvan Csicsery-Ronay Jr. quoted by Roger Lockhurst in "The Science-Fictionalization of Trauma: Remarks on Narratives of Alien Abduction," *Science Fiction Studies* 25, no. 1 (March, 1998): 308.
[21] Eric S. Rabkin, "Science Fiction and the Future of Criticism," *PMLA*, 119 No. 3 (May, 2004): 461.
[22] Donna Haraway "A Manifesto for Cyborgs," in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991), 149.

indeed, in the work of Jean Baudrillard for instance, it is possible to discern an overlap.[23] Baudrillard argued in his 1991 essay "Simulacra and Science Fiction" that there is a natural tendency to move from utopia to science fiction to political ideology as part of a single continuum—orders of simulacra. In the third, political stage, the distance between real and imaginary has been reduced in a way that threatens the space necessary for ideal or critical projection since "[t]here is no real and no imaginary except at a certain distance."[24] This follows his previous work in which he described a "fourfold progression" of simulacrum in which technology and industrialization are the driving forces that detach simulacra from reality and move toward the creation of "hyperreality" or "maximum operationality" and "total control."[25] Yet Baudrillard's books and essays are themselves sometimes read as science fiction, in that they provide a hyperbolic reading of the future according to a critique of present trends. His work has influenced a number of science fiction writers and filmmakers, perhaps most notably, the Wachowski's 1999 film *The Matrix* in which Baudrillard was explicitly quoted.[26]

Music's Cognition Affect

Given science fiction's formal rendering of cognition effects, this dissertation asks how certain musical forms, methods of analysis, and listening practices support what I call a "cognition *affect*," a desire for and emotional reward from consuming fantasies supposedly based in rational,

[23] Freedman, *Critical Theory*, xvi.
[24] Jean Baudrillard, "Simulacra and Science Fiction," *Science Fiction Studies* 18 (Nov. 1991): 309.
[25] Ibid.
[26] Douglas Kellner, "Jean Baudrillard," in *The Stanford Encyclopedia of Philosophy*, ed. Edward N. Zalta, Winter 2019 (Metaphysics Research Lab, Stanford University, 2019), https://plato.stanford.edu/archives/win2019/entries/baudrillard/.

scientific logic.[27] While science fiction's cognition effect is "*something done with language by someone to someone*," the cognition *affect* is more difficult to locate. It pervades Space Age affective atmospheres, and drives research at all levels, from academic institutions to the spurious "Dr. Google;" they fuel online battles, where to be "right" is almost always political; and they settle into psychological habits of mind that dictate myriad pleasures and anxieties about knowing and not knowing, including one's own body. While the content of this "knowing" takes different forms, I broadly trace imaginative trends that draw from sonic evocations of "peripheral" spaces—here outer space, the ocean, and the United States' desert southwest—in order to a produce politically-inflected consensus of meaning.

In the sense that they are sound "scapes" these sonic imaginaries tether (human) identity-forming sounds and practices to images of utopian escape in a way that is not unlike the metaphorical estrangements of literary science fiction. Because of the way sound and music are culturally understood as both material and immaterial, positivist and hermeneutic, contained and limitless, scientific and fantastical, estrangement is built into the listening experience. Within this cultural imaginary, music is able to permeate otherwise inaccessible or discrete spaces—an ultrasound that visualizes imagined places, whether geographical, temporal, spiritual, or scientific. As armchair transport, music symbolizes real and imagined worlds alike. In the service of a techno-capitalist imaginary, these heard sound worlds reflect imaginary narratives of a scientific Manifest Destiny, as if political expansion were a spiritual calling.

To be clear, I do not apply a linguistic approach to music theory—although such a theoretical approach to music's material is itself arguably part of the historical process of rationalizing

[27] Quote is borrowed from China Miéville in "Afterword/ Cognition as Ideology," 235.

music in which I am interested. In fact, I was initially drawn to this project out of an interest in how music was understood as a form of mathematical logic at midcentury. I began by looking at Milton Babbitt's compositions at the Columbia-Princeton Electronic Music Center, focusing on his discourse of high-modern electronic music and contribution to the mathematically-based subdiscipline of music theory. In studying Babbitt's *Philomel*, it became clear that the language he and those around him were using to explain his musical process echoed both positivist discourse and science fiction theory via a sort of transcendental objectivism.

Specifically, *Philomel* engages in what I describe in my "Electronic Voices" chapter as an obsession with disembodied mathematical abstraction rendered through an extremely visceral representation of the female body. Here, techno-scientific practice reflects the feminist critique of the social contract (as described by Thomas Hobbes, John Locke, and Jean-Jacques Rousseau) as what Carol Pateman and later Judith Butler identified as "already a sexual contract."[28] For Babbitt, abstracted science and the female body come together in the black-box physicality of the RCA synthesizer, of which Babbitt was described unironically in a contemporary television piece as "trainer and keeper." We can think of *Philomel*, then, as positioning the female voice within Baudrillard's second stage of simulacra, where woman and machine merge to produce a de-natured representation of perceived reality. This is a political positioning: if the "state of nature" described by Hobbes and Locke describes man as an individual whose first relation is one of conflict, it thereby positions woman as always already outside the scene, unrepresentable. With this in mind, the female voice easily translates into a science-fiction-like relationship of alienation in two ways: the listener is

[28] See Butler, *The Force of Nonviolence*, 38, where Butler invokes Carol Pateman's foundational book, *The Sexual Contract* as well as various responses to Pateman in "The Sexual Contract: 30 Years On."

estranged by the sound of a fractured human-technology hybrid, and as a femme-sounding cyborg, Philomel's voice represents an interiority that is fundamentally peripheral to the state of nature.

Here, *Philomel*—the character and the composition—does not offer a version of Donna Haraway's emancipatory cyborg.[29] Instead of transgressing boundaries, her voice reifies them; instead of offering dangerous possibilities, it substantiates paternal rationalism. It is as though *Philomel* is doubly robbed of her agential voice, first by Ovid, and then by Babbitt. Furthermore, listening to singer Bethany Beardslee's iconic, virtuosic performance is meant to be *pleasurable*—insofar as it challenges the ability of the auditor, it also intimates a sort of technological achievement for those who listen. I get it; I was drawn in by its alien magic too. In this way, Babbitt's work became a catalyst for my project: after setting out to study music from a scientific perspective, I realized that I needed to study science fiction's "rational" basis from a musical perspective.

Such study then, may help us frame how music technology reflects the interdisciplinary norms of value consensus, that is, how the sounds of a "mathematical sublime" across different recordings and compositions insinuate the desire to reconcile the limitlessness of outer space with the comforts of mathematical positivism. In this way, my dissertation is about music's role in producing affective orientations to a political environment that craves such reconciliation, using the production of musical knowledge as way of "feeling" the world.

We Are All Conspiracy Theorists

If schools of critical thought prioritize certain styles and genres, I seek to place alternative epistemologies in conversation with eachother by taking a broadly comparative approach. In doing

[29] See Haraway "A Manifesto for Cyborgs."

so, I take my cue from anthropologist Susan Lepselter, who juxtaposes various stories and images, allowing them to resonate with one another in order to draw meaning out in a way that parallels the experience of everyday life. The "apophenias" that people experience—that is, the psychological tendency to find patterns in random information—help "point to a pattern and structure lying beneath the surface of things."[30] Lepselter recognizes that apophenia is related to the mechanisms underlying conspiracy theory—her questions center on the rhetorical patterns that underlie imbrications of Indigenous fantasies and alien abduction stories in the American West.

Conspiracy theory can be considered an American institution. Following a series of significant essays, including historian Richard Hofstadter's famous 1964 essay, "The Paranoid Style in American Politics" (later a book), conspiracy theories have been associated with crisis moments in history that produce insular collectives, often politically associated with the radical right, who draw spurious, irrational claims that tend to follow an "apocalyptic and absolutistic framework."[31] For Hofstadter, the paranoid style aligns the psychologically "paranoid" tendency for projection—that is denying one's own psychoses while projecting them onto someone or something else. Such projection involves a style of delivery that "has more to do with the way in which ideas are believed than with the truth or falsity of their content."[32] In 1982, Gordon S. Wood published a "psychohistorical" article on "Conspiracy and the Paranoid Style" that rooted a psychological tendency toward conspiracy theory in "the scientific promise of Enlightenment thought." According to Wood, the "new science" of mechanistic cause and effect in combination with individualist moral

[30] Susan Lepselter, *The Resonance of Unseen Things: Poetics, Power, Captivity, and UFOs in the American Uncanny* (Ann Arbor: University of Michigan Press, 2016), in "Dreaming the Colonized World," 47.
[31] Richard Hofstadter, "The Paranoid Style in American Politics," Harper's Magazine, November 1, 1964, https://harpers.org/archive/1964/11/the-paranoid-style-in-american-politics/.
[32] Ibid.

philosophy engendered "a new kind of man-centered causal history... based on the same assumptions as the age's conspiratorial interpretations."[33] Indeed, to combine these readings, something akin to a science fiction worldview emerges: the conspiracy theorist's paranoid outlook is precipitated by crisis, after which, they form an opinion based on a rationalist Enlightenment-era framework while nevertheless being drawn to ideology according to style over content.

But in his 2002 article, "The Value of Conspiracy Theory," Ed White offers a rehabilitation of conspiracy theory based on its historical significance, particularly in the nineteenth century, when conspiracies—many of them emancipatory like the underground railroad—regularly occurred. For White, conspiracy theories are valuable ways of understanding "systemic patterns and tendencies," in that "they also typically necessitated knowledge of the same, since strategic actions had to anticipate characteristic structural and institutional responses."[34] I think of the unforgettable (and seemingly un-attributable) line, "Just because you're paranoid doesn't mean they aren't out to get you."[35] Real structural inequalities tend to make one feel expendable, un-"grievable" in Judith Butler's usage, or simply, paranoid.

Conspiracy theory and paranoia, it turns out, are politically flexible inasmuch as they relate to the currency of abjection, that is, the affective appropriation of truly subjugated voices. In their edited volume, *Abjection Incorporated: Mediating the Politics of Pleasure and Violence*, Maggie

[33] Gordon S. Wood, "Conspiracy and the Paranoid Style: Causality and Deceit in the Eighteenth Century," *The William and Mary Quarterly* 39, no. 3 (July 1982): 415.
[34] Ed White, "The Value of Conspiracy Theory," *American Literary History* 14, no. 1 (March 1, 2002): 1–31.
[35] This line is often attributed to Joseph Heller in his 1961 book *Catch-22*, but this is misnomer. The phrase does appear in the 1970 movie version, and was also a popular phrase on pins and magnets in 1971. Kurt Cobain used the phrase in Nirvana's song "Territorial Pissings" on the 1991 album *Nevermind*.

Henefield and Nicholas Sammond describe two ways that abjection has been theorized.[36] In psychoanalytic terms, abject objects are described in relation to subject formation—a child learns to identify as an individual entity in relation to those excretions—snot, piss, shit, vomit—that require "suppression, rejection, and regulation."[37] Taken politically, this psychology translates to the behavior observed in tyrants, where abjection becomes an imposed condition of oppression. Henefield and Sammond see this behavior mirrored in reactionary responses to liberation movements, arguing that "[i]f social authenticity is a currency that derives from a wounded identity, abjection is its lingua franca."[38] I argue that abjection discourse is also integral to a science fiction worldview since forms of alienation can similarly serve to either liberate or oppress. Guillermo Gómez-Peña captures this mutability in his recollection of being a Mexican immigrant in 1970s urban Southern California: "We were the undisputed backbone of the economy and the omnipresent bogeyman in the Anglo imagination. We were California's romantic backdrop and favorite food, and at the same time we were its epic fear: A gallant mariachi morphing back and forth into Godzilla."[39]

Thinking in terms of sound, conspiracy theories are often not at all illogical when one considers the myriad uses of sonic warfare, many of which are targeted at civilian populations and are indeed meant to make victims experience "an ambience of fear or dread."[40] And while paranoia

---

[36] Maggie Henefield and Nicholas Sammond, "Not It, or, The Abject Objection" in Maggie Hennefeld and Nicholas Sammond, eds., *Abjection Incorporated: Mediating the Politics of Pleasure and Violence* (Durham: Duke University Press Books, 2020): 1-32.
[37] Ibid., 2.
[38] Maggie Henefield and Nicholas Sammond, "Not It, or, The Abject Objection" in Maggie Hennefeld and Nicholas Sammond, eds., *Abjection Incorporated: Mediating the Politics of Pleasure and Violence* (Durham: Duke University Press Books, 2020): 1-32.
[39] Guillermo Gómez-Peña, *Ethno-Techno: Writings on Performance, Activism and Pedagogy*, ed. Elaine A. Peña (New York: Routledge, 2005), 7.
[40] Steve Goodman, *Sonic Warfare: Sound, Affect, and the Ecology of Fear* (Cambridge: MIT Press, 2009).

can be symptomatic of fear-based biopolitics and tends to feature in the words and behavior of tyrants (a recent article used Hofstadter's analysis coupled with DICTION software to determine that President Trump used the paranoid style "considerably more often than prior presidential candidates between 1948 and the present") paranoia and the desire to discover explanatory hard facts are symptoms of trauma response. In my "Borderscapes" chapter, I describe a "science-fictionalization of trauma" in which victims attempt to fill a void of repressed trauma with standard narratives shared by a community of survivors (as seen in alien abduction reports). At the same time, responding to a traumatic event by trying to make sense of it can contribute to a social order that answers trauma with a capitalist work ethic.

Indeed, some of these examples echo Eve Kosofsky Sedgwick's famous criticism of "paranoid reading" in scholarly discourse. In Heather Love's words, "the image of the paranoid person is both aggressive and wounded" and as a defense "picks up paranoid habits of mind as critical tools or weapons."[41] Sedgwick's essay was born from a conversation she had with her friend Cindy Patton during the first decade of the AIDS crisis, specifically the moment when Patton questioned what good comes of demystifying the oppressive underlying factors that led to the spread of the disease when the oppression itself was well known to exist. This question stuck with Sedgwick, who questions whether intellectual energies might be better spent in other ways, arguing that "for someone to have an unmystified, angry view of large and genuinely systemic oppressions does not intrinsically or necessarily enjoin that person to any specific train of epistemological or narrative

[41] Heather Love, "Truth and Consequences: On Paranoid Reading and Reparative Reading," *Criticism* 52, no. 2 (2010): 235–41, 236-237.

consequences."[42] She frames this as a choice: "whether or not to undertake this highly compelling tracing-and-exposure project represents a strategic and local decision, not necessarily a categorical imperative."[43] For Sedgwick, the crux of the question is not whether a piece of knowledge is true, but rather what that knowledge does—"the pursuit of it, the having and exposing of it, the receiving again of knowledge of what one already knows? *How*... is knowledge performative, and how does one move among its causes and effects?"[44]

There is a way in which Sedgwick sees paranoia in Wood's terms, as one rooted in Enlightenment thinking inasmuch as it places the human (an individual, a man, whose first relationship is one of conflict) in a historical continuum of cause and effect. In this way, it is as if paranoid thinking is just rationalism in extreme form—a relentless need for answers in response to the fear, anger, and anxiety arguably produced by that very same worldview. In other words, the critical form of inquiry, which seeks to deconstruct—and ultimately dismantle—oppressive forces, has inadvertently "involved a concomitant privileging of the concept of paranoia" insofar as it is a "theory of negative affects" that "places its faith in exposure." In writing, this can take the form of a focus on violent scenes, which can serve to make a spectacle of the thing meant to be deconstructed. Here, I will draw a parallel to my "Seascapes" chapter, where it is possible to discern an aesthetic continuum from Jacques Cousteau's appalling mistreatment of animals under the guise of scientific progress and even conservation, to present-day nature documentaries like *Our Planet* in which the language is different (David Attenborough tries to convey that we *must* change our ways in order to

[42] Eve Kosofsky Sedgwick, "Paranoid Reading and Reparative Reading, or, You're so Paranoid, You Probably Think This Essay is About You," in *Touching Feeling: Affect, Pedagogy, Performativity* (Durham: Duke University Press, 2003), 124.
[43] Ibid.
[44] Ibid.

save the planet) even though the spectacle remains the same (walruses falling from cliffs to bloody deaths set to a dramatic orchestral underscore). The spectacle provides an affect of abjection, which has the effect on viewers, in Slavoj Žižek's words, of both personal exemption and "political neutralization."[45]

But Patton's initial reply to Sedgwick can be read as a trauma response itself: she was exhausted. It's almost as if she had followed that thinking for so long to fruitless ends, that it wasn't that she found the paranoid style to be problematic at its essence. Instead, it was that in all its effort to do something, the paranoid style hadn't done anything at all. Perhaps she realized that the doing was itself the means and the ends. The cause had no effect, yet the illusion of rational causality—that uncovering the names and the mechanisms of the oppressor would lead to those people coming to justice—was enough to sustain scholarship in the paranoid style. Then again, perhaps that's my paranoid reading of Patton.

How do sound and music become sonic fictions in the service of affects of alienation and abjection? In my "Electronic Voices" chapter, I briefly discuss how conspiracy theory became a motivator for amateur radioists, particularly as it related to Cold War anxieties. Plugging in and listening to the public apparatus allowed the radio ham to satisfy two related desires: that of accessing science for the national good (perhaps not so distant from citizen vigilantes, or "good guys with guns"), a practice Adorno criticized as prefabricated pseudo science, and the impression of power that eavesdropping purveys. My "Borderscapes" chapter offers an alternate political orientation to conspiracy theory. I discuss Omar Rodríguez-López's 2018 film *Amalia*, in which the main character listens to a conspiracy theorist on the radio in order to gain perspective on her own

[45] Slavoj Žižek, "The Seven Veils of Fantasy" in *Plague of Fantasies* (London: Verso, 2009), 23.

beliefs, her history, and her psyche. In this way, her radio becomes her lifeline. Whereas she has been teetering on the edge of breakdown, and everyone she knows puts her down, hurts her, or dies, conspiracy theory offers an empowering (if violent) alternative.

Our Current Disaster Epic/Epoch

There is a sense in which simply being alive during this late-capitalist, late-Anthropocene moment, we are exposed to an environment of trauma, not only because of widespread economic and social inequality but because apocalyptic trauma has itself become normalized and commoditized. In her 2008 book, *The Shock Doctrine: The Rise of Disaster Capitalism*, Naomi Klein wrote that "Wherever we look, anticipating disasters now drives its own kind of growth industry."[46] Her book followed on the heels of the Hurricane Katrina disaster, but feels equally pertinent today as the world tries to make sense of how things have changed and will change after the COVID-19 pandemic. Recently, a quote by the father of neoliberal economics Milton Friedman, which figures prominently in Klein's book, started circulating Facebook: "Only a crisis—actual or perceived—produces real change. When that crisis occurs, the actions that are taken depend on the ideas that are lying around."[47] Many who posted or commented on the quote interpreted it as a call for radical change for the better. Some were confused—these sounded like hopeful words coming from someone who notoriously disregarded the social ramifications of extreme privatization. According to Klein, an essay in response to Hurricane Katrina, which he penned at 93 years of age and published in the *Wall Street Journal*, sheds light on the above quote. What Friedman suggested in that essay,

[46] Naomi Klein, *The Shock Doctrine: The Rise of Disaster Capitalism* (New York: Picador, 2008).
[47] Milton Friedman, "Preface, 1982" in *Capitalism and Freedom*, 2nd edition (Chicago: University of Chicago Press, 1982) ix.

was that precisely at the moment of social collapse, when New Orleans' schools were in ruin and children were "scattered all over the country"—that was the moment to strike the final blow to public schools and privatize education by bringing in charter schools.[48] In this way, his "permanent reform" was to reverse all the headway made by the civil rights movement, which had demanded the same standard of education for all children, as well as to demolish the teacher's union. Klein calls this "treatment of disasters as exciting market opportunities, 'disaster capitalism.'"[49] Incidentally, Klein's book has been called conspiratorial by Friedman's followers.

For me, COVID-19 has provided the concluding violent frame in my return to my hometown of El Paso, Texas: I was greeted by a mass shooting, and as I look to finish my degree and move on, I am facing a pandemic. It feels fitting. I have encountered two monsters, one a white supremacist, one a virus, both made worse by the monster of capitalism and its specter of a science fiction worldview. For those of us who have experienced trauma, it is possible to recognize familiar patterns being played out on a national, if not global scale: the paranoid impulse to define why this happened and who is to blame is met with its complementary impulse to find answers that might neutralize the disease, neutralize our collective panic, and save lives (namely black lives and elderly lives). These are good impulses. At the same time, what happens behind us when all eyes are fixed on a single issue?

But we also watch as the world has become a political petri dish, and we place our bets on who has the best information based on whose expertise we trust, scientific and political, and sometimes it's hard to tell the difference. Many have theorized, like Friedman but with opposite

[48] Milton Friedman, "The Promise of Vouchers," *The Wall Street Journal*, Dec. 5, 2005, https://www.wsj.com/articles/SB113374845791113764
[49] Ibid. 6

policies in mind, that this crisis moment is the time to make social change, noting that we can already see the environmental benefits of a less industrial-driven society. Novelist Arundhati Roy recently framed the issue as no less than a science-fiction call to use this coronavirus as "a portal, a gateway between one world and the next." She movingly argues that "[w]e can choose to walk through it, dragging the carcasses of our prejudice and hatred, our avarice, our data banks and dead ideas, our dead rivers and smoky skies behind us. Or we can walk through lightly, with little luggage, ready to imagine another world. And ready to fight for it."[50]

But here Frederic Jameson counters with a warning.

> For that very distance of culture from its social context which allows it to function as a critique and indictment of the latter also dooms its interventions to ineffectuality and relegates art and culture to a frivolous, trivialized space in which such intersections are neutralized in advance. This dialectic accounts even more persuasively for the ambivalences of the Utopian text as well: for the more surely a given Utopia asserts its radical difference from what currently is, to that very degree it becomes, not merely unrealizable but, what is worse, unimaginable.[51]

Is all this theorizing for naught? We have known for a while that "the end is nigh but for a major rethinking and reorientation of human activity."[52] In the public response to COVID-19 it is possible to discern how fiction and reality circle one another in what Kathleen Stewart has called "the charged atmospheres of everyday life…[that] constitute a compositional present."[53] It is not only fictions that have taught us what dystopia feels like. In fact, the feeling of disappointment and consternation in how the situation is being mishandled feels similar to how Stewart describes the

---

[50] Arundhati Roy, "The Pandemic Is a Portal," *Financial Times*, April 3, 2020, https://www.ft.com/content/10d8f5e8-74eb-11ea-95fe-fcd274e920ca.
[51] Fredric Jameson, *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions* (New York: Verso, 2005), xv.
[52] Julie Livingston, *Self-Devouring Growth: A Planetary Parable as Told from Southern Africa* (Durham: Duke University Press, 2019).
[53] Kathleen Stewart, "Atmospheric Attunements," *Rubric* no. 1 (2010): 2.

ripples of consternation in West Virginian coal mining camps when people started getting kicked off of social security when Reagan was elected. "None of this was a surprise. Just a shock. Just the recognition."[54] In the context of current struggles, it is easier to spot continuities than ruptures. COVID-19 was not exactly expected, but the feeling of impending disaster has been bubbling underneath the surface of everyday life for a long time.[55]

If the moment feels apocalyptic, this feeling was already lying at the surface—it is easy to recognize precisely because we have been prepared to know what apocalypse feels like, both historically and fictionally. Jack Halberstam eloquently describes what we are experiencing:

> That feeling when…every dystopian novel you have ever enjoyed, read and reread is suddenly happening in your own neighborhood...the tightening of the noose, the fear of other people, a deep concern over passionate men and their misplaced sense of justice, a horror of religion and some buried intuitive sense that what impacts all of us will cause the wealthy to hide, the poor to die, the white guys to explain and blame, the women to pick up new burdens of care, the young to flaunt their indifference, the old to tell us we've been here before, the ignorant to arm themselves and those who have been living apocalyptic lives all along to help, restore, share, feed, work, shelter, learn, teach, shine."[56]

Halberstam lists dystopian content that indeed resonates with the current moment, but circumstances are also formal in an aesthetic sense if we think of lived experience as "compositional" as Stewart does. For example, the sheer volume of media coverage with a single focus mirrors so many dystopian films. In quarantine, as so many dystopian movies have already shown, media

---

[54] Ibid., 2.
[55] Many have noted that while this pandemic has affected Americans more than previous epidemics, on global scale we have endured several other in recent history, including SARS, MERS, and Avian flu.
[56] Jack Halberstam, "What the Storm Blows In," *Bully Bloggers*, March 23, 2020, accessed March 26, 2020, https://bullybloggers.wordpress.com/tag/jack-halberstam/.

becomes a "snorkel to the universe"—entertainment and news coexist on the same platform, channel, radio frequency. In a zombie flick, we would be tuning in to the radio, trying to find the signal from the sanctuary which may or may not be real.[57] In real life, the monster is a virus, but we still hunker down in our homes, waiting to receive directives from experts, arguing about who counts as such and whose plan would be the most effective. Then we reprimand one another for not using this time to heal, we share therapeutic music, humorous videos. Media is our snorkel to the universe in both an aesthetic and existential way, and indeed, the two are not mutually exclusive.

Our being "homeward bound" at this moment contextualizes the arc of my dissertation, which starts during in the Cold War and ends now.[58] It also, appropriately, seeks to open a space for figuring out how to heal relational wounds—the wound of having been "conceptually nullified," and thus not granted a future in positivist-capitalist science-fiction worldviews, the Earth wound as narrativized by the Anthropocene, and a wound born by Xicanxs in which identity-formation depends upon a re-conceptualizing of many borders including the political, the geographical, and the temporal. In this way, my project begins to feel around in the dark for an "egalitarian imaginary."[59] In the sense that musical experience invokes memories, fantasies, and historical knowledge, I ask how music's embodied histories project futures that have ramifications for life here and now.

[57] In a 1997 interview with Charlie Rose, fiction writer David Foster Wallace described television as his "snorkel to the universe." *David Foster Wallace Interview on Charlie Rose (1997)*, accessed February 20, 2020, https://www.youtube.com/watch?v=GopJ1x7vK2Q.
[58] I borrow this play on words from Elaine Tyler May's book *Homeward Bound: American Families in the Cold War Era* (New York: Basic Books, 1988).
[59] Butler, *The Force of Nonviolence*, 23-24.

Utopian and Dystopian Soundscapes

The three chapters that comprise this dissertation form a kind of narrative arc from positivist utopian thinking in the first chapter, through environmental degradation in the second chapter, to the sort of dystopian underbelly of positivist thinking in the third chapter. I take "worlding" to be the activity of building conceptual contexts according to the human sensorium. It is both an aspirational activity of becoming, and a way of describing aestheticized representations of the world. Gayatri Chakravorty Spivak's original usage applies as well, in which "worlding" is an imperialist activity that naturalizes all its subjugating labels as if cartographers tell the true story. This worlding makes "first-world/third-world" distinctions while forcing "the 'native' to see himself as other."[60] I am thus also intent on avoiding the moves in the direction of innocence common in historical musicology, where affective investments in Western art music prevent thorough analyses of its position in imperialist worlding narratives.

In "Electronic Voices: Satellites, Sound Effects, and Gendered Soundscapes" I trace sonic representations of outer space from the 1957 beeping of *Sputnik 1* to the wordless vocalise of space lounge exotica in two albums by Russ Garcia to show how the woman's voice represents empty space—both enclosed domestic space and limitless outer space—in a way that supports the framing of knowledge as masculine. I apply the work of two phenomenologists, Gaston Bachelard and Don Ihde, to a string of albums from the era, following sonic discourse from an amateur satellite recording, to an acoustics pedagogy album, to science fiction sound effects, to audio drama, and finally to space lounge jazz, in order to position sound and music as correlates to an early Space Age

[60] Gayatri Chakravorty Spivak, "The Rani of Sirmur: An Essay in Reading the Archives" *History and Theory* 24, no. 3, (Oct. 1985), 254.

science fiction worldview. I argue that through imagined armchair sonic explorations, the idea of peripheral space powerfully oriented American listeners to their world, in Jairo Moreno's words, "invoking the world while, paradoxically, ignoring it."[61] In this way, anxiety-inducing Cold War tensions (defined as male), could be ameliorated by female vocalise, in that it fused the comforts of positivism and heteropatriarchal comforts of the home.

In "Musical Seascapes: Nature Documentary as an Anthropocene Genre," I describe how the nature documentary genre emerged at mid-century based on a science-fiction view of planet Earth. This chapter focuses on two nature documentaries: Jacques Cousteau's 1976 *Voyage to the Edge of the World* with a soundtrack drawn from Maurice Ravel's oeuvre, and Jean Painlevé and Geneviève Hamon's 1967 film *Les amours de la pieuvre* (The Love Life of the Octopus) with a *musique concrète* score by Pierre Henry. In order to analyze how each score functions in relation to the standard history of Western art music as conceptualized at midcentury, I triangulate my analysis of these two documentaries with Stanley Kubrick's 1968 film *2001: A Space Odyssey*. I argue that for these films, musical genre aligns cognition effect and affect in such a way that Cousteau's science-fiction adventure film could be accepted as "truth" while Painlevé and Hamon's surreal cephalopodian social commentary has been relegated to more underground viewerships. In Jacques Cousteau, we see Jameson's argument come to life, namely, that postmodernism is marked by "an immense dilation of… the sphere of commodities" as an "acculturation of the Real," resulting in "what Benjamin… called the "aestheticization" of reality."[62] In this way, midcentury oceanic nature-

[61] Jairo Moreno, "Imperial Aurality," in *Audible Empire: Music, Global Politics, Critique*, Ronald Radano and Tejumola Olaniyan, eds. (Durham: Duke University Press Books, 2016), 137.
[62] Fredric Jameson, *Postmodernism, or, The Cultural Logic of Late Capitalism* (Durham, NC: Duke University Press, 1992), viii-ix.

documentary soundtracks influenced the emerging idea of conservation by signaling crosscurrents between art and science, nature and technology, colonialist politics and conservational ethics. Ultimately, I argue that Cousteau's version has endured even though he and his crew commit a number of harms to animals, because it harnesses a musical affect that corresponds to a narrative of technological progress, providing a feeling of continued global expansion at the "end(s)" of genre, art, and history.

My third chapter, "Borderscapes, Monstrous Music, and *Rasquachismo* Cyberpunks," zeros in on the somewhat siloed, primarily Xicanx border community in El Paso, Texas across the Rio Grande from Ciudad Juarez in order to form a geographically-based case study in which musical production and consumption indexes multiple forms of ideological exchange. The *rasquachismo* aesthetic was born from the Chicano movement in the 1960s and is a form of political resistance that traverses domestic and artistic borderers. Making colorful displays that juxtapose found objects and cultural icons, rasquachismo artists convey a Xicanx survivalist spirit through an ability to embed objects with meaning. In this chapter, I scavenge a number of genres and works—Omar Rodríguez-López's 2018 horror film *Amalia*, as well as punk, prog rock, and *corrido canciones*—analyzing them through a rasquachismo theoretical framework in order to position musical materials in a way that undermines hierarchical stratification. Specifically, I home in on genres that portray abjection, like punk, prog rock, and horror, which I position politically in relation to the borderlands of the Desert Southwest, where history is tracked by *corridos canciones*. Ultimately, I ask whether music's materials can be reconstituted as cyberpunk commodities in order to undermine the currency of abjection that follows capitalist lines of commerce. If "the oppressed are formed out of the amorphous and immense mass of the wretched population," then this chapter explores what

happens when sounds are harvested from the junkyard of music history's digital archive by these very masses.[63]

Thus the dissertation simultaneously traces utopian and dystopian sonic imaginaries in order to understand how music intervenes in structural inadequacies that are biological in the broadest sense: from the ability to obtain wages, to the right to a life that is "grievable" in Judith Butler's usage, to occupying an ecological sphere (Earth as both local and global) that is thriving rather than dying, to racial, sexual, gendered, and ethnic inclusion in the imaginaries that (re)produce reality.[64] By taking a detailed historical account of aesthetic language across a variety of works and genres, my account shows how audio media has abetted a slippage between knowledge systems and entertainment, center and periphery, drawing power from marginal spaces in order to fuel American culture's invisible center.

[63] George Bataille, "Abjection and Miserable Forms," quoted in Maggie Hennefeld and Nicholas Sammond, eds., *Abjection Incorporated: Mediating the Politics of Pleasure and Violence* (Durham: Duke University Press Books, 2020).
[64] See Butler, *The Force of Nonviolence*, particularly the chapter "Nonviolence, Grievability, and the Critique of Individualism."

Chapter I. Electronic Voices: Satellites, Sound Effects, and Gendered Soundscapes

The launch of Sputnik 1 in October of 1957 was heralded by a steady rhythmic beeping broadcast across radio and television. Like a metaphorical ticking of the doomsday clock, the satellite's otherwise innocuous chirp signified what many United States citizens feared was a communist infiltration of both outer space and American living rooms.[1] Yet the mythos of American exceptionalism held fast in the face of impending catastrophe; just as Walt Disney's 1956 book *Our Friend the Atom* spun hope and pride out of the science behind nuclear devastation, Sputnik's beeping was absorbed into the growing compendium of electronic sounds that underscored everyday American life and entertainment. While on one hand it signified a loss in an ideological war against communist infiltration, on the other hand it promulgated a heroic narrative of capitalist science in the service of national growth.

This slippage was made possible in large part by an electronic sound vocabulary that imaginatively and ideologically merged domestic spaces with space travel, synthesizing America's two expansionist drives into the suburbs and into outer space—the latter barely veiled by political rhetoric that promised outer space as a neutral zone rather than its tacitly understood function as military high ground. Reporting on Sputnik 1, a television newscaster alluded to these sonically tethered territories: "Until two days ago that sound had never been heard on this Earth. Suddenly it has become as much a part of twentieth-century life as the whir of your vacuum cleaner."[2]

---

[1] The doomsday clock, a symbolic representation of nuclear threat instituted by members of the *Bulletin of the Atomic Scientists'* Science and Security Board in 1947, had been set at a meager two minutes to midnight in 1953 after both the United States and the Soviet Union tested thermonuclear weapons.

[2] Ken Hollings, *Welcome to Mars: Fantasies of Science in the American Century 1947-1959* (London: Strange Attractor Press, 2008), 183.

This chapter traces how early Space Age sounds circulated across a range of genres, snowballing signifiers on their way to public meaning consensus. Beginning with the steady beep of Sputnik 1 as a sonic baseline and proliferating out into a constellation of genres available to middle-class American consumers of the day, I argue that sound transgressed a multitude of boundaries—political, social, geospatial, and conceptual—to insinuate possible worlds into the mundane. In this way, the ideas of domestic space and outer space both emerge from (or merge with) an "invisible center,"[3] that universalizing place of power that weds identity with operating norms through the perpetuating of cultural patterns. In order for outer space to be seen as conquerable, it had to remain emblematic of the periphery, a boundless "outside" kept at bay by our earthly abode. In this way, outer space could be assimilated into colonial politics whereby the powerful center defines itself by its peripheries, occupying them, drawing from them, while simultaneously subjugating them.

Where invisibilities proliferate, they often converge in sound. The two kinds of invisibility mentioned above—the invisibility proffered by power and the invisibility of the unknown (namely outer space and the future)—were manifested in radio practices during the Cold War. Just as technology held the potential to make unseen things visible (e.g. microscopy, sonography, etc.) and produce invisible things that instigated physical change (like radio waves), it conversely allowed physical presences to withdraw into the shadows under mass surveillance systems, Big Brother listening in. A great deal has been written on Cold War suspicion; while radio served to disseminate and receive information, its use as a tool for recreational listening, both musical and narrative, allowed the kind of blurring between fiction and reality made famous by the 1938 *War of the Worlds*

[3] Russell Ferguson, "Introduction: Invisible Center," in *Out There: Marginalization and Contemporary Cultures*, (Cambridge: The MIT Press, 1992), 9.

panicked reception.[4] But what is most pertinent about the *War of the Worlds* incident was not the panicked reception, but the *belief* that people ever panicked in the first place, which Jefferson Pooley and Michael J. Socolow argue was itself a fabrication created by newspapers in order to discredit radio as a newsworthy medium. Here, 1938 newspaper tactics presaged the accusations of Trump-era "fake news" with the New York Daily News headlining the story, "Fake Radio 'War' Stirs Terror Through U.S."[5]

In this way, the social implications of sound and its relation to the invisibility of power shares conceptual space with both the technologically circumscribed limits of perception. As Donna Haraway reminds us, this makes the boundary between physical and non-physical very imprecise, which can map onto the limits of believability, marking a fiction/nonfiction divide.[6] Sound can help us understand both the urge and the difficulty to traverse what Don Ihde has termed the "hermeneutics-positivism binary."[7] While our perception of sound is physiological, it easily assimilates into the poetics of the invisible, a darling of the phenomenological urge to reconcile observation and interpretation. This urge is traceable to the middle and late decades of the twentieth century, when "sound worlds" surfaced as a descriptor attached to a diverse array of aesthetic

[4] Neil Verma argues that listeners were primed for panic due to both recent news coverage of the Munich crisis, as well as the aesthetic parameters of the show itself. But this causal link might also serve merely to support the idea of a public panic in order to discredit radio. See Verma's *Theater of the Mind: Imagination, Aesthetics, and American Radio Drama* (Chicago: University of Chicago Press, 2012).

[5] Jefferson D. Pooley and Michael J. Socolow, "Orson Welles' War of the Worlds Did Not Touch Off a Nationwide Hysteria. Few Americans Listened. Even Fewer Panicked.," Slate Magazine, October 29, 2013, accessed January 3, 2020 https://slate.com/culture/2013/10/orson-welles-war-of-the-worlds-panic-myth-the-infamous-radio-broadcast-did-not-cause-a-nationwide-hysteria.html.

[6] As Haraway describes in her "Cyborg Manifesto," "Our best machines are made of sunshine; they are all light and clean because they are nothing but signals, electromagnetic waves, a section of a spectrum…" in "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century," in *Simians, Cyborgs and Women: The Reinvention of Nature* (New York: Routledge, 1991), 294.

[7] See Don Ihde, *Expanding Hermeneutics: Visualism in Science*, 1st ed. (Evanston, Ill: Northwestern University Press, 1999).

categories: from a reference to the sounds of the technologically developing world, to the imagined worlds depicted in radio plays and narrative albums, to the sonic languages of individual composers, to species-specific *Umwelten*, the sensory self-worlds available to humans and non-humans, which bind a creature to its environment.[8]

We can similarly compare sound *worlds* to sound *masses* like those employed in Edgard Varèse's 1956-58 *Poème electronique* or György Ligeti's 1958-59 *Apparitions*, which seem eager to exemplify sonic manifestations of Einstein's theory of relativity, as if sound could bind mass and energy (perhaps not unlike scientologists' belief that thoughts have mass).[9] Around this time, the term *soundscape* was coined by R. Murray Schafer, the Canadian composer and environmentalist who was so concerned with the inimical effects of technology's raucous intrusions into the everyday environment (in his view a form of "sound imperialism" expressing power through noise) that in 1969 he instituted The World Soundscape Project, a research group that attempted to bring about awareness of noise pollution and its consequences on the human psyche. And finally, space exploration was assimilated into the language of tonal exploration, which allowed it to soundtrack the fiction of utopian domesticity. In this massive array of sound world descriptors, the physical/nonphysical problem plays out between constructed soundworlds and the soundscapes of the world. If exploration served national interest through its discoveries of military high grounds,

[8] The concept of the *Umwelt* was developed by the German biologist Jakob von Uexküll, and became highly influential for posthumanist inquiry. See Jakob von Uexküll, *A Foray into the Worlds of Animals and Humans: With a Theory of Meaning*, trans. Joseph D. O'Neil, 1st ed. (Minneapolis: University of Minnesota Press, 2010).

[9] Incidentally this work can be categorized as both an architecturally contained sound environment and an imagined sound world, given the Philips Pavilion's ephemerality. As a counter example, it is not difficult to find examples of associations between tonal adventurousness and space exploration in popular entertainment and critical discourse. Consider Elvis Presley's 1957 *Jailhouse Rock*. In the film, after Elvis's character is released from prison, his record producer takes him to her professor father's pretentious party and a conversation ensues in which the aesthetic qualities of atonal experimentation in jazz is debated. Lennie Tristano's "latest" recording is said to "reach outer space."

this "service" could be enacted in the home, where sonic forays into outer space allowed an illusion of private participation in world(s) competition.

This chapter will address just a few of these aesthetic categories as a small constellation of metaphors where sound invokes image and narrative. Following science fiction author Samuel Delany's argument that "every fully-functioning metaphor…is a cyborg," this chapter seeks to describe some of the social mechanisms that emerge from midcentury human-sonic interactions. Tracing conceptual continuities within an emerging sonic vocabulary I illustrate how audio media abetted a slippage between epistemologies and daydreams, center and periphery, an umbilical cable that anchored the domestic home to the political fantasies of a patriarchal society.

In the opening to *The Human Condition* (1958), Hannah Arendt describes the launch of Sputnik 1 as the first material manifestation of mankind's long-cultivated desire to escape the earth. Bringing sound to the fore I begin with the same event, its electronic pulse sounding the cyborgian life-pulse of nascent otherworldly soundscapes, which mirrored perceptions of and aspirations to fictive normality. In the first section, I focus on a 1958 recording made by amateur radio operator and physics professor, T.A. Benham, entitled *Voices of the Satellites!* to illustrate how the onset of the Space Race contributed to the production of popular pedagogical recordings utilizing satellite radio signals. I then turn to two more recordings released that same year, one on the physics of sound and another a compilation of science fiction sound effects, in order to highlight how aesthetic tendencies crossed the scientific/fantastic divide, allowing sounds to derive a "cognition effect" that mimicked Benham's mathematical expertise. In the second section, I consider how the affirmation of life inherent in voice and breath reflected a contemporary phenomenology of space that created a slippage between the cradle of the home and the cosmos, a slippage that was undergirded by

newfound sonic signifiers and reinforced by patriarchal gender roles. In the final section, I turn to two space lounge albums released by film composer Russ Garcia featuring the voice of Hollywood dubbing artist Marni Nixon: *Sounds in the Night* (1957) and *Fantastica: Music from Outer Space* (1959). I argue that these albums signal the full move to the symbolic in which wordless vocalise, often soprano, represents the woman as outer space itself—the ultimate empty vessel. In conclusion, I briefly consider a reception history that draws out the estranging qualities of this repertoire in similar ways to science fiction literature. Having drawn an aesthetic line from recordings espousing ostensibly "pure science" through fiction radio drama to the kitschy mass production of space lounge music, I argue that the American soundscape at the start of the Space Age signaled an understanding of reality that combined science and science fiction in near equal measure.

Eavesdropping on the World

The first chirpings of Sputnik 1's radio signal were broadcast through public radio and television by way of amateur radio equipment. Due to a series of miscommunications within the international science community, the Soviets had programed their radio signals to a different frequency than what had initially been agreed upon by the committee for the International Geophysical Year (IGY).[10] As a result, IGY-involved nations turned to the international community

[10] The International Geophysical Year (actually a period of eighteen months scheduled from July 1, 1957 to December 31, 1958 to coincide with the period during which the sun's activity was highest) was organized as a peaceful precedent for international science and space enterprises. As part of the IGY, the first satellites were meant to map and study the Earth, from oceanography to glaciology to the movement of the tectonic plates, many of which yielded momentous results. These miscommunications appear to be less the fault of the Soviets than has formerly been thought. When the United States announced in 1955 that they were planning a satellite program with a launch goal toward the end of the International Geophysical Year, the Soviets responded vaguely that their own satellite project was possible in the "comparatively near future," but gave no indication whether or not it would be of service to the IGY. However in 1956, they confirmed IGY participation, and in 1957 Soviet scientist Ivan P. Bardin sent specifications to the U.S. IGY office who neglected to forward this information to American scientists working on tracking systems. Several other

of amateur radio operators to determine the velocity and orbit of Sputnik 1 for the first few days after launch while official tracking stations adjusted their instruments. For a brief moment, hobby scientism in the United States seemed to gain the dimension of national import, the stuff of dreams for ham radioists. It was almost as if they were undermining Theodor Adorno's criticism that amateur radio enthusiasts operated under a pretense of agency, "only interested in the fact of hearing—the fact of being inserted, with private equipment, into the public mechanism, without exerting even the slightest influence on it" (I will discuss Adorno's critique later).[11] Not only was the input of amateur scientists substantial during the late fifties and early sixties, but in this singular case, the "fact of hearing" from remote locations across the world on the part of hams and other radio amateurs contributed to scientists' understanding of this first successful experiment in rocketry, a rare bite from the commodity scientism carrot.[12]

To an extent, the enlisting of radio amateurs figured into both the Soviet engineers' and the IGY committees' plans from the beginning. Starting a year or so before the launch of Sputnik 1, amateur radio magazines like *Radio* in the Soviet Union and *QST* in the United States provided descriptions and instructions for likely tracking protocol, materials, and settings for upcoming satellite launches, and the Smithsonian Astrophysical Observatory gained sponsorship from IGY to coordinate visual and auditory tracking communities with its Projects Moonwatch and

---

communications occurred in which Soviet scientists provided information but appear to have not been taken seriously. For more information see Rip Bulkeley's "Harbingers of Sputnik: The Amateur Radio Preparations in the Soviet Union" in *History and Technology*, 16:1 (1999).

[11] Theodor W. Adorno, "On the Fetish-Character in Music and the Regression of Listening (1938)," in *Essays on Music*, ed. Richard Leppert (Berkeley: University of California Press, 2002), 288-317. The nineteenth-century pejorative label of "ham" to describe amateur radio practitioners had by the mid-twentieth century been reclaimed by the community and was used almost ubiquitously.

[12] As W. Patrick McCray argues, some groups like Project Moonwatch continued to contribute to astronomy into the 1970s. See his "Amateur Scientists, the International Geophysical Year, and the Ambitions of Fred Whipple," *Isis* 97, no. 4 (Dec. 2006), 634-658.

Moonbeam.[13] From the construction end, Sputnik 1's chief designer, Sergey Korolev stated that the satellite's transmitter signals should be picked up by "the most dilapidated receiver, that the whole world should hear them!"—a call for science as public domain if not also a patriotic trumpet of the Soviets' soon-to-be success.[14] At the same time, just as a wide range of instruments and instrument quality was available to different amateurs and groups across the globe, radio amateurs themselves differed in how they listened, what they invested, and what they hoped to gain. Serious amateurs are loathe to be included with dabblers, hobbyists, and devotees in critical radio literature, and indeed there is profuse variation in practices and scientific contributions.[15] While according to some reports by British and American visitors to the Soviet Union, the "backwards" receivers used by the Russians were incomparably low quality in comparison to those available in the West, the materials funded by IGY such as those for Project Moonbeam were also not comparable to those found in the homes of American hobbyists.[16] As such, listening practices were and continue to be tied up with both material conditions and a range of personal motivations.

The single overarching objective sought by radio amateurs was access, whether to outer space via satellites, the world, a nation, a neighbor, or one's spouse. It implied the superhuman power of invisibility, as illustrated in the countless pulp science fiction magazines and comic books in

[13] See Bulkeley, "Harbingers of Sputnik" and McCray, "Amateur Scientists, the International Geophysical Year, and the Ambitions of Fred Whipple." The magazine, *QST* is so called in reference to the amateur radio shorthand for "calling all stations."
[14] Quote taken from Asif A. Siddiqi, "The Space Review: Sputnik Remembered: The First Race to Space," *The Space Review*, October 9, 2017, accessed March 22, 2018. https://www.thespacereview.com/article/3344/1.
[15] W. Patrick McCray lists these categories in "Amateur Scientists." He also credits several publications by Robert A. Stebbins for elucidating these categories, including "Avocational Science: The Amateur Routine in Archaeology and Astronomy," *International Journal of Comparative Sociology* 21, no. 1 (1980): 34–48; "Amateur and Professional Astronomers: A Study of Their Interrelationships," *Urban Life* 10 (1982), 433–454; and *Amateurs, Professionals, and Serious Leisure* (Montreal: McGill-Queen's Univ. Press, 1992).
[16] Bulkeley, "Harbingers of Sputnik," 86.

circulation (as we all know, the primary reason to choose invisibility as your superpower, as comic book fans often do, is for purposes of surveillance).[17] Thus it is no surprise that radio practices often seem to have been undergirded by a fascination with eavesdropping, a perhaps more innocent form of surveillance, which had been a topic of increasing national concern amidst the technological developments and political climate of the Cold War. "Eavesdrop" is popular catchword in electronics magazines, with examples ranging from nostalgic narratives describing first encounters with radio to myriad advertisements to conspiracy theories involving the government, aliens from outer space, or both.[18] The word itself implies proximity, standing just under the eaves or roof overhang in order to get the best access to what is being said inside the house, the ability to listen without making one's presence known.

With information increasingly synonymous with power, the ability to tap into secret/private correspondence was seen as invasive and totalitarian in the hands of government (American or otherwise) and rightful or libertarian in the hands of civilians; as a 2017 Denver Post headline reads, "Transparency is for government, privacy is for people."[19] Indeed, as has oft been noted suspicion of government surveillance was in fact warranted under government programs that increasingly took

[17] H.G. Wells first popularized the power of invisibility in his 1897 novel, *The Invisible Man*. By the mid-twentieth century, a slew of characters with invisibility abilities had been created in comic books, including but not limited to Martian Manhunter (DC Comics, first appearance in 1955), Invisible Woman (Marvel, first appearance 1961), and Dr. Fate (DC Comics, first appearance in 1940).

[18] For example, an editorial in the magazine *Popular Communications* describes how the author discovered the ability to listen to a St. Louis baseball game in Philadelphia, allowing him to "eavesdrop on a nation." See "Is There a Greater Hobby? Why Bother Looking?" in *Popular Communications* (September, 1995), 5. A recurring ad that ran in the late 1950s in *Popular Electronics* magazine read "Eavesdrop with a pack of cigarettes. Miniature transistorized radio transmitter…" The selling point of using radio to eavesdrop has remained standard today. In 2006, a recurring ad in *Popular Electronics* for the MFJ MultiReader radio reads, "Eavesdrop on the world's press agencies transmitting *unedited* late breaking news in English—China News in Taiwan, Tanjug Press in Serbia, Iraqi News in Iraq—all on RTTY [radio teletype]."

[19] Jon Caldara, "Transparency Is for Government, Privacy Is for People," *The Denver Post* (blog), March 18, 2017, https://www.denverpost.com/2017/03/18/transparency-is-for-government-privacy-is-for-people/.

advantage of Franklin D. Roosevelt's 1940 secret executive order authorizing wire-taps of "subversives" and suspected spies. For 30 years between 1945 and 1975, advancements in technology allowed the National Security Agency's "Project Shamrock" to conduct mass surveillance on U.S. citizens with increasing accuracy and detail, often targeting civil rights leaders, antiwar protesters, and others deemed to be "unreliable."[20] This long period of suspicion crescendoed to rampant distrust during the second "Red Scare" period following World War II in which the United States Congress became obsessed with the idea that intellectuals, cultural movers-and-shakers, and political dissidents were "communists" who needed to be surveilled, punished, and blacklisted. This distrust culminated in the horror of the McCarthy era, known for indiscriminate accusations and disregard for evidence.

While cyber-hacking has significantly altered expectations and acceptable parameters for government transparency and privacy, the idea that civilians have certain rights of access and protection is rooted in midcentury practices. As mentioned above, "eavesdropping" was used equally to describe innocuous activities like listening to baseball game coverage or ham radio practitioners ineffectually plugging in to the public mechanism, as well as more cagey activities like investigating spousal fidelity or, at the extreme end, engaging in espionage. But what does "scientific" access mean, and where does it fall ethically? Although the internationally agreed upon (public) stance held that scientific access should be universal (the democratic flipside to the idea that science provides access to universal truth), maintaining scientific secrets and/or gaining access to them fueled the

[20] For instance, in the 1960s computers made it possible to search correspondence by keyword as opposed to manually monitoring messages. For more information on Cold War surveillance and its effects in the social sphere, see David H. Price, *Threatening Anthropology: McCarthyism and the FBI's Surveillance of Activist Anthropologists* (Durham: Duke University Press, 2004).

Cold War generally and the Space Race specifically. Thus, Korolev's statement that signals from Sputnik 1 should be picked up by "the whole world" was perhaps less about scientific generosity and more about using the satellite as a world-wide loudspeaker advertising Soviet superiority, an announcement that would be all the more impactful for its element of surprise. This would essentially turn the tables on Americans listening in. Surprise! You lost.

It is appropriate to this account that David Brion's essay on the ideological underpinnings of conspiracy theory, "Some Themes of Counter-Subversion: An Analysis of Anti-Masonic, Anti-Catholic, and Anti-Mormon Literature" was first published in 1960.[21] Literary historian Ed White, has traced a lineage of thinking to this essay, in which conspiracy theory is understood as fundamentally illogical—an understanding that persists today. But White argues that in eighteenth-century America, conspiracies were a regular occurrence enacted by both the powerless and the powerful, and were regular public interactions through which powers and freedoms were negotiated. And while secrecy is fundamental to conspiracy, "[c]onspiratorial acts and theories not only signaled systemic patterns and tendencies, they also typically necessitated knowledge of the same, since strategic actions had to anticipate characteristic structural and institutional responses."[22] Still, those who feared conspiratorial action tended to be those already in power since uprisings threatened the status quo. In this way, the conspiratorial interaction is negotiated through informational flow—upholding the idea that conspiracy theories are often believed to be the province of illogical thought, in this way also protects those who would conspire. This is why it is in the best interest of the powerful to scramble the code, supporting the public perception of a free and open informational

[21] David Brion Davis, "Some Themes of Counter-Subversion: An Analysis of Anti-Masonic, Anti-Catholic, and Anti-Mormon Literature," *The Mississippi Valley Historical Review* 47, no. 2 (1960): 205–224.
[22] Ed White, "The Value of Conspiracy Theory," *American Literary History* 14, no. 1 (March 1, 2002): 15.

flow, while allowing a certain level of conspiracy theory to proliferate in order to further discredit its own form.

It is not surprising that Brion wrote his essay in 1960, during a period that had just emerged from national trauma and distrust, compounded by proliferating technology. Adorno's criticism of ham activity is pertinent here, because allowing the public to believe a conspiracy theory not so different from allowing amateur radio enthusiasts to believe they were plugged into the public mechanism as individual contributors who could participate in scientific inquiry and government affairs, rather than merely as cogs within a prefabricated system. For amateur radioists, credibility and believability were largely aesthetically informed.

Where does this lead us? I argue that electronic sounds tend to support a "cognition effect"—a way of using language to build an idea's credibility regardless of its relationship to truth or a speaker's expertise. Perhaps just as listening itself could be understood as positive or negative based on who was on which end of the receiver, listeners also might feel inclined to assign trust or distrust based on sonic cues. But more importantly, the ludic aspect was likely not entirely lost on radioists. Ironically, the game-like quality lent itself well to the family-friendly packaging, which itself supported an idea of science as a universal domain.

One radio enthusiast, Dr. Thomas Alonzo Benham of Haverford College, made an album from personal recordings he compiled of the first six Soviet and American satellite launches, resulting in *Voices of the Satellites!*, released on Folkways Records in 1958.[23] Primarily pedagogical in content,

[23] Benham initially published the album on his own recording label, TABEN (T.A. BENham). The company appears to be active, though I have been unable to locate other recordings under the label.

the album is comprised of fourteen tracks in which Benham narrates over the satellites' radio signals to illustrate telemetering methods and provide information about each satellite.

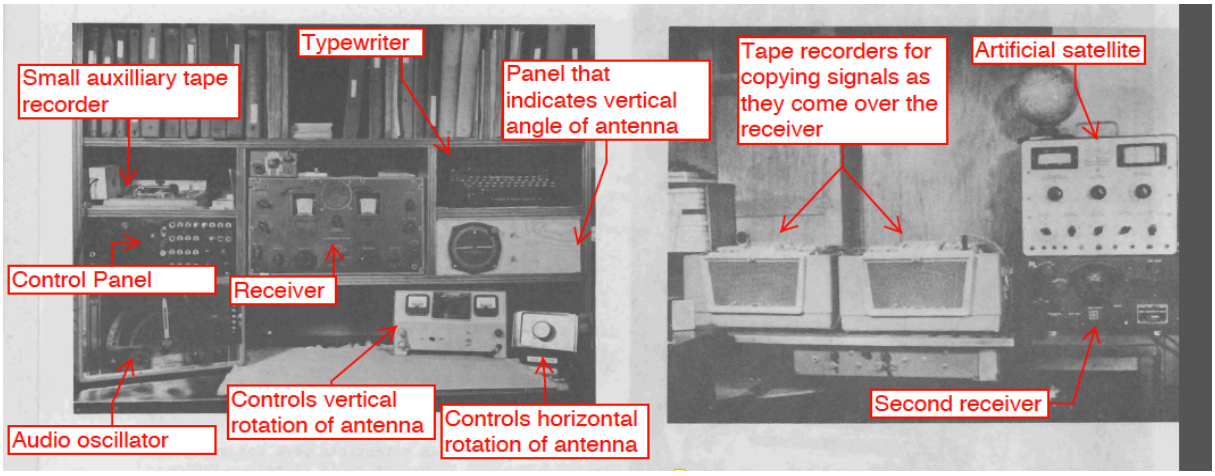

Figure 1.1: Images from the liner notes to T.A. Benham's Voices of the Satellites! *I have added labels according to his detailed descriptions of each apparatus, its function, and instructions on how to derive signals and calculate telemetric information.*

Peppering equations with personal anecdotes, his monologue emulates the recent-decades' influx of pedagogical sound recordings, aligning his tone with the Cold War trend of popularizing knowledge production through family-friendly science. *Voices* was in fact explicitly domestic: the typewritten liner notes provide photos of his family alongside overviews of equipment, detailed descriptions of their functionality, and basic mathematics for calculating velocity and distance based on signal information. Taken together, the album and liner notes resemble a "listen while you read" companion package not unlike the format of the wildly popular Little Golden Books and Little Golden Records which had been in circulation as box sets since 1948.[24]

[24] Originally conceived of only in book form, publishing company, Simon & Schuster started printing Little Golden Books in 1942. Inexpensive and accessible, these books were meant to comfort American children during World War II. First produced in 1948, Little Golden Records were companion records that played a couple of minutes of music to accompany each book.

A professor of physics and engineering, Benham's institutional affiliations and skill set bely his "ham" status, while the amateurish recording quality conveys a hobbyist aesthetic.[25] The liner notes similarly read like a personal log, alternating between accounts of individual satellite launches, procedural directions, and equipment overviews. Taken together, the recording conveys a feeling of intimacy, evoking a knowledgeable father figure whose near-God access to the workings of the universe stem from his ability to hear.[26] In this way, the poor quality of the recording lends a certain credibility to its content: the recording crackles with the low production value of an authentic scientist, comparable perhaps to the extemporaneous audio note-taking of a low-fi field recording. Like a musicologist studying the singing of satellites, Benham understands sound as simultaneously method and the object, the technology and its sonic traces. Some tracks consist of brief comments preceding sustained recordings of fuzzy transmissions (on one track he draws attention to "fading," a form of sonic interference which he explains was particularly marked due to an Aurora Borealis that night), while other tracks provide vividly descriptive continuous stream-of-consciousness informational narration layered over satellite transmissions. For example the track "Explorer 3" offers this explanatory interlude between audio examples:

> At 2:45 PM we heard a very faint and short duration signal, indicating that the orbit was not as planned. Because if things had gone as scheduled, the signal should be very strong and should last for several minutes. Our deduction was that the satellite was very low thus it came up over the horizon for only a short time. This would account for the short duration of the signal and its weakness. From the speed up of the rocket from the takeoff, as indicated by the increase in pitch, it could be deduced

[25] Indicative of his status in the scientific community, Benham was influential for Joseph Taylor, a young student at Haverford in the early 1960s who went on to win a Nobel Prize in physics.

[26] It is noteworthy that T.A. Benham was blind and contributed extensively to the development of resources for the blind and visually impaired. Although I do not discuss the ramifications of this detail here, it may be worth considering in terms of Benham's particular form of practiced listening.

> that the speed was normal. This would mean that at the other extreme of the orbit on the other side of the earth, the distance would be large. It turned out to be about 1,730 miles. The distance at the near approach turned out to be about 120 miles. Let us listen to a few seconds of that short duration weak signal that led us to these conclusions [fuzzy transmission follows].[27]

Thus, each track demonstrates various processes by which new information can be derived from the transmission of satellite sounds, some including detailed technical inferences. While the album is informative, the pedagogical legibility varies almost as if Benham only occasionally realizes that he has an audience. Yet in these moments, it seems equally plausible that he would be addressing his children as much as lecturing university students. A listener familiar with Disney's coeval series on space travel might imagine Benham's explications playfully animated.[28] Where Disney's esteemed host, aerospace engineer Wernher von Braun (who hoped "America's devotion to space fiction…could be channeled into interest in space fact") harnessed visual diagrams to illustrate speeds and trajectories as seen in Figure 1.2, Benham harnessed sound.

For instance, in the first track, "Introduction Part I," Benham describes how a satellite's position and distance can be determined based on frequency (pitch) and the Doppler effect. Narrating over the recorded sound of Sputnik I's approach over Philadelphia on October 26th, 1957 (now heard as a sustained hum since the beeping mechanism had failed after the initial few days), he proceeds to determine the satellite's altitude and speed by matching pitch with an audio oscillator,

---

[27] Thomas Alonzo Benham, "Explorer 3" *Voices of the Satellites!* Folkways Records FX 6200, 1958. CD.

[28] Disney exemplifies the science-for-family model, providing some of the most influential and widespread programming: *Our Friend the Atom*, which espoused a utopian view of atomic energy, was made into both a picture book (1956) and an hour-long television special (1957) on Walt Disney's show. Also notable is a trio of episodes on the *Disneyland* show created with the input of aerospace engineer Wernher von Braun (and which Disney described as "science factual"): "Man in Space" (1955), "Man and the Moon" (1955), and "Mars and Beyond" (1957), as well as multiple shorter documentary animations like "Eyes in Outer Space" (1959), among others. Reportedly, 42 million people viewed "Man in Space."

highlighting the length of time it takes for the pitch to change as well as the change in pitch per second during its most rapid descent. In other tracks, he deduces different phenomena based on

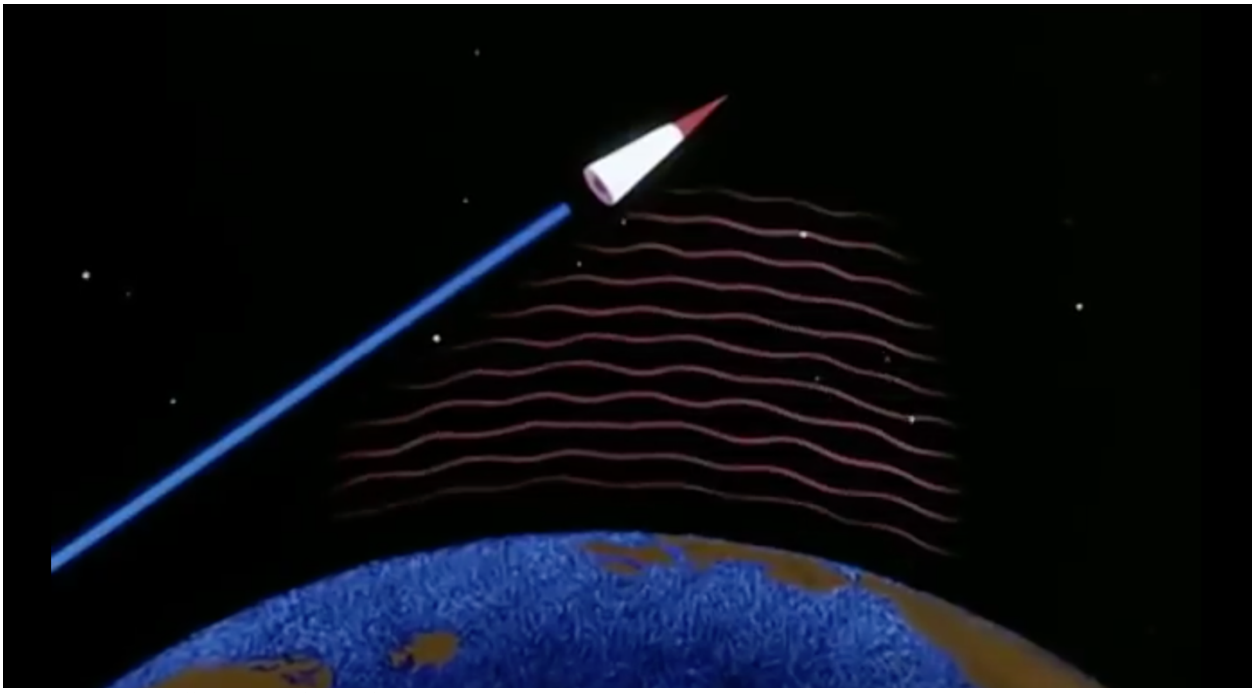

Figure 1.2: An illustrative frame from Disney's "Man in Space" (1955)

sound: pitch flutters illustrate variations in the ionosphere, a wavering in Vanguard's third attempt indexes a rotating system, differing modulation characteristics indicate different kinds of batteries, and certain frequency shifts indicate different temperatures. In the instances in which he was unsure of his interpretation, he checked against the findings of the scientific community, modeling the scientific truth-as-consensus model to confirm his findings. From this, he was able to gather data about both the instrument and its environment—that differing modulation characteristics indicate different kinds of batteries, or that pitch flutters illustrate variations in the ionosphere.

The ostensible purpose behind the launch of Sputnik 1 was the study of Earth—the satellites were intended to see *through*, not at. As part of the International Geophysical Year (IGY) project, which was organized as a peaceful precedent for international space enterprises, the first satellites were meant to map and study the Earth, from oceanography to glaciology to the movement of the tectonic plates. Indeed, several significant discoveries were made by subsequent IGY satellites, both Soviet and American. Yet the unexpected launch of Sputnik 1 was so monumental that rather than focusing on the information provided by the instrument about Earth's physics, it was equally compelling to study the effect of physics on the satellite itself. In this way, radio enthusiasts like Benham became secondary observers: with earthbound receivers tuned to the sub-perceptual frequency of the satellite's "voice" (it is perhaps not coincidental that Benham named his album *Voices of the Satellites*), Sputnik 1 itself became the object of study.

In a sense, Benham does similar work to von Braun. Whereas von Braun's tools harness conceptual mathematics in order to engineer and orchestrate rocket propulsion, Benham's tools reverse the process calculating both environmental factors and satellite position and motion from sonic clues. Because sound ostensibly serves the same illustrative purpose for Benham as chalk on a blackboard does for von Braun, it is easy to interpret both as a means to similar conceptual spaces. Thus, Benham's recordings offer their listeners direct access to natural phenomena that are nevertheless ingrained in technological sound-space, conveying a form of what Lorraine Daston and Peter Galison have termed "mechanical objectivity," an "ideal of objectivity [that] attempts to eliminate the mediating observer."[29] Stemming from a tradition of moralizing mechanical devices as

[29] Lorraine Daston and Peter Galison, "The Image of Objectivity" in *Representations*, No. 40, Special Issue: Seeing Science (Autumn, 1992), 82.

cognitively neutral with the capacity to produce truth-to-nature imaging, the ideals of mechanical objectivity notably emphasize a non-interventionist philosophy. Rather than the "seeing *as*" of hermeneutics, mechanical objectivity assumes a "seeing *that*."[30] In this case, Benham taps into the "hearing *that*" of mechanical objectivity by quantifying the physics of various satellites' trajectories through mathematizing, using sound as a tool for measurement. The interpretive dynamic of his technological devices disappears into the conceptual elision of sound as a nonmaterial entity and hence as a mathematical entity in its own right.

Half a century later, phenomenologist Don Ihde offered what he calls "material hermeneutics," an approach that views mechanical instruments as interpretive devices. Partly hermeneutic aids, partly technological embodiments in their own right, technological devices allow us to form hybrid human-technological perceptual systems that can access phenomena which are otherwise sub-perceptual to humans like atmospheric pressure and ionospheric physics.[31] For Ihde, technology provides access to aspects of reality that would otherwise remain hidden, in this way becoming implicated into the human formation of situated reality. In other words, instrumental interventions provide "interpretations" of the world, translating it (and hence *transforming* it) into forms we understand.

Expanding on this logic, Benham's analysis provides a layered subject/object perceptual system in which sound bridges the two instrumental systems in home and space. Just as the satellite uses its "perceptual" system to interpret its environment, Benham uses his perception to provide a scientific hermeneutic of sound based on the affordances of his home configuration. And ultimately, the

[30] Ibid. 83.
[31] Don Ihde, *Expanding Hermeneutics: Visualism in Science* (Chicago: Northwestern University Press, 1999).

listener similarly uses a device in order to access Benham's album—a cyborg listening to a cyborg. Here, unlike the straightforward algebraic formulas that he uses to describe the satellite's activity, Benham's sounds readily transfer to different hermeneutic realms, namely music and drama, traversing a sonic bridge not only between physical spaces but conceptual ones.

There is an oddly captivating quality to reading Benham's lessons in mechanical objectivity via material hermeneutics, a way of hearing his scientific explanation as an aesthetic experience, a sort of "voice as something more" in the sense used by Martha Feldman and Judith T. Zeitlin. That is, the "voice" of Benham's satellite is not a "vanishing mediator" as Mladen Dolar describes the human voice, but one whose meaning is immanent to its sound.[32] Listening to the hypnotic rhythm of oscillating transmissions and discussion, the recording easily ignites a dispersed *listening* subjectivity whereby Space Age listeners could picture themselves in Benham's laboratories (one at Haverford College and one at his home, as he specifies) or in space with the satellites—out of home, out of planet, saturated in meaning. In this way, the listener's scientistic foray becomes an aesthetic encounter. The layman can tour knowledge as an armchair scientist as much as exotica allows for armchair travel from a colonialist perspective. In this way, Benham's coupling of aesthetic and scientific meaning (with its many contemporary connotations for national power and identity) created a sort of programmatic work in which sounds both gained meaning and became part of a narrative.

Taking Delany's earlier point that metaphors can be understood as meaning-producing cyborgs the logic of Benham's album creates a conjoined set of aspects between sound and physics.

[32] Martha Feldman and Judith T. Zeitlin, "The Clamor of Voices," in *The Voice as Something More* (Chicago: University of Chicago Press, 2019) and Mladen Dolar, *A Voice and Nothing More* (Cambridge: MIT University Press, 2006).

But the important takeaway from Delany's point is not the cyborigian quality itself, but what psychologically remains in excess when two concepts are bound together. If "the function of all metaphor is to compare objects in such a way that their identical aspects are formed into a logical system while their nonidentical aspects gain in psychological intensity through the very search process by which the system was created," what vividly remains when we hear the "voices of satellites"?[33] What associative elements might have been in excess of the sounds and signifiers of Benham's presentation?

There is a way in which this question sheds light on the sway of commodity scientism. From the standpoint of Space Age consumers, both reality and technology were always obscured whether by the inscrutability of science and math or by the machinations of the government, yet both were continually and paradoxically held at bay by the promise of *access* to truth. If a scientistic approach to technology reinforced the fetishistic quality of consumer scientism by adding "truth" to the continually inaccessible capitalist palliatives of affluence, comfort, and good conscience, at the same time it turned "eavesdropping" into a neutral or even noble pursuit.

In order to imagine some of the sonic horizons producing excesses of meaning, a brief survey of a few other recordings will be instructive. Another album released by Folkways records in 1958, *The Science of Sound*, seen in Figure 1.3, provides a rudimentary lesson on acoustical physics with tracks such as "Vibration and Resonance," "Noise Measurement," and "Echo and Reverberation." Several tracks highlight similar sonic phenomena to Benham's album, such as frequency and the Doppler effect (also like Benham, this recording employs the archetypal illustration of the speeding car to demonstrate the Doppler effect—a sonic emblem of commodity scientism). However, other

[33] Samuel Delany, "Reading at Work" in *Longer Views* (Middletown: Wesleyan University Press, 2011), 106-107.

tracks sidestep to musical topics like "Musical Scales," "Dissonance and Consonance," and "Vibrato and Tremolo," shifting from the physics of sound phenomena to Western art music theory. In one track, "Music or Noise," the narrator reaches for objective language in order to differentiate the two categories based on how the ear drum is affected—with either "more or less regular and periodic motion" for musical sound or "irregular motion" for noise. Ultimately, he is unable to avoid basic aesthetic value judgments like "pleasing" and "unpleasant." The accompanying booklet similarly describes in anthropocentric terms the "various phenomena of sound as an aid to understanding how sound is put to work *for the benefit and pleasure of man* [emphasis added]." If musical sound is defined as "periodic motion," then do the "voices" of the satellites elicit a pleasurable response? Here, agreeable and pleasing techno-scientific sounds from space import a range of fantasies from Western European art music—one psychologically vivid factor in excess of Benham's sounds and signifiers.

Still other recordings proliferate with metaphors that became standardized within the Space Age's new sonic vocabulary. Released in the same year and by the same production company as the *Science of Sound* album, *Science Fiction Sound Effects* consisted of 33 tracks on two discs (originally LPs) with titles that range from the semi-mundane ("Elevator," "Electronic Drone") to the newly familiar ("Rocket Blastoff," "Launching Site") to the fantastical ("Cosmic Bombardment Indicator," "Sound of Approach of Missile or Creature"). While the album's lack of liner notes makes it difficult to confirm equipment makes and models, its tracks sound as if they were created by tone oscillators akin to the kind Benham used to confirm satellite frequency, only this time in tandem with the vacuum tube oscillators and feedback systems used in avant-garde music. Several tracks evoke Benham's satellites: "Tone Pyramid, Sweeps & Drones" consists of a steady beeping akin to

Sputnik's first transmission and "Sonic Search" provides a faint tone enveloped in a blanket of static white noise, reminiscent of weaker satellite transmissions.

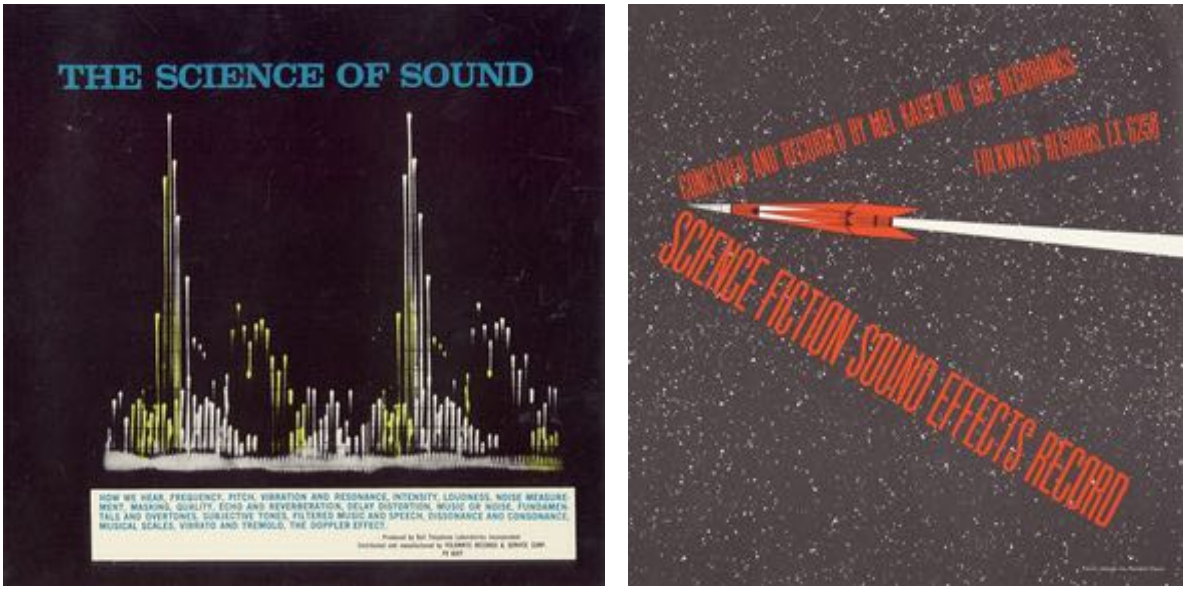

Figure 1.3: Two albums produced by Folkways Records in 1958: The Science of Sound *and* Science Fiction Sound Effects

A similar aesthetic pervades all tracks; despite subtle variations, "Rocket Primer," "Space Ship Hatch: Opening," "Exterior of Space Ship in Motion," and "Elevator," depict nearly identical textures, tonal movement, and rates of change, creating a sonic slippage between different imagined sources. The acoustic "sound of objectivity" exemplified by Benham's satellites were thus inlayed with fantastical visions and a breadth of metaphorical excess.

Between House and Universe

These records were custom made to be experienced within the utopian model of the middle-class home. Benham's family-oriented pedagogical tone lent easily to a domestic environment not

least because his liner notes are filled with anecdotes about his home and family. In addition to several photos of his home laboratory set-up, Benham included photos and descriptions of his children. Depicted as budding scientists, their purported experimentation generates further liner-note explication of technological set-up and processes. In one anecdote, Benham describes how he "came in to find two of my children, Connie and Roby, intently listening to Explorer IV. After the path was worked out from a recording made from the other receiver, they were thrilled to discover that the satellite had passed overhead at a height of 615 miles, heading northeast." The children are then shown apparently captivated not only by what they hear but by the instruments themselves.

Benham's pedagogic tone suited his subject and audience, who certainly would have been familiar with popular televised programs depicting family-friendly science, and may have been privy to the records described above. Implied was an image of the home laboratory (or home-as-laboratory) through which families could safely access outer space. Apropos to these ideals, Gaston Bachelard's 1958 book, *The Poetics of Space* offered a phenomenological interpretation of architectural spaces. In it, Bachelard described the home, particularly one's first home, as the shelter and producer of imagination, "the first cosmos…[whose] space…shapes all subsequent knowledge of any space, of any larger cosmos."[34] For Bachelard, the home mediated between humans and the universe, assuming a seemingly paradoxical dual role of protector and portal. Furthermore, the house was not only a shelter for the imagination; humans need houses in order to dream. In his words, "[a]t whatever dialectical pole the dreamer stands, whether in the house or in the universe, the

[34] John R. Stilgoe, Foreword to Gaston Bachelard's *The Poetics of Space* (Boston: Beacon Press, 1994), viii.

dialectics become dynamic. House and space are not merely two juxtaposed elements of space. In the reign of the imagination, they awaken daydreams in each other, that are opposed."[35] It is notable that the domestic daydream described above invokes a dialectic with the two primary schools of thought about space power: the idea of space as the ultimate sanctuary—a pristine frontier free of

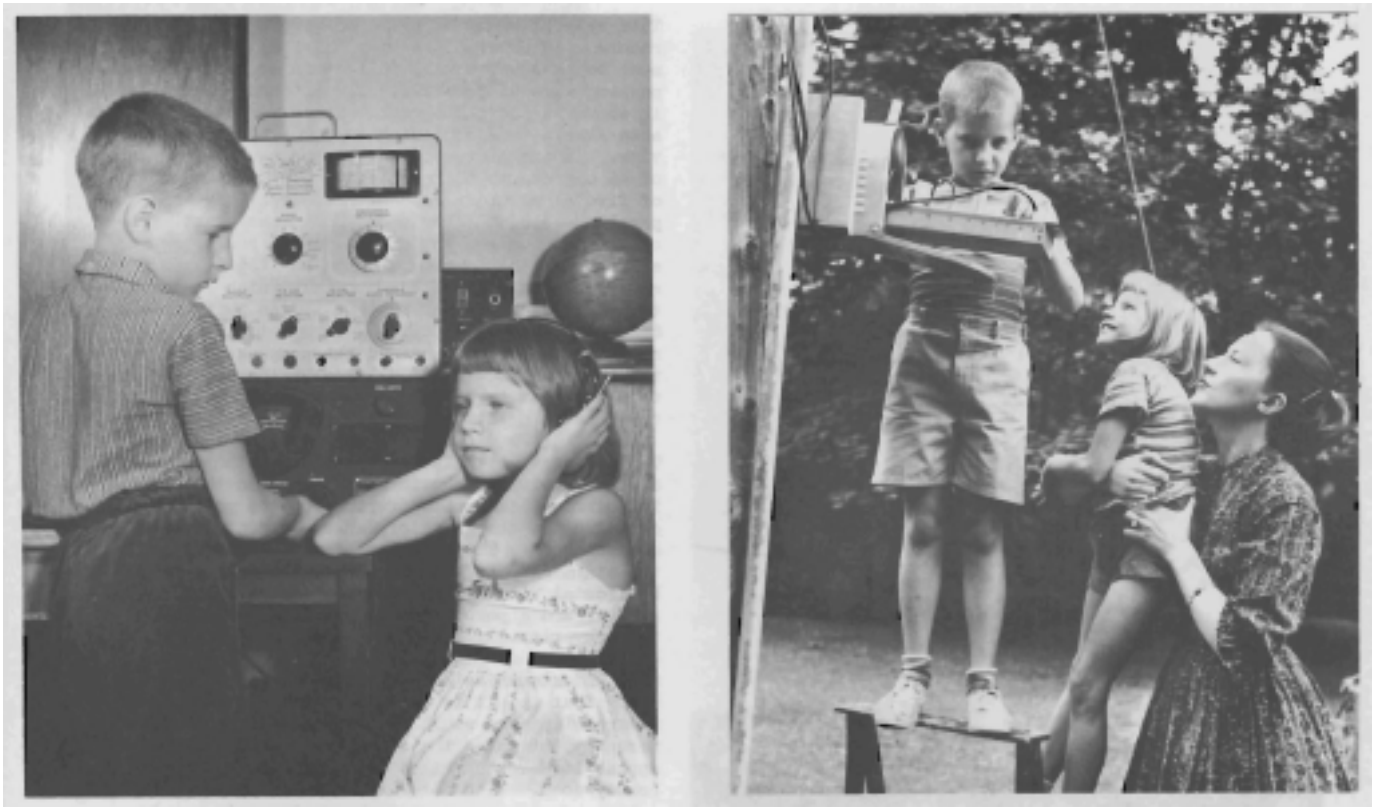

Figure 1.4: Images of T.A. Benham's children in the Voices of The Satellites! *liner notes. According to the description, in the photo on the left, the children are listening to the modulation signals for Explorer IV that appear on side two of the record. In the photo in the right, Mrs. Fuller (relation unknown) is pointing out and explaining a frequency convertor mounted on an antenna pole.*

war and violence—and space as the ultimate military high ground (indicated by the covert development of space weaponization policies). It also does not take any stretch of the imagination to

[35] Bachelard, *The Poetics of Space*, 43.

apply this illustration of the home to the mother figure herself, whose body is similarly both sanctuary and portal. As Nixon and Kruschev's infamous kitchen debate made clear, America's political superiority was symbolized equally by domination over both home and the cosmos, the spatial-political extension of heteropatriarchal domestic roles.

It was not only the content and context of these spaces, but the fact of space itself that contributed to this linkage. Don Ihde's 1976 classic, *Listening and Voice*, opens with a meditation on air and space noting that "even when we humans wander far away from the surface of the earth to that of the moon or deep into the sea, we must take with us packaged envelopes of air that we inhale and exhale… [T]he air that is breathed is not neutral or lifeless, for it has its life in *sound* and *voice*."[36] For Ihde, sound and voice not only indicate life, they give space life by filling it up. Conversely, the life-affirming nature of sound transmitted within "packaged envelopes of air," implicates the silent and (human) life-effacing nature of outer space, where an infinite non-sounding vacuum threatens the tenuous fragility of our safe enclosures. Even Benham's indefatigable machines transmitted not just *sounds*, but *voices* of satellites, as if to extend an illusion of life into an otherwise hostile environment. Taking sound as life-affirming, the beeping of Sputnik 1 can be seen as a sonic precursor to the heartbeat of Laika transmitted from orbit as the first dog sent into space on Sputnik 2 just one month after the initial launch.[37]

---

[36] Ihde, *Listening and Voice*, 3. As Nina Sun Eidsheim points out, this is also an anthropomorphic understanding of listening since plenty of aquatic creatures transmit sound through water. See Nina Sun Eidsheim, *Sensing Sound: Singing and Listening as Vibrational Practice* (Durham: Duke, 2015).

[37] While Benham purportedly includes the sound of Laika's heartbeat in his album, there is some inconsistency with his reporting. Narrating over the sound of her heartbeat, Benham describes it as "perfectly peaceful and seemingly at rest." However, he also claims that the recording was made three days after launch. While at the time it was thought that Laika lived for several days, in 2006 it was revealed that Laika survived only a few hours due to heat and stress. Thus, it is unclear how the sound Benham provides relates to the circumstances as they happened. Incidentally, he also calls her "he."

Figure 1.5: The "Astra-nome Time and Space Car," featured on the cover of Newsweek, September 3, 1956.

Not surprisingly, Bachelard's and Ihde's conceptions of life, sound, and space apply as much to cutting edge modes of transportation (the universal Doppler example) as to the home. Take for example the whimsical "Astra-Gnome 'Time and Space'" car, featured on the cover of *Newsweek* in September, 1956. A brochure by the manufacturer describes how "the Gnome's bubble canopy, plus air conditioning, gives [it an] open feeling…a totally new driving sensation akin to flying." Another page lists "ten important features" including "Futuristic styling with sculptural interest derived from space ship forms," extra space for "greater comfort and storage," and "True Hi-Fi radio and record playing setup utilizing dome as *perfect sound chamber*." A toy for the affluent, the "Astra-Gnome" equates life-affirming sound with upward economic mobility. Naturally, the car of the future was

always envisioned with a dome—a reminder that the same extractive capitalist progression that could lead from the city to the suburbs could similarly extend to interplanetary colonization. In this way, the "perfect sound chamber" allowed music to substitute fantasy for necessity, sound for air.

When humans entered outer space, the sounded artifacts of those missions, stereotyped through countdowns and static-filled radio communications between astronauts and mission control, became equally influential on the American soundscape. One final example from Folkways Records, *Man in Space: The Story of a Journey, a Documentary* (1964), incorporated communication recordings from the first American to travel into space in 1961, with a sweeping narrative and orchestral score. The tracks (cutely labeled Band 1, Band 2, etc. as a nod to the frequency domains used in radio communication) alternate between narration recorded for the album, recordings of Shepard's correspondence with the Cape Canaveral Mercury Control Center, and what sounds like on-site news reporting during the launch with the bustling sounds of the mission control foregrounded by a news anchor providing an account of the day. Both the narrator and reporter echo Benham's documentary style in assertive baritones, providing data about the rocket and documenting event details including liftoff weight, altitude, and top speed. Yet both also pepper their descriptions with a purple prose that highlights both technological domination and the precariousness of human life. For instance, the "*powerful* rocket" was described as "gleaming white in the *powerful* light of the tropical sun," but when it came to the rocket's precious cargo, "at the top of the rocket, inside a strange looking vehicle that looks something *like a child's toy top*, there was a man [emphasis added]," a diminutive lifeform ensconced perilously in an impressive technological marvel.

The clips and commentary from Shepard's conversation with Mercury Control similarly linked the listener's space with the enclosed sanctuary of the rocket, providing a sounded safety tether between Earth and space:

> Band 1: Astronaut to "Mercury Control"
> "…holding at 5.5…oxygen is good…"
>
> [Narrator]: The voice of a man 115 miles above the earth, the man—37 year old Lt. Com. Alan Bartlett Shepard, Jr., U.S. Navy, made that report you just heard while traveling at a speed of over 5,000 miles an hour, while traveling in space in a special vehicle which had been carried from earth at the top of a powerful rocket. This is the story of that man, his journey, and of the scientists who made possible his mission in outer space. [orchestral fanfare…][38]

Reinforcing a theatrical portrayal of this life-threatening yet ground-breaking technological feat, the orchestral score blossoms at key dramatic moments to go beyond the sounds of technoscience towards a nationalistic radio drama aesthetic. For instance, following the narration quoted above, a brass fanfare supported by sustained strings plays a progression of six notes—a descent and return of a minor third followed by a descent and return of a perfect fourth—that essentially mirrors the opening of "America the Beautiful." Later, the same orchestral excerpt opens a track entitled "Jules Verne's Prophecy" which sidetracks to a description of Verne's *From Earth to the Moon* written in 1865, drawing parallels between his narrative and the real-life circumstances of the Mercury Spacecraft 7 launch.

[38] Transcript from "Astronaut to Mercury Control" *Man in Space: The Story of a Journey—A Documentary* Folkways Records FX 6201, 1958. CD.

Thus, just as science fiction appropriated the sound of radio broadcasting in order to gain a dimension of believability, non-fiction documentary adopted a utopian feel through sonic and narrative parallels, the orchestral soundtrack lending affective weight to electronic exploratory connotations. In fact, the narrator says as much during the next orchestral swell: "The ocean that cradled the imaginary spacecraft of Jules Verne still roars against the beaches of Florida today. But now the ancient sounds are blending almost indiscernibly with new sounds just as one man's incredible imagination has blended with reality." Here the narrator asks the listener to blend two imagined sounds—the ocean and the roaring spacecraft—both of which signify man's sublime encounter with the power of nature through technology. Yet these imagined sounds are only background to those heard on the recording, at this particular moment a neo-romantic orchestral score accompanying the cadences of a man's voice whose surety seems synonymous with truth. Just as the staticky voice of Lieutenant Commander Alan Bartlett Shepard reporting "oxygen is good" allowed the listener to sympathetically sigh deeply, perhaps adjust the dials of their own listening device, and be comforted by the reassuring melodic sounds of success, the astronaut's life could validate the listeners' through the lush orchestral soundscape.

Space Lounge Music on the Threshold

Charles Schridde's series of illustrations for advertisements in *The Saturday Evening Post* capture the feel of Frank Lloyd Wright's plan for Usonia (its name derived from combining Utopia and U.S.A.), a community of single-family homes that Wright claimed in *The Natural House* would provide "a new sense of space, light and freedom to which our USA is entitled."[39] In the image seen

[39] Hollings, *Welcome to Mars*, 4.

Figure 1.6: Illustration by Charles Schridde Motorola Ad, Life Magazine *and* The Saturday Evening Post *(1961-1963)*

in Figure 1.6, a man and woman are nestled in the curve of a sofa, which frames a circular rug whose shape is complemented by the oculus above. A group of similarly circular LPs are scattered on the ground, leading the eye to an open record player, a reminder that no life-serving chamber is complete without a soundtrack. Dressed in virginal white, the woman curls up coyly at the man's feet, her head cocked sideways as she listens enraptured to his straight-backed analysis of the music playing on the stereo or the album in his hand. As the albums strewn across the rug from the feet of the stereo to the feet of the presumed lovers attest, this is a listening party. Whatever topic engages

them, their conversation is ensconced within the sonic atmosphere of the stereo, which holds the couple within the protective shelter of their domicile against the crashing of ocean waves just outside the threshold.

The image literally places the viewer on the eaves, making us not only voyeurs but eavesdroppers on the utopian scene, which must be animated by the sounds of the stereo and the crashing waves, the smell of seawater and cocktails, the cool tranquility of the living room apart from the whistling wind outside. As good advertising does, the image begs to be extrapolated into a scenario: The man, having achieved financial prosperity in a free market economy, enjoys his domestic empire from the comfort of his living/entertainment room (where to live means to entertain or be entertained). The woman by his side might be his wife or his lover, the setting a bachelor pad or a marital home. Cutting edge architectural and technological design (this is after all a Motorola advertisement) signals the youth and speed of courtship.

The geometric design of the home and its juxtaposition to the sea exemplifies the modernist affinity for placing inorganic linearity against the natural world, perhaps a metaphor for the absolute perfection of determinist mathematics harnessing and controlling nature. The home seems to be challenging the natural world with straight lines and perfect circles. Triangular pillars thrust beneath swirling waves to support the protruding roof overhang, and, delineated by the frame of the house, the image's vanishing point juts toward the rocky border between tumultuous ocean and land. The couple seems oblivious to the raging waters lapping at their doorstep, but we cannot tell whether the wall of glass encloses them in music-filled security or whether the sounds of crashing waves have become a sonic mainstay alluding to the everyday life as one of adventure. Either way, the home is

a technologically secure vessel at the mouth of the chaotic sublime, a flavor of adventure that the Space Age inherited from Victorian era sea-faring.

They might be listening to Russ Garcia's 1957 vocal jazz album *Sounds in the Night,* whose aesthetic of space-age speed and bourgeois domesticity echoes the couple's spatial imbrication of reverie and exploration. It features Hollywood voice-over artist and singer Marni Nixon who seemingly envoices this imbrication of reverie and exploration with a wordless vocalise that colors nearly the entire album. Geared more towards domestic space than outer space, Garcia arranged both original works and jazz standards like "Sophisticated Lady" and "When Your Lover Has Gone" for orchestra and vocal ensemble. Throughout, Nixon's voice aligns an aesthetic of mechanical exploration with one of bourgeois domesticity through near-immaculate curved vocal sweeps.

The first track, an arrangement of Duke Ellington's "Sophisticated Lady," drips with innuendo. It opens with the quintessential sonification of the male gaze, a sexy saxophone solo complete with schmaltzy pitch-bends. A harp glissando pulls back the curtain to the full scene, a four-voiced choral polis singing in cool jazzy urban harmony, a public frame for an intimate picture. Finally, Marni Nixon's flexible soprano enters with a wordless vocalise that culminates in a series of descending glissandos, sounded curves that evoke a synthesis between sleepy sensual yawns and sonic falling stars (perhaps also a nod to the hazy rainbow on the album's cover as seen in Figure 1.7)—affectively embodying the album's titular "sounds in the night." On "Blue, Blue, Blue," her self-harmonized sweeping vocal ascent is at first indiscernible from a sine wave generator until it blossoms into vibrating third. And on "Sweet and lovely" she affects a theremin-like quality while traversing melody and melismatic embellishment. Most of the album stylistically follows suit: slow

tempos, a subtle rhythm section, and carefully balanced vocal harmonies with Nixon's pointedly otherworldly glissandos shimmering above.

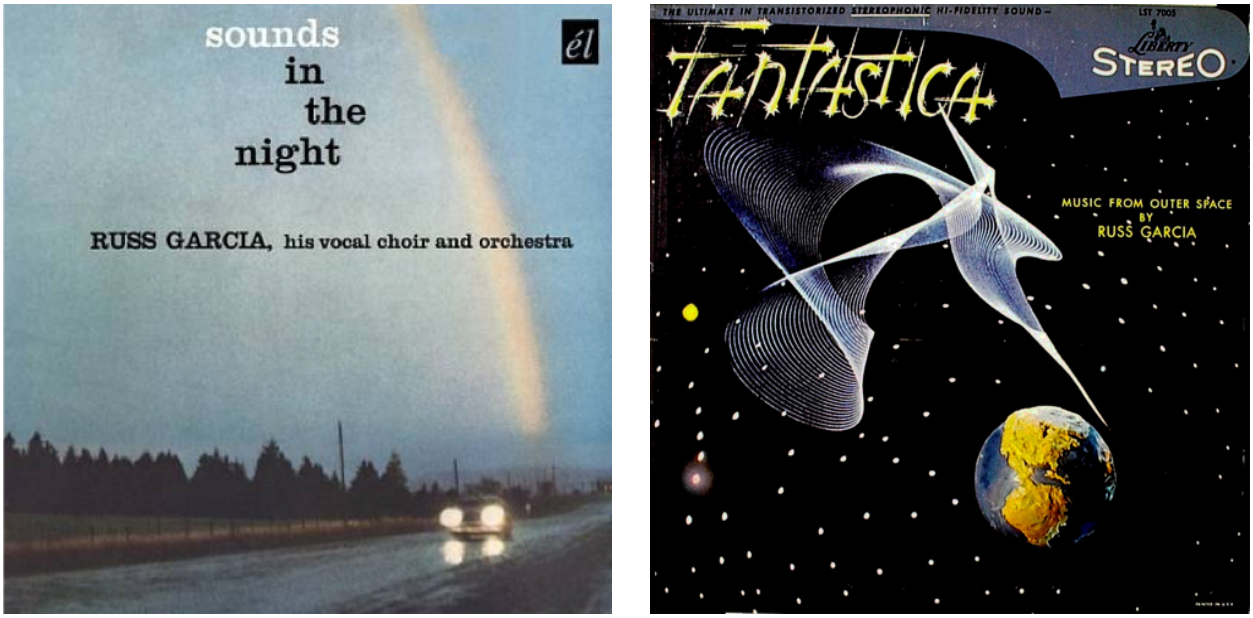

Figure 1.7: Two albums by Russ Garcia: Sounds in the Night *(1957) and* Fantastica: Music from Outer Space *(1959)*

If meaning is understood as immanent to the "voices" of Benham's satellites, what is the information contained in Nixon's voice? Think about Ihde's claim in conversation with Bachelard's, then Nixon's voice, like the satellites, provides a bridge between the home as "the first cosmos…[whose] space…shapes all subsequent knowledge of...any larger cosmos," and outer space, where sound shapes the womb-like dome of helmets, "time and space" vehicles, and the living room itself. Here, much can be gleaned from the architectural trends of the space age, which achieved Bachelard's "intangible look of the future" by bridging the feminine-coded curvilinear sculptural lines of celestial edifices, forms, and buildings with the masculine-coded movement and speed of

straight jutting lines.[40] Together they serve as fertile ground for a particular version of the science-fiction thinking, "the nuclear family in the nuclear home" as Elaine Tyler May so eloquently put it.[41]

In *The Poetics of Space* and his later *Poetics of Reverie*, Bachelard attributes the tendency toward reverie and repose in the home to a warm maternal nature geometrically set in curves: "The grace of a curve is an invitation to remain…For the beloved curve has nest-like powers; it incites us to possession, it is a curved corner, inhabited geometry. Here we have attained a minimum of refuge, in the highly-simplified pattern of daydream or repose."[42] In Bachelard's description, it is clearly the feminine element that allows this phenomenological reinterpretation of space, which counters the modernist (masculine) of abstract formalism.[43] This follows the same logic discussed earlier, where curved spaces of domes insinuated protective, oxygen-rich structures represented most immediately by astronaut's helmets or the planet Earth, in which sound signified life. For that matter, spherical architectural design extended into the utopian sphere where architects like Buckminster Fuller designed geodesic domes that occupied both real and imaginary spaces.[44]

As is made apparent in Schridde's illustration, the LP record similarly embodied this contemporary symbolism in which masculinized depictions of speed, exploration, and danger meet the feminized geometry of curves. The record spins on its axis and carries its listeners into the future on sonic waves whose channels are only navigable by what was deemed a worthy domestic

[40] Description taken from the Astra-Gnome brochure.
[41] May, *Homeward Bound*, 1.
[42] Bachelard, *Poetics*, 146.
[43] A more detailed analysis would include a discussion of Bachelard's body of work, his dual focus on philosophies of science and poetics, and the interplay he saw between the two—for instance his argument that the epistemological obstacle was a driving force in scientific inquiry that paralleled the nature of the poetic image in literature.
[44] For example, see his 1960 collaborations with Shoji Sadao, like the "Cloud Nine" floating cities whose conceptual designs dictated that the dome would lift itself up by the warmth of the people inside. Also notable is the idea of a dome that would cover mid-town Manhattan.

constellation. This particular configuration of elements finds a sonic correlate in space lounge exotica.

Space lounge music is situated under the broad umbrella term of "space-age pop," which has been described as an in-between genre, comprised of a vague menu of sub-genres (exotica, space-lounge music, cocktail music, etc.) and united in the popular imagination by a kitsch status akin to science fiction pulps. Brad Bigelow claims that "populated by the outcasts from other well-established genres," space-age pop is "too esoteric and extreme to be called pop," yet "not serious or straightforward enough to be called jazz."[45] This common and somewhat pejorative characterization hinges on space lounge music's humorous tendencies, which incidentally also have the effect of excusing its largely sexist bad behavior—"boys will be boys" meets "boys and their toys." But the lack of differentiation also places it within a network of genres and artists that capitalized on space exploration as a metaphor for musical experimentation, which in some cases metaphorically connected to The Space Age's capitalist expansionist drives, while in others it opened up space for alternative epistemologies and futures, the primary example being Afrofuturism and jazz.

Though a list of space-inspired albums is far too extensive to enumerate here, a brief representative selection might include a wide variety of jazz albums ranging from Duke Ellington (*The Cosmic Scene: Duke Ellington's Spacemen*, 1958) and Shorty Rogers (*Martians Come Back*, 1955) to Sun Ra (most of whose professional life was devoted to a science fiction persona; the first album produced on his label Saturn Records was recorded in 1956 and released in 1957); experimental electronic music by such composers as Tom Dissevelt and Kid Baltan (*Song of the Second Moon*, 1968) and Attilo Mineo (whose 1962 album, *Man in Space With Sounds*, is paradoxically categorized

[45] As with the science fiction genre, hobbyists generate a large percentage of information on space lounge music.

as both “avant-garde” and “easy-listening” in an allmusic.com synopsis); and musical dramas such as *Exploring the Unknown* (a 1955 album that combined talents like film composers Walter Schumann and Leith Stevens, with a narrated script by Rip Van Ronkle, known for his collaboration with Robert Heinlein on the 1950 film *Destination Moon*). Suffice to say that space age pop’s hazy genre boundaries might be related to overlaps between its subgenres, whose racially-inflected intertextual nature affected slippages between “lite” and “serious” music.

As a futuristic sonic accessory within pleasurable environments including casinos, clubs, bars, and in particular the home, space lounge music functioned as a vehicle of emotional transport linking the awe and uncertainty of new technology to private experience, a successor of sorts to nineteenth-century parlor music. But it also has a timbral inheritance, namely wordless singing whether choral or solo as a symbol for the ineffable. The prime example is Maurice Ravel’s 1912 ballet, *Daphnis et Chloé*, in which the wordless chorus of the finale evokes a mythological-pastorale sublime as if the whole of humanity might wash away in a maritime storm that consummates the natural world and erotic love. Less than half a century later, this aesthetic was fully assimilated into American culture, perhaps drawing from the spiritually-inflected understanding of divine nationalism in the form of American parks, which could then translate into a manifest-destiny orientation to outer space. Wordless singing was the sound of Disney, from Bambi to Sleeping Beauty, the sound of Alexander Courage’s 1966 Star Trek theme song (performed by Loulie Jean Norman), and *Exploring the Unknown*, the 1955 musical drama listed above, which employs “The Voices of Walter Schumann” a twenty-person vocal ensemble whose orchestrally-accompanied wordless swells form the sonic backdrop to the narrative. Naturally this sound was integral to lounge music.

In 1957 and 1959, Russ Garcia made two albums—first, his *Sounds in the Night* described above, and then *Fantastica: Music from Outer Space*—that both feature Marni Nixon's soprano in wordless vocalise. If *Sounds In the Night* sees the universe in the night sky from the standpoint of the home, *Fantastica: Music from Outer Space* is explicit about being music *from* outer space, its alien quality depicted through a mix of genres and a variety of experimental electronic sounds. Following on the heels of a series of highly successful exotica albums put out by Liberty Records since 1957, *Fantastica* exemplifies one form of auditory space travel that became increasingly popular since the year the first satellite was launched. In line with the precedent set by space lounge patriarch, Les Baxter, Russ Garcia unabashedly amalgamates stylistic features from film music, Latin pop, and jazz, as well as composers Ravel, Debussy, and Stravinsky. Layered onto these forms are a series of Sci-Fi sound effects achieved through the kinds of sound experimentation and electronic manipulation exhibited on albums like *Science Fiction Sound Effects*.[46] The resulting album plays like an audio version of a pulp science fiction magazine, where technological sounds contribute to a "cognition effect" that supports a science-fiction worldview.

As was the fashion for space-inspired albums of the time, the first track, "Into Space," begins with a countdown featuring a heavily-reverbed male voice evocative of *Man in Space* and *Exploring the Unknown*. The sound of a rocket blasts and then fades as electronic shimmers fade in—the kind of sound effect that in radio dramas, film, and television came to represent journeys into new dimensions of time and space. Then a languid flute melody materializes out of the sonic distance

[46] For more on exotica and the female voice, see Rebecca Leydon, "Utopias of the Tropics: The Exotic Music of Les Baxter and Yma Sumac," in *Widening the Horizon: Exoticism in Post-War Popular Music*, ed. Philip Hayward (Indiana: Indiana University Press, 1999); and Phil Ford, "Taboo: Time and Belief in Exotica" in *Representations*, 103, no. 1 (Summer 2008), 107-135.

accompanied by a harp, bells, and a gradually emerging orchestra. An oboe takes over the melody followed by the rhythm section, first just the low pulse of a string bass, then a vibraphone and the sweep of a brushed snare. As if we might forget that this familiar sound of orchestral lounge jazz was meant to illustrate a trip into outer space, a slowly ascending sine wave enters, suggestive of ascent into the cosmos. The liner notes play up this quality, narrating a journey into space that ends with a turn homeward. The opening track is described as follows: "We are catapulted into the atmosphere—surrounded by the deafening roar of rockets which fade into nothingness, and are enveloped by the silence of space and swallowed into a nebulous mist of weightlessness…floating far *Into Space*."[47]

A successful composer, conductor, and arranger for film and radio, with experience working for NBC radio and a fifteen-year stint at Universal Pictures, Garcia was likely developing this aesthetic in tandem with his cinematic and commercial work.[48] Each of the short tracks (most are between two and four minutes long) is whimsically named after an imaginary cosmic feature or alien race like "Volcanoes of Mercury," "Monsters of Jupiter," or "Water Creatures of Astra," and stylistically features a quirky combination of West Coast jazz, classical, cartoon-like orchestral themes, electronic sound effects, and lounge exotica. Not surprisingly, Garcia professed to having been inspired by Disneyland's Tomorrowland; indeed, the experience of listening to the album is not unlike that of floating on a man-made river through a theme-park tunnel featuring islands of animatronic space-age attractions. Here the liner-notes, like Benham's album, evoke a read-while-you-listen program experience. "Volcanoes of Mercury" for instance reads: "Directly ahead the

[47] Ashley Warren in the Digital Booklet for *Fantastica: Music from Outer Space*, re-released in 2009.
[48] Following the release of Fantastica, Garcia was invited by director, George Pal to score *The Time Machine*, released in 1960.

molten rocks of the "Volcanoes of Mercury" are visible. The liquid fire turns the sky into a sea of scarlet and, as we whisk past the barren inferno, sylph-like figures seem to be writhing against the stark backdrop."

In this moment, Nixon's faraway vocals emerge to shape the setting as if painting the sky scarlet against the foregrounded sound of bubbling lava (which incidentally Garcia achieved by blowing bubbles into gelatinized water). Eventually joined by Latin percussion and an exoticized English horn, the space safari reaches cartoonish levels of overrepresentation with interjections from a xylophone and Stravinskian woodwind adornments, including a *Petrushka* chord clarinet run. Here, not only are we presented with an imaginary interplanetary scene, but as modern listeners we also enter a museum of sonic elements that comprised the American midcentury future: here the cosmic is comprised of the exotic, affecting a colonial power theory in which space must be conquered in order to serve as the ultimate military high ground. Just as *Sounds In the Night* aligns space with the sphere of the home and "domesticated" as sanctuary, *Fantastica* opens a portal into strange lands with hostile environments and creatures that can nevertheless be viewed from within a safe pocket of domestic air—a sort of interplanetary armchair safari. In its simultaneous metaphors of safety and exploration, *Sounds* and *Fantastica* follow a continuum from Benham's auditory extrapolations to the aesthetic value judgements of *The Science of Sound* to the speculative sonic worlds of *Science Fiction Sound Effects* to the fully narrated *Exploring the Unknown*. The aesthetic thread that leads through this continuum is attached to a patriarchal social structuring in which conflict is the primary relation. This is then represented by gender norms.

For instance, it was not just Marni Nixon's vocal facility, but also her vocal timbre that granted her success (if often uncredited). A successful opera and musical theater singer, Nixon had become a

sought-after dubbing artist, initially picking up Hollywood gigs to pay the bills. Later, having provided the singing voice for Deborah Kerr in *The King and I* (1956) and *An Affair to Remember* (1957) and a few years later lending her voice to Natalie Wood in *West Side Story* (1961) and Audrey Hepburn in *My Fair Lady* (1964), Nixon's vocals came to exemplify an idealized white feminine timbre. Her chameleon-like ability to mimic the vocal quality and diction of the actresses with whom she worked, made it possible for her voice to become the sound of "everywoman"—or at least every desirable woman according to Hollywood. As Kristina Zarlengo describes, this imaginary woman was a "symbol of serene goodness and capability, of attractiveness rather than sexiness, and control rather than decadence,"[49] a portrayal assumed by Nixon's onscreen characters.

At the same time, space lounge music flaunts the trope of the sexualized exotic female (largely through its close ties with the genre of exotica), only this time as either a space alien or *as space itself*, a theme depicted on the cover art of numerous albums, as well as within the liner notes.[50] Considering the pervasive depictions of sexualized women on these album covers, it is tempting to read the feminine voice as exemplifying what Ihde describes as the pregnant silence of the face, or the forms of silence experienced in the moment of human encounter. Here, wordless vocalise could signify the troped mystery of the female psyche, an unknown space analogous to outer space, both only just beginning to be explored, one through the science of psychoanalysis and the other through the sciences of physics and engineering. But ultimately, "woman as space" (made explicit in Andre

[49] Kristina Zarlengo, "Civilian Threat, the Suburban Citadel, and Atomic Age American Women" in *Signs* 24, no. 4 (Summer 1999), 943.
[50] As Tim Taylor notes in his book, *Strange Sounds*, there are always other objects for reference—most often planets or phallic rockets.

de Dienes portrait of Marilyn Monroe in space seen in Figure 1.8) is fittingly empty—a vessel waiting to be filled by the desires of a man, whatever those desires might be. Scientific inquiry has

Figure 1.8: Andre de Dienes portrait of Marilyn Monroe in space (1953)

long naturalized white male positionality, so it follows that the fetishizing of outer space would be represented through fantasies of dominating feminine bodies. In other words, if lounge music is a kitschy, silly, pulp Sci-Fi product, it mimics the "presumptive frame" (to borrow from Judith Butler) of everyday life. In her words:

> The gendered structure of the family is taken for granted, including, of course, the obscuring of the mother's labor of care and the full absence of the father. And if we accept all this as the symbolic structure of things rather than merely a specific imaginary, we accept the operation of a law that can only be changed in incremental

> fashion over a very long time. The theory that describes this fantasy, this asymmetry, and this gendered division of labor can end up reproducing and validating its terms, unless it shows us another way out, unless it asks about the scene prior to, or outside of, the scene—the moment, as it were, before the beginning.[51]

In her foundational essay, "Visual Pleasure and Narrative Cinema," Laura Mulvey similarly describes in psychoanalytic terms how "an idea of woman stands as lynch pin to the system: it is her lack that produces the phallus as a symbolic presence, it is her desire to make good the lack that the phallus signifies." She goes on to argue that woman comes to signify for the male other, "bound by a symbolic order in which man can live out his phantasies and obsessions through linguistic command by imposing them on the silent image of woman still tied to her place as bearer of meaning, not maker of meaning."[52]

In much this way, we might think of Marni Nixon's wordless crooning as both opposite and integral to scientific knowledge production within this frame: a satellite signal that could confirm (technical-sexual) calculations, an infinite space to be explored, a high ground to be obtained, and pleasurable feedback congratulating every man with a radio that his eavesdropping intentions are for the betterment of humanity. Accordingly, Marni Nixon's vocals are dubbed "otherworldly" in the *Sounds in the Night* liner notes while the booklet of her later collaboration with Russ Garcia, *Fantastica: Music from Outer Space*, describes Nixon's voice as that of an "eerie soprano space siren." Tempered as *Sounds in the Night* may be, its exotica tendencies manifest in the harp glissandos of "Ill Wind" and the habanera rhythm as the basis for the title track, not to mention the titillating track, "Wow," which features bongos, the "son clave" salsa rhythm, and vocal writing evocative of a full

[51] Butler, *The Force*, 39.
[52] Laura Mulvey, "Visual Pleasure and Narrative Cinema," in *Feminist Film Theory: A Reader*, ed. Sue Thornham (Edinburgh: Edinburgh University Press, 1999), 58–69.

brass band, while Nixon's sighs and cries hint at the kinds of guttural vocalizations made famous by Bas Sheva and Yma Sumac. Yet with Nixon's meandering vocalise suspended high above the texture, the utopian horizon remains ambiguous.

Similarly, the empty woman can be mapped onto an idea of home through the comforting sound of her humming, which drowns out the dangers of the outside world while filling up the space, marking its boundaries so it can be occupied. Just as her voice indexes an empty vessel, Nixon's voice also comes to expand within the space that it is given, a life-affirming sound projected within the protective sphere of the domicile, the first cosmos of imagination according to Bachelard. As music for the home, the constrained tonal parameters and controlled execution of Nixon's melodies connote a fifties housewife, while hints of exotica and the stratospheric tessitura of her vocal line open the door to otherworldly exploration.

Conclusion: Science Fiction Sound Worlds

I have alluded to science fiction as an operative genre in relation to emerging Space Age soundworlds in a way that supports a nationalist domestic ethos: the *Science Fiction Sound Effects* album bears sonic similarities to the Benham's *The Voices of Satellites!* and the pseudo-musicological *The Science of Sound*, while *Man in Space* explicitly calls upon Jules Verne for his prophetic narrative, and *Sounds in the Night* and *Fantastica* take commodity scientism to its patriarchal capitalist extremes. We might extend some of these connective threads through Darko Suvin's science fiction criticism, which sets up an inextricable link between utopia, science fiction, and society. Calling utopia "the sociopolitical subgenre of science fiction," Suvin groups both science fiction and utopia

under the umbrella of "literature of cognitive estrangement"—a two-sided concept comprised of cognition (an empirical, interactive view of reality) and estrangement, akin to "estranging labors" in the Brechtian sense.[53] As Phillip Wegner summarizes, estrangement consists of "the ability to view the present moment through a critical, distancing eye."[54] Put differently, the act of engaging with utopian material initiates an ongoing feedback dialogue between listeners (or viewers, or readers) and depictions of possible worlds, which they imagine always in relation to their own. Because science fiction functions on the premise that "the sociopolitical cannot change without all other aspects of life also changing," science fiction could easily become the primary vehicle for utopian fiction amidst the twentieth century's drives and desires to reimagine infrastructures based on the landscape demanded by commodity scientism.

In a complex mapping of utopia and dystopian categories, Suvin describes most American mass media as the kind of "fake utopia" represented by 1950s Disneyfication—that is, where "the pursuit of happiness becomes a lifetime of shopping."[55] But in another sense, for disaffected parts of the population, mass-distributed genres like space-lounge music must have felt estranging, as part of what Kenneth Keniston in 1965 called "the institutionalization of hypocrisy."[56] Margaret Mead argued that the feeling of estrangement among the postwar American public was similar to that of new immigrants, cut off from their pasts and former social relationships, and Susan Franzosa similarly claims that post-war Americans "were now situated in a modern technological culture in

[53] Suvin, *Metamorphoses of Science Fiction*, 12, and *Defined by a Hollow*, 42. He clarifies that it has paradoxically become clear "only now that SF has expanded into its modern phase 'looking backward' from its subsumption of utopia."
[54] From Wegner's preface, "Emerging from the Flood in Which We Are Sinking: Or, Reading with Darko Suvin (Again)," to Darko Suvin's *Defined by a Hollow: Essays on Utopia, Science Fiction, and Political Epistemology* (New York: Peter Lang, 2010). Quote taken from Suvin's *Metamorphoses of Science Fiction*, 12.
[55] Suvin, *Defined by a Hollow*, 228.
[56] Kenneth Keniston, *The Uncommitted; Alienated Youth in American Society* (Boston: Harcourt, Brace & World, 1965).

which the language, landscape, and even the objects that surrounded them at home were unfamiliar."[57] For that matter, Franzosa has compellingly argued that Cold War Americans were temporally alienated as well, since the 1950s myth of middle-class homogeneity was not retroactively applied as a historical description, but rather constructed and marketed within its historical moment—"the nostalgic reading of the fifties *began* in the fifties."[58]

If tacit standards are generated from what Russell Ferguson calls "the invisible center," a mythical norm defined by Audre Lorde as "white, thin, male, young, heterosexual, Christian, and financially secure," then historically it seems fitting that these standards also seem to have a nucleus in the center of the twentieth century during a decade defined by a nostalgia which was spun from scratch.[59] How we view the 1950s today, as "pop images and stereotypes about the past, which remains forever out of reach,"[60] is rooted in the way cultural products were marketed at the time of their inception—the fantasy of the 1950s never really existed even *in* the 1950s, yet its prototype for "normal" persists as part of an imaginary center that nevertheless exerts real power over marginalized populations.

In musical terms, Jairo Moreno has described one way this center is represented fluidly in time and space through the "imperial aurality" of jazz, that is, through a form of access to the world from the perspective of empire's center. As a "mechanism for accumulation," the center is defined by its power and capacity rather than its components. Moreno argues that jazz represents the

---

[57] Susan Franzosa, "Reframing the Landscape of the 1950s," *Counterpoints*, 43 (1999), 2.
[58] Ibid.
[59] Russell Ferguson, "Introduction: Invisible Center," in *Out There: Marginalization and Contemporary Cultures* (Cambridge: The MIT Press, 1992), 9. Audre Lorde, "Age, Race, Class and Sex" in *Sister Outsider: Essays and Speeches* (New York: Crossing Press, 2012).
[60] Alan Liu, "Remembering the Spruce Goose: Historicism, Postmodernism, Romanticism" in *The South Atlantic Quarterly*, Volume 102, (Winter 2003), 263-278.

heterogeneity of empire against the homogeneity of capitalism in the way multiple complex diasporic histories "become blurred, compressed, expanded to the point of transcendence, or even vanished" at the hands of an American fiction, which repaints jazz as a home-grown national aesthetic based around a model of musical participatory democracy.[61]

Many of the tropes described in this chapter, particularly those of space lounge music, exemplified cultural norms that were criticized by feminists, most notably Betty Friedan in her seminal 1963 book, *The Feminine Mystique*. In it, she famously critiques the marketed myth of the happy housewife, whose feelings of unfulfilled emptiness seemed mysteriously unexplainable to the friends and health professionals whose help they sought. In this light, space lounge music literally was a dystopian form of science-fiction for the invisible majority who did not fit the standard narrative—whose class, race, gender, sexual orientation, and/or ethnic ties were deemed to be either on the fringe or "deviant" as social scientists might have described them, as well as those who ostensibly appeared to fit the mold but still felt alienated.

Where Suvin leans on Marcuse's claim that "people find their soul in their automobile, hi-fi set, split-level home, kitchen equipment" resulting in a sort of numb, mindless happiness, it might conversely be argued that because no one ever truly fit the narrative, products like space lounge music highlighted, rather than extinguished a sense of cognitive estrangement.[62] We might even take Mead's and Franzosa's argument that "postwar families were like new immigrants" and apply Suvin observation that "immigrants are constantly threatened with the fate Aristotle allotted to those not

[61] Jairo Moreno, "Imperial Aurality: Jazz, the Archive, and U.S. Empire" in *Audible Empire: Music, Global Politics, Critique*, ed. Ronald Radano and Tejumola Olaniyan (Durham: Duke University Press, 2016), 139.
[62] Marcuse, *One Dimensional Man*, 2nd ed. (London: Routledge, 2002), 82.

belonging to the polis: to mimic either gods or beasts."[63] Perhaps, through the auditory exploration of a time and space outside their own, as immigrants in their own country (not to mention a recent influx of actual immigrants) Americans could hear the beast within sonic aspirations to masculine godhood. As Jessica Langer has noted, "[i]t is the power differential of colonialism…that assigns either familiarity or strangeness to people and places; and even then there is the palimpsest, the remnants of that inherent doubleness."[64] Within an urban environment, she argues, the city that "was once a place of protection for the citizen…is now a hostile and chaotic environment that must protect the citizen from the what the city has become." This is especially true for "immigrants from colonies or former colonies [who] often found themselves immovably on the bottom rung in a dangerous place, compounded by the colonizer's pervasive insistence that these immigrants did not belong in the seat of imperial power."[65]

In this way, while in one sense space-inspired recordings fed pleasurable fantasies, they might also be seen as sowing the seeds of cognitive estrangement, not despite, but because of the myth of homogenous prosperity. It is perhaps for this reason that Hannah Arendt, who saw the launch of Sputnik 1 as the most important even of the modern age, described it as the first "step toward escape from men's imprisonment on earth." It was almost as if seeing Earth from the viewpoint of outer space, instigated a species-wide psychoanalytic mirror phase.[66] But it wasn't the glory of exploration and selfhood that catapulted man into space so much as the anxiety of what waited at home. The sonic traces that brought scientific possibility into the home through technological affordances could

[63] Franzosa, "Reframing the Landscape," 2.
[64] Jessica Langer, *Postcolonialism and Science Fiction* (London: Palgrave Macmillan, 2011), 109.
[65] Ibid. 111.
[66] Hannah Arendt, *The Human Condition*, 2nd ed. (Chicago: The University of Chicago Press, 1998), 1.

allow American consumers to participate in an imagined escape while also confronting the dystopian shadows of their current condition.

As Habermas explains, "[s]cientism renounces the self-reference *required* to be present in every case of recognition. At the same time, scientism itself utilizes this self-reference performatively…[that is] the reference to us as socialized subjects capable of speech and action…who always find themselves in the context of their lifeworlds."[67] As I have argued, the performative nature of scientism necessitates a poetic dimension that alludes to contextual worlds. Sound bridges the gap between positivism and the possibility of capitalist expansion that only outer space could provide given the limited resources on Earth. Just as a woman's voice could stand in for both the shape of a space and the thing that fills the space, music opened up imaginative spaces that through the myths of American capitalist expansion could create the illusion of possible alternatives to lived reality.

[67] Jürgen Habermas interview with Michaël Foessel, "Critique and Communication: Philosophy's Missions, A Conversation with Jürgen Habermas" *Eurozine* (2015) accessed Feb. 12, 2017 http://www.eurozine.com/critique-and-communication-philosophys-missions/.

Chapter II. Musical Seascapes:
Nature Documentary as an Anthropocene Genre

> "Inasmuch as knowledges are worldmaking practices, they tend to make the worlds they know."
>
> —Marisol de la Cadena and Mario Blaser, *A World of Many Worlds*

> "…content can be a useful word; but…it becomes invalid when it is held up to oppose style. Content is the illusion myriad stylistic factors create when viewed at a certain distance."
>
> —Samuel Delany, "About 5,750 Words"

In a moment of cultural epiphany, people started realizing in the 2010s that Jacques Cousteau—that icon of ecological conservation who had pulled back the curtain of nature to reveal beautiful oceanic mysteries—had in fact done unspeakably destructive things to the creatures he documented. His first film alone, *The Silent World* (which would go on to win an Academy Award for Best Documentary Feature of 1956), documents a continual onslaught of abuse: his crew dynamites a coral reef before going in with hammers to break up chunks by hand; they run over a baby sperm whale while trying to harpoon an adult, then they shoot the baby with a rifle; when a group of sharks swarm the whale corpse, the crew hacks at them with axes; among regular lesser affronts, members of Cousteau's crew ride a sea turtle underwater and ride tortoises on land. When French film critic, Gérard Mordillat lambasted Cousteau in 2015 for his "horrible," "repulsive," and "unbearable" treatment of marine wildlife, viewers had already begun noticing how "comically anti-ocean" Cousteau's oceanic films actually were.[1] How could we have continually celebrated Cousteau as a conservationist for over half a century when his films plainly depicted the opposite?

[1] Henry Samuel Paris, "Row Erupts in France over Famed Sea Explorer Jacques Cousteau's 'Disgusting' Abuse of Marine Life," The Telegraph, July 8, 2015, accessed August 9, 2016 https://www.telegraph.co.uk/news/worldnews/europe/france/11726747/Row-erupts-in-France-over-famed-sea-explorer-Jacques-Cousteaus-disgusting-abuse-of-marine-life.html. Another video of Gerard Mordillat criticizing Cousteau was

And yet it's not so hard to believe. The cinematic "worlds of Jacques Cousteau" are beautiful pastoral paeans to a version of nature familiar to middle-class Americans and Western Europeans since the beginning of the twentieth century. This "nature" aligns the spiritualist philosophy of John Muir's writing with the panoramic sensuality of Ansel Adams' photography, the figure of the Greek techno-hero with the Western hierarchical scientific relation between man and Earth. In Bruno Latour's words, it is "an irreconcilable jumble of Greek philosophy, French Cartesianism, and American parks."[2] While this concept of nature reaches for universality as a *feeling*, it is temporally circumscribed by a history of technological progression whose subject is fundamentally male, a subject who, in Donna Haraway's words, portrays both science and history from the perspective of "a conquering gaze from nowhere."[3] In short, this concept of "nature" is inherently modern. It is also the story of the Anthropocene.

Music is paramount to the message. A considerable degree of affective weight is carried by the musical scores in Cousteau's documentaries, which align certain mediated strains of environmentalism with existing filmic idioms. In *The Silent World* (1956), an eerie theremin-halo enshrouds two divers as they demonstrate the perils of decompression sickness, a thinly-veiled reference to space exploration and science fiction film; in *World Without Sun* (1964), cool jazz frames a solo diving excursion as pleasurable urban-evening solitude; and in *Voyage to the Edge of the World* (1976), an all-Ravel underscore paints the arctic in a wash of French neo-classical pastoral

---

posted on dailymotion.com: "Gérard Mordillat Critique 'Le Monde Du Silence' avec Le Commandant Cousteau," *Dailymotion*, accessed April 20, 2020, https://www.dailymotion.com/video/x2x2i7l. A 2014 Amazon review for the blue ray edition of *The Silent World* captures this element of surprise saying, "Not only does the Blu-Ray look amazing, but the whole movie is so anti-ocean it's comical!"

[2] Bruno Latour, "Introduction" in *The Politics of Nature: How to Bring the Sciences into Democracy* (Cambridge: Harvard University Press, 2004), 5.

[3] Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminism Studies* 14, no. 3 (Autumn 1988): 575–99.

tones. The musical choices made by Cousteau's directors of music are so generically suggestive that his films appear veritably cartoonish today.[4] Indeed, the sound worlds of his films are not so very different from the middle-class armchair space-safari albums I discuss in Chapter 1—both genres engender a form of safe conquest practiced by those who would identify as "first world" citizens.

Nevertheless, a 1956 review of Cousteau's first film, *Le Monde du Silence* by *New York Times* critic Bosley Crowther shows how seriously his films were taken at the time of their release. He states: "Like true scientists, they've eschewed trickery. When the excellent music of Yves Baudrier is used, it is applied to scenes, however amazing, of authentic occurrence and continuity."[5] Here, Crowther's statement is revealing in its defensive tone, which simultaneously denies any emotionally manipulative filmic techniques on the part of Cousteau and codirector Louis Malle, while specifically acknowledging music's affective import. More to the point, he replaces "trickery" with "true science" insofar as the "excellent" (i.e. high class) music depicts scenes of "authentic occurrence and continuity" (i.e. a techno-heroic narrative in a realist style). As a gatekeeper of critical consensus, Crowther's opinion held weight in shaping public opinion. But his statement also reflects a generally accepted worldview that has changed little in the last half century. Specifically, his logic shows how enculturation to aesthetic style and narrative technique can stand in for empirical accuracy, and similarly, how empirical accuracy could itself stand in for "nature." Here, he takes as axiomatic the

[4] Many readers may be familiar with the fact that his onscreen persona inspired the boorishly self-interested/melancholic character of Steve Zissou in Wes Anderson's fanciful (and in part animated) *The Life Aquatic* (2004). What Anderson so keenly captures in his film is the dark humor that emerges from portraying supposedly disrupted historical worldviews that nevertheless still resonate in the present. In other words, Steve Zissou is both an antiquated caricature and a historically significant figure whose actions bear meaning in the present day.

[5] Bosley Crowther, "Screen: Beautiful Sea; 'Silent World' Opens at the Paris Here," *The New York Times*, September 25, 1956, sec. Archives, https://www.nytimes.com/1956/09/25/archives/screen-beautiful-sea-silent-world-opens-at-the-paris-here.html.

perfect combination of tasteful aesthetics, narrative progression, and empirical process, ushering Cousteau into the nascent canon of nature documentary under a presumption of ethical realism.

In short, Cousteau's musical-oceanic depictions effectively produced what I have described throughout this dissertation as a sonically-grounded "cognition effect"—that is, like the techniques employed by science fiction authors, Cousteau's use of scientific language and claims to rationality are affectively supported by the soundtrack in a way that engenders both a suspension of disbelief and an avowal of ethical trust.[6] While Cousteau was indeed a knowledgeable and institutionally supported scientist and naval officer, his films were largely scripted action-adventures that portrayed explorations of time and space by temporally positioning the known world on a Western historical continuum. Aligning Greek mythology with Space-Age technology, this world—or rather the "worlds of Jacques Cousteau"—served as science fiction settings that projected a particular social system into the future. In this way, Cousteau's oceanographic documentaries appeal to "nature" by paradoxically espousing a science fiction worldview, inasmuch as they intentionally collapse the distinction between possible worlds and Earth's distant/inaccessible places (to Western European and American audiences), purportedly in support of an ethical, conservationist oceanography.

While today, Cousteau's films might feel familiar to American audiences as nostalgic artifacts, they also helped standardize the aesthetic norms that persist in twenty-first-century nature documentary films and series. Even in the 2019 series *Our Planet*, in which David Attenborough urges viewers to consider social change and ecological activism, the fundamental *aesthetic* orientation is almost unchanged from Cousteau's. While an emphasis on ethical obligation has shifted (in *Our*

[6] For more on science fiction's "cognition effect," see Carl Freedman *Critical Theory and Science Fiction* (Middletown: Wesleyan University Press, 2000); and China Miéville "Afterword: Cognition as Ideology" in Mark Bould and China Miéville, eds., *Red Planets: Marxism and Science Fiction* (Middletown: Wesleyan University Press, 2009).

Planet Attenborough explains why it's *our fault* that the walruses are falling from cliffs to bloody deaths) we still witness the spectacle of life in "faraway" places set to a dramatic filmic underscore which narrativizes ecological drama as peripheral rather than integral to modern urban life.[7] The result is not unlike what Frederic Jameson's describes as the generic novel's residual effects on conceptions of reality: "a narrative ideologeme whose outer form, secreted like a shell or exoskeleton, continues to emit its ideological message long after the extinction of its host."[8] Here, the nature documentary seems unable to shake its outer form even as its utopian affect turns dystopian. How can the content change when the form remains the same?

But if Cousteau occupies the center of the European-American nature documentary genre in the middle of the century, there were others who worked at the margins. Exploring music's place in Anthropocene worlding practices, this chapter will interrogate how soundtracks informed ideology in three contemporaneous films—two mid-twentieth-century French aquatic documentaries and one American science fiction film, each signaling crosscurrents between music, technology, and the natural world but oriented differently. First, I turn to the "world" of Western European Art Music history to broadly sketch ways that the parameters of its techno-heroic narrative have been mapped onto and magnified by science fiction film, using Stanley Kubrick's 1968 film *2001: A Space Odyssey* as an example. Then I consider how Cousteau's 1976 *Voyage to the Edge of the World*, scored with excerpts from Maurice Ravel's *oeuvre*, enmeshes the two presumed universals of Western science and Western European art music in a symbiotic colonialist historical narrative that has been standardized

[7] Rarely nature documentaries will address interactions between humans and other animals. For instance, the last episode of Planet Earth II (2019) is called "Cities" and focuses on animals in urban life. These interactions are almost always depicted as humorous; there is a sort of logic of modernity at play here, in which landscapes are sublime while the animals we encounter are funny—that is diminutive, unimportant.

[8] Jameson, "Realism and Desire" in *The Political Unconscious: Narrative as a Socially Symbolic Act* (Ithaca: Cornell University Press, 1982), 137.

in nature documentary and still used to the present day, even as musicologists struggle to rewrite this narrative. As a counter-study, I turn to Jean Painlevé and Geneviève Hamon's surrealist-inspired 1965 film *The Love Life of the Octopus,* which features an original *musique concrète* score by famed electronic music composer Pierre Henry. Painlevé and Hamon's film offers a glimpse into the rhetorical nature of genre formation as it pertains to natural science film using surrealism as a form of "*antinarrative* poetics, the poetics of the nondescriptive, nonmimetic, and nonethnographic…"[9] While the high-modernist *musique concrète* compositional style operates orthogonally to the surrealism movement, the filmmakers were both avid surrealists, raising the question of how aesthetic forms of political resistance implicated a scientific imaginary. As this film both defies and feeds the same Earth-science narrative, it provides an opportunity for navigating the fluid spaces between artistic production and scientific inquiry in Western European and American thought.

Encoded in the difference between these two films is a splitting of the Anthropocene itself into two categories offered by Donna Haraway, the *Capitalocene* and the *Chthulucene*.[10] Cousteau's musical choices signal the Capitalocene, a framework that specifies the role of industrial capitalism's timeline, major players, and geographical movements in precipitating the ecological crisis. Where Cousteau's neo-classical scoring provides affirmational beauty, Painlevé and Hamon's surrealistic inclinations outline the boundaries of citizen-science consensus worlds, offering a glimpse of the Chthulucene, a story without beginning or end, a way of understanding our on-going time in the world through "multispecies stories and practices of becoming-with."[11] Ultimately we are left with a

[9] Carrie Noland, 'Red Front/Black Front, Aimé Césaire and the Affaire Aragon,' *Diacritics* 36, no. 1 (Spring 2006), 75.
[10] See Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016).
[11] Ibid.

question of worlding—how ideas about the Earth's physical reality are built from musical genre-worlds and scientific field-worlds, and how they negotiate boundary confusion within watery liminal spaces.

This particular story starts *in medias res*, during Western man's first inklings that his scientific-economic aspirations were at odds with his interests of self-preservation—that he would have to make efforts to "conserve" those spaces and creatures whose destruction seemed a necessary counterpart to human expansion. Tracing the interactions between sound worlds, genre boundaries, and forms of mediated science, I ask how Western art music has contributed to a "worlding" of the oceans that has led to the degradation of the physical world. But throughout the chapter, I also dip into critical ocean studies by following Barbadian poet Kamau Brathwaite's "tide-alectic" approach to mapping historical-landscapes. In his words, tidalectics are "the rejection of the notion of dialectic, which is three—the resolution in the third. Now I go for a concept I call 'tide-alectic' which is the ripple and the two tide movement."[12] In what follows, I move critically in ebbs and flows, sometimes with material dredged up from below that changes the proximity between our two filmic objects as they lap continually over old and new critical shores. This chapter itself thus fits into a field of ecological inquiry that tries to understand how conceptual world formation leads to degradation of the physical world.

***

[12] Kamau Brathwaite is quoted in Markus Reymann and Francesca von Habsburg, *Tidalectics: Imagining an Oceanic Worldview through Art and Science*, ed. Stefanie Hessler (London, England : Cambridge, Massachusetts: The MIT Press, 2018).

Narrating the Anthropocene

The Anthropocene, for all its terminological newness, has the formal logic of an old story, a romance even—a utopian/dystopian hero's journey in which modern Western man explores, excavates, claims, defines, and then kills the Earth and its inhabitants. [13] No less real for its fictive power, it frames our current epoch, a fragment of time itself circumscribed and defined by "Western man." This fantasy places humans at the center of a man-versus-wild adventure, what Ursula K. Le Guin described as the hunter's "linear, progressive, Time's-(killing)-arrow mode of the Techno-Heroic":

> "Technology," or "modern science" (using the words as they are usually used … standing for the "hard" sciences and high technology founded upon continuous economic growth), is a heroic undertaking, Herculean, Promethean, conceived as triumph, hence ultimately as tragedy. The fiction embodying this myth will be, and has been, *triumphant* (Man conquers earth, space, aliens, death, the future, etc.) and *tragic* (apocalypse, Holocaust, then or now). [14]

In Le Guin's telling, the originary man-spearing-mammoth story supports a mythos whereby human/world relations are based on the imagined quest for bodily nourishment—*Anthropos* defines nature through their stories about surviving it, conquering it, and crucially, consuming it.[15] Here, man is inseparable from his spear. In his hand, the spear is the manifestation of his unparalleled tool-making intelligence, and in motion it emblematizes his dominion over the natural world,

[13] I use the phrase "Western man" in reference to a self-attributed identity based on a historical formulation of "Western" lineage that is unrelated to geographical location(s). I use it here to underscore the autobiographical nature of both the Anthropocene and a predominate form of history labeled "Western Civilization."
[14] Ursula K. Le Guin, "The Carrier Bag Theory of Fiction," in *Dancing at the Edge of the World* (New York: Grove Press, 1989), 153.
[15] It should be noted that I am not presuming the story itself to be part of a multi-millenium oral inheritance, but rather a Western cultural framing of "early man" story-telling practices. It is a particular cultural framing of human history.

"triumphant…and tragic." Embedded in the hide of a wooly mammoth, the spear provides the materials to warm man's "naked" body, feed his body with meat, and feed his ego with the three elements of the Hero's story: "…first, that the proper shape of the narrative is that of the arrow or spear, starting here and going straight there and THOK! hitting its mark (which drops dead); second, that the central concern of narrative, including the novel, is conflict; and third, that the story isn't any good if he isn't in it."[16]

Judith Butler among others has problematized this framework for shaping not only our stories, but our modern Western worldview as inherited from Enlightenment-era man-centered causal history.[17] In particular, we are imagined to emerge from a state of nature in which "we are already, for some reason, individuals, and we are in conflict with one another," based on eighteenth-century mechanistic cause-and-effect models.[18] Within this framework, the Anthropocene presents a narrative of geological history that positions humans at the center of the very problem it seeks to dismantle. Corporatists quite literally position human needs in opposition to environmental ones saying that we have a choice between attending to ecological crisis and feeding the world's human populations, that there is an irreconcilability between the needs of the people and the needs of the planet. This myth of extractivist necessity is fueled by the unlimited resource of colonial man's fictive imagination, which sees every limit as a challenge to beat—whether economic, scientific, or

[16] Le Guin, "Carrier Bag," 152. It might also be noted that the narrative spear shares some symbolic space with the Holy Spear, or the Spear of Destiny as it is sometimes called, which in Christian legend pierced Jesus' side to prove that he had died on the cross.
[17] See Butler, *The Force of Nonviolence*, especially "Nonviolence, Grievability."
[18] Ibid., 30. Butler traces this impulse from Thomas Hobbes to Jean-Jacques Rousseau and analyzes Karl Marx's response as one that both acknowledged the fiction and in another sense ceded to it as a way of moving forward through known fictions.

geographic.[19] It is perhaps for this reason that the idea of the Anthropocene represents a technological utopia that has "sour[ed] on the vine and become dystopian," a tendency that has been attributed to the morally-based utopian form.[20] In this way it is fitting that the term "Anthropocene" first appeared in is current usage in the year 2000, a mere decade after Francis Fukuyama popularized the phrase "end of history"—the idea that we have reached our historical-narrative denouement by means of liberal democracy. If the Anthropocene is a geological epoch defined by human activity, a story with a beginning and an end, it makes sense to frame this particular dystopian horizon with father of neoliberalism Milton Friedman's claim that an ethical economy can be achieved through "democratic" spending.

Broadly construed, a parallel narrative can be found within midcentury versions of Western Art Music (WAM) History taught in United States institutions of higher education. To summarize, this history espoused a similar grand narrative arc in which chronological developments follow music-theoretical ones—like that of early hominid man, the tools defined the story. Using largely the same narrative structure described by Le Guin, it originated in Greek antiquity and followed a storied progression that climaxed in the late-nineteenth/early-twentieth century, a parade of canonical works naturalized as biocultural coevolutionary artistic "progress" through a techno-heroic narrative built upon appeals to nature.[21] Here, the pen is substituted for the spear, whose technology

[19] In their 2019 book, *Politics of Operations*, Sandro Mezzadra and Brett Neilson connect the creation of the world market to this obsession with conquering limits, aptly framed by Monsanto's slogan "Challenging the Limits of Soy." Sandro Mezzadra and Brett Neilson, *The Politics of Operations: Excavating Contemporary Capitalism* (Durham: Duke University Press Books, 2019).

[20] Jasper Bernes, "Communism Might Last a Million Years," *Commune* (blog), October 14, 2018, accessed 10/5/2019, https://communemag.com/the-shield-of-utopia/.

[21] Musicologists have been problematizing this standpoint since the 1980s, and yet it is shocking how stubbornly tenacious the evolutionary model is even today, particularly within conservatories and other performance-focused institutions. I find it telling that those institutions focused on musical production are often the ones most attached to the idea of evolutionary-*techné*. Similarly, the "heroic" narrative that finds its exemplar in Beethoven's life and work is a

is depicted as the written form—language, music, and language about music. In thereby asserting a dominant aesthetic position, Western art music was positioned as a singular global tradition, "mononaturalism" as an aesthetic logic in the face of globalization. In this way, "classical music" history participated in what John Law has called "the one-world world: a world that has granted itself the prerogative to assimilate all other worlds and, by presenting itself as exclusive, cancels possibilities for what lies beyond its limits."[22] James Currie and Marianna Ritchie similarly position "classical music" in terms of the capitalist "message that difference can be acknowledged without the world economy [or ecology] having to be disturbed."[23]

In many ways, music follows the same patterns found in histories of literary and plastic arts. But music is perhaps more extreme in its ideological derivation in mathematics combined with organicist metaphors. In both institutional critique and popular listening practices at midcentury, the rhetoric around WAM combined a capitalist ethos of physical and intellectual expansion with a scientific-organicist understanding of music theory, an inheritance from the 19th-century Romantic ideal of art-eternal. In this way, midcentury positivist music theory supported notions of universal human nature by also theorizing Western music within a single framework for affective world-

---

tenacious one and evident in both Western Art Music History syllabi and textbooks. For example, see words like "development," "innovation," and "invention" in textbooks like the standard *A History of Western Music* by Donald Jay Grout and revised by Claude V. Palisca J. Peter Burkholder (most recent edition is 2014). Craig Wright's *Listening to Western Music* (2014) purveys a sense of technological progress through framings like that of late baroque instrumental music as "progressive expansion" (121). While this is a mode of historiography that has been applied to other musics and forms of cultural production, the idea of classical music as "high art" (where enjoyment is synonymous with wealth and leisure) makes it a particularly potent and tenacious techno-capitalist utopian model. Similarly, music theory historians have described how conservative music theorists have for the last half-millenium argued for such organizing characteristics as the "chord of nature," which implied that anything outside organizing characteristics would "fly in the face of nature." See Suzannah Clark and Alexander Rehding, eds., *Music Theory and Natural Order from the Renaissance to the Early Twentieth Century* (Cambridge, United Kingdom ; New York: Cambridge University Press, 2001).

[22] John Law, "What's Wrong with a One-World World" as cited by Marisol de la Cadena and Mario Blaser in "Introduction" to *A World of Many Worlds* (Durham: Duke University Press, 2018) 3.

[23] James Currie as quoted by Marianna Ritchey in *Music and Neoliberalism* (Chicago: University of Chicago Press, 2019), 14.

relations. A dominant thread within WAM history thus participated in a universalizing narrative aligned with nature's supposed bifurcationist ontology: inherent to humanity as a quantifiable, marketable tool (*technê*—a musical spear that both dictates its historical trajectory and qualifies its aesthetic), and by extension, a universal emotional language.[24]

Can we call WAM a genre? As I argue in Chapter 3, marking boundaries itself tends to be a move made in the service of imperialist interests, an overdetermined activity that even in the case of genre often derives from social categorizations that lend to hierarchical categorizing. But if we think of genre as group*ing*—an interpretive act rather than a static category (as music theorist Eric Drott does, for instance), then there is certainly a social-economic context in which WAM operates as a single entity independent of historical, geographical, and/or aesthetic subgenres.[25] I place this generic grouping in the context of the postwar 20th century, when a neoliberal ethos condensed the chronological view of the music studied in institutions of higher education into a single highly marketable idea about technological progress and high culture, specifically in relation to the racially-dominant white "middle class." In her timely analysis of music's integration with capitalist ethos *Music and Neoliberalism*, Marianna Ritchey links this "vague idea of 'classical music' as the expression of culturally universal and eternal values" to the emergence of neoliberalism in the United States in the 1970s.[26] A vast network of music-production elements contribute to this integration of capital, progress narratives, mood, and morality—for instance classical compilation albums categorized by mood (where mood rather than geo-history determines genre), performer-based

[24] See Leonard Bernstein's attempts to describe an evolutionary chronology of Western music in Chomskyan linguistic terms in his 1971-1973 lectures *The Unanswered Question - Six Talks at Harvard by Leonard Bernstein* (Kultur Video, 2002). Not coincidentally, his final lecture on Stravinsky is entitled "The Poetry of the Earth."
[25] Eric Drott, "The End(s) of Genre," *Journal of Music Theory* 57, no. 1 (March 1, 2013), 5.
[26] Ritchey, *Music and Neoliberalism*, 5.

compilations (virtuoso as ideal worker-achiever), film genre music, and genres within streaming services—but indeed as Ritchey shows, this feedback loop between categorizing and marketing music permeates production and scholarship from midcentury to the present day.[27]

Still, this is not a simple matter to generalize for Cousteau's films, not least because the relationship between cultural history and class looked different in America and France, the two countries at the forefront of this chapter. While I will briefly address some of the latter issue later, a full investigation into the nature of "classical music" as a single genre is beyond the purview of this chapter. Rather, I am interested in juxtaposing popular threads of aesthetic understanding at play within the transnational nature documentary genre, in order to see how WAM both envelopes and eschews its own musical objects relative to their function as complementary to scientific Earth-systems knowledge. Here, associations between certain kinds of music and certain film genres were mutually influential world-building forces: in Jameson's words, "an immense dilation of…[the] sphere of commodities" superimposed onto Earth itself as part of what Benjamin called the "'aestheticization' of reality."[28]

Another way to describe the plausibility effect that WAM lends to nature documentary is through a sort of genre attunement. Like the Keats heuristic, so-called for the psychological tendency to recognize alliterative or rhyming statements as more true than unstructured ones (the usual example is how "Woes unite foes" is often judged to be more truthful than "Woes unite enemies"), classical music is often utilized in marketing for having "beauty with a purpose"—a phrase used by

[27] This is also not an uncommon criticism. In his bestseller *The Rest is Noise*, Alex Ross has described most histories of music since 1900 as telling "a teleological tale, a goal-obsessed narrative full of great leaps forward and heroic battles with the philistine bourgeoisie." Alex Ross, *The Rest Is Noise: Listening to the Twentieth Century* (New York: Picador, 2008), xviii.

[28] Fredric Jameson, *Postmodernism, or, The Cultural Logic of Late Capitalism* (Durham, NC: Duke University Press, 1992), 8-9.

musicologist Lawrence Kramer to describe colonial implications of Ravel's ballet *Daphnis et Chloé*. It can do this in part because of the audience's implicit understanding of music's representational language. Attunement to the musical genres within nature documentary requires not just a familiarity with, but an emotional investment in the multiple genre worlds from which it draws.

In this way, the understanding of nature espoused by Cousteau is comprised of a sort of holographic history—its component parts may be incompatible as Latour argued, but conceptual compatibility is not necessary. Its parts do not fit together like a puzzle so much as they project a three-dimensional aesthetic object onto social consciousness, reified by multitudes who share its cultural history. Nevertheless, the incompatibilities of concepts therein leave residues of affective discomfort. As Ritchey argues, "an unavoidable feature of subjectivity in late capitalism" is a feeling of "discrepancy... between capitalism's rhetorical benevolence and [subjects'] actual experiences of life within the system."[29] For Ritchey, eventually either rhetorical benevolence wins in such a way that oppositional feelings are placated, or changes are made in the system that ultimately bolster capitalism's validity. Both of the latter effects are evident in Cousteau's filmic underscores, which similarly contribute to an affect of scientific benevolence in the face of ecological defacement.

2001: Sounding a Cosmic Womb

While the above description of a holographic mass imaginary might apply to any number of categories and genres, it functions in strikingly similar ways to the science fiction genre(s). Take this description by science fiction writer Kim Stanley Robinson:

[29] Ritchey, 16.

> ...science fiction works by a kind of double action, like the glasses people wear when watching 3D movies. One lens of science fiction's aesthetic machinery portrays some future that might actually come to pass; it's a kind of proleptic realism. The other lens presents a metaphorical vision of our current moment, like a symbol in a poem. Together the two views combine and pop into a vision of History, extending magically into the future.[30]

In his 1978 essay, "About 5,750 Words"—understood by many to describe the thing that was special about "new wave" science fiction of the 1960s and 70s—Samuel Delany dissolves the form/content divide entirely, arguing that "meanings (*content* or *information*) are the *formal relations* between sounds and images of the objective world."[31] He argues that a piece of writing unfolds rather than shows, word by word, building entire worlds through minute word-segments, each of which consecutively brings both imagined worlds and our own into sharper focus. There is no style/content divide, he says, since with each word both are shaped simultaneously.[32] He mentions film only briefly to say that it inherently produces a different relationship between viewer/reader and story because whereas in film, "the illusion of reality comes from... a fixed chronological relation which the eye and the mind together render as motion," in writing, "rather than a fixed chronological relation, they sit in numerous inter- and over-weaving relations. The process as we move our eyes from word to word is corrective and revisionary rather than progressive."[33] Of course, the term "new wave" itself derives from the French film movement of the 1950s and 60s, the

[30] Kim Stanley Robinson, "Dystopias Now," *Commune* (blog), November 2, 2018, accessed 10/24/2019 https://communemag.com/dystopias-now/.
[31] Samuel Delany, "About 5,750 Words" in *The Jewel-Hinged Jaw: Notes on the Language of Science Fiction* (Middletown: Wesleyan University Press, 2009), 1-15.
[32] Carl Freedman makes a similar argument in his book *Critical Theory and Science Fiction*. For more on how his argument aligns with film theory, see my first chapter, "Electronic Voices."
[33] Delany, "About 5,750 words," 4.

nouvelle vague, which sought to align formal experimentation with social and political dissent. Let us bookmark this and return to it later.

While Delany sees form and content as interchangeable, he differentiates science fiction from naturalistic literary genres based on the degree of subjunctive tension. Whereas naturalistic fiction is based on scenarios that "*could have happened*," science fiction describes events that "*have not happened*," a category that encompasses things which "might happen," "have not happened yet," "could have happened," and "will not happen." But what differentiates naturalistic fiction from nonfiction among nonscientific nonexperts? What distinguishes "*Can* you believe *that* [accepted scientific fact]" from "*Would* you believe *if* [scientific possibility]" when both are based on the personally observable world? Critical theorist Darko Suvin argues that what differentiates science fiction from other fictional forms is primarily the degree to which science fiction is grounded in scientific fact, linking hard science to hard science fiction in a sort of continuum (I will discuss some issues relevant to this view, namely that science fiction often goes against scientific knowledge, in the next chapter). But the genre of nature documentary exemplified by Cousteau capitalizes on an *affect* of knowing, and here at least two epistemological worlds—the empirical and the intuitive—overlap. Thus, a sort of holographic tension results from an epistemological worldview represented by the empirical indicative that is also an aesthetic representation of the planet whose accumulations form intuitions. The latter is a subjunctive view that snaps into focus in a fashion similar to science fiction. Cousteau's forms invoke science fiction's "portray[al]… [of] a kind of proleptic realism," providing "a metaphorical vision of our current moment, like a symbol in a poem."[34] While temporally, Cousteau's nature documentaries position their actors in the 20th-century present, they

[34] Robinson, "Dystopias."

exist on the same techno-heroic timeline that guarantees their own technological future. At the same time, as musical nature-ballets, they provide a naturalized Western European artistic rendering of "civilization," one that depicts nature as both metaphor-for and object-of human activity. Cousteau's films thus romanticize the same things that have contributed to the ecological precarity narrativized by the Anthropocene.

In order to draw attention to the connective affect of techno-heroic progression that underlies both the backward-facing historical-realist narrative that projects into the present and the forward-facing projection that follows that same history into the future, I will discuss an exemplary specimen from 1960s science fiction film made by one of Cousteau's contemporaries (and one that has attracted an abundance of commentary with the kind of critical elation belonging to modernist patrilineal high art), Stanley Kubrick's 1968 *2001: A Space Odyssey*. I mention this film here for two reasons: first, because it is often referred to as genre-defining, and second because it is an American film that shares a holographic imaginary of nature with Cousteau from across the Atlantic. In many ways, *2001* explicitly depicts what Cousteau's films imply.

I'll start with a brief formal refresher and analysis. In an almost three-hour voyage from distance past to distant future, the film portrays a metahistory of mankind framed by two epiphanic leaps: first, mankind's intellectual emergence from early hominid to modern man, and second his technologically-mediated immaculate conception as a god—a starchild formed and gestated by the cosmos (seen in Figure 2.1). This two-point framing is central to the plot's trajectory in which intellectual leaps (aided by alien technology in the form of multiple monoliths placed throughout the Solar System) allow man to precipitate his own physical and spiritual evolution. The means by which he achieves this feat takes the form of a symbiotic relationship between conflict—man against

animal, man against man, man against machine, man against his own embodiment—and technological progress. It is a self-contradicting story not unlike Cousteau's. Just as soon as the arrow reaches its mark (THOK!) we witness (not death, but) another evolutionary leap. Here, conflict can only be transcended through more conflict, an evolutionary transmogrification of man described as scientific process.

Much has been made of Kubrick's rejection of Alex North's original score with his final edit set to what were initially temp tracks from the WAM pantheon.[35] Indeed, science-fiction film music is arguably much more crucial to the plot than in other film genres, first because within science fiction, setting is as important as character development, and second because music tethers possible worlds to our own. Following Delany, the style of music is tied to the content, or plot, of the film. Thus, Kubrick's favoring of both canonic and *avant-garde* WAM works over a generic film score indicates his explicit position on historical musical relationships—more "*is*" than "*might be*," more inevitable than utopian, a positivist history of Western music. We know this because the score's musical tools match the technological development represented in the film. Kubrick didn't reject Alex North's score because it wasn't up to snuff. No freshly-composed piece of film music would have satisfied Kubrick because his film requires a direct orientation to WAM in the form of an

[35] For more on the history of hired composers, scores that were never accepted, and Kubrick's use of works from the WAM canon, see Alex Ross, "Space Is the Place," *The New Yorker*, Sept. 23, 2013, accessed April 20, 2018, https://www.newyorker.com/magazine/2013/09/23/space-is-the-place; Arved Ashby, "Modernism Goes to the Movies" in *The Pleasure of Modernist Music: Listening, Meaning, Intention, Ideology* (Rochester: University of Rochester Press, 2004); Russell Platt, "Clarke, Kubrick, and Ligeti: A Tale" in *The New Yorker*, August 12, 2008; Julia Heimerdinger, "'I have been compromised. I am now fighting against it': Ligeti vs. Kubrick and the Music for *2001: A Space Odyssey*" in *Journal of Film Music* 3.2 (2011) 127-143; Kate McQuiston, "'An effort to decide': More Research into Kubrick's Music Choices for *2001: A Space Odyssey*" in *Journal of Film Music* 3.2 (2011) 145-154; Paul A. Merkley, "'Stanley Hates This But I Like It!': North vs. Kubrick on the Music for *2001: A Space Odyssey*" in *The Journal of Film Music* 2, no. 1 (2007) 1-34; David W. Patterson, "Music, Structure and Metaphor in Stanley Kubrick's *2001: A Space Odyssey*" in *American Music* 22, no. 3 (2004), 444-474; Irena Paulus, "Stanley Kubrick's Revolution in the Usage of Film Music: *2001: A Space Odyssey* (1968)" in *IRASM* 40 (2009) 99-127.

affective awareness of its representative historical-tonal trajectory.[36] Indeed, as Kate McQuiston has argued, "it is as though a secret dramatic import were there in the music all along, awaiting verification and discovery in cinematic form."[37] This seemingly perfect audiovisual pairing is a result of Kubrick's utter commitment to the historical-aesthetic narrative. The constellation of works in 2001's soundtrack affirms a history that fuses a Western technological futurism with nature and Darwinian evolution, a process rooted more in a nostalgic orientation to science than the impulse for social change that characterized the decade in which it was created.

For example, each of the two epiphanic "emergences" are announced with the music of Johann Strauss Jr. and Richard Strauss, respectively representative of "light" and "serious" music, both deriving from WAM's Austro-German homeland. The first, Johann Strauss II's *The Beautiful Blue Danube* written in 1866, is used in depiction of man's leap from early hominid to tool-using scientist (from bone-tool to space-travel tool). This music provides a conceptual map essentially indicating "You are here," bookending the twentieth century with an imagined twenty-first century that is sound-tracked with the music of the nineteenth century. By offering an image of the near future that audibly gestures to its past, Kubrick's futurism is more inevitable-dance-of-progress than speculative fantasy.

The second leap, depicting Dr. David Bowman's rebirth as A, gives us the iconic filmic rendering of Richard Strauss's opening to *Also Sprach Zarathustra*, written in 1897. Here, Strauss's aptly-called "nature theme" essentially narrativizes the "chord of nature" through a tonally

[36] I would argue that this is true for nearly all of Kubrick's films. Indeed, it is clear that Kubrick sought advice from modern composers who would have been imbricated in the concert music historical trajectory. In the case of *2001*, Kubrick sought advice from Carl Orff, as evidenced by Kate McQuiston in "An Effort to Decide," 146.
[37] Kate McQuiston, *We'll Meet Again: Musical Design in the Films of Stanley Kubrick* (New York: Oxford University Press, 2013), 109.

ambiguous harmonic progression that delays its triumphant C Major resolution for 16 bars (about a minute and a half of film-play time). Having also been used for the film's opening title sequence—a cosmic dawn to fulfill Strauss's programmatic "Sunrise"—it acts as a microcosm of the film's trajectory, emblematic of the monolithic narrative of techno-heroic evolution. Like the Danube River, Kubrick's musical trajectory demarcates a history that runs through the heart of white civilization, a continental artery that flows into the cosmic bubble of amniotic fluid holding the starchild.

Here, the production of heroic offspring depends precisely upon the negation of woman. Laura Mulvey describes in psychoanalytic terms how, "the function of woman in forming the patriarchal unconscious is two-fold. She first symbolises the castration threat by her real absence of a penis, and second thereby raises her child into the symbolic. Once this has been achieved, her meaning in the process is at an end, it does not last into the world of law and language except as a memory which oscillates between memory of maternal plenitude and memory of lack. Both are posited on nature."[38] In this way, not only does the techno-heroic narrative espouse an evolutionary progression that is incongruously based on violent encounters with Others, but it cancels out its violence through the starchild's representation of reproduction-as-scientific-understanding. This narrativization is affectively naturalized by Strauss's climactic nature theme, itself a microcosm of common practice tonal/historical "progression." To recall Delany, the form is the content, which in this case, is not new even though "newness" is the thing most sought after by Kubrick.

This brings us to Ligeti. The sonification of alien technology, which in the film circumscribes a vast human time-space from early hominid man to his future rebirth as a starchild, is

[38] Laura Mulvey, "Visual Pleasure and Narrative Cinema," 6.

famously represented by four of György Ligeti's works: *Requiem, Aventures*, *Lux aeterna* and the entirety of his *Atmosphères*, all of which had been composed within the decade.[39] In the form of multiple monoliths, Ligeti's music, it turns out, embodies the very sound of WAM's purported

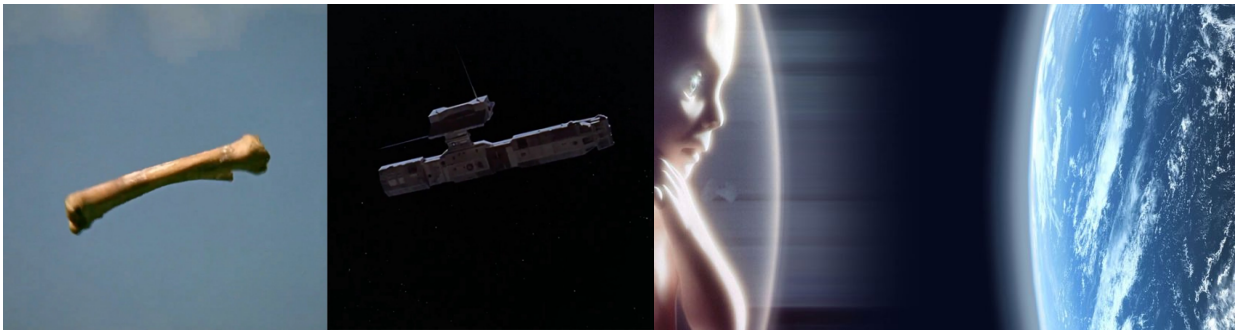

Figure 2.1: From material tool to transcendent womb in Kubrick's 2001: A Space Odyssey

techno-heroic evolution. It is the sound of progress itself: *not* the sound of the future, but the sound of epiphany. If Johann Strauss Jr. and Richard Strauss can be thought of as part of an aesthetic river of history flowing from tonality's inception to its "maximalization," Ligeti's music emerges from outside the historical river (from the modern "present" of the film's production) to change its course like a musical deus ex machina.[40]

In this way, Kubrick locates Ligeti's music not only outside of his narrative-historical trajectory but altogether outside human control—as a universal mechanism rather than a fragment of cultural production. Here Kubrick's narrative aligns with modernist music's "end of genre" debate, described by music theorist Eric Drott as an aesthetic philosophy that comprises a sort of

[39] *Requiem* was composed between 1963 and 1965, *Aventures* was composed in 1962, *Lux aeterna* in 1966, and *Atmosphères* in 1961.
[40] Richard Taruskin uses the term "maximalism" to describe trajectories of modernist music in his *Oxford History of Western Music: Music in the Early Twentieth Century* (New York: Oxford University Press, 2009).

genre grouping even as it eschews the label. Characterized by a rhetoric of autonomy that derives from a lingering commitment to the nineteenth-century idea of absolute music, Ligeti's music, it has been argued, follows these same tendencies.[41] For Drott, the tendency to claim the end of genre in music criticism is marked by the bourgeoning of post-tonal idioms in tandem with composers' titular rejection of forms—"plural-form noun [titles]...like 'Ramifications,' 'Interpolations,' or 'Structures'...more often than not drawn from scientific or technical discourse," point to something about the imminent musical structure while also positioning the work as a natural (nonhuman, universal) phenomenon (see Ligeti's *Aventures*, *Lux aeterna, Atmosphères)*. Ligeti said as much in his 1978 Darmstadt lecture, "On Music and Politics," in which he argued that music is politically neutral because it is merely a mathematical organization of sound. Of course, by adopting a mathematical-scientific framework, Ligeti espouses what Donna Haraway has called a "God's eye view from nowhere," the practice of making knowledge claims that are exclusionary precisely because they are unlocatable. Adorno disagreed: "Of course, art deceives itself when, encouraged or intimidated by science, it hypostatizes its dimension of logical consistency and directly equates its own forms with those of mathematics, unconcerned that its forms are always opposed to those of the latter."[42] Philip Ewell has recently shown that this argument can be extended to music theory practices, since the position that "the institutions and structures of music theory have little or nothing to do with race or whiteness, and that to critically examine race and whiteness in music theory would be unfair or inappropriate" is fundamentally a white male framing.[43] Regardless, any

[41] See Eric Drott, "The End(s) of Genre," *Journal of Music Theory*, (Spring 2013), 1-45; Charles Wilson, "György Ligeti and the Rhetoric of Autonomy," *Twentieth-Century Music* 1, no. 1 (March 2004), 5-28.
[42] Theodor W. Adorno, *Aesthetic Theory*, ed. Robert Hullot-Kentor, 1 edition (Minneapolis: University of Minnesota Press, 1998), 136.
[43] Philip Ewell, "Music Theory's White Racial Frame." Plenary speaker at the annual meeting of the Society for Music Theory, Nov. 7–10.

utopia based upon continual progression is doomed to dystopia if we follow Jameson's reasoning that a feeling of inevitability can only ever accompany a dystopian narrative.[44]

"End of genre" rhetoric depends on a framing that is not only outside subjectivity, but outside historical progression—and yet it is historical precisely because it self-positions as ahistorical. In his *Atmosphères*, Ligeti designed percussion-less micropolyphonic sound bands (inspired by electronic music's "frequency bands") to produce a structure "without beginning or end," that would remain "underwater," mysterious to the listener.[45] Ironically, this impulse to create a nonteleological musical form as an autonomous entity implicitly gestures to a view of music that correlates musical form and societal structure. Yet it is clear that Ligeti wants his music to be understood as a nonteleological wash of mathematical sound *as opposed* to a historically situated work whose history is also immanent in the work's form. Similarly, titles like *Requiem* gesture to a critique of the standard historical form, and yet "[a]ny work aiming to declare its independence from a particular genre necessarily ratifies a latent connection with the latter through the very act of negation that it performs."[46] Furthermore, following Drott's definition of "end of genre" lineage, this music represents WAM's march from affective universal to mathematic universal, from nineteenth-century absolute music to twentieth-century positivist philosophy of music—it is outside history only inasmuch as it narratives itself as an end point in a historical progression. In this way, Ligeti's title of *Atmosphères* can be appropriately taken in reference to the more recent use of the word as "affective spacestimes that acknowledge their force and palpability even if they remain vague and unformed."[47]

---

[44] See Jameson, *Archeologies of the Future*.
[45] Ligeti as quoted by Edward Pearsall in "Anti-Teleological Art: Articulating Meaning through Silence" in *Approaches to Meaning in Music*, ed. Byron Almén and Edward Pearsall (Bloomington: Indiana University Press, 2006), 54.
[46] Drott, "The End(s) of Genre," 7.
[47] Derek P. McCormack, *Atmospheric Things: On the Allure of Elemental Envelopment* (Durham: Duke University Press Books, 2018), 6.

Rather than forming a world unto itself, Ligeti's *Atmosphères* gives us a sense of what it feels like to be part of a political narrative that needs to hold on to a feeling of expansion *particularly* as it sees itself at the end of things.

By extension, the "end of genre" can be understood as a sort of sonic foreshadowing of Fukuyama's "end of history," in that both represent a worldview fundamentally based on the universalization of a techno-heroic narrative. While both "ends" are defined by a limit (of tonal progression on one hand, of global expansion on the other), composers' response was to position music's atonal technological possibilities as limit*less*, maintaining the feeling of expansion not in spite of but *because* colonial expansion had reached its end point. Jameson argues that the "'end of history' is not really about Time at all, but rather about Space.... [T]he anxieties it so powerfully invests and expresses...are not unconscious worries about the future or about Time: they express the feeling of the constriction of Space in the new world system; they bespeak the closing of another and more fundamental frontier in the new world market of globalization and of transnational corporations."[48] Hannah Arendt made a similar observation at the beginning of the Space Race:

> Only now has man taken full possession of his mortal dwelling place and gathered the infinite horizons.... Precisely when the immensity of available space on earth was discovered, the famous shrinkage of the globe began.... Nothing, to be sure, could have been more alien to the purpose of the explorers and circumnavigators of the early modern age than this closing-in process; they went to enlarge the earth, not shrink her into a ball.... Only the wisdom of hindsight sees the obvious, that nothing can remain immense if it can be measured.[49]

[48] Frederic Jameson, "'End of Art' or 'End of History'?" in *The Cultural Turn: Selected Writings on the Postmodern 1983-1998* (New York: Verso, 1998), 90.
[49] Arendt, *The Human Condition*, 250.

These sentiments are expressed in Fukuyama's end of history, where globalization's limit is directly related to the Earth itself, and whose resources, including the people and cultures that might be absorbed into a single economic-political system, are finite. Positing the "end of history" as a positive development requires an affect that answers the need for continual growth.

Susan Lepselter has shown how writers of American frontier stories exhibit an uncanny openness to the fantastic as if treading on uncertain ground among unknown populations opens up an endless array of possible truths, making it difficult to discern the rational from the implausible.[50] Lepselter describes how seventeenth-century stories of airborne ghost ships parallel the formal narrative of twentieth-century UFO sightings. In the Introduction, I argued that this affect is fundamental to the genre of science fiction, which requires that possibility and rationality exist on the same narrative plane. Here, the feeling of the colonial frontier is transferred to the feeling of technological progression, which is historically made plausible where science fiction emerges as scientific reality (e.g. biological warfare, submarines, lie detector tests, and in vitro fertilization)—science fiction as a precursor, rather than an alternative to science fact. I argue that science fiction film and nature documentary alike use music to transmute this feeling of exploration, in which the blurriness of possibility comes into the focus of reality through an idea of historical causality fueled by mathematic universals.

By citing math as the most important resource for music, "End of genre" composers could frame atonality and music technology as infinite resources—a continual growth industry that was not only immune to, but could serve as a palliative to the anxiety of enclosure. By responding to the

[50] Susan Lepselter, "Dreaming the Colonized World" in *The Resonance of Unseen Things: Poetics, Power, Captivity, and UFOs in the American Uncanny* (Ann Arbor: University of Michigan Press, 2016).

conceptual limit imposed by the tonal trajectory of WAM history, these composers created music that is specific to the need for exploration in a world where that is no longer possible.[51] Marc Redfield has observed that "much of the political force of aesthetics resides in its historicism, in its projection of a temporal line running from the primitive to the modern, and then onward to a futurity, an ever-deferred end of history, that aesthetic experience prefigures."[52] In this sense, music can do the affective work for which globalization no longer has the capacity, supporting a science fiction mindset as part of everyday experience.

With this in mind, *2001* thus emerges as paradigmatic in more ways than one. If vernacular forms gain widespread usage because they crystallize something already present but latent, then Kubrick's musical Space Odyssey defined a certain kind of science fiction genre precisely because of its orientation to an accepted narrative of music history and genre criticism, one in which human evolution (physical and spiritual) is spurred on by the mysterious machinations of math itself, here sonically rendered by Ligeti's micropolyphony. In this way, the science fiction ideology espoused by both Ligeti and Kubrick couches its utopia in dystopic forms. Or, to quote Samuel Delany, "...in all the brouhaha clanging about these unreal worlds, chords are sounded in total sympathy with the real."[53]

***

[51] This is, for instance, the story told by Leonard Bernstein in his fifth lecture in his series of six talks at Harvard University, entitled "The Twentieth Century Crisis." It tells the familiar story of Schönberg and Stravinsky, the story of two composers addressing tonality pushed to its limits.
[52] Marc Redfield, *The Politics of Aesthetics* (Stanford: Stanford University Press, 2003), 12.
[53] Delany, "About 5,750 Words," 8.

"We Must Go and See": Ravel, Voyeurism, and Capitalocene Worlding

> "The symbolists have a lesson here: the only thing that we will trust enough to let it generate in us any real sense of the mystical is a resonant aesthetic form."
> —Samuel Delany, "About 5,750 Words"

Essential to Cousteau's famous documentary style are balletic *divertissements* in which aquatic creatures, scientist-explorers, and their equipment are depicted in elegant audio-visual tableaus.[54] *Voyage to the Edge of the World* gestures to its choreographic inclinations in its opening credits, a hot-air balloon ballet set to the pantomime scene from Ravel's 1913 ballet *Daphnis et Chloé*.[55] It is a prelude to set the Antarctic stage: atop a sheet of ice, an enraptured Cousteau and crew observe the balloon as it readies for take-off. A string pizzicato signals the metaphorical curtain and the balloon lifts off with two videographers in the gondola. As orchestral strings blanket the now-panoramic shot in sonic anticipation, the balloon is revealed in its entirety, adorned with a side-lying female nude accompanied by a dolphin in roughly the style of an ancient Greek vase painting. Presumably, she is *Calypso*, the namesake of Cousteau's ship and the mythological nymph who detained Odysseus for seven years by enchanting him with her singing. The languid flute solo of Chloé's pantomime enters and the balloon is set free, careening over ocean, drift ice, and a group of sunning seals. Here, Ravel's music unites the mythological characters of Chloé, Calypso, and Syrinx; merged and transfigured, they *become* the balloon. Seemingly born aloft by the wind issuing from the lungs of the flutist, this

[54] His first film, *Le Monde du Silence* (The Silent World, 1956), features a three-minute dolphin pod ballet set to a trumpet and snare-drum fanfare, the crew delightedly looking on as the ship joins the racing and leaping dolphins. Later in the same film there is a water ballet of sorts featuring two divers as they careen through the water holding on to sea-scooters chasing turtles and sea creatures to a brass-heavy score. Similar moments feature in his other films, *Le Monde sans soleil* (World Without Sun, 1964) and *Voyage*. I call these scenes ballets because they resemble both the form and function of the kinds of interludes found in nineteenth-century dramatic ballets—for example the "Bluebird" dance in Swan Lake, or the Peasant *Pas de Trois* in *Giselle*. These scenes that are only roughly related to the larger story, they almost always feature animals or peasants, and serve to showcase both technical mastery and aesthetic beauty.

[55] The film is set in its entirety to works by Maurice Ravel with musical direction by French conductor, Serge Baudo.

balloon ballet represents a network of Western music-historical symbolism interweaving categories of nature, science, exploration, colonization, and beauty.

Figure 2.2: Initial aerial shot of the Calypso balloon in Jacques Cousteau's Voyage to the Edge of the World *(1976)*

I will attempt to collect some the referential accumulations at play here, starting with Ravel's 1912 ballet. Loosely based on the third-century Greek pastoral romance by Longus, the particular musical moment described above occurs in the third and final scene of the ballet—the narrative denouement after the shepherdess Chloé has been saved from pirates by the God Pan. Awakening at dawn to the ethereal sound of rivulets draining the morning dew and "the deep murmur of

slumbering earth as she rhythmically breathes,"[56] Chloé and her lover, the shepherd Daphnis are reunited at the Altar of the Nymphs. In joyful devotion and thanks to Chloé's savior, Daphnis plays an *air melancholique* on the flute while Chloé mimes the tale of Pan and Syrinx; here is that tale described by Longus:

> "This pipe in former times was not a musical instrument, but a beautiful maiden, who had a melodious voice. She tended goats, sported with the Nymphs, and sang as now. Pan, who saw her tending her goats, sporting, and singing, tried to persuade her to yield to his advances, promising that her goats should always bring forth twins. But she scoffed at his love, and declared that she would never have anything to do with a lover who was neither a goat nor a perfect man. Thereupon Pan was proceeding to violence, but Syrinx fled, until at last, weary of running, she flung herself into a swamp and disappeared amongst the reeds. Pan, enraged, cut down the reeds, and, not finding the maiden, understood what had happened. Then, cutting some reeds of unequal length, in token of an unequal love, he joined them together with wax and fashioned this instrument. Thus she who was once a beautiful maiden is now an instrument of music—the pipe."[57] [emphasis added]

Here the idea of a woman-as-music and instrument comes full circle, embodied by a balloon who sings the song of a maiden who became a pipe. Just as Ravel shepherds Syrinx, Daphnis, and Chloé into a twentieth-century neoclassical pastorale, Cousteau shepherds the lot into the Space Age.

And yet, unlike Ligeti's musical math, which reverberates sonic progress in Kubrick's science fiction film, Cousteau's ostensible look through "the keyhole of nature" receives a dreamlike treatment in Ravel's music. Ravel, who shared with other symbolists a desire to depict a *feeling* of being in nature as opposed to the sounds of nature itself described how eighteenth-century French

[56] Scott Goddard, "Some Notes on Maurice Ravel's Ballet 'Daphnis et Chloe'-I," *Music & Letters* 7, no. 3 (1926), 214.
[57] Longus, *Daphnis and Chloe* excerpt from the 1896 translation by the Athenian Society. Note that in the original version, the goatherd Lamon first tells this story before Daphnis and Chloé mime the story.

painters inspired a "Greece of my dreams."[58] As Lawrence Kramer has noted, Ravel's "choreographic symphony" aesthetically refracts a contemporaneous culture of French consumerist exoticism whereby the ostentatious consumption of exotic wares could be transmuted as the less conspicuous consumption of aesthetic beauty.[59] This beauty was "precisely the kind... associated with 'elemental drives'—and [hence] associated... with the sights and sounds that Europeans had found, selectively... in the world of their colonial empires."[60] Alluding to the distant time of ancient Greece through the sounds of distant places—Ravel conflates the long ago with the far away, a displacement of time and space that in Jamesonian terms positions "end of history" discourse at the end of a continuum that starts in a Greek "beginning of history." That the sounds didn't match the time or place didn't matter for Ravel, nor do they matter for Cousteau's Antarctica.

In fact, Cousteau's "world" is a referential hologram—this scene draws on multiple layers of historical, national, pastoral aesthetics in order to turn a feeling of being in nature into a feeling of being immersed in a technological world and back again. Much like the divertissements in nineteenth-century dramatic ballets, both space-ship and balloon are designed as moments of escape that revel in the "purely technical," even as that technicity is grounded in a colonial historical narrative. The imbrication of natural beauty and technicity dissolves in sublime "natural beauty." In

---

[58] As quoted by Madeleine Goss in *Bolero: The Life of Maurice Ravel* (Whitefish: Kessinger Publishing, LLC, 2010), 154. Cousteau cherished ancient Greece, regularly recounting lessons learnt from antiquity on archeological expeditions. There is a good example in the 1976 symposium, "Why Man Explores," in which Cousteau excitedly recounts an archaeological expedition in Greek waters near Crete in which a violent storm threatened their ship. In a moment of "vertical thinking," Cousteau reasoned that "in antiquity, the tiny primitive harbor of Knossos could not have protected the ships of King Minos" and deduced an alternative location for safe anchoring. In this way Cousteau searches for material and immaterial remains of lost civilizations. Incidentally, he also comments that often men explore to get away from their wives, a thinly veiled double entendre on the kinds of bodies explorers "explore." Jacques Cousteau, "EP-125 Why Man Explores," 5.

[59] Lawrence Kramer, "Consuming the Exotic: Ravel's Daphnis and Chloe," in *Classical Music and Postmodern Knowledge* (Berkeley: University of California Press, 1995), 201-225.

[60] Ibid., 204.

other words, Cousteau's Calypso and Ravel's Syrinx/Chloe are both aesthetic manifestations of technological heteroerotics—the former insistent upon capturing and detaining a lover with her voice, the latter representing a lustful integration of woman, nature, and technology in the form of Pan's reed flute. Through music they show us a nature that is too big and too deep to own or control, a merging of affect, scientific knowledge, and geographical exploration, all of which beg for penetration in the service of conquest. Woman and nature merge as Others outside of man's control; in order to access these Others, he produces an affective truth-object that displaces the pleasure of conquest to the pleasure of song.

The Calypso balloon's journey at the "edge of the world" embodies this sublimated colonialism through sexy interspecies innuendo rewritten as a scientific investigation of the natural world. In a brief but revealing moment, one man catches the gaze of a soft, brown-eyed seal (see Figure 2.3). As the flute melody rhythmically settles *retenu legérèment* into a sustained middle-register A# the balloon seems to pause while the man subtly nods to the seal, who meets his gaze before glancing downward and then looking away. The flute melody chromatically meanders up to a floaty third-register D♮, rhythmically picking up *au mouv!* cuing the balloon to also be on its way. Here, the seal becomes a shy nymph, Syrinx perhaps, who is embodied in the flute's melancholy *Air*. Like the Antarctic landscape, her beauty is feminized and exoticized, accessed through the power represented by technological development: white man pausing to look down at the attractive brown native.

The message is that Love and Knowledge become synonymous at the same time that the boundary between "objective reality" and "artificial culture" is dissolved in order to represent man's

access to nature and his creation of technology as one in the same. Seeking knowledge with the urgency of the sexual drive, man creates technology in order to feed his desire for "truth," which

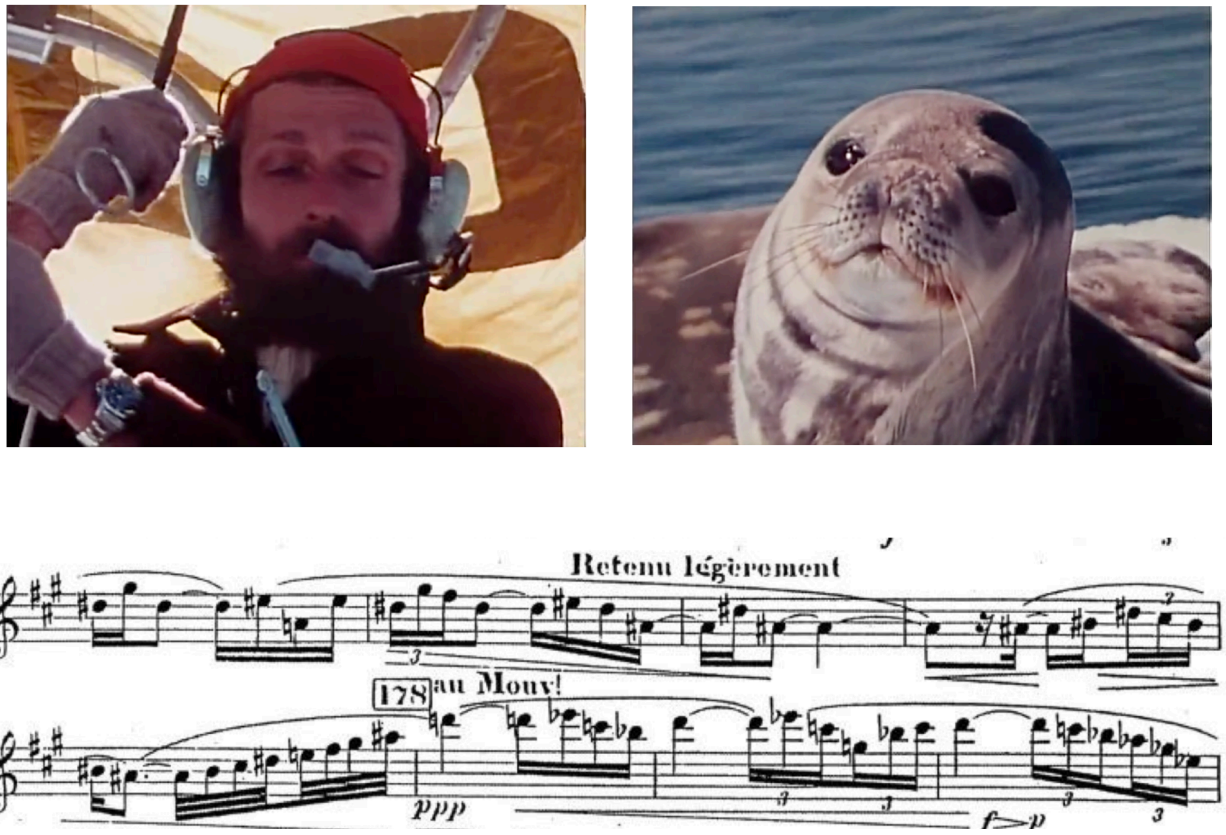

Figure 2.3: A balloon ballet excerpt, a modern Daphnis and Chlóe

itself can never be sated since desire itself is ultimately what needs to be sustained—desire disguised as a drive (sex disguised as food). At the same time, nature only requires "access" because Western man separated himself from it in the first place, necessitated by his desire for boundary-making in the service of a realized selfhood. Notably, this separation is also a precondition of conflict, which according to Kubrick and Cousteau, are required for both scientific and narrative progress.

In musical terms, the songs of Calypso and Syrinx represent nature-as-woman triangulated by knowability (in both scientific and biblical senses). The hypnotic power of Calypso's imagined song aligns music and nature with the Greek idea of the music of the spheres, which, like absolute music, can only be accessed affectively. Per the myth, the explorer, Odysseus traverses the oceans in the service of his people, yet remains at the mercy of this feminine power of nature, music, and the sea. In the case of Syrinx, while the God Pan is formulated half in the image of (rational) man and half in the image of (irrational/nonhuman) goat, his half-animal access to nature allows him to conquer Syrinx's transfigured body even though his rational man is flummoxed by her retreat into unknowability. Thus music merges the rationality of technology (the panpipes), with the irrationality of lust via melodic sound.

This is how the Calypso balloon is itself fetishized as a wonder of science, an extension of the conqueror Odysseus enamored, but here not detained, by Calypso's magic voice. Indeed, the camera remains focused on the balloon for the remaining duration of the scene, capturing the romance of the journey in sumptuous panoramic shots visually akin to Kubrick's space station. Ostensibly charged with capturing surveillance of the landscape, the men in the gondola become the true hero-subjects of the scene. While the seals were lovely, they were really only props for a technological display—the feat of bridging the vast landscape of Western history from Ancient Greece to twentieth-century France into a single bird's eye view, seemingly circumnavigating the globe like one of Jules Verne's "*voyages extraordinaires.*"

Cousteau's worlding proclivities were historically relevant. Media scholar James Cahill reminds us that France responded to its postwar vulnerability with an urgency to reconceptualize and re-explore the world. Out of this time and place came Maurice Merleau-Ponty's 1948 call for

the arts to "rethink the world through poetic exploration," followed by French demographer Alfred Sauvy's introduction of the term "third world" in 1952, and the general circulation of the term *mondialisation* or "globalization" in 1953 to describe the expansion of Western capitalism.[61] Three years later, Jacques Cousteau released his first feature-length film to become part of the Calypso trilogy, all three films branding a "World of Jacques Cousteau" where the ocean becomes progress materialized (*The Silent World* [1956], *World Without Sun* [1964], and *Voyage to the Edge of the World* [1976]). One could imagine it as a French response to the American/Soviet Space Race, an ordering that joins America in the "first world." In both cases, world power defines its *terra firma* precisely through its dominating relation to the unfirm territories of ocean and outer space, and their inhabitants seen and imagined. His films thus participated in exploration ideology, physically rebuilding cities according to globalized schemata that sought to reclaim science in the postwar period as a constructive force.

It is pertinent also to remember that the balloon was significant in French history for strategic military use. First used in 1794 at the battle of Fleurus, hydrogen balloons were used to surveille the landscape, gaining information on enemy positioning from an aerial position of 300 meters above the battlefield and by World War I, at least 4,200 captive balloons were used.[62] The added benefit was a psychological one: both the French army and its opponents would see the balloon as evidence of France's superior technology, which inevitably buoyed the morale of the French army and intimidated their enemies. By the end of the nineteenth century, balloons became

[61] James Leo Cahill, "On the Plurality of Worlds: Jacques Yves Cousteau and Louis Malle's *Silent World*," paper in progress presented at the University of Chicago Mass Culture Workshop in May, 2018.
[62] Captive balloons differ from standard hot air balloons as they are tethered to a point on the ground. Thus, while they might sway a bit based on air conditions, they are mechanically maneuvered from the ground.

emblems of national pride rooted in their twin associations of military prowess and exploration—in particular the ability to circumnavigate the globe (a form of imaginary ownership over the world), as Jules Verne so famously depicted in his 1873 *Around the World in 80 Days*.

Figure 2.4: Two posters: The first advertises the Tuileries steam captive balloon probably during the 1878 World's Fair; the second is a Poster for the aerodrome of Porte Maillot around 1890.

The affective implications are evident in the two posters shown in Figure 2.4: in the first, the spectacle of the balloon (which could carry 40 passengers at a time) was supported by an orchestra of 70 musicians; in the second, likely from around twelve years later, the balloon is portrayed in mythic proportions, hovering in a spotlight that is managed by a winged fairy who harnesses a spark of light at her fingertips. Thinking of these balloon spectacles as part of Cousteau's lineage places the emergence of conservation as a genre of social interest into a historical scene that "invoke[es] the

world while paradoxically ignoring it."[63] As a scientist-military hero on a quest across the wide expanse and fathomless abyss of the world's oceans to fetch the manna of knowledge for all mankind, Cousteau's audiovisual excursions demand we ask: What are a few animal deaths in the service of—for the beauty of—science, which, after all, is not so different from death in the service of the nation?

I want to draw attention to one final applicable atmospheric signifier from the period. Holly Watkins has written about the idea of a "biotic aesthetics of music" in a way that opposes the capitalist-extractivist one I outlined earlier. Watkins has written about the idea of a "biotic aesthetics of music" in a way that opposes the capitalist-extractivist one I outlined earlier. [64] It is possible to analyze the scores to Cousteau's films as functioning in parallel to what Watkins terms the "neo-romantic pastoral"—a genre of neo-tonal works that combined the romantic and environmentalist impulses of the early 1970s.[65] As Watkins points out, there was a strong musical movement against the progress narratives espoused by modernist composers who aligned abstraction and technical evolution. Fueled by an emerging awareness of environmental issues brought to the fore by Rachel Carson's 1962 book *Silent Spring*, as well as the 1972 ban on DDT by the Environmental Protection Agency, some composers returned to both the tonal language and pastoral topoi of the previous two hundred years. Thus, while Ravel was both stylistically and temporally distant from the neo-romantic pastoral as described by Watkins, there is perhaps an element of this ideology at work in

[63] Jairo Moreno, "Imperial Aurality: Jazz, the Archive, and U.S. Empire" in *Audible Empire: Music, Global Politics, Critique*, Ronald Radano and Tejumola Olaniyan, eds. (Durham: Duke University Press Books, 2016), 137.
[64] Holly Watkins, *Musical Vitalities: Ventures in a Biotic Aesthetics of Music* (Chicago: University of Chicago Press, 2018).
[65] See Holly Watkins, "The Pastoral After Environmentalism: Nature and Culture in Stephen Albert's Symphony: River Run" in *Current Musicology* 84 (Fall 2007) 7-24. Calling Ravel's music in *Voyage to the Edge of the World* "neo-romantic" is not at odds with the neoclassical label given his work. It could be argued that it is in fact the neoclassical elements that allow to function as a neo-romantic Pastoral.

Cousteau's films, including *Voyage to the Edge of the World*. This musical association would have underscored Cousteau's ability to pass as a conservationist. And while much can be said of "different times, different worldviews," temporal distance brings clarity largely because aesthetic norms become denatured with time.

It is worth noting that the crew's motto, "*il faut aller voir*" or "we must go and see" is reminiscent of German mathematician David Hilbert's 1900 declaration that "we must know—we will know," itself a response to the Latin maxim on the limits of scientific knowledge, *ignoramus et ignorbimus* "we do not know and will not know." This framing of knowledge acquisition as a moral imperative finds a political correlate in the French nationalism: as Loraine Daston has pointed out, foundational to the French Revolution was the idea of nature as not only an absolute but an *aspirational* absolute, "attributing all 'public ills and corruption of governments' to the ignorance or neglect of 'the natural, sacred, and inalienable rights of man.'"[66] Cousteau thus seems to narrativize positivism itself within a distinctly French political ethic by making the limits of knowledge synonymous with the bounds of the earth, boundaries that might be crossed on "uneasy oceans" of water and air as does the flute-as-balloon suspended over the edge of the world.

"Scientific-Poetic Cinema": Jean Painlevé and Geneviève Hamon's Romantic Octopuses

Characteristic of their surreal filmic style, Jean Painlevé and Geneviève Hamon's 1967 documentary *Les amours de la pieuvre* (*The Love Life of the Octopus*) portrays its cephalopod subjects as horrifically humorous, alien and yet anthropomorphic. It is a far cry from Cousteau's cinematic nature dramas. The fourteen-minute film opens with a brusque narration over an inscrutable close-

[66] Lorraine Daston, "The Naturalistic Fallacy Is Modern," *Isis* 105, no. 3 (September 2014), 583.

up of a black and white photo of a man holding an octopus like a baby, its arms splayed. The narrator (Painlevé) begins, his voice deep and gravelly, affecting an old fisherman telling a tale of terror: "*Huit tentacules, 2000 venteuses*…"—"Eight tentacles, 2000 suckers. A two-foot-long octopus can have 250 suckers on each tentacle." Cut to a montage of an octopus crawling across shallow tide pools, its gelatinous red body glistening in the sun like some B movie horror creation, a blob with entrail-like arms. Simultaneously, Pierre Henry's *musique concrète* soundscape bursts in, an otherworldly audio collage to complement disjunct camera work and reinforce the animal's SciFi/horror depiction. The music's reverberant, slippery sweeps and burbles hearken sounds for travel through time and space, teleportation, and artificial intelligence. (Indeed, Kubrick had been listening to *musique concrète* when researching music for *2001* and could easily have used this aesthetic for the film had he not discovered Ligeti.)[67] The introductory narration concludes: "*Pieuvre, poulpe, animal horrifique*"—"Octopus, cephalopod, horrifying animal."

As a viewer, it might feel like Painlevé and Hamon are toying with your expectations as much as the octopus' depiction. Indeed, that was their intent. Made towards the end of their collaborative career (as life-partners, Hamon and her nonconformist family had long greatly influenced Painlevé, but it was only from the 1960 film *How Some Jellyfish Are Born* that she is credited as codirector), *Love Life* emblematizes those elements most important to the pair, namely public education that communicates radical social commentary through an absurdist or humorous orientation to natural science.[68] Straddling the worlds of Western institutional science and the

[67] In her article, "An Effort to Decide," Kate McQuiston cites Jeremy Bernstein's description of Kubrick's musical process in 1966: "In the office collection were records by the practitioners of *musique concrète* and electronic music in general," 146.

[68] As life partners, it is unclear what role Hamon played in Painlevé's earlier films and what changed when she started to be credited as codirector in later films. For this reason, I refer to Painlevé in the singular when addressing his early life but refer to the pair together when discussing *Love Life of the Octopus*. James Leo Cahill provides a discussion of the

French surrealist movement, Painlevé's works (at first credited alone) have become cult favorites in France and the United States. But rarely are his films used for educational purposes. He is most often referred to as a surrealist whose work is "also serious science," the not-subtle implication being that scientific explanation is a byproduct rather than the primary objective of his work.[69] Certainly it is not surprising that his approach to elucidating animal behavior through a formal style that has been interpreted to "swerve away from… 'the reality of its content'" has manifested distrust among the scientific community on one hand, and inspired an instrumental rock dedication album on the other.[70]

But are Painlevé and Hamon's films really so different from Cousteau's? By what mechanisms do these French oceanographic filmmakers demarcate a separate space of knowledge and feeling, or feelings of knowing (and what things)? Considering his life-long dedication and pioneering efforts to bring the worlds of underwater fauna to the public long before Cousteau, I wonder whether it was his surrealist aesthetic, his social message, or some other factor that most impacted the framing of his scientific legacy.

As a young adult, Painlevé trained at the *Laboratoire d'Anatomie et d'Histologie Comparée* at the Sorbonne and throughout his life actively participated in institutional initiatives like the creation of the World Union of Documentarists in 1948. However, he also had a rebellious streak and

---

circumstances, ramifications, and hermeneutic ambiguity surrounding their partnership in the introduction to his book, *Zoological Surrealism: The Nonhuman Cinema of Jean Painlevé* (Minneapolis: University of Minnesota Press, 2019).

[69] The booklet (and website) to the Criterion Collection release of his films describes how "The mesmerizing, utterly unclassifiable science films of Jean Painlevé… have to be seen to be believed: delightful, surrealist-influenced dream works that are *also* serious science." "Jean Painlevé: Going Beneath the Surface," *The Criterion Collection* (blog), accessed June 12, 2015, http://www.criterion.com/current/posts/1098-jean-painleve-going-beneath-the-surface.

[70] Carrie Noland quotes André Breton in "Red Front/Black Front: Aimé Césaire and the Affaire Aragon," *Diacritics* 36, no. 1 (Spring 2006), 178. In 2001, indie rock band, Yo La Tengo released their album *The Sounds of the Sounds of Science*, nine tracks meant to be performed in front of Painlevé's films.

according to film pioneer Sergei Eisenstein, he reportedly "found a way of taking part in everything that bore even the faintest trace of social protest and disorder."[71] This impulse seems to have manifested in large part through his professional and friendly associations within those at the forefront of surrealism and critical theory.[72] In fact, while he did not consider himself to be a surrealist at all, his work plainly orbits the movement and draws from its aesthetic philosophy. Notably, this includes an article published in *Surrealisme* in 1924 titled "Exemple de surréalisme: le cinéma," in which he espoused "the superiority of reality" and the "extraordinary inventiveness of nature," which, when enhanced through cinematic techniques like slow motion or accelerated speed could produce a surreal aesthetic.[73] Since a primary feature of surrealist work is its focus on scientific subjects, surrealism is actually quite an apt aesthetic for Painlevé's political zoology—reality is already weird, you don't need to make it so. He positioned his own filmic techniques in opposition to "the artifice" of traditional cinematographical scenes, later clarifying that "although it would seem that film would be an educational tool well suited to our era, it is actually a double- edged sword: while film can spark an interest in a certain subject matter, it can also gloss over details and suppress curiosity by fostering the dangerous illusion that one has understood, when in fact, one has not."[74]

As a forerunner of the avant-garde, surrealism, with its radical political intent, also distinguishes it from Cousteau's more mainstream musical associations, which proffer an illusion of

---

[71] Sergei Eisenstein is quoted by James Leo Cahill in *Zoological Surrealism: The Nonhuman Cinema of Jean Painlevé*, currently the most comprehensive book on Jean Painlevé and Geneviève Hamon. (Minneapolis: University of Minnesota Press, 2019).

[72] For instance his position teaching film at the Experimental University of Vincennes, had been founded by Hélène Cixous in 1969 in response to the events of May 1968, placed him among a faculty that included Gilles Deleuze, Jacques Lacan, Alain Badiou, and Michel Foucault. Other collaborators and close friends included Man Ray, Edgard Varèse, André Breton, Antonin Artaud, Luis Buñuel, Sergei Eisenstein, Jean Cocteau, and Darius Milhaud, among others.

[73] Jean Painleve, "Exemple de surréalisme: le cinéma," *Surréalisme* 1 (October 1924).

[74] Painlevé quoted in *Science Is Fiction: The Films of Jean Painlevé*, Andy Masaki Bellows and Marina McDougall eds. (Cambridge: MIT Press, 2000), 161.

being apolitical. One of Painlevé and Hamon's points of connection with the Surrealist movement was their interest in the weirdness of sexual reproduction. Yet they were also guided by a desire to challenge gender norms, a critical element that has often been found to be lacking in surrealist works and history.[75] This objective largely informed the choices of animals Painlevé filmed, the most famous example being his 1934 "*L'hippocampe ou 'Cheval Marin,'*" which depicts a male seahorse giving birth as part of seahorse mating practices. Today, the film almost reads as a subversive version of Disney's True Life Adventures (a series filmed over a decade later between 1948 and 1960 that notoriously depicted animals in anthropomorphic heteropatriarchal domestic mini-dramas). Darius Milhaud's charming original score supports Painlevé's domestic sea-horse scene in which an "ordinary fish," whose "upright body and horizontal head…evokes a biped," and quite simply reverses normative human gender roles in the bringing forth of offspring. In 1936, the Motion Picture division of the New York State Board of Censors banned *L'hippocampe* for its "indecent" depictions of "copulation" and "male evicting its young."[76]

Love Life of the Octopus similarly uses the cephalopod as a foil for human gender expectations. About four minutes into the thirteen-minute film, two octopuses copulate. Painlevé (who, like Cousteau, often narrated his films in voiceover) remarks that the smaller male octopus is "white with fear" at the larger female octopus. Shortly thereafter, Henry splices a snippet of the "Song of the Volga Boatmen" from a 1922 recording made by the Russian operatic bass Feodor Chaliapin into the electronic otherworldly soundscape. The traditional Russian song had been

[75] There has been a call for more female representation in museums and histories of surrealism, not least because the movement is associated with misogynist tendencies, namely the depiction of women as muses rather than authors or artists in their own right.
[76] James Leo Cahill, "Forgetting Lessons: Jean Painlevé's Cinematic Gay Science," *Journal of Visual Culture* 11, no. 3 (December 2012), 282.

circulating in numerous media and genre circles since the early 1940s, taken up by American media with an often-comedic implication of Soviet allegiance, service, and endless toil.[77] Here, the scoring scrambles the code: sounds that might signify on one hand avant-garde musical seriousness, and on the other, science fiction futurism now frame a wryly comic musical moment. On the level of scientific-social commentary, the "Volga Boatmen" song is doubly referential. Already laden with codes, the crackling recording is funny in its ambiguous filmic use: as underscore, it comments on the male octopus's counter-normative role in this sexual encounter—not an "iron" boatman as the song implies, the little octopus is threatened by the larger female who it keeps at a safe distance while nevertheless fulfilling his duty to the species (as opposed to the state, like the Volga boatmen). Even in the oceanic otherworld, comrades have duties, and it is Comrade Octopus's duty to procreate.

The audiovisual situatedness of Painlevé and Hamon's style adds to their social critique. Visually, the octopi's captivity is evidenced by the circumscribed frame of the tank, against which suckered arms press; and later magnified images of spermatozoa and octopus embryos further pull us out of a human-centric "view from nowhere." Henry's soundtrack similarly draws attention to its material mediation. The form of this section resembles an electronic dance with a sort of theme and variation structure (the theme comprising the first five seconds of the clip). The awkward quasi-dotted rhythm chafes against dance norms, while the repeated "boom-chick" conjures an estranged mazurka of sorts—"weirded" rhythms that defy human affordances of playing music and dancing even while alluding to them. When the "Song of the Volga Boatmen" fades in, the timbre is

[77] For instance, in 1944 a Warner Bros. war cartoon entitled *Russian Rhapsody* features "gremlins from the Kremlin" singing the song; in 1949 the Disney cartoon *Goofy Gymnastics* features Goofy lifting weights to the song; additional references include a jazz rendition released by the Glenn Miller Band in 1941, and in 1965 the Russian Red Army Choir released its version.

reminiscent of what composer and sound engineer, Robert Beyer termed *Raumton* or spatialized sound—whereby the sound of the music is anchored within the sound of its recorded environment, a "spatial imprint" that forces listeners to "confront it as what it in fact is: a technologically transfigured fragment of reality."[78] In this way Henry's score helps drive the film's metacritique of science described by Don Ihde as "interpreted reality" through "situated subjectivity."[79]

Figure 2.5: Two scenes from Les Amours de la Pieuvre, *a frame of the octopus copulation and an enlarged view of octopus sperm*

The score forms a subtle commentary that undermines heteronormative gender conventions—a sort of modernist queering applied to the genre of science film. But more importantly, it is *noticeable*. Unlike Cousteau's films' "unheard melodies"—what Claudia Gorbman famously described as film music's ability to signify below the surface of viewer consciousness—Henry's score sits right at the surface, nudging its viewer to think about what it is they are watching. In this way, the musical language complements camera effects like microscopic viewing. In the sense

[78] Thomas Patteson, *Instruments for New Music* (Berkeley: University of California Press, 2015), 100.
[79] Ihde, *Expanding Hermeneutics: Visualism in Science* (Evanston: Northwestern University Press, 1999), 92.

that Painlevé and Hamon's film zooms in rather than out (like Cousteau's sexy panoramas) *Love Life*'s audiovisual language alludes to the limits of human perception and cognition, and it is following this logic that they upturn the universalizing myth of heteronormative anthropos by satirizing it as cephalopodian. In this way, it might be argued that surrealist aesthetics were fundamental to their scientific method. On one hand, it is laughable that the American film board was so quick to censor the "obscene" depiction of male seahorses baring their young, but on the other hand, Painlevé and Hamon *want* their audiences to be at least somewhat disturbed by images of sperm.

For that matter, the fact that I find their work to be humorous says something about my worldview, since as Lauren Berlant and Sianne Ngai argue, humor indexes the "epistemologically troubling, drawing insecure boundaries" that "help us figure out what lines we desire or can bear."[80] Much like the science fiction genre, it is precisely the feeling of alienation that allows for critical reflection, even if (or because) that reflection makes us laugh.

However, categorizing *Love Life* as a surrealist film is complicated not only by Painlevé and Hamon's claims to the contrary but also by Pierre Henry's *musique concrète* score since André Bretòn squarely excluded music from the surrealist movement.[81] Anne LeBaron has written on some compelling synchronicities between certain postmodern musical genres and surrealism but notes that few other scholars consider this negated relationship. She cites Jacqueline Chèniux-Gendron who "suggests a link between the beginnings of electronic music and serialism" in her book, *Surrealism*

[80] Lauren Berlant and Sianne Ngai, "Comedy Has Issues," *Critical Inquiry* 43, no. 2 (January 2017), 235.
[81] Bretòn's exclusion of music was explicit, set out in his 1913 essay, "No Music."

and even muses on "the French surrealists' neglect of music as one 'system of signs.'"[82] Here, she specifically cites Pierre Henry as getting close to "the spirit of surrealism," but ultimately asserts that "from a historical perspective, the opportunity for any meeting between music and surrealism has been irretrievably missed."[83] Similarly, musicologist Benjamin Piekut argues that *musique concrète* experimentalism is "genealogical[ly] embroil[ed] with science-and-technology discourses" and has thus "disinclined it from developing an overt political project."[84] Here are echoes of Ligeti, whose math-as-music provides the sound of Kubrick's monolithic narrative.

Put differently, depending on your framing, Henry could fall under the umbrella of "end of genre" modernist composers while also providing the sonic backdrop for a more radical "end of art" aesthetic-political positionality. Where Drott has argued that the "end of genre" impetus points to a unified aesthetic philosophy among a group of post-tonal avant-garde composers operating within a common artistic lineage, Jameson defines the "end of art" debate as largely a movement against "end of genre" high modernism, which (unwittingly or not) positioned itself within a techno-heroic trajectory. Jameson locates the "end of art" movement in the radical theater of the 1960s, during a time when artists took part in a global protest against the American war in Vietnam by disavowing the canons and cultural institutions that position the high arts as extensions of Western values, state prestige, and power.[85]

For Jameson, "end of art" artists found their truest expression in the "happenings" of the 1960s and 70s, which involved "do[ing] away with the pretext of the text altogether and offering a

---

[82] Anne LeBaron, "Reflections of Surrealism in Postmodern Musics" in *Postmodern Music/Postmodern Thought*, ed. Judy Lochhead and Joseph Auner (New York: Routledge, 2001), 11-12.
[83] Chénieux-Gendron is quoted by Anne LeBaron in "Surrealism and Music," 12.
[84] Benjamin Piekut, *Henry Cow: The World Is a Problem* (Duke University Press Books, 2019), 2.
[85] Frederic Jameson, "'End of Art' or 'End of History'?" in *The Cultural Turn: Selected Writings on the Postmodern 1983-1998* (New York: Verso, 1998), 73-92.

spectacle of the sheerest performance as such."[86] Here, their ultimate desire to "abolish the boundary and the distinction between fiction and fact, or art and life" was not unlike Painlevé and Hamon's assertion that "science is fiction."[87] Indeed, neither was unlike a science fiction worldview in that form and content could be fused in a way that allows for an experience to help us draw our own epistemological, political, or social boundaries in order to question them. Jameson describes this process as a form of holographic thinking. In fact, the richness of any interesting thought, he argues, "stems not from the ingenuity or the pertinence or any particular individual concept, but rather from the way in which, in the thinker in question, several distinct systems of concepts coexist and fail to coincide." He continues with a poetic description:

> Imagine models floating above each other as in distinct dimensions: it is not their homologies that prove suggestive or fruitful, but rather the infinitesimal divergences, the imperceptible lack of fit between the levels - extrapolated out into a continuum whose stages range from the pre-choate and the quizzical gap, to the nagging tension and the sharpness of contradiction itself – genuine thinking always taking place within empty places, these voids that suddenly appear between the most powerful conceptual schemes. Thinking is thus not the concept, but the breakdown in the relationships between the individual concepts, isolated in their splendour like so many galactic systems, drifting apart in the empty mind of the world.[88]

A description of Painlevé and Hamon's work by James Leo Cahill sounds similar: "born from the romantic friction of the epistemological approaches of science and surrealism, each dedicated to the expansion of sensuous perception and through it, the revelation of new realities."[89] While Painlevé and Hamon's work was anything but spontaneous (*Love Life* took ten years to complete) they arrive

[86] Ibid., 75.
[87] Ibid., 76.
[88] Ibid.
[89] Cahill, "Forgetting Lessons," 271.

at a similar endpoint. If "science is fiction" then perhaps nature documentary is also science fiction.

Arguing for "end of genre" categorizing would put him in the company of Ligeti who falls under the science and technology discourse of experimentalism. But as underscore to *Love Life*, his audio collage enhances the out-of-time feeling of the documentary's non-linear montages in a way that disrupts the teleologic hero quest model. The style is not unlike that of the French New Wave pioneer Jean-Luc Godard, who sought to align formal experimentation with social and political dissent. So perhaps the *nouvelle vague* filmmakers are better company for Painlevé and Hamon than the surrealists, even if their Venn diagram (and temporal space) is not a perfect circle. One way of putting this is to frame their imaginaries: the left-wing intentions of the "end of art" avant-garde were proponents of a future in which the end of capitalism *is not* more difficult to imagine than the end of the world.

From a more explicitly scientific-political stance, Henry's score offers a version of what Donna Haraway would later describe as a feminist theory of situated knowledges, writing: "I am arguing for politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims."[90] For Haraway, an insistence on location and partial perspective alleviates the symptoms of universality. She calls for ethnophilosophies as opposed to universal rationality, heteroglossia rather than common language, local knowledges instead of a single world system, webbed accounts in place of a master theory—in more recent terms, the Chthulucene in place of the Anthropocene.

This brings us back to the octopus. At home in the literature of horror and science fiction,

[90] Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminism Studies* 14, no. 3 (Autumn 1988), 589.

the octopus is a deep-rooted symbol grounded in the perceived mystery of its biologically confounding parts—three hearts, blue blood, rows of intestinal teeth, eight arms—an assemblage of features whose "whole" seems to lack coherence. Eugene Thacker has theorized that the octopus is horrific to humans because it represents the philosophic irreconcilability of our curiosity about nature with our inherent limits of perception.[91] In his telling, the oceanic abyss becomes a metaphor for nature-as-truth, receding indefinitely into inaccessible darkness. Yet it beckons us with the octopus, who looks back at us with its human-like eye, and we begin to imagine that if we access the creature we just might figure out how to access the truth about nature and our place in it. Those familiar with the literary horror genre will recall H.P. Lovecraft's 1928 short story, "The Call of Cthulhu," in which a giant sub-oceanic demon-god with an octopus-like head on a vaguely anthropoid silhouette creates emotional and spiritual disturbances in a nearby town. Its enduring cult popularity exemplifies Thacker's argument that, in the words of Lynda Haas, "Man's fear, a fear initiated by his need for mastery, is of the thing he cannot enclose, possess, or capture in his nets."[92] It is the underside to Le Guin's techno-hero, a story about knowledge, nature, and other Others, that leads some like Cousteau to proclaim that "we must go and see."

By contrast, Donna Haraway reconfigures the octopus's mythic heritage, abandoning the monstrous Lovecraftian deity even while sharing the Greek root, *khthôn*, meaning "of, in, or under the Earth and seas."[93] Combining *khthôn* and the temporal marker *kainos*, Haraway seeks to redefine

---

[91] See Eugene Thacker, *Tentacles Longer Than Night: Horror of Philosophy* (United Kingdom: Zero Books, 2015).
[92] Here, Lynda Haas is describing Luce Irigaray's feminist take on fluidity in her "Review: Of Waters and Women: The Philosophy of Luce Irigaray," review of *Marine Lover of Friedrich Nietzsche* by Luce Irigaray and Gillian C. Gill; *The Irigaray Reader* by Luce Irigaray and Margaret Whitford; *Philosophy in the Feminine* by Margaret Whitford," *Hypatia* 8, no. 4 (1993), 155.
[93] Donna Haraway, "Tentacular Thinking: Anthropocene, Capitalocene, Chthulucene" *Journal #75* (September 2016) accessed April 20, 2020, https://www.e-flux.com/journal/75/67125/tentacular-thinking-anthropocene-capitalocene-chthulucene/.

the Anthropocene as the Chthulucene, a reframing of our current times through chthonic (tentacled, interwoven, tangled) interspecies assemblages "infusing all sorts of temporalities [in a] thick, ongoing presence." Instead of being horrified by the octopus's seemingly random assembly of different parts, we might allow it to show us how we are all holobionts—assemblages of different parts and species that form symbiotic ecological units (humans after all are comprised of many more bacteria than cells). It provides a way of seeing our interconnectedness with the Earth "through affinities, not identities," that extend to all the world's creatures and systems.[94] She even extends the metaphor one step further to describe communities of situated knowledge producers *sym-poetically* worlding through "cacophonous visions and visionary voices" in the Chthulucene.[95] In so doing, Haraway seeks to dissolve the already putrefying techno-heroic narrative in order to recompose a deeply connected kinship of multispecies muddles living and dying together; relationally made, the Anthropocene must be relationally unmade. Here, the octopus is a metaphorical fulcrum point (a fulcrum point that is a metaphor) on which science-fiction's techno-heroism might shift. In other words, instead of the octopus as embodiment of our fear of limits, we might see it in Haraway's terms—and to an extent in Henry, Painlevé, and Hamon's terms—as reflections of our own human bricolage, our messy interrelations, and the tentacular reach of ideas.

Conclusion and Postlude: Worlding in the Chthulucene

From a 21st-century perspective, tragic tales about nature have overtaken triumphant ones. As global capitalism's demands for energy have propagated unsustainable extractivist practices,

[94] Donna Haraway, "A Cyborg Manifesto," in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1990), 277.
[95] Haraway, "Situated Knowledges," 196.

stories of hunting for dinner have fueled practices of hunting the Earth itself. As Marisol de la Cadena and Mario Blaser observed, "Now the colonizers are as threatened as the worlds they displaced and destroyed when they took over what they called *terra nullius*."[96] Yet today's practices are not so different from Cousteau's, and not just because we have continued to world-build through destructive practices. While nature documentary practices have changed in the last half century, they are still founded on the dual affects of sublime desire and the pity, sadness, and loss that Cousteau capitalizes on during certain moments of destruction. How do you effectively turn people to conservation anyway? By showing it being destroyed. This is the Anthropocene: a (s)cene comprised of the delusion that the same practices that lead to ecological destruction might get us out of that very same mess. We might imagine Rachel Carson's 1962 *Silent Spring* as a rebuttal to Cousteau's 1956 *Silent World*—the silence in Cousteau's film is suggested by the anthropocentric viewpoint of man's stifled hearing underwater. In Carson, that silence is reversed—a silence imposed by man.

Cousteau provides a utopian form whose literary subcategory might be described equally as fantasy or science fiction. Cousteau's fantasy reads as plausibly scientific precisely because it is recognizable, not least for its underscore, as pastoral Edenic fantasy. Yet it projects itself into the future via oceanic metaphors to space travel, referenced by the balloon's aerial technology as well as specific references to space travel technology used on board the ship. Portrayed alongside lovingly-rendered landscapes and animals, technological instruments are beautified and the scientists' work spiritualized, softening—if not alleviating—the cognitive dissonance that might result from witnessing destructive acts in the name of conservation. It is a model borrowed from both science

[96] Marisol de la Cadena and Mario Blaser, eds. in their "Introduction" to *A World of Many Worlds* (Duke University Press Books, 2018), 3.

fiction film and Western European art music history, both of which align the sublime with that which is sublimated, through a shared understanding of elegant beauty.

What is sublimated for Cousteau, Painlevé and Hamon brings to the surface by drawing attention to what Bruno Latour calls the "double bind of creation," that is, the modern Western notion that "[o]n the one hand...tells us that we have to decide between fiery illusions ad icy reasons, but on the other...tells us the opposite, since there is no way to choose between the two, as soon as put our hand into the creation of any thing."[97] Like Latour, Painlevé and Hamon take aim at the modern Western hermeneutic/positivism binary, which is evidenced by the distrust many scientists felt of the duo's work, not to mention film as a scientific educative medium. But Painlevé and Hamon's films also critique what Cousteau would come to normalize in nature documentary—namely a form of naturalistic fallacy, what science historian Lorraine Daston defines as a "covert smuggling operation in which cultural values are transferred to nature and nature's authority is then called upon to buttress those very same values."[98]

Painlevé and Hamon's films problematize the illusion of boundaries between hermeneutics, positivism, and society, exaggerating the interplay between these elements rather than presenting them as mutually exclusive. The aesthetic supports the narrative: by utilizing technological interfaces as through-points, rather than endpoints, Painlevé and Hamon highlight the materiality of mechanical intervention and, by extension, the situatedness of perception. Whereas Cousteau frames technology as a point of arrival (the "World" of Jacques Cousteau is a destination exclusive to those

[97] Bruno Latour, *On the Modern Cult of the Factish Gods* (Durham NC ; London: Duke University Press Books, 2010), ix.
[98] Lorraine Daston, "The Naturalistic Fallacy Is Modern," *Isis* 105, no. 3 (September 2014), 580.

with the scientific know-how), *Love Life* shows us that technology merely provides a framework for seeing the world: there is no "keyhole into nature."

The two nature documentaries I have discussed offer a preliminary view into the relationships between narratives, musical aesthetics, and epistemologies in Anthropocene worlding practices, arguing that audio-visual *poesie* provides one link between knowledge and beauty. Cousteau is in fact operating within the parameters of Western European science, which tends to paradoxically define itself in relation to its polemical others, namely fiction, aesthetics, and hermeneutics, even while depending on them intrinsically.[99] Just as Cousteau's narrative practices sync with a scientific-empirical worldview based in overcoming boundaries, the sublimated colonial fetishizing of Ravel's music also sublimates Cousteau's own participation in ecological destruction. Perhaps if Painlevé had fully embraced the mythos of the tentacled monster rather than using it as a foil to illuminate the artificiality of societal conventions—the same conventions that define the parameters of science as a techno-heroic act—his work wouldn't be defined as surrealist first, science second (or not at all). In their respective aesthetics, the two oceanographers I've engaged thus enter into a curious dual paradox: Cousteau's musical choices, operating under the parameters of the fictional, suggest his work as scientific; Painlevé's musical choices, highlighting the artificiality of the medium and the inevitability of mediation, suggest his work as *merely* fictional.

But while I have largely argued that the two documentaries offer differing epistemologies, at the same time, they can also be seen as two sides of the same coin. As Zachary Loeffler has shown,

[99] Isabelle Stengers describes this tendency in her opening to "Scientific Passions" in *Cosmopolitics.* She argues that fiction and hermeneutics are deemed by scientists to be their polemic others, to which I add aesthetics. Isabelle Stengers, *Cosmopolitics I*, trans. Robert Bononno (Minneapolis: University of Minnesota Press, 2010).

since the early days of critical theory, music has been lauded as the strongest form of magic.[100] Could this be precisely why Breton denied music a place in the surrealist movement? Surrealism, while evocative of dreamscapes, was meant to be about science and political society. Eschewing music and the label of magic, surrealism perhaps held as tight to a rationalist viewpoint as Cousteau, just represented differently, and I wonder what is gained or lost politically in that move. Another way of putting it is that Painlevé and Hamon index uncanny emergence via avant-garde aesthetic alignments whereas Cousteau shows us a performance of exploration as an established norm (as non-fiction, neo-romantic fantasy and science fiction). In both, the space-age, the ocean, and new sound worlds lend to an accepted expansion of reality.

A possible extension for this work would consider genre as a form of inter-species community formation. With what kind of non-human lives do we empathize, since the brown seal and the octopuses clearly function differently for human self-understanding. And in these documentaries, music is a powerful way of orienting to the nonhuman. Amy Allen argues in *The End of Progress that* "...forward-looking progress with respect to the decolonization of the normative foundations of critical theory can take place only if we abandon the backward-looking story that positions European modernity as the outcome of a historical learning process. In this sense, progress occurs where it comes to an end." What we need for nature documentary is perhaps a new aesthetic, perhaps a new genre altogether—one that doesn't make precious the escape into nature, but that makes ordinary (and overcome-able) the dystopic lack of integration. It requires reevaluating our participation in musical micro-aggressions to the world we occupy.

[100] Zachary Loeffler, "'The Only Real Magic': Enchantment and Disenchantment in Music's Modernist Ordinary," *Popular Music* 38, no. 01 (January 2019): 8–32.

I want to say a final word on water. The sea has always been a site for imaginary crosscurrents. On one hand it signifies what Rob Wilson and Arif Dirlik have called a "hyper-capitalist fluidity," marked in the political imaginary by complex systems of trade-routes, offshore drilling, and unmarked territorial limits. As composer and historian Tara Rogers has illustrated, these colonialist maritime practices have formed imaginary frameworks for acoustics and audio technologies: sound reaches us through ear "canals;" electronic devices have currents, channels, and flows; synthesizers of the 1970s were given names like Voyager and Odyssey—one thinks of acoustician Frederick Hunt's account of sound as an "uneasy ocean of air." In Roger's words, even "[t]he imagined physical 'space' of the sound wave became both a gendered and racialized space [in acoustics texts]…: a particle/subject voyaged out, experienced affective encounters, and returned home to a state of rest."[101] Zooming out from waves to works and genres, musical evocations of the sea engage similar narrative conventions.

On the other hand, the ocean has been theorized as a site from which we might develop feminist, queer, and indigenous epistemologies. Sarah Ahmed thinks of "feminist action as like ripples in water, a small wave, possibly created by agitation from weather; here, there, each movement making another possible, another ripple, outward, reaching."[102] Among a slew of new books and essays on the topic, Karin Amimoto Ingersoll describes an indigenous Hawaiian oceanic epistemology in her 2016 *Waves of Knowing*, and the 2018 collection of essays edited by Stefanie Hessler, *Tidalectics*, (a neologism borrowed from Barbadian poet and historian Kamau Brathwaite) reimagines an "oceanic worldview" as one that is permeable, nonlinear, and affected by forces that

[101] Tara Rodgers, "Toward a Feminist Epistemology of Sound," in *Engaging the World: Thinking After Irigaray*, ed. Mary C. Rawlinson (Albany: State University of New York Press, 2016), 196.
[102] Sara Ahmed, *Living a Feminist Life* (Durham: Duke University Press, 2017), 3.

continually change. As gender and cultural studies scholar, Astrida Neimanis writes, "water as a queer archive reminds us that planetary time is not stratigraphic time" instead consisting of "swell[s] of time, which [are] also ineluctably about forgetting."[103] Many have borrowed from French cultural theorist, Luce Irigaray's 1979 essay "The 'Mechanics' of Fluids" and 1980 book, *Marine Lover of Friedrich Nietzsche*. Among them, Tara Rogers formulates a feminist epistemology of sound that discards some of Irigaray's more "restrictive, generational models of feminism" while recouping "productive [wave] metaphors for feminist orientations to knowledge, communication, and technology"—namely a more integrated subject position less concerned with control and boundaries than transformation and transduction.[104] If aesthetics can support alternative epistemologies, perhaps we can start with more female voice-overs in nature documentaries? And perhaps those women would not also be the same women that achieved fame through science fiction film.[105]

[103] Astrida Neimanis, "Water, A Queer Archive of Feeling" in *Tidalectics: Imagining an Oceanic Worldview through Art and Science*, ed. Stefanie Hessler (London, England : Cambridge, Massachusetts: The MIT Press, 2018).
[104] Rodgers, "Toward a Feminist Epistemology of Sound," 203.
[105] Two women who have provided narration for nature documentaries are Sigourney Weaver (of Alien fame) and Tilda Swinton, whose voice is described on at least one website as "Androgynous tone, slight high-class British accent... general otherworldliness."

Chapter III. Borderscapes, Monstrous Music, and *Rasquachismo* Cyberpunks

> Yet again, there's no either/or. The history of all hitherto existing societies, it's been pointed out many times, is a history of monsters, on all sides. Our utopianism is always already a chimera. *Angelus erethizon*: a porcupine with celestial wings; a seraph bristling with spines.
>
> And like those other hybrids, our cousins, the beast-men of More(au), who ultimately overthrew the ghastly utopia that created and despised them, it must learn to move with an unprecedented crossbred gait. To use its parts and powers in ungainly but effective ways: stilt-walking on wingtips, gripping with the quills of feathers and the quills of a sharper, martial kind. Fighting on four legs, two and none, and swimming—it's close to the shore—to New Abraxa.
>
> It will move, perhaps, as it is just possible we might, with a new motion neither and both animal and divine.
>
> —China Miéville, "'We are all Thomas More's children': 500 years of Utopia"

The Mysterians

In December of 1957, the Japanese science-fiction film, *The Mysterians*, is released nationwide and becomes a major box-office success. The plot involves a group of aliens (mysterians) who want to colonize the earth with the help of a giant subterranean robot. In a meeting with a group of Japanese scientists, they explain how after they lost their planet to nuclear destruction a few mysterians were able to escape and immigrate to Mars. They then negotiate a strip of land on Earth as well as access to Earth's women for reproductive purposes, reasoning that "The field of science recognizes no borderlines, national, racial, or global." The core film-making team, including the film-score composer Akira Ifukube of *Gojira* fame, go on to make a series of highly successful monster flicks including all the *Gojira* sequels.

In May of 1959, the film is released in the United States where, described as an "ear-splitting Japanese fantasy" by *New York Times* critic Henry Howard Thompson Jr., it captures the

imagination of an emerging pop band from just outside Detroit, Michigan, a group of young musicians whose Mexican migrant worker parents had moved from Texas.[1] They name themselves "? and the Mysterians" and proceed to release the smash hit song "96 Tears" in 1966.[2] Perhaps taking his cue from jazz composer and musician Sun Ra, Martinez tells reporters (and continues to claim to this day) that he is from Mars, that in a past life he lived among the dinosaurs, and that he is able to time travel and see the future. Unlike Sun Ra's avant-garde musical excursions, 96 Tears is repetitive and harmonically simple, oscillating between G and C7 chords for most of the song. In a 1971 column for *Creem Magazine*, music critic Dave Marsh calls a recent performance of theirs "a landmark exposition of punk rock," thus coining the term and establishing a genre. The group goes on to make a few moderately successful records before diminishing into punk pre-history as one-hit wonders.

In 1991, Duke University professor of philosophy and neurobiology Owen Flanagan publishes his book *Science of the Mind*, in which he endeavors to "sort out the various ways in which philosophical assumptions [in other words unscientific and hence ungrounded speculation] appear in, affect, afflict, and illuminate the science of mind."[3] In the process, he snubs proponents of a school of thought he terms the "new mysterians," so-called in his words, after "a forgettable 1960s pop group."[4] These mysterians, he says are "mischievous reactionaries who argue that although consciousness is part of the natural order, it will never be understood as such." Colin McGinn, the

[1] Henry Howard Thompson, "Screen: A Double Bill; 'Watusi' Arrives With 'The Mysterians,'" *The New York Times*, July 2, 1959, sec. Archives, https://www.nytimes.com/1959/07/02/archives/screen-a-double-bill-watusi-arrives-with-the-mysterians.html.
[2] They are sometimes listed as ? and the Mysterians, X, Y, Z; frontman Rudy Martinez called himself ? and his band X, Y, and Z after the "mysterious" letters. Eventually they cut X,Y, and Z out; Rudy Martinez later officially changed his name to Question Mark.
[3] Owen Flanagan, *Science of the Mind*, 2nd edition (Cambridge, Mass: A Bradford Book, 1991), xiii.
[4] Ibid., 313.

head mischief-maker according to Flanagan, argues that humans are fundamentally incapable of understanding their own consciousness due to the mechanistic limitations of the brain. He terms his philosophy "transcendental naturalism" to allow for the possibility that other intelligent beings in the universe may actually possess this ability. In 2013, McGinn resigns from his tenured position at the University of Miami after a female graduate student reports sexual harassment.

*

This chapter is not precisely about the film *The Mysterians*, the song "96 Tears," or institutional neurobiology. However I begin with the premise that none of the above-described details are unrelated. One way to understand the connections between these anecdotes is by how they are encompassed by a white-American science-fiction worldview. As I discuss in my introduction, this claim follows those made by a number of critical theorists: Jean Baudrillard argued that the distance between real and imaginary has been reduced in a way that threatens the space necessary for ideal or critical projection, Frederic Jameson has described how genres "spread out to colonize reality itself," Istvan Csicsery-Ronay Jr. asserts that "SF has ceased to be a genre of fiction *per se*, becoming instead a mode of awareness about the world," and Donna Haraway contends that "the boundary between SF and social reality is an optical illusion."[5] These authors share the notion that twentieth-century American modernity is based upon a worldview in which the distinction between science fiction's possible worlds and our own has collapsed.

This worldview is one that produces and relies on what I have described thus far in my dissertation as a "cognition effect," a way of using language to suggest a rational basis in empirical

[5] Baudrillard, "Simulacra and Science Fiction," Jameson's *Postmodernism*, 371, Istvan Csicsery-Ronay Jr. "Science Fiction and Postmodernism," 308, Donna Haraway "A Manifesto for Cyborgs," 60.

science, regardless of its foundation in reality, fantasy, or political interest. While I argue that positivist science fiction has indeed "spread out to colonize reality itself," this chapter interrogates how musical "cognition effects" align with other boundary-making practices integral to American capitalist expansion, including nation, identity, religion, and genre. In order to draw out related elements within a social totality, I tease at the borders between a cluster of audiovisual genres that feed off of or catalyze science fiction: horror, progressive rock, punk, heavy metal, and "classical music" soundtracks for science fiction and horror films. I choose these genres because of a horror film, Omar Rodríguez-López's *Amalia* (2018), its setting in the United States-Mexican border city of El Paso, Texas, and the way it maps a particular constellation of social filaments between genre, community, and preference at the moment of its production in the late 2010s.[6]

In *Amalia*, horror is SF's abject twin, a genre that similarly shadows everyday experience along racially, classed, and gendered lines. Whereas this dissertation has thus far examined how the science fiction genre sonically seeps through the cracks of reality, I will now follow that thread into horror as a parallel genre that feeds on "politically consequential form[s] of phantasmagoria" (to borrow Judith Butler's phrase).[7] Here, science fiction has not just colonized reality, it does so in the service of white, patriarchal, colonialist, capitalist imaginaries. In this way, horror serves to describe not merely a related genre, but one that maps onto the geo-political interface between the United States and Mexico. Here, music's signifying jumble has a real effect on thinking political borders and the personhood that emerges in their shadow.

[6] *Amalia* is not commercially available. Readers may access the film here: https://vimeo.com/414147224/477e398bde
[7] Judith Butler, *The Force of Nonviolence*

I take music to be a constitutionally hybrid artform, riven by internal borders that change constantly—hardening, breaking, and reconfiguring as its formal and social meaning shift. This inherent flexibility harbors constructive and destructive power, especially when combined with music's affective force. Music provides a wellspring of spiritual uplift, it cultivates solidarity against hegemony, it grants communities catharsis. But it can also serve oppressive structures and grease their wheels; one thinks of how rock 'n roll appropriated and exploited the blues, and did so through an affective currency of abjection, erasing race while enjoying its surpluses. Sarah Ahmed speaks of the "queer use" of an object; perhaps music, in all its shifting inner rivenness, can afford a "queer use" of the concept of the border.[8] I follow Sandro Mezzadra and Brett Neilsen in trying to understand how borders create "epistemic angle[s]": rather than "serving merely to block or obstruct global passages of people, money, or objects...[borders] have become central devices for their articulation."[9] Instead of focusing on inside/outside relations, they conceptualize border theory as one of "deep heterogeneity" that addresses movements of people, materials, and ideas across borders to continually shape "world order and disorder."[10] How can music's mutability and deep heterogeneity help upend hierarchical categorizations? How can it unsettle social strata, even strata built on musical genre?

In what follows, I use a *rasquachismo* approach to juxtapose, deconstruct, and reformulate relations of social alienation and abjection within musical histories and trajectories. An aesthetic born from the Chicano/a movement in the 1960s and 70s, the rasquachismo style asserts Xicanx

[8] Sara Ahmed, *What's the Use?: On the Uses of Use* (Duke University Press Books, 2019), particularly the conclusion, "Queer Use," 197-229. Quote taken from page 199.
[9] Sandro Mezzadra, *Border As Method*, (Durham: Duke, 2013) ix.
[10] Ibid. x

identity by displaying accumulations of disparate social and iconic materials as representations of a self-fashioned survivalist culture.[11] Harnessed as a theory, a rasquachismo approach might help refashion social positions of alterity by reimagining material and historical categorizations, relations, and histories. It also allows me to make locatable knowledge claims in a hybrid voice—not fractured so much as multiple. This chapter thus experiments with forms by tracing connective historical, aesthetic, and generic threads, taking them apart and then seeing how they look, sound, and feel when put together differently. Such work thus builds upon approaches that have been and continue to be utilized in Xicanx studies, where identity (national, racial, gendered, and sexual) is haunted by the "hybrid wound" of a nationalized ethnicity born upon a foundation of colonial-sexual violence. For many Xicana theorists in particular, this work starts with reconfiguring a history rife with contradictions in order to envision better futures.[12] In this way, as Miéville states above, "[our utopianism] will move, perhaps, as it is just possible we might, with a new motion neither and both animal and divine,"—but also neither and both fantasy and science fiction, neither and both rewriting history and rewriting the future. Analyzing Rodríguez-López's works, their influences, and reception (popular and critical), I engage some of the systems of musical exchange that carry the cargo of traumatic histories and cyberpunk futures across social and generic channels.

---

[11] I use the spelling Xicanx as opposed to Chicanx in part as a nod to the 1960s Xicano movement, which sought to redefine Chicano etymology, and by extension history, by acknowledging its Indigenous roots. There has been a long complex history of spellings and pronunciations using "x" instead of "j"—for example in "Mexico" itself, and there has been legitimate criticism that the contemporary usage elides the real-world conditions of current Indigenous and Xicanx life conditions. I cautiously adopt it here to keep in view both the problematic nationalist origin story of the Mexican people, and its use as a placeholder for hybrid futures: just as the final x refuses the gender binary a/o, the initial X can be used to signify the myriad racial and cultural forms that exist under the Xicanx umbrella—a way of projecting Xicanx culture into the future from a reimagined history while also expressing solidarity with other colonized and dispossessed peoples in the world. Finally, it might also be seen as an Indigenous countering of what many see as the final x's white-washing of language, thereby serving as a reminder that no single change is ever utopian. When historically appropriate or when referring to the movement in the 1960s and 70s, I use the Ch spelling. "Chican@" is also used as a nonbinary/gender-inclusive spelling in many of the works I cite.

[12] Much of this work began with Gloria Anzaldua in her *Borderlands: La Frontera*;

Amalia

Omar Rodríguez-López's 2018 psychological horror film *Amalia* follows a young woman as she suffers a psychological breakdown after the recent death of her mother. Typical for both horror and science fiction films, the world-building provides a rich backdrop from which the plot can emerge. Yet the film seems crafted from familiar tropes, a sort of DIY love letter to American horror and science fiction genres. As a musician himself, Rodríguez-López's filmic writes a filmic love letter that, not surprisingly, grows from sonic seeds. The musical references are profuse: a (synth) flute and percussion duo over an El Paso nightscape montage hearkens to Jerry Goldsmith's score to *Planet of the Apes* (1968); scenes in a bar are set to cool lounge jazz in the vein of Angelo Badalamenti's work for David Lynch; timpani glissandos evoke Stanley Kubrick's use of Béla Bartók's "Music for Strings, Percussion and Celesta" in *The Shining* (1980); and as the main character spirals toward insanity, the spare piano theme gets supported by a unison several octaves below recalling Kubrick's use of Györgi Ligeti's *Musica ricercata* in *Eyes Wide Shut* (1999).

These recognizable musical sounds from the American canon of science fiction and horror film—often drawn from or inspired by the Western Art music canon—are juxtaposed with sonic references that likely only resonate with local viewers from El Paso and Ciudad Juárez where the film takes place: folk Catholic clapping songs ("*Por su amor*, *por la mañ**ana** las aves **cantan**, las ala**banzas** a cristo Salvador*..."); a radio soundtrack that includes international Latinx pop, salsa music, and norteña; and an original piano theme that itself seems to sit on a perceptual border between the horror-movie music-box trope and telenovela (popular Latin American serial dramas that fetishize all

things scandalous and controversial) underscore.[13] The remaining sound-world similarly features tropes and references that seem to have trickled down from both sides of the U.S./Mexico border. The Catholic chanting of "*la sangre de Christos tiene poder*" ("the blood of Christ has power") echoes throughout the film, in one scene the sounds of a ventilator and heart monitor over still shots (a slide-show of photos of Rodríguez-López as a baby with his mother as well as photos of her in the hospital before she died) evoke *La Jetée's* audiovisual style, the voice of real-life conspiracy theorist and occult specialist Jordan Maxwell as a radio announcer, and a biblical-sounding whispered refrain repeats with slight variation at key moments throughout the film: "I have seen a tyrant asleep and have thought it would be better if he slept forever. Because when a man is better asleep than he is awake, surely he will be better dead than asleep."

I call this film a love letter because watching it felt to me like witnessing a form of fan fiction, a genre in which the author's imagined narrative reads as both separate from and inherent to the narrative on which her fantasy is based. This is not to criticize the film—fan fiction is often seen as amateurish because it is derivative, but it is also an act of interpretation that has the audacity to personalize a story, an idea, a sound. In *Amalia* the personalization reveals itself in form and content: it is as much a love letter to the city of El Paso's border community as it is to American horror and science fiction more broadly; this is clear not only because of the film's location, but because it formally exemplifies the city's approach to its hybrid material things. For instance, proliferative referencing in filmmaking is often used with a cinephile audience in mind, but Rodríguez-López's cinephiles are firmly rooted in El Paso.

[13] Notable songs include "Tormento" by Chilean singer-songwriter and Mon Laferte; and "No olvido a Caracas" by Puerto Rican-American congo drummer and band leader, Ray Barretto, in addition to unidentified Cumbia Norteña See "Ominous Music Box Tune" at *tvtropes.org*: https://tvtropes.org/pmwiki/pmwiki.php/Main/OminousMusicBoxTune.

In order to relate to the film's heterogenous references, you have to know what it feels like to be alienated in time and space from mainstream American culture. If media consumption becomes a "snorkel to the universe" in an apocalyptic imaginary (consider how the COVID-19 outbreak has aligned with dystopian imaginaries by sending the population online for instance), this orientation is paradoxically both more normalized and more alienating in El Paso, where liminal political positioning correlates with geographical/urban placement and economic hardship.[14] El Paso/Juárez is geographically distant from other major cities: to the east, Austin is an eight-to-ten hour drive away; to the west, Phoenix, Arizona is a six-hour drive; and northward is a little-populated expanse of New Mexican wilderness dotted with small towns. The metro area is temporally alienated because as one of the poorest urban cities in the United States, it seems suspended in time, unaffected by the momentum—cultural, ideological, material, economic—that drives the rest of the country.[15] And yet this city-that-time-forgot aura also reflects a modern conceit. There is a self-fashioning ethos within the city, and El Pasoans tend to accentuate nostalgic elements, even those that seem frivolous outside the city. Displaced from the rest of the country by maybe a couple of decades, El Paso boasts one of two remaining Glamour Shots locations in the United States, as well as brick and mortar bookstores like Barnes & Noble. This temporal-geographic alienation is compounded by the

[14] David Foster Wallace described television as his snorkel to the universe on an interview with Charlie Rose in 1997. "Author David Foster Wallace talks about David Lynch, dealing with fame, and the essays in *A Supposedly Fun Thing I'll Never Do Again*, *Charlie Rose*, posted March 27, 1997, https://charlierose.com/videos/23311.

[15] In 1993, David Simcox called El Paso "one of America's poorest urban areas by a number of measures" in his report, "Immigration, Population, and Economic Growth in El Paso, Texas" for the Center for Immigration Studies. While the economy has grown slightly since the 90s, data still show that major economic concerns, such as median income and demographic stratification, still far exceed the national average. David Simcox, "Immigration, Population, and Economic Growth in El Paso, Texas," CIS.org, accessed April 21, 2020, https://cis.org/Report/Immigration-Population-and-Economic-Growth-El-Paso-Texas. See also "El Paso, TX | Data USA," accessed April 21, 2020, https://datausa.io/profile/geo/el-paso-tx/.

complex trans-national cultural features of a highly mobile population that, in El Paso, is over eighty percent Latinx.[16] Here, the materials of slightly out-of-date mainstream American cultural activity becomes integrated with traditional Latinx (primarily Xicanx) tradition, turning kitsch items into *rasquachismo* elements.

When my grandfather died, my family began the painstaking process of combing through his accumulated stuff. There is a derogatory stereotype of the Latinx hoarding junk in the barrio, of it filling up living spaces, broken down cars in the yard, outdated appliances inside. This stereotype has been internalized in Xicanx culture. Among middle and upper Xicanx classes, the word rasquache *connotes the undesirable activities and worldview of the have-nots, a tasteless uncultivated aesthetic that is associated with lower-class behavior—a friend who forgets her wallet when the bill comes, or the pieced-together aesthetic of a living room assembled with a less-than living wage, Arizona Tea bottles used as flower vases next to family heirlooms. Holding on to objects for their material potential rather than their intended function is a necessity for life among underclass workers. But for those who occupy this sphere, the derogatory implications diminish as "junk" items are recycled not only for renewed function but for the spirit of resilience and creativity that adheres to this stuff. As my family digs through my grandpa's items, we remember the stories: here are the wheels from the grocery cart that Grandpa turned into a beautiful, fully functional grill. Here is Great Grandma's sewing machine from the turn of the 20th century that still works—my cousin wants to make things with it. Remember when Grandma stapled the drapes over the window because Grandpa never got around to putting up a curtain rod? When she cut fringe into her*

[16] The population is mobile in part because workers regularly cross the border, but also because as many people who enter El Paso leave it in search of better jobs and quality of life, thus making the population numbers stagnant even as large numbers of people cross through.

blouse because she found it boring? This is tradition. This is the knack for hack that Dad put to use when he attached the car door to that old Ford Pinto with a wire hanger when we were kids.

Rasquachismo is the assertion of beauty born from a survivalist spirit. As part of the Chicano/a movement in the 1960s and 70s, artists appropriated and subverted *rasquache's* hierarchical bourgeois foundation, highlighting the resourcefulness and adaptability of those who are "down but not out."[17] Depicting a resilient and inventive attitude through the improvisational juxtaposition and integration of objects, *rasquachismo* borrows from the decorative trend that already aesthetically binds *la plebe* communities together through hybrid accumulations of pop culture (often American), religious paraphernalia, and various other colorful arrays of found objects that can be seen on display in yards and porches. As an aesthetic that binds the barrio, it is a form of *domesticana* that weaves continuity and belonging out of hostile encounters. Thus, the ability to remake items is both a material need and a psychological one. It revels in the ability to remake those things that confound others, instituting a playful and lighthearted approach to feeling dispossessed. "Trash" is after all just a form of giving up, sending away the feeling of discomfort that accompanies the riddle of excess. In this way, homes are both laboratories and pieces of performance art, endlessly open to re-making and re-imagining material, self, and culture. My grandparents were *rasquachismo* cyberpunks.

This relationship of alienation to the dominant culture is a useful way of upending hegemonic relations inasmuch as power is gained through experience and use of material things. Where El Paso can be described in one sense as a city that time forgot, in another sense, this

[17] Tomás Ybarra-Frausto, "*Rasquachismo*: A Chicano Sensibility" (1989) in *Chicano and Chicana Art: A Critical Anthology*, Critical edition (Durham: Duke University Press Books, 2019), 86.

forgetting is useful. What happens when we think of high modern Western art music as detritus, part of an accumulation of so much stuff? Positioned as found objects, hegemonic forms can thus be destabilized; as *only* material, they become degradable, alien, before they can be transformed into something familiar again, something useful in new aesthetic and functional senses. This is not to say that *rasquachismo* aesthetics can form harmonious social relationships out of suppressive American infrastructures. In fact, much of this chapter is dedicated to the real-life horrors that inform Xicanx orientations to American culture. But theorizing *Amalia*'s soundtrack—where something that sounds like Ligeti (which itself embodies a certain strain of Western Art Music scientism, as I discuss in my second chapter) is juxtaposed with Xicanx Catholic chanting—through a *rasquachismo* lens, might help imagine a way to destabilize the imaginative foundation upon which those horrors take root in reality.

This idea resonates with Sarah Ahmed's idea of reuse as "queer use...when you use something for a purpose that is 'very different' from that which was 'originally intended.'"[18] Whereas Rodríguez-López's film ostensibly follows the tradition of using Ligeti's music—or rather the *sound* of Ligeti's music—to produce a feeling of alienation, *who* is alienated from *what* changes based on its sonic constellation. To be clear, this was not Rodríguez-López's intention: his works do not adhere to the *rasquachismo* aesthetic as defined by the artistic-social movement (though there are related elements), even if his works do accrue similar political meaning. But applying a *rasquachismo* theoretical framework to his artistic output highlights the contextual elements and critical responses to which I want to draw attention. Ultimately, I position Rodríguez-López's music production as a cyberpunk activity, a weaving-together of sound materials from the pieces that lie on the surface of a

[18] Sara Ahmed, "Queer Use," 199.

larger archive that has formed from particular patterns of accumulated mass use. Let us see what changes when we imagine canonic materials as not necessarily the cream that has risen to the top, but as part of history's rusty accumulations that are useful only according to the ingenuity with which we refashion them.

The Bible and the Star: Spatial geographies, heterosexual romance, and domination fantasies

> "*This task—to be a bridge, to be a fucking crossroads for goddess' sake*."
> —Gloria Anzaldua, "La Prieta"

Rodríguez-López noted in an interview with *Latino Rebels* that among other niche El Paso references, Ciudad Juárez is in the background of every outdoor shot of *Amalia*.[19] El Pasoans will recognize these shots even without specific landmarks since Juárez is always present as a geographically orienting entity within the city. Nevertheless, two primary features stand out as physical representations of an imaginary cultural divide, both of which are visible for long stretches of road while driving over Interstate 10, El Paso's main navigational thoroughfare. In Juarez, an inscription on the Cerro Bola mountainside reads *"CD Juarez. La Biblia es la verdad. Leela"* (Juarez City. The bible is truth. Read it). Laid out in white lime paint over the mountain's stone, the giant inscription has loomed over El Paso and Juarez since 1987 to signify evangelical unity in Juarez. On the other side of the border, a giant star adorns the mountain, a gift to the city from the El Paso Electric Company. Erected in 1940 (though it was refurbished and re-sized twice until 1946) the star represents Christianity as a national interest: it was lit annually at Christmas time since 1946, for

[19] Jasmine Aguilera, "New Horror Film by Omar Rodríguez López, 'Amalia,' Premieres in Paris," *Latino Rebels*, October 29, 2018, https://www.latinorebels.com/2018/10/29/amalia/.

444 days during the Iran hostage crisis from November 1979 to January 1981, as well as for eight months between December 1990 and August 1991 in support of United States troops during the Gulf War—many of whom resided at Fort Bliss, El Paso's immense military base.[20] The star became a nightly feature in 1993 when the city's motto changed from "The Sun City" to "The Star City."

In these monuments, the ideological imaginaries that both imbricate and separate the two cities are born out as visual reminders on the mountainsides where their concomitant worldviews are naturalized as if they had sprouted from the topography itself. As Roberto D. Hernández reminds us, "Manifest Destiny, imagined as being 'God's will' that Euro-American settlers should expand their grasp on the continent from 'sea to shining sea,'"—the purported rationale for the United States

Figure 3.1: A scene from Amalia *depicts Juárez and its mountain*

[20] Fort Bliss is the largest United States Army Forces Command installation, and the second largest army base in the U.S. Army. The largest is the adjacent White Sands Missile range in the desert about 40 miles to the north in New Mexico.

Figure 3.2: A scene from Amalia *depicts the star on the mountain in El Paso*

claiming what was Mexican territory until the latter half of the nineteenth century—"was rooted in an epistemological space very similar to that of the Catholic Church's 'salvation,' carried out by the Spanish conquistadors three centuries earlier."[21] Therefore, Cuidad Juárez experienced subjugation and decimation at the hands of expansionist projects twice: first from the Spanish conquistadors who arrived from the south in 1598, and then from the Anglo settlers who arrived from the east in nineteenth century.

Yet the epistemological space of Manifest Destiny, supported by the impression of techno-capitalist forward momentum, could translate into a science-fiction worldview in the twentieth and twenty-first centuries, while Mexico's economic depression allows Americans to allocate Mexican

[21] Roberto D. Hernández, *Coloniality of the US/Mexico Border: Power, Violence, and the Decolonial Imperative* (Tucson: University of Arizona Press, 2018), 131.

Christianity to a politically and imaginatively regressive, fantastical genre-space. Some of these imaginaries are reproduced in *Amalia* where the two mountains become symbols of future-thinking and past-thinking, science fiction and fantasy, "first world" and "third world," life and death—all of which bear relation to the political-historical and development of each nation's identity. These identities are performative—they continually regenerate in geographically-sited, identity-informing, and genre-aligning ways among those who live there. But like the denizens of the two cities, *Amalia* depicts the fluidity between these polarities, and by extension—their hierarchical and fictive nature.

In the film, Amalia (played by actress Denise Dorado) is haunted by auditory hallucinations that eventually drive her to kill her father, brother, best friend, and lover, and set her father's bar on fire. In psychological-thriller style, her acts of listening are both internally and externally directed, opening up a sonic space that bridges reality and fantasy from which her psychosis can emerge. The voices originate from two main external sources: Amalia's car radio and a two-faced monster born from a pulsing, glowing membrane in the desert behind her father's bar (other whisperers include an

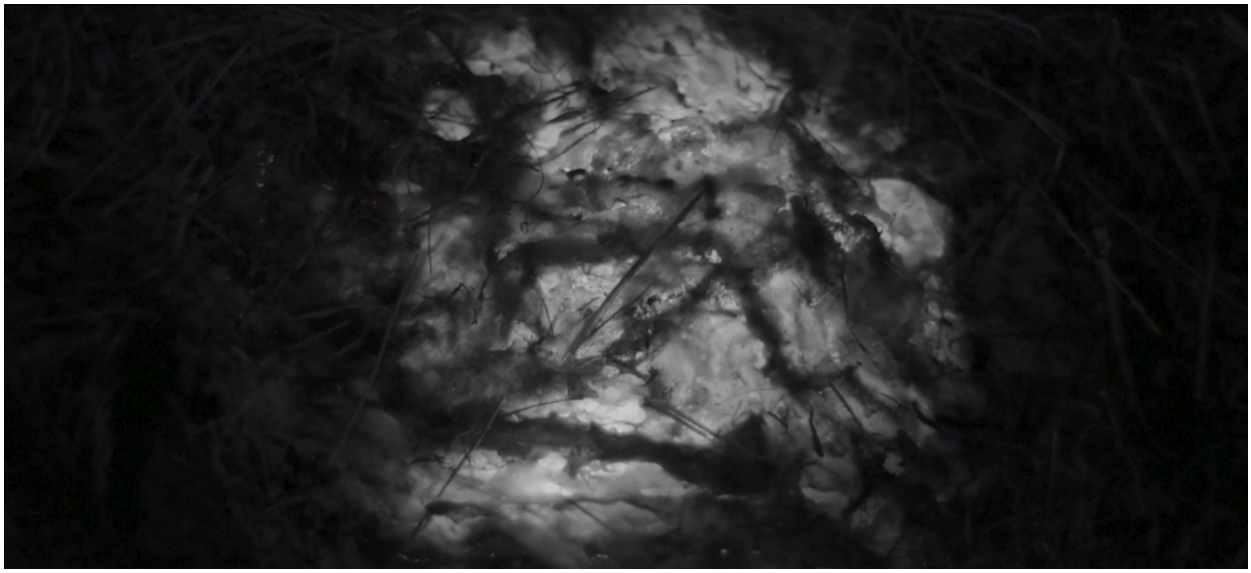

Figure 3.3: The pulsing membrane from which the monster is born in Amalia

Figure 3.4: View of The Esmelda (Smeltertown) Cemetery in Amalia

anonymous woman as well as Amalia herself in voice-over). Here, life and death are bound together by the sitedness of the barren desert: while Amalia's dead boyfriend is buried in the infamous Smeltertown cemetery, a poisoned Earth Mother brings forth a dualistic demon.

Smeltertown was the local nickname given to the community that housed the primarily-Mexican immigrant population that worked for the copper refinery, ASARCO (American Smelter and Refining Company), for much of the twentieth century. In 1970, during a time when El Paso was considered to be the most polluted city in the nation, the city of El Paso and the state of Texas sued ASARCO for air code violations caused by its giant smokestacks. While investigating the case, health officials also discovered potentially life-threatening levels of lead in the bloodstreams of over one hundred children. Nevertheless, what most angered the residents of Smeltertown was that their homes were scheduled for demolition, which would also demolish the community and cultural lifeline they had built in this foreign land, a community forged in hardship. By shutting down ASARCO, they shut down a community. Residents relocated to federally-subsidized low-income housing across the city in the 1970s, but operations were not entirely shut down until 1999, and the smokestacks were finally demolished in 2013. All that remains is the cemetery

near the small La Calavera historical neighborhood. El Pasoans tend to wonder whether any number of their mysterious diseases that plague the city could be related to ASARCO's smokestacks, but we may never know; the ills of capitalism hide well inside the body. [22]

Amalia's violence and pyromania are cathartic acts in the contexts of both the film and real life. Within the film's narrative, these acts echo her mother's death and the burning down of their family home. Her acts relate to history through the desert's symbolism, highlighting its sited non-sitedness, an empty vastness for disposable life where sexual and political violence disappear into the dark of unwritten history. From the unsolved femicides of thousands of women in Juarez since 1993 (many of them raped and mutilated, many additional unsolved cases and missing women), to immigrant deaths of unknown but certainly vast proportions in the desert Southwest's unrelenting arid heat, to the environmentally racist violence of ASARCO, the image of the desert resonates with the idea of human—particularly brown and female—expendability. As Roberto D. Hernández pointedly asks, "How [do these deaths] fulfill a function in the service of somewhere or something else?"[23] In other words, it is not simply the desert's unforgiving geographical features that lend it a horrific feel, but its association with the border as an open wound in the sense described by Gloria Anzaldúa: "*una herida abierta* where the Third World grates against the first and bleeds."[24]

The American modernist tradition fetishizes the Desert Southwest, in descriptions of an ineffable quality that hangs in the air as if imbued with a *brujeria* that makes unseen things palpable.

---

[22] For more on Smeltertown, see Monica Perales, *Smeltertown: Making and Remembering a Southwest Border Community* (Chapel Hill: University of North Carolina Press, 2010), which provides a detailed history, from initial investigations by the Environmental Protection Agency to the refinery's eventual shutdown.

[23] Roberto D. Hernández, "Las Mujeres Asesinadas de Ciudad Juárez and the Double Bind of Their Representation/ability" in *Coloniality of the US/Mexico Border: Power, Violence, and the Decolonial Imperative* (Tucson: University of Arizona Press, 2018), 129.

[24] Quoted in Hernández, "Las Mujeres Asesinadas," 130.

Upon arriving in northern New Mexico where she frequently worked and would eventually settle, Georgia O'Keeffe mused that "It's something that's in the air, it's just different. The sky is different, the stars are different, the wind is different." A little further south in western Texas, Donald Judd turned 400 acres of scrubby desert into a vast art space described by NPR writer Anne Goodwin Sides as "a Xanadu of contemporary art…where artworks come alive beneath the wide blue skies and sharp Texas light." And north of O'Keeffe's Santa Fe gleams the art haven of Taos, a place that D.H. Lawrence said "heaves with ghosts."[25] Artaud's 1947 play *The Peyote Dance* (1947) arguably originated the psychedelic drug pilgrimage to Mexico and contributed to an increase in tourism to the Sierra Tarahumara—this drug tourism has led to a decline in wild peyote, which is sacred to several Indigenous groups who know it simply as "medicine."

It is as if these artists experienced the Southwest as Pierre Nora's *lieux de memoire*, "sites of memory" where "memory crystallizes and secretes itself" when the continuity of history implied by certain physical spaces is disturbed by a break in social memory.[26] What remains is a subtle mystery, a feeling that underlies experience for those living within or in proximity to these spaces where cultural memory and national history no longer seem to coincide. These breaks are often framed by the violent histories that echo within barren landscapes, silent because of the all the voices that have been quieted there. Consider White Sands National Park in New Mexico, the largest gypsum dune field in the world, 3,200 square miles of which is a missile range owned by the United States Army. The sand is white because of the crystallized gypsum of which it is comprised, but it also has traces of green from the glassy green "trinitite" produced by the explosion of the first nuclear bomb at

[25] D. H. Lawrence, *Mornings in Mexico* (Victoria: Reading Essentials, 2020), 176.
[26] Pierre Nora, "Between Memory and History: Les Lieux de Mémoire," *Representations* 26 (Spring 1989), 7.

Trinity Site near the northern border of the missile range. The site, which was chosen largely for its high visibility due to low humidity, elevation, and vast open space (the same qualities beloved by O'Keeffe and Judd), is memorialized by way of awed descriptions from those present, like Major General Thomas Farrell, who in his official test report described the explosion as "golden, purple, violet, gray, and blue," lighting "every peak, crevasse and ridge of the nearby mountain range with…clarity and beauty…" It is as if the sublime awe of death imbricates an awe of nature, as if they are one and the same, a lived experience of form and content—as if those who died were supposed to die.

Every summer from the time I was four years old, my family stopped at White Sands on the journey from our home in El Paso, Texas to my grandmother's cabin in the mountains of New Mexico. Like most memories, the journey is a montage: sand stinging my legs, whipped up by winds unmitigated by the faraway mountains; army trucks full of soldiers passing us on the long hypnotic stretch of highway; stopping at the interior Border Patrol checkpoint near Alamogordo to declare ourselves "American" (because my mother is blonde, they often took a long look at me, the brown child in the backseat); delighting when passing the Very Large Array, the field of antenna satellites that "listen" to black holes and pulsars (we fondly called them "the ears"). Our journey was often narrated by my anthropologist grandmother's history lessons—a revision of the vulgar valorization of colonists and conquistadors found in Texas elementary schools—and sound-tracked by the road-trip compilations my dad brought—numbered cassette tapes that ranged in genre from flamenco guitar to 1980's synth space music. These cassette tapes still hang on the wall of my parents' house, where the same audio-visual memory-montage whips up like wind every time I look at them. Part rasquachismo decoration, part lieux de memoire, part archive of a

technological-aesthetic moment, part cultural memory, it is like a whispering of ghosts in my ear, something in the air that is "different."

Amalia's radio is her lifeline. In apocalyptic films, the radio often signifies the survivors' only remaining salvation or hope for freedom. But whereas the Hollywood trope offers its characters utopian sanctuary out of harm's way, here Amalia's radio directs her toward the desert-demon. An umbilical tether whose life-blood flows via frequency, it signifies a different orientation to life and death, in which internalized demons provide clarity and wounds become portals to agential life. In the film, those who court death—a homeless man, Amalia, and her boyfriend—bear wounds that resemble the pulsing, breathing, womb-wound in the desert out of which the two-faced monster is born. If the starchild in *2001: A Space Odyssey* is born motherless from the elegant forward-moving dance of technological progress (as I argued in Chapter 1), then this monster is born from the sludge that American "progress" leaves behind for the dispossessed workers on Earth. Where for Don Ihde, "the air that is breathed is not neutral or lifeless, for it has its life in *sound* and *voice,*" this monster embodies, through its distorted breathing that haunts Amalia throughout the film, a precarious life always at the mercy of some other power. Outer space is the high-ground in which Star Wars are fought; the desert is the low ground on which fantasies of a better life die.

Amalia's radio station of choice broadcasts a show hosted by Jordan Maxwell, a real-life conspiracy theorist and UFO specialist, whom Rodríguez-López personally interviewed and recorded. The film opens with Amalia listening to Maxwell in her grungy car (in order to open the car from the inside driver's seat, Amalia has to roll the window down, stick her arm out and open the door from the outside). Her friend Ines is sitting in the passenger seat and they're snorting cocaine. Ines comments about the radio, "C'mon man, this shit is depressing. You gotta be careful what you

let people put in your head, *güey*. Life's hard enough without this bullshit. And don't tell me you think the Earth's flat or vaccines are bad." Amalia laughs, but continues to tune in to this station. As the frequency of her thought increasingly resonates with the radio frequency, the signal starts to glitch. The first time this happens, she hears, "Elohim is a feminine plural to a word in Hebrew [the radio scrambles]…is a feminine plural." About halfway through the film, she starts muttering in response to what she hears: "There's two of you. There's the one your mother created, God brought into the world, that's one person. But there's another one that the government created," says the man on the radio. As the audio starts to scramble, the voice changes to an 80s-era distorted voice-effect that sounds like a layered, high-pitched, indiscernible elf-demon with whom Amalia begins to converse. "Right now?" she asks. "Ok," and checks her hair in the mirror before getting pulled out of the car by two anonymous people in white jumpsuits, put into a van, and delivered to an abandoned lab. While Amalia seems to be losing her mind, there is a way in which she is also awakening from a sort of Kantian dogmatic slumber. She is awakening to the voices that have been silenced, that no one else hears—or if they do, it is a voice that only registers as "something in the air that is different."

Sitting in a chair at the lab, Amalia's vision turns photo-negative and the two-faced monster emerges into view. Whispering in Spanish, it says (translated here):

> I have heard your call. Have you heard mine? Cowards, you well know, would stop fighting now. But the person who wants to make their mark in war must remain firm, like blood that's run cold. You must never sooth the spirit of its struggle until they have paid with their lives all of their offenses. Turn to peace only in moments of divine weakness, because love flourishes with pain. You will not stop looking until all desire is realized and your soul reaches me: Let them open your tomb after you've died and observe how smoke still rises from your shroud from a fire deep inside.

> Remember that when a man is better asleep than he is awake, surely he is better dead than asleep.

After the monster delivers its address, Amalia begins to come out of her trance, rubbing her eyes in distress. She is back in her father's bar, cumbia Norteña on the radio.

It is not difficult to see that the two-faced monster embodies Amalia's sense of wounded hybridity, registered emotionally as trauma—"love flourishes with pain"—within a worldview constructed of the disparate elements that constitute the Xicanx sexual-colonial encounter. In this moment, Catholicism is catholic, symbolizing war, blood sacrifice, patriarchy, and sexuality. At the same time, it chafes against Amalia's hybridity, manifested in her Spanglish slang, her bisexuality, and the music that underscores her emotional world. The Catholic imagery derives from her mother's spiritual heritage, while also underscoring Amalia's own need to break with that tradition

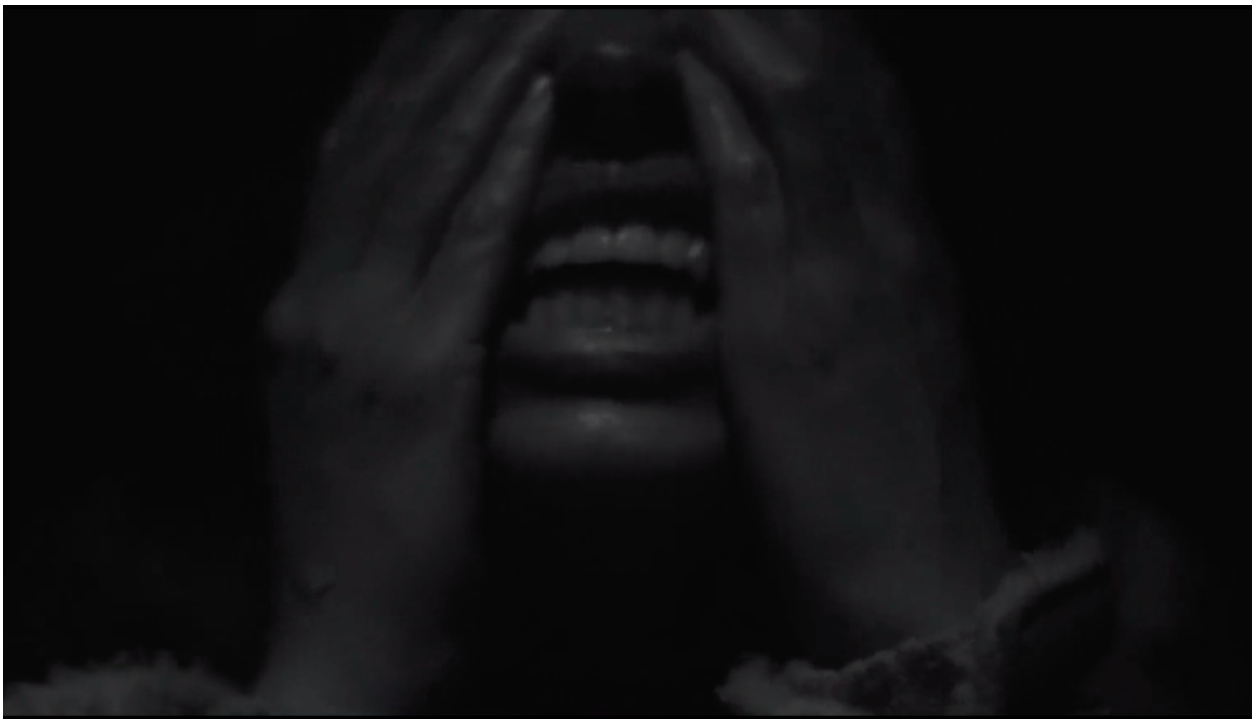

Figure 3.5: Amalia suffers from a vision

Figure 3.6: The desert-demon that Amalia sees in her vision

and reimagine her history in order to re-orient herself in the world: "When a man is better asleep than he is awake, surely he is better dead than asleep."

Out of her geographical and psychic desert is born a violent relation to her own personhood, her family, and those she loves. This is a common theme within Xicanx folklore on both sides of the U.S.-Mexico border and one that Xicanx scholars have long interrogated. Over and over, these stories reify Mexican nationalism's sleight of hand whereby purity is woven out of previously imagined impurity, perpetuating the sexual-colonial encounter by making it internal to the individual and requisite for national identification. To summarize a few of these stories, let us return to the mountains.

Xicanx Hybridity: Mythohistory, Gender, and Identity

"Chicano is a science fiction state of being."
—Ernest Hogan, "Chicanonautica Manifesto"

While two mountains geographically orient the denizens of El Paso and Juárez, two different mountains also occupy identity-orientating imaginaries for much of the Chicanx American and Mexican population. Originating in the Pre-Columbian era, the legend of the volcanoes Ixtaccihuatl and Popocatépetl endures in many versions. A common version tells of the Aztec princess, Mixtli, who was in love with the peasant Popoca but was betrothed to the vicious and bloodthirsty nobleman Axooxco. In order to gain the social status that would allow him to fight Axooxco for Mixtli's hand, Popoca went into battle with their fiercest enemy. Although he was victorious and returned with the head of his victim, Mixtli heard and believed that he had died. In some versions, she died of a broken heart; in others she killed herself. Arriving to find her dead, Popoca carried her body into the mountains where he built a tomb under the sun. Sitting by her side, he imagined all that could have been if only they had been united in life. Soon, the snow covered both their bodies and she became the volcano Ixtaccihuatl (the white woman, sometimes also called the *mujer dormida* or sleeping woman) while Popoca became the volcano Popocatépetl (the smoking mountain). Ixtaccihuatl is a dormant volcano, but as legend goes, when Popoca starts to think about Mixtli, his heart beats faster and the volcano erupts.

Today, these peaks are the second and third highest ones in Mexico and tower over Mexico City and Puebla. Just as these mountains form a visual reminder of Indigenous roots to those who live in the volcanos' vicinity, a different associative image dominates Xicanx domestic and commercial life. Jesús Helguera's 1948 painting, "Grandes Azteca," seen in Figure 3.7, is reproduced copiously on calendars and matchboxes, in restaurants and businesses; it is not an overstatement to

say that if you are at all connected to Xicanx culture, you are familiar with this painting. The image has gained importance precisely for its decorative function—it becomes a "household icon" that supports the formation of national identity by depicting Indigenous mythology through a modernist-nationalist style featuring Aryan faces and Catholic themes, in heteronormative "settings that owe more to Tinseltown than Tenochtitlan."[27]

As Catrióna Rueda Esquibel has shown, this kind of imagery perpetuates the idea that heterosexual monogamous romance forms the foundation for cultural harmony. Added to this foundational ethos is an "Indian Princess" narrative, which portrays Indigenous women as passive yet willing sexual partners to colonial white men. The image thereby allows its Xicanx viewer to mourn the loss of Aztec civilization while simultaneously gazing at Mixtli's sensual *undamaged* body, serving to erase the violent colonial process of that loss and positioning Indigenous bodies as always already dead.

These themes are compounded by the myth of conquistador Hérnan Córtez and his Nahua translator, advisor, and mistress Malintzin, popularly known as La Malinche. Córtez and Malinche have become origin figures for the Mestizaje racial/ethnic figure as a nationalist unifier. A sort of Adam and Eve for the New World, they were seen as the mother and father of "la raza cósmica"—so-called by writer and politician José Vasconcelos in a 1925 essay that constructed a mixed national identity as one that promised progress by assimilating Indigenous cultures and advancing technologically and spiritually within a Christian capitalist paradigm. Adding to the potency of this semi-historical account is the nationalist-religious rendering of a lineage born from the Christian and

[27] Catrióna Rueda Esquibel, "Aztec Princess Still at Large," in *Beyond the Frame: Women of Color and Visual Representation* (New York: Palgrave Macmillan, 2005), and Tomás Ybarra-Frausto as quoted in Esquibel, "Aztec Princess Still at Large," 199.

Aztec divine mythic figures, Quetzalcoatl, who was seen by missionaries as the Indigenous name for the true Messiah, and la Virgen de Guadalupe, the Mexican people's version of the Virgin Mary who is often seen as a replacement for the Aztec Earth goddess Tonantzin.[28]

Figure 3.7: "Grandeza Azteca" by Jesús Helguera (1948) and "Amor Alien," (2004) part of the "Naked Dave" series by Laura Molina

Étienne Balibar has described how the polysemy and heterogeneity of borders become personal "inner borders" that register differently for different people while nevertheless reduplicating within communities.[29] He argues that borders are always overdetermined things that by definition depend on a shared understanding of history that "defines," "delimits," and "register[s] the identity

[28] As legend goes (it was not recorded in a dated publication until the mid-seventeenth century), on December 12, 1531, the Virgin Mary appeared to an Indigenous but newly Christianized shepherd whose baptized name was Juan Diego. She appeared near the hill in Tepeyac where Spanish priests had destroyed Tonantzin's temple, and in the Aztec language of Nahuatl, she asked Diego to erect a new church in her honor. On his third visit to request permission from his archbishop, roses fell out of his cloak and an image of the Virgin was found miraculously imprinted inside. Here, she becomes a hybrid figure who embodies "old and new," Indigenous and Christian.

[29] "Étienne Balibar, "What Is a Border?" in *Politics and the Other Scene* (New York: Verso, 2002), 78.

of a territory."[30] In this way, the interpretative, internalized multiplicity of border relations, fueled by the "hypothetical and fictive nature'' of their determining does ''not make them any less real.''[31] With this in mind, hybridities become doubly overdetermined things since constructing a whole from disparate elements requires the simultaneous reification of those borders. Defined as the offspring of colonial and colonized, Indian myth-mother and techno-Christian father, the idea of a Xicanx identity is thus constituted as a doubled otherness to oneself that is immanently historical, while only the techno-Christian father is granted a future. Looming over the borders upheld in the stories described above is the overarching border between myth and history, fact and fiction, past and future, borders which derive their value precisely from their elusive nature. As Balibar points out, that does not make them any less real.

This fictive nature also allows for remaking the self. In the second painting seen in Figure 3.7, artist Laura Molina playfully pokes fun at the grand nationalist narratives that so pervade Xicanx culture, using the American 1940s trope of the exoticized sexy alien to comment on the misogyny that exists on both sides of the border. It is part of her "Sexy Dave" series, featuring the likeness of illustrator and *Rocketeer* comic book creator, Dave Stevens, whom she dated in 1978—the alien likeness is of herself. The image depicts Dave as an objectified and vulnerable figure, who needs a helmet in order to breath in the unfamiliar atmosphere that the femme alien breaths naturally. His gaze is steady but perhaps self-absorbed, his rocket, tiny in the distance. Like Mixtli, the alien princess is sprawled in the astronaut's arms, but here she looks relaxed, perhaps napping with a small alien millipede-pet-creature tucked under her arm. The painting shows us so many of the borders

[30] Ibid., 75-85.
[31] Ibid.

that inform Xicanx identity: temporal, gendered, Indigenous/settler-colonialist, love/hate, revenge/memory.

Corridos

At the Texas-Mexico border, the affective turbulence that has resulted from complex interpersonal identification with manifold layers of conceptual borders and hybridities are purveyed in the *corrido*, a narrative ballad song form that arguably emerged from the region's interethnic conflict in the nineteenth century.[32] Indeed, the origins of the song form itself have been a site of contestation—some ethnomusicologists trace its poetic form to the Spanish decíma, a romance with ten octosyllabic lines per stanza, while others have argued that it has roots in *la itotolca náhuatl*, or Nahuatl sung poetry.[33] Regardless of its early inception, one prominent strain documents the moment in 1848 when, as ethnomusicologist Américo Paredes pointed out, the Rio Grande became a racial and ethnic "dividing line" as opposed to a shared geographical feature, thereby turning former community and family members into "foreigners in a foreign land"—doubling any already-hybrid feelings by attaching them to the land as neither and both familiar (Indigenous) and alien

[32] As song forms do, the corrido emerged over a long period of time, inflected by its use in various locales in Texas, Mexico, and along the border.

[33] Ethnomusicologists Armand Duvalier (1937), Vincente T. Mendoza (1954) agree that the corrido is of primarily Spanish origin. Américo Paredes (1958) provides evidence that the corrido was born out of borderland interactions in "New Spain" starting in the mid-eighteenth century, while Seledonio Serrano Martínez (1973) argues for its derivation in Nahuatl poetry. The argument for its derivation in Aztec culture is complicated by the inability to date extant collections of Nahuatl poetry, notably in what is known as the *Cantares Mexicanos* and the *Romances de los señores de la Nueva España*. If they were composed by survivors after the Spanish conquest in 1520, they offer a glimpse into the Aztec-Spanish encounter, and a way of understanding that historical moment as a precursor to the Mexican-American conflicts centuries later (and that conflict's resulting corridos). However, other historians argued that they derive from works by "poet kings" prior to the Spanish invasion. For more on the historiography of the corrido, see Catherine Ragland, *Musica Nortena: Mexican Migrants Creating a Nation between Nations* (Philadelphia: Temple University Press, 2009), particularly Chapter 1: "Mexicanidad and Música Norteña in the 'Two Mexicos.'"

(settler).[34] Historians have noted that the Mexican-American war of 1846-1848 was key to the development of the ballad tradition since this period was just prior to the subordination of Mexicans to Anglos, who had worked amongst one another as ranchers.[35] José E. Limón, among others, has described "a clear racial-cultural stratification and subordination" that emerged in the 1890s due to Anglo-American capitalist expansion, which, compounded by an influx of Mexican immigrants, established a near complete political and economic hegemony by 1910.[36] By praising pre-revolutionary and revolutionary bandit-heroes as well as narrating the shared tribulations of working-class borderland Xicanxs, corridos attempt to heal the river-wound.

But in addition to creating a shared musical imaginary, corridos operate within a tradition of documenting *la pura verdad*, portraying either the stories that do not show up in official accounts, or versions of well-known events that vindicate *la gente* in opposition to hegemonic histories.[37] Like the histories told by my grandmother on our road trips, the conspiracy theorist on Amalia's radio, and the monster in her vision, they tell "our side" of the story. While the corrido has undergone a number of instrumental and generic transformations, it remains a mainstay of folkloric music and has retained its basic function in northern Mexico and the Southwest United States, as well as across the Xicanx diaspora. Recently, after the mass shooting in the El Paso Walmart in August of 2019,

---

[34] Americo Paredes, *"With his pistol in his hand": A Border Ballad and Its Hero* (Austin: University of Texas Press, 1958), 4. The Rio Grande became the border along the southern side of Texas to the Gulf of Mexico as part of the Treaty of Guadalupe Hidalgo, which ceded about 55% of what was formerly Mexico to the United States. Mexican residents were given the option of either relocating south within the newly-defined Mexican border, or staying and being granted United States citizenship. Since then, the river has changed course several times, sometimes causing individual and international disputes.

[35] In fact, many corridos mock the amateur Anglo ranchers—cowboys essentially learned their craft from Mexican *vaqueros*, who had perfected the Spanish tradition of mounted herding.

[36] José E. Limón, "Folklore, Social Conflict, and the United States-Mexico Border" in *Handbook of American Folklore* (Bloomington: Indiana University Press, 1983) 216-217.

[37] See Jose Pablo Villalobos and Juan Carlos Ramirez-Pimienta, "Corridos and La Pura Verdad: Myths and Realities of the Mexican Ballad," *South Central Review* 21, no. 3 (2004): 129–49.

musicians appeared among the crowds of mourners to sing corridos about the tragedy.[38] At the same time, the corrido provides a traditionalist conduit to an imagined past that upends the current social order by vindicating *la gente*.

There are a few rasquachismo elements to both the formal structure and topical function of the modern corrido, which was commercialized in the 1940s. These twentieth-century canción-corridos also standardized the norteña ensemble, which features a singer, accordion, bajo sexto (twelve-string guitar), and tololoche (often-handmade contrabass). The accordian, which was readily available at low cost, had become the primary instrument for dance gatherings, namely festivals, weddings, birthdays, and "the notorious baile de negocio, a business dance associated with working-class cantinas" where women sometimes engaged in prostitution to earn wages, particularly during the Depression.[39] The forms were largely adopted from the European salon music that was introduced into Mexico during the eighteenth and nineteenth centuries, particularly the polka, mazurka, and waltz, in addition to the Mexican huapango.

Its colonial German-polka accordian underpinnings notwithstanding, the conjunto has remained one of the strongest symbols of Xicanx working-class solidarity to this day. Musical histories are often traced in terms of threads of influence, which "evolve" as peoples move across national borders and form new ones. But music does not evolve on its own and it is certainly not subject to natural selection in the Darwinian sense. If historical musical elements can be thought of

[38] A story in the *San Diego Tribune* covered one of these corridos: "In El Paso's Wake, a Corrido Honors the Dead and Points Fingers at the Villains," *San Diego Union-Tribune*, August 10, 2019, Accessed 1/15/2020 https://www.sandiegouniontribune.com/entertainment/music/story/2019-08-10/el-paso-shooting-corrido-walmart. Another notable development over the last forty years, which I do not discuss here, is the emergence of the infamous narcocorrido, which valorizes Mexican drug lords.

[39] For more on corrido history, see Manuel H. Peña, *Musica Tejana: The Cultural Economy of Artistic Transformation*, particularly the chapter "Texas-Mexican Conjunto" (College Station: Texas A&M University Press, 1999).

as bits of material, people make do with what material is available to them. For subjugated populations adapting to colonialist upheavals, whether as Indigenous or displaced peoples, making music with available materials is certainly survivalist, but not natural in the Darwinian sense. It is a rasquachismo manipulation of material that manufactures powerful selfhood in the finding of joy through scavenging, fragmenting, and recombining. The corrido is fundamentally rasquachismo, a caricature of scavenged musical materials that invokes the myriad affective atmospheres people muster in order to emotionally thrive in often horrific conditions.

Rasquachismo, Punk, At the Drive-In

Following this chapter's pattern of tracing histories backward into the present, I want to gather the materials of Rodríguez-López's musical backstory. *Amalia*'s compendium of sonic references follows a pattern of stylistic non-monogamy within variegated career as a musician and producer—a sort of rasquachismo rejection of genre confinement. Readers might know Rodríguez-López for his work as guitarist, bassist, and producer for the hardcore punk band At The Drive-In, the progressive (prog) experimental rock band The Mars Volta, or the art rock band Bosnian Rainbows, but he has also written orchestral works that range in style from a modernist-baroque aesthetic in the vein of Lukas Foss, to minimalist piano works, to atonal avant-garde string ensembles, among myriad other stylistic excursions.[40] His ability and willingness to move across

[40] All music available on "Omar Rodríguez-López," Bandcamp, accessed March 21, 2020, https://orlprojects.bandcamp.com.

styles is itself a feature often attributed to Latinx musicians.[41] Critics describe this activity as finding one's voice, but that presumes singular identity.

One particularly idiosyncratic move consisted of his transition, with bandmate Cedric Bixler-Zavala, from hardcore punk (in At the Drive-In) to progressive rock (in The Mars Volta), two genres that in the pop music industry are often figured as rivals. The narrative usually goes like this: in the mid-1970s, punk music came along to thumb its nose at prog's aging bands, overblown 20-minute songs, self-satisfied experimentalism, and antiquated fantastical subject matter. While punk was young, gritty, rebellious, and political, prog was "[h]ated, dated, sonically superannuated."[42]

Of course, underlying the implied class war between prog's elite and punk's rowdy groundlings is a racial erasure writ large since all rock-related genres are based upon the exploitation of African American and Afro-Carribean blues styles and musical systems, as well as Latinx elements from Brazilian bossa nova to Tex-Mex conjunto.[43] Prog has been described by at least one critic as "the whitest music ever" (a fair claim to be sure, and one I'll discuss later) but punk is also remembered as a British phenomenon, a narrative generated by a mid-seventies British-loving American media.[44]

---

[41] For example, Linda Ronstadt is often described as a genre-hopper. In the documentary, *Linda Ronstadt: The Sound of My Voice*, Ronstadt says "People would think that I was trying to reinvent myself, but I never invented myself to start with, I just kind of popped out into the world."

[42] This narrative was not always espoused by the musicians themselves, and other bands have even been labeled "pronk" or a cross between prog and punk. But this narrative has endured in popular writings on rock history. Quote taken from James Parker, "The Whitest Music Ever," *The Atlantic*, August 4, 2017, https://www.theatlantic.com/magazine/archive/2017/09/the-whitest-music-ever/534174/.

[43] Ed Morales points out that the story-telling nature of the Tejano corrido influenced artists like Woody Guthrie whose Dust Bowl Ballads were written while traveling through Texas and the Southwest in the late 1930s. In this way, Mexican American music also affected the development of rock music via country western and folk. See Ed Morales, "The Hidden History of Latinos and Latin Influence in Rock and Hip-Hop" in *The Latin Beat: The Rhythms and Roots of Latin Music, from Bossa Nova to Salsa and Beyond* (Cambridge, MA: Da Capo Press, 2003).

[44] See Charlie Brinkhurst-Cuff, "Why Is the History of Punk Music so White?," *Dazed*, November 12, 2015, https://www.dazeddigital.com/music/article/28372/1/why-is-the-history-of-punk-music-so-white; Katherine E.

But the sound of British punk itself has roots in Xicanx music. As critic Ed Morales has pointed out, the famous organ hook of "96 Tears" (written by thirteen-year-old Frank Rodriguez)—that 1966 "landmark exposition of punk rock"—derives from tejano conjunto practices, where bands had started utilizing the inexpensive Farfisa organ to augment the sound of the accordion in the late 1950s.[45] The conjunto Tejano ensemble, you will recall, had been associated with Mexican Revolution era *corrido canciones* in the southwest United States and northern Mexico, and has been the primary regional sound of Xicanx music on both sides of the Texas/North Mexico border as well as "the most powerful symbol of working-class culture" in the region since the late-nineteenth century.[46] It is thus somewhat fitting that the "tinny, cheesy sound" of the Farfisa came to exemplify early punk, a musical movement known for its class critique, and it is ironic that it became the sound of 1960s pop music. On the other hand, the adoption of the Farfisa among conjunto bands had itself been part of a larger movement to incorporate additional brass and electric instruments in order to shake the association of the corrido with poor-people's music—a very not-punk stance based in a desire to gain commercial distribution.

Regardless, associations with Mexican American culture was enough to mark ? and the Mysterians as poor-people's music—too poor even for punk—and in the 1970s, they had been re-

---

Wadkins, ""Freakin' Out": Remaking Masculinity through Punk Rock in Detroit," *Women & Performance: A Journal of Feminist Theory* 22, no. 2–3 (July 1, 2012): 239–60; and Parker, "The Whitest Music Ever." Also missing from the standard history of punk are the many punk bands from east Los Angeles, including numerous female *punkeras,* who helped shape an international punk sound through their recordings on independent labels that utilized grassroots distribution circuits.

[45] Morales, *The Latin Beat.* Sam the Sham and the Pharoahs, another Tex-Mex band who brought Latinx sounds to rock music, also employed the Farfisa organ, notably in the 1965 hit song, "Wooly Bully."

[46] Manuel Peña, "The Texas-Mexican Conjunto," *Borders and Identity*, accessed Feb. 18, 2020, http://smithsonianeducation.org/migrations/bord/txmxcon.html. The term "conjunto" refers to a group or collection of similar elements, therefore there are several different conjunto-related genres. For instance Afro-Cuban conjuntos play mambos and guarachos.

categorized as a "garage band," a name that insinuates *rasquache* amateurs playing music with on-hand instruments as opposed to the concerted DIY (do-it-yourself) *sound* of professional musicians. This is a story we have all heard before: an underdog image fueled by the identities of artists at the social margins, who were then barred entry into the annals of mainstream history. For that matter, it bears mentioning that histories of female punk musicians have only emerged in the last few years.[47]

The idea of DIY itself became integral to punk rock in the next two decades, during which time it underwent a sort of conceptual gentrification that peaked with the corporate scramble to find the next Nirvana after their wildly successful album *Nevermind* was released in 1991. The grunge genre, one could argue, represented the emotional internalization of punk's class struggle—its complementary aesthetic was thus heavy metal (more on this later). In this way, the DIY process came to mean not only playing with the instrumental resources at your disposal (or in your garage), it also meant side-stepping the corporate music industry's predatory practices. As a response to this need, the magazine *Maximum Rock n Roll* published its first edition of *Book Your Own Fucking Life: Do It Yourself Resource Guide* in 1992, which helped bands move away from dependence on major labels by providing "listings of other bands, labels, venues, radio stations, distributors, record and book stores, zines, and other miscellaneous tools—per state, per province, and per country."[48] As a pre-internet medium, the magazine is touted for substantially changed the American music scene, its players, and its business.

---

[47] For more on women and punk, see Vivien Goldman, *Revenge of the She-Punks: A Feminist Music History from Poly Styrene to Pussy Riot* (Austin: University of Texas Press, 2019), and Michelle Habell-Pallan, *Loca Motion: The Travels of Chicana and Latina Popular Culture* (New York: NYU Press, 2005), especially the chapters, "'¿Soy Punkera, Y Que?': Sexuality, Translocality, and Punk in Los Angeles and Beyond" and "Bridge over Troubled Borders: The Transnational Appeal of Chicano Popular Music."

[48] For more on the history of the zine, see Kevin Warwick, "How 'Book Your Own Fuckin' Life' Kept DIY Bands on the Road in the 90s," *Vice* (blog), May 6, 2019, https://www.vice.com/en_us/article/ywyzpm/the-story-of-the-diy-publication-that-kept-bands-on-the-road-for-decades.

Around this time, a high-school aged Cedric Bixler-Zavala, singer of the yet-to-be-formed Mars Volta, started using this guide to tour with his current band, Foss, during summer breaks from school. A short-lived band, Foss later gained interest when in 2017 one of its original members, Robert "Beto" O'Rourke ran for a seat in the U.S. Senate representing Texas. Incidentally, O'Rourke credited the DIY approach he learned during his Foss years as informing his campaign approach, which he also claims to have applied during his brief run for the democratic presidential nomination in 2019. Mostly this consisted of a pledge not to accept PAC money, and a grassroots campaign that largely benefited from small donations. But his politics proved otherwise, particularly his support of NAFTA (the North American Free Trade Agreement), which since 1993 had ostensibly opened up the American-Mexico border economically while actually blocking south to north immigrant movement (it is often noted that construction on the border wall started simultaneously with the onset of NAFTA).

In 1994, Bixler-Zavala and his new hardcore punk band, At The Drive-In, released their EP on Western Breed Records, a label owned by their guitarist Jim Ward and funded with college savings. The title, *Hell Paso*, derives from a local colloquialism that, light-hearted as its deployment may be, hints at the locale's historical and ongoing horrors. In 1995, Bixler-Zavala's friend, Omar Rodríguez-López, joined At the Drive-In to replace Jimmy Hernandez, who had died of cancer.

The fact that genres, not unlike historical epochs, tend to be retroactively fitted to a particular framework of concepts or events sometimes gets lost in the hyper-speed production of new rock genres. Even punk, which has the reputation for having blazed onto the scene with the raw

energy of youthful defiance was itself born from a sort of musical "masculinity nostalgia."[49] As Alina Simone notes, in 1971 the young male critics of CREEM magazine (all in their early twenties), who first sought to label punk—Dave Marsh, Lester Bangs, and Greg Shaw—were growing fatigued by the "too good, too accomplished and cocky" prog bands like The Who and The Yardbirds (the latter of whom ? and the Mysterians had opened for on tour in the late '60s).[50] So they dug into the last decade, "bushwhack[ing] a path through '70s progginess," in search of the "visceral jolt" they felt was rock music's critical element, finally settling on a group of four one-hit wonders.[51]

Musicologist Bernard Gendron has traced the term "punk" across a host of different kinds of bands for different reasons, designated as such by different critics subsequent to CREEM's initial usage.[52] Indeed, by Penelope Spheeris's 1981 documentary on the Los Angeles punk scene, *The Decline of Western Civilization*, the relationship between punk musicians and their social cause was widely variable. There certainly did not seem to be a feeling of any musical heritage, much less one that stemmed from either the corrido. What does seem to have stuck was a generalized feeling of "marketable outrage" that stemmed at least in part by perceived racial/ethnic abjection. While today the sound of the Farfisa readily evokes Smash Mouth's 1998 "Can't Get Enough of You Baby," a cover of ? and the Mysterians 1967 recording, Alina Simone has pointed out in *Madonnaland* that white listeners' reception of the Mysterians' music as dangerous and edgy at the time of its initial

[49] I borrow this phrase from MacKenzie and Alana Foster, "Masculinity Nostalgia: How War and Occupation Inspire a Yearning for Gender Order" *SAGE* 48, no. 3 (April, 2017). In El Paso the military culture surrounding Fort Bliss forms a counterpoint between military masculinity and Xicano machismo.
[50] See Alina Simone, "Mystery of the Mondegreen, or, Who Was the First Band to Smuggle the Word 'Masturbate' onto the Billboard Top 100?," in *Madonnaland: And Other Detours into Fame and Fandom* (Austin: University of Texas Press, 2016), 69–96.
[51] Ibid., 83.
[52] See Bernard Gendron, "Punk before Punk," in *Between Montmartre and the Mudd Club: Popular Music and the Avant-Garde* (Chicago: University of Chicago Press, 2002), 227-248.

release was defined as much by an image as a sound. This was particularly true after 1968 when ? was arrested by Michigan State Police for sniffing glue at a rest stop off of I-75, a story that was broadcast on national news. Nostalgia marries image to sound: in 2010 during a guest DJ stint on KCRW, Anthony Bourdain listed "96 Tears" as a personal favorite song, crediting the sound of the "cheesy, evil, roller-rink organ" for stoking his desire for a "rebellious drug-and-sex-drenched youth." He describes how the song "laid out…the possibility for darkness in an otherwise happy landscape of AM radio pop music," adding that "This was a very sinister-looking band—Question Mark, had sort of a Ramone-like bowl haircut and wraparound shades." Similarly, in an interview with *NME Magazine* About ? and the Mysterians, lead singer of the punk band Suicide Alan Vega said: "These five Mexican wetbacks in shades and black leather, junked out of their minds. The keyboard player was like fifteen. He was snortin' so much glue he couldn't even move his fingers. That song is, like, the National Anthem as far as I am concerned."[53]

It is easy to see how the purported punk/prog rivalry (or at least the narrative of this rivalry) is racially and ethnically inflected. The ostensible narrative harnesses the sound of social friction between punk's desired "decline of Western Civilization" against prog's upholding of classical music through its focus on formal structure, harmonic experimentation, and technical complexity (framed in terms of my argument in Chapter 2, we might call this "end of art" discourse against "end of music" discourse). But if punk seeks Western decline, it does so *in the service* of American capitalism, following a pattern whereby white heteronormative hegemony takes on the mantle of abjection by appropriating claims made by the truly marginalized: as Maggie Henefield and Nicholas Sammond

[53] Simone, "Mystery," 82. While 1977 seems to be a generally accepted birth year for punk it has also been claimed that Alan Vega was the first singer to refer to his band Suicide as punk in 1970.

have argued, "If social authenticity is a currency that derives from a wounded identity, abjection is its lingua franca."[54]

As Beto O'Rourke has shown, harnessing a survivalist working-class ethos can underlie an effective form of political bait-and-switch. There is a way in which Beto's use of a politically-motivated DIY ethos can be seen as parallel to NAFTA's "domesticat[ion] of 'conservative diplomacy'" free-trade, which also mimics the production of genre space and its unidirectional racial-economic movement.[55]

The Prog Years

In the spirit of cyberpunk social possibility, The Mars Volta have been called prog-punks. Named in part for the intertextual SciFi implications of "Mars," and in part after filmmaker Federico Fellini's use of the word "volta" to describe the turn-around or juxtaposition associated with the change from one scene to another, The Mars Volta seemed to constantly flummox music critics with their flamboyant, bombastic style. About their 2006 album *Amputechture, Pitchfork* critic Brandon Stosuy says "The Mars Volta's new album is partially a Lynchian pro-immigration statement that, we assume, will thrill lovers of musical onanism...The boys have created an oeuvre that, while technically adventurous, is more or less a hodgepodge of ADD prog trope noodles."[56]

---

[54] Maggie Henefield and Nicholas Sammond, "Not It, or, The Abject Objection" in Maggie Hennefeld and Nicholas Sammond, eds., *Abjection Incorporated: Mediating the Politics of Pleasure and Violence* (Durham: Duke University Press Books, 2020), 2.

[55] Thomas Foster quotes Guillermo Gómez Peña who, simultaneous to NAFTA, had advocated for a "Free Art Agreement" in his performance art. See Foster's "Cyber-Aztecs and Cholo-Punks: Guillermo Gómez-Peña's Five-Worlds Theory," *PMLA*, 117 (2002), 48. It is also worth mentioning that while Bixler-Zavala initially endorsed his former bandmate, he reneged this endorsement in 2020, instead supporting Bernie Sanders.

[56] Brandon Stosuy, "The Mars Volta: Amputechture Album Review," *Pitchfork*, September 12, 2006, https://pitchfork.com/reviews/albums/9406-amputechture/.

Mike Schiller concurs in his *popmatters* review, describing their 2005 album *Frances the Mute* as a: "77-minute suite broken up into five (or twelve, depending on who you ask) tracks that confounded (and, about half the time, thrilled) fans and critics alike, putting all of the band's influences, from krautrock to salsa to, of course, prog-metal, into a soup that didn't always blend and didn't always satisfy, but at least generated a number of great talking points."[57]

Pointing to stylistic cohesion, or the lack thereof, is low-hanging fruit for the dissatisfied music critic, particularly for the genre of prog, which, although characterized by experimentation, is also attached to certain aesthetic parameters. Here, the "territory" of the genre is marked by proximity to a classical music heritage. What irritates critics of the genre galvanizes its proponents: prog is "classical music" fan fiction, specifically progressive for its drive to be more compositionally innovative, not for its politics.[58] It's all the fascination with form, with being "technical," "complex," "experimental," and "lengthy," and is in many ways not so far removed from the particular aspects we celebrate about heroic Beethoven. Indeed, embedded in 1970s prog songwriting and keyboard harmonies, listeners might discern a canonic repertoire—see for instance Moody Blues keyboardist Mike Pender's heavy use of the Neapolitan chord (a favorite of Beethoven's) in "Nights in White Satin," or Keith Emerson's borrowings from Modest Mussorgsky, Alberto Ginastera, and Aaron Copland. Robert Walser has written on heavy metal's similar "appropriations of classical virtuosity," arguing that a classical music inheritance is evident in themes that juxtapose technical mastery and

[57] Mike Schiller, "The Mars Volta: Amputechture," in popmatters.com Sep 12, 2006. Accessed January 8, 2020 https://www.popmatters.com/the-mars-volta-amputechture-2495702083.html

[58] Marianna Ritchey for example, describes how the desire to be "innovative" has been aligned with neoliberal penchant for economic growth as an indicator of value. See Marianna Ritchey, *Composing Capital: Classical Music in the Neoliberal Era*, First edition (Chicago: University of Chicago Press, 2019).

demonic possession à la Paganini.[59] But according to prog's critics, it is not that prog sounds amateur *per se* since this is precisely punk's virtue; it's that its pretensions to virtuosity simultaneously make vividly apparent all the sexist, racist tendencies within Western classical music's hierarchies of form and analysis. Worse, it does so without formal education. Occupying an easily dismissible aesthetic middle ground, prog is frivolous compared to classical music, overly technical and showy compared to the simplicity of folk music or the raw materiality of punk music. Although The Mars Volta fits the prog bill with its "indulgent guitar solos [and] pretentious lyrics," calling The Mars Volta's albums musical onanism points to the age-old question: is there a line between masturbatory and masterful?[60]

But more to the point, it is less the mere fact of the band's kaleidoscopic sound than the particular make-up of its components that seems to rankle the most. Importantly, it is precisely how those elements relate to the abject as both a fantasy and as a real-life experience that seems to unsettle. In reference to his early childhood in Puerto Rico, Omar has said "Salsa is everything. Everything I interpret, be it rock music or punk music or whatever stage I'm at, is filtered through hearing the clave."[61] For Omar, there is absolutely nothing disjunct about pairing a dance-music rhythmic timbre with dark Paganini-level virtuosity, because doing so reflects the colonial encounter. It specifically reflects how integrating Western aesthetics into domestic activity is a Latinx survival mechanism. Whereas the Farfisa organ could be deemed punk because it corresponded to the

[59] See Robert Walser, "Eruptions: Heavy Metal Appropriations of Classical Virtuosity," *Popular Music* 11, no. 3 (October 1992): 263–308.
[60] This is how David Reyes and Tom Waldman describe the tendencies of rock n' roll in the 1970s in their *Land of a Thousand Dances: Chicano Rock "n" Roll from Southern California*, Revised edition (Albuquerque: University of New Mexico Press, 2009), 135.
[61] Rodríguez-López is quoted by Ian Gormely in "At the Drive-In Interpolating Relations of Complexity," *exclaim!*, June 21, 2017, http://exclaim.ca/music/article/at_the_drive-in-interpolating_relations_of_complexity.

agreed-upon social-aesthetic affect, in a sense allowing white audiences to emotionally piggy-back onto working-class immigrant abjection, inserting the clave into prog threatened to equate Paganini with Ray Baretto. Krautrock, salsa, and prog metal should be kept musically discrete in order to allow generic space to reflect hierarchical lines. In his article, "The Whitest Music Ever: Prog Rock Was Audacious, Innovative—and Awful," James Parker quotes the lead singer of the "proto-proggers" The Nice in 1969: "We're a European group, 'so we're improvising on European structures...We're not American Negros, so we can't really improvise and feel the way they can.'" Parker assesses, "Indeed. Thus did prog divorce itself from the blues, take flight into the neoclassical, and become the whitest music ever."[62] But as Adorno observed, insofar as music reflects society, "...the essence of [music's] coherence is that it does not cohere."[63]

Incidentally, this is also why a Lynchian aesthetic is actually quite compatible with a pro-immigration message. David Lynch's films highlight a form of alien uncanny (more prevalent in southern California than Texas), a feeling of witnessing society's ills being covered over with the American dream's sickening goo, oily stage make-up slathered over a festering wound. While Lynch's films and the Mars Volta's music are often described in aesthetic parallel according to their production of inscrutable works with little emotional payoff (to critics anyway), they both invoke Jack Halberstam's definition of horror as that which produces a "rhetorical extravagance," an "ornamental excess" that produces a fear which "comes from the realization that meaning itself runs riot."[64] On a personal level, Mars Volta front-man Cedric Bixler-Zavala developed an affinity for

---

[62] Parker, "The Whitest Music."
[63] Theodore Adorno, *Aesthetic Theory*, trans. Robert Hullot-Kentor (Minneapolis: University of Minnesota Press, 1997), 143.
[64] Jack [Judith] Halberstam, *Skin Shows: Gothic Horror and the Technology of Monsters* (Durham: Duke University Press, 1995), 2. This is a different but perhaps related fear to what I described in Chapter 1 as a fear of inaccessible truth.

Lynch's films after emotionally resonating with his 1980 *The Elephant Man*, which he felt explained the racism he experienced growing up: "There was something about [the character of John Merrick] that I felt I could identify with. It's about people being afraid of something they can't put their finger on and being physically different from others."[65]

Monsters and Metaphors, Science Fiction and Fantasy

In his essay "The Emancipatory Power of the Imaginary: Defining Chican@ Speculative Productions," William A. Calvo-Quirós begins with a poem:

> In many ways, you need to turn yourself into a monster,
> willing to deconstruct and dismantle history,
> trying to be free from the constraints of history
> in order to study the monsters of history
> and the history of monsters.[66]

As W. Scott Poole puts it, "American monsters are born out of American history," where they accumulate in the shadows of identity.[67] A significant body of work addresses the enduring metaphorical connections between monsters and the "deviant body," which, in works from the Gothic novel to American horror film is analogous to race, class, gender, and/or sexuality.[68] When monsters are depicted as Frankenstein-like hybrid biological experiments, they knit together science fiction and horror through a shared foundation based on racial and gendered categories. The Dr.

---

[65] Quoted in an interview with Ronnie Kerswell in "Welcome to my World," *Rock Sound* (Feb. 2008), 42.
[66] William A. Calvo-Quirós, "The Emancipatory Power of the Imaginary: Defining Chican@ Speculative Productions" in Merla-Watson and Olguin, *Altermundos*. 39.
[67] W. Scott Poole is quoted in Bernadette Marie Calafell, *Monstrosity, Performance, and Race in Contemporary Culture* (New York: Peter Lang Inc., 2015), 4.
[68] See Halberstam, *Skin Shows*; Calafell, *Monstrosity*; Elizabeth Young, *Black Frankenstein: The Making of an American Metaphor* (New York: NYU Press, 2008).

Frankenstein mad scientist figure is in fact not too far from reality. He is the personification of a historical process in which colonization in the name of techno-scientific and Christian progress beget "mixed" racial and ethnic categories—a system of categorization that is itself colonial.

But if fiction provides metaphors for lived experience, the reverse is also true. Anthropologists have described a "science fictionalization of trauma" whereby the absence of traumatic memory can cause victims to fill in a mental void with standard narratives, as evidenced for example in alien abduction reports.[69] Unable to name or give shape to their source of trauma, abductees transform their trauma into a specific shape (gray aliens) that fits an established narrative structure and is shared by a community of survivors.[70] Yet again, these narratives mimic real-world racism—abductees, who are most often white, seem to respond to the historical burden of inflicting trauma on people of color by finding a monster who is somehow *even more* white than they are, even more coldly clinical, even more technologically advanced. In gray aliens, the monster is simultaneously self and Other, symbolically narrativizing real-world monsters-in-the-closet by coopting the trauma experienced by subjugated people. In 2020, the implicit has become explicit, evidenced by the "currency of abjection" in which "[e]very genuine liberation protest is now echoed by its scandalous inversion, exemplified by perverse chants such as 'Blue Lives Matter,' 'Affirmative Action for White Applicants,' or 'Men's Rights are Human Rights.'" To state the obvious, monsters are always relational (monsters *to whom*?).

---

[69] Roger Luckhurst, "The Science-Fictionalization of Trauma: Remarks on Narratives of Alien Abduction," *Science Fiction Studies* 25, no. 1 (March 1998): 29–52. For more on abduction narratives see also Susan Lepselter, *The Resonance of Unseen Things: Poetics, Power, Captivity, and UFOs in the American Uncanny* (Ann Arbor: University of Michigan Press, 2016).

[70] This is perhaps also related to what Lauren Berlant describes as "genre flailing...a mode of crisis management that arises after an object, or object world, becomes disturbed in a way that intrudes on one's confidence about how to move in it." Lauren Berlant, "Genre Flailing," *Capacious: Journal for Emerging Affect Inquiry*, June 3, 2018, 156–62.

Science fiction and horror are also both relational, genres of difference where the affect is determined by the quantity and quality of that difference. In Carl Freedman's words, not only is science fiction inherently different from readers' time and place, but its "chief interest is precisely the difference that such difference makes."[71] Here, horror can be seen as science-fiction's abject other through its worlding relations. In other chapters, I have drawn on science fiction author and theorist Samuel Delany's argument that "every fully function metaphor…is a cyborg," a clever meta-comment on language and form, since this makes his comment itself cyborgian.[72] The mechanical function of metaphor in this sense is to produce an excess image against its logical parts. It is precisely the rub between surplus meaning and immanent logic that produces the metaphor's value. Horror is produced by that same process in reverse. Starting with an excess of affect as a result of emotional trauma, horror attempts to bridge the image-logic divide by producing a monster from disparate parts at hand in the psyche. In other words, monsters reverse metaphorical techno-scientific logic by starting with the biological and creating something mechanical-logical.

We might say that the act of imagining monsters is itself a monstrous activity when part of oppressive, sexual-colonialist fantasies, a monstrous beast dressed up in a techno-heroic worldview. On the other hand, framing the monstrous nature of your oppressor, naming it, and narrativizing it can provide a framework for resistance. Bernadette Marie Calafell gets at the slippery nature of monsters when she describes monstrosity in disparate terms—white murderers and rapists, formulations of women as monstrous, and reclaiming monstrosity as a powerful tool.[73] Indeed, in her Cyborg Manifesto, Donna Haraway famously theorized a utopian horizon based in the potential

[71] Carl Freedman, *Critical Theory and Science Fiction* (Middletown: Wesleyan University Press, 2000), xvi.
[72] Samuel Delany, "Reading at Work" in *Longer Views* (Middletown: Wesleyan University Press, 2011), 106-107.
[73] Calafell, *Monstrosity.*

for constructing "monstrous and illegitimate" identities as illustrated by Xicana theorists Chela Sandoval and Cherríe Moraga.[74] Judith Butler similarly asks how the cognition effect relates to claims of violence, power relations, and abjection discourse. When some violence is claimed to be "justified," it becomes important to determine on what basis these claims are made, to ask "not just 'what it says,' but 'what it is doing with what is said.' Within what episteme does it gather credibility? In other words, why is it sometimes believed, and most crucially, what can be done to expose and defeat the effective character of the speech act—its plausibility effect?"[75]

Here, there are traces of colonial thinking within genre-formation itself. Author and theorist China Miéville has pointed out that most science-fiction theorists follow Darko Suvin in differentiating science fiction from fantasy by placing science fiction worlds within a cognitive continuum rooted in scientific practice, thus distinguishing SciFi from the irrational, anticognitive estrangements of fantasy or Gothic literature.[76] What results is a putative hierarchy of genre among literary theorists. But Miéville makes a case for questioning the generic science-fiction/fantasy hierarchy, not least because its "cognition effect" is often not based in science at all. In Miéville's worlds, "To the extent that the cognition effect is about cognition, it is precisely about it, about a putatively logical way of thinking, not a function of it. And inasmuch as the experienced effect is in fact a function of authority, the 'cognition effect', in deriving supposed cognitive logic from external authority, is *not only fundamentally a-rational but also intensely ideological*."[77] For Miéville, this demands we ask, "whose cognition effect? More pertinently, whose cognition? And whose effect?"

---

[74] Donna Haraway, "A Cyborg Manifesto: Science, Technology and Socialist-feminism in the Late Twentieth Century" in *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1990), 295.
[75] Judith Butler, *The Force of Nonviolence: The Ethical in the Political* (New York: Verso, 2020). 6
[76] China Miéville, "Afterword: Cognition as Ideology" in Mark Bould and China Miéville, eds., *Red Planets: Marxism and Science Fiction* (Middletown: Wesleyan University Press, 2009).
[77] Ibid., 239.

Ultimately, he argues that the episteme under which the cognition effect functions in science fiction is "not some ideal science but capitalist science's bullshit about itself."[78]

In American-Mexican border culture, the science-fiction/cognition worldview that originates in a male hetero-normative subjectivity, is mixed with the fantasy of a Mexican national identity born from Malintzin and Cortez. Here, the generic hierarchy of science fiction and fantasy is born out in the gendered, temporal hybridity embedded in nationalist consciousness. As noted above, where the Indian Princess narrative creates a link to the past, the white-man narrative structures all cognitive knowledge as trajectory into the future—the union of Cortez and Malintzin create a techno-Christian beginning and end as the Adam and Eve of *la raza cosmica*. Thus, science fiction, horror, and fantasy are imbricated in the Xicanx experience inasmuch as the nationalist *mestizaje* (mixed) story produces an identity comprised of a white patriarchal rape story whose plausibility effect rests on the thrust of Western technological progress. Catheryn Josefina Merla-Watson and B.V. Oguín argue that for Xicanas in particular, "horror, the gothic, and the post-apocalyptic are not foreign notions... but rather powerful and enduring structures of feeling" based on the spectral presence of unresolved histories of violence and oppression that "continue to shape the present."[79] Afrofuturist and Xicanx critics have long noted that the absence of Latinxs and people of color within science fiction literary and cinematic canons indicates their erasure from collective futures. Resisting these conceptualized futures means "establish[ing] existence for those who have been conceptually nullified," which can only be done by imagining both forward- and backward-facing temporal alternatives to a history in which those who have been conceptually nullified have also been

[78] Ibid., 235.
[79] Cathryn Josefina Merla-Watson and B. V. Olguin, "Altermundos: Reassessing the Past, Present, and Future of the Chican@ and Latin@ Speculative Arts" in *Altermundos*, 3.

physically terminated.[80] One way Xicana futurists have approached this problem is by reversing associations attached to temporal materiality: in Xicana speculative production, reality is understood as temporal and hence ephemeral, while the future is a thing that can be made, something material. Another is to reformulate the fantastical-past, which radical Xicanxs have been doing since the 1960s in their theorizing of Aztlán, the mythical homeland of the Aztecs that geographically covers the present-day Southwest United States, particularly understood to relate to the territories ceded to the United States by Mexico with the Treaty of Guadalupe-Hidalgo in 1848.[81] If as Istvan Csicsery-Ronay argues, "a past that is not yet known is a form of the future" then there is a way of understanding this fantasy as one that also projects into the future.[82] Amalia, for her part, burns down the cosmos of her father—his bar—after her mother's prayer candles tipped over and burned down their family home.

The above-described formation of mestizaje identity in the service of nationalism shows how there is equal dystopian potential to hybrid utopias, a flexibility that is also built in to abjection discourse. Erin Huang has observed that where there is ambiguity, horrors lie in a "flexible façade, its meaning subject to infinite manipulation and redefinition" and Judith Butler similarly reminds us that, "relationality is a vexed and ambivalent field in which the question of ethical obligation has to be worked out in light of a persistent and constitutive destructive potential."[83] But if we return to rasquachismo as an approach—and one that is able to inform Haraway's call for cyborgian "affinity,

[80] Butler, *The Force of Nonviolence*, 23.
[81] Gloria Anzaldúa was one of the foundational authors who brought Aztlán into critical border theory. See her chapter, "The Homeland, Aztlán" in her book *Borderlands / La Frontera: The New Mestiza*, 4th ed. (San Francisco: Aunt Lute Books, 2012).
[82] Istvan Csicsery-Ronay, *The Seven Beauties of Science Fiction*, Reprint edition (Middletown: Wesleyan University Press, 2011), 4.
[83] Erin Y. Huang, *Urban Horror: Neoliberal Post-Socialism and the Limits of Visibility* (Durham: Duke University Press, 2020), 2. Butler, *The Force of Nonviolence*, 10.

not identity," where the SF of string figures, speculative feminisms, and So Far overtake the monolithic American science fiction worldview—perhaps we can start to critically unravel abjection discourse insofar as it relates to the musical genres thus far discussed.[84]

As Christophe Den Tandt reminds us, "the label cyberpunk itself, coined by sf writer Bruce Bethke, refers to postmodern sf's concern both with the socio-technological aspects of information-based societies and with the latter's capacity to generate subcultures comparable to those spawned by rock music."[85] It is perhaps fitting then, that as Veronica Hollinger has observed, the genre's primary authors consist of "a small number of white middle-class men, many of whom, inexplicably, live in Texas."[86] But more importantly, the term was created in order to express the "juxtaposition of punk attitudes and high technology."[87] In this final section therefore, I want to think about how Rodríguez-Lopez's work reflects prog-punk activity that is orthogonal to cyberpunk juxtapositions, using punk attitudes to think through abjection discourse. In her book, *The Force of Nonviolence*, Judith Butler seeks to reconfigure human relationships with eachother and other living things in part by questioning the fundamental constitutive identity as individual. When humans question their lines of affinity (where does self-protection end—myself? My family? My country?), it becomes more difficult to validate violence, even in the name of self-defense. In her words, "There is a sense in

[84] Haraway, "A Cyborg Manifesto," 296.
[85] Christophe Den Tandt, "Cyberpunk as Naturalist Science Fiction," *Studies in American Naturalism* 8, no. 1 (2013): 93–108, 94. It is also worth mentioning the Farfisa's sonic crossover into prog, used for example by Pink Floyd on their album *Dark Side of the Moon* (1973).
[86] Veronica Hollinger, "Cyberpunk Deconstructions: Cyberpunk and Postmodernism" in *Mosaic: An Interdisciplinary Critical Journal*, 23, no. 2 (Spring 1990): 29-44.
[87] Bruce Bethke, "Etymology of Cyberpunk," *Cyberpunk!,* October 2, 2017, accessed April 3, 2020 http://project.cyberpunk.ru/idb/etymology_of_cyberpunk.html.

which violence done to another is at once a violence done to the self, but only if the relation between them defines them both quite fundamentally."[88]

Following this logic, I wonder whether we can think monsters as kin. Monsters are always born from violence; they represent the residue of toxic social interaction, the physical representation of a process in which feelings, suspicions, and other unseen sensations are distilled into entities and given physical attributes tangentially related to the thing originally feared—the Other. But inasmuch as relations to the monstrous are sustained by rage and violence, whether or not this wrath is righteous, can we think these relations in a way that undermines the social currency of abjection?

Conclusion: Abjection Discourse

> "But you love mosh pits. You always said that that's how you legally get your aggression out. Remember?"
>
> —Carlos Santos, "*Gentefied*"

John Coltrane reportedly once said that when a blues "singer says 'I' the audience hears 'we.'"[89] Susan McClary sees this as indicative of how musical codes engender intersubjective expression; Fumi Okiji extends this intersubjectivity to "the tradition and the wider social context from which the music emerges," in which a blues performance "sets off constellations of communal associations, ranging from other renderings of the same lyrics or melody to a mixed bag of inflection, riff, and theme, to the kinds of associations that evoke Ellison's more esoteric 'jagged grain... of a brutal experience.'"[90] Here the listener is someone who resonates with the form, the context, and the

[88] Butler, *The Force of Nonviolence*, 9.
[89] Susan McClary, *Conventional Wisdom: The Content of Musical Form* (Berkeley: University of California Press, 2000), 47.
[90] Fumi Okiji, *Jazz As Critique: Adorno and Black Expression Revisited* (Stanford: Stanford University Press, 2018),

community of listeners who get the "jagged grain of a brutal experience." But are there contexts in which an audience is somehow alienated from the music being performed, but still hears "we"? How does music externalize the experience of internal borders?

I referred above to the term "cyberpunk" as it relates to the proliferation of subcultures in both technology and rock music. Thematically, cyberpunk is associated with urban industrial dystopian imaginaries in which virtual reality might provide an escape from extreme class stratification. In cyberpunk film and literature, the profusion of alienated identities required to fuel the narrative is only representable by introducing alien and machine cultures. Put differently, if it is possible to imagine a sort of "utopian" or ideal cyberpunk dystopia, it would be one in which alien identities spring forth in order to fulfill the many relations of abjection required by the story. In fact, it turns out abjection is the affect that is required in order to keep the wheels of abjection discourse turning, which interlock with the wheels of industry. Not unlike the rhetoric of autonomy, in which an artist must present herself as an outsider to commercial media in order to materially succeed, the rhetoric of abjection is a capitalist paradox in which performed abjection bestows recognition. Abjection is the affective residue that seeps out of the incommensurability of neoliberal life's excesses, the riddle of "trash" that no one knows what to do with. If "difference can be acknowledged without the world economy having to be disturbed," it is precisely because the American emotional economy runs on abjection and the truly subjugated need to remain angry in order to produce the affect that the powerful systematically long to produce.[91]

---

29. The Ellison she refers to is Ralph Ellison, who in his essay, "Seer and Seen" describes the blues as a form born from an impulse "to keep the painful details and episodes of a brutal experience alive in one's aching consciousness."

[91] James Currie as quoted by Marianna Ritchey, *Composing Capital: Classical Music in the Neoliberal Era*, (Chicago: University of Chicago Press, 2019), 14.

At the same time, much like working class estrangements from material production, those who truly experience subjugation are alienated from the value of their own abjection. Instead, there is a constant exchange between those who experience abjection and those who affectively portray it in order to provide a soundtrack for everyone else's feelings of alienation. In this way, abjection follows the same paths as commerce—it takes from the poor and gives to the middle class and rich. Moreover, it is self-perpetuating because when abjection reaches the highest forms of social power—namely white male representation—it can then perform that abjection in a way that is self-validating in its toxic, masculinist display of anger. As if it is only natural. Both punk and prog rock are symptoms of this pattern.

As a half-Xicana (let me tell you, I am a hybrid), I have heard "we" when the singer says "I," even when the singer is a white man, even when he is singing about a woman who did him wrong. I have sometimes questioned myself, sometimes given in to the deliciously cathartic act of singing along, as if I understand exactly where he is coming from. When I listen to The Warning, a band of young Mexican sisters who got their start playing gorgeous, meticulous, covers of classical heavy metal songs from AC/DC to Metallica, I hear my younger self responding to the exhilarating power and freedom of plugging in to the public masculine mechanism where technology meets techne, where power meets artistic expression. This isn't screaming into the void; this is delighting in the darkness. But sometimes, to my consternation, singing along to Nine Inch Nails or Ramstein almost feels aspirational, like a powerful monstrosity that gives voice to the inexpressible anger I harbor from violence done to me. It feels like I am using "the

master's tools" to access my own emotional catharsis, which in a way, I am. But as Audre Lorde reminds me, the master's tools were stolen and require reappropriation in order to dismantle the master's house.[92]

In China Miéville's weird fantasy novel, *Perdido Street Station*, there are monsters called slake-moths who are taller than a bear and occupy multiple dimensions at once. These creatures seek out sapient prey, preferring those with vivid dreams, in order to feed off of their psyche. Once a victim is discovered, the slake-moth spreads its massive hypnotic wings on which a continuously morphing image is displayed, immobilizing its enthralled prey who may know their terrible fate but cannot look away. The slake-moth then approaches its victim, unfurls its long thick trunk-like tongue and inserts it into an orifice in the victim's head. Like a hummingbird sucking nectar from a flower, the slake-moth sucks out the contents of the victim's brain, leaving an empty husk. In the city of New Crobuzon where the story takes place, a group of slake-moths have been captured by the mob who harvest their milk—a substance they produce for their larvae that is "thick with distilled dreams"—so that they can manufacture a drug appropriately called dreamshit by those who consume it. When consumed, dreamshit produces intense hallucinations in an hours-long three-dimensional immersive montage of other creatures' digested experiences, emotions, and lives.

There is a bit of Adorno's culture industry in this monster, in its mechanism for hypnosis that deprives the viewer of agency, in the way it (re)produces collective fantasies as drug that is both disquieting and addicting. Like the monster of rampant capitalism, it sucks out people's dreams, digests them, and then produces dreamshit to feed to its acolytes so that they too can become big strong slake moths. Because it leaves its victims an empty husk, its resources will eventually run out

[92] Audre Lorde, "The Master's Tools Will Not Dismantle the Master's House" in *Sister Outsider: Essays and Speeches*, (New York: Crossing Press, 2012): 202-209.

and it will have to, like the colonial capitalist, eventually find a new population to control and deplete. While they are described as lascivious creatures who make "tiny, obscene, noises... drool[ing] in vile anticipation," when approaching prey, the slake-moth is nevertheless neither good nor bad, but simply a creature built to extract and (re)produce the ineffable stuff that supposedly separates the self-aware from the non-sapient.[93]

The monsters are a disquieting metaphor for the capitalist music industry, not only because of the violence they inflict, but more to the point, because of the people—who in the book, as in real life, are the government and the mob—who are willing to keep the slake moths around in order to make a profit and maybe even take some of the drug themselves. In her book, *The Force of Nonviolence*, Judith Butler recalls Walter Benjamin's 1920 essay "Critique of Violence" in which he describes an "instrumentalist logic" through which people decide whether or not violence is justified, whether the ends justify the means.[94] Benjamin then asks what justifies the instrumentalist framework in the first place, arguing that if it is always a question of justifiability, then violence is always already within reason. Butler extends this argument by asking: "*Can violence and nonviolence both be thought beyond the instrumentalist framework, and what new possibilities for ethical and political critical thought result from that opening*?" Butler argues that "the actualization of violence as a means can inadvertently become its own end, producing new violence...reiterating the license, and licensing further violence."[95]

But for Butler, the question of violence has to be approached from prior to the question—before describing what violence is and what it does, she wants to know why we keep subscribing to

[93] China Miéville, *Perdido Street Station* (New York: Del Rey, 2001), 363-365.
[94] Butler, *The Force of Nonviolence*, 18.
[95] Ibid., 20.

this Enlightenment myth of (male) individuality, in which our first relation is conflict. As a fantasy that has taken hold on reality, the conflict/violent resolution cycle has come to stand in for all social relations to the extent that its purpose is never questioned, articulating "arguments for strengthening state power and its instruments of violence to cultivate or contain the popular will" as well as emerging "in our understanding of populism, the condition in which the popular will is imagined to assume an unconstrained form or to rebel against established structure."[96] In this way, punk, like everything else, derives from the state of nature. It is simply a slake moth, mechanistically following its instinct.

For Butler, if we exchange the idea of individuality for an "avowed interdependency" that is based in the shared vulnerability of our lives, we might learn to recognize that "we are not altogether separable from the conditions that make our lives possible or impossible. In other words, because we cannot exist liberated from such conditions, we are never fully individuated." Furthermore, our global obligations would have to be reframed as post-national, since nation is just another form of individuation. The way to end violence, for Butler, is by reimagining our own boundaries of selfhood. If we extend this as a metaphor for affect, perhaps the best way to defeat the slake-moth capitalist engine of abjection discourse is to reimagine the future in "speculative rasquache" forms that, like the corrido, find humor in the struggle and strength in vulnerability.

[96] Ibid., 34.

Bibliography

Abel, Richard, and Charles F. Altman, eds. *The Sounds of Early Cinema*. Bloomington: Indiana University Press, 2001.

Adas, Michael. *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance*. Ithaca: Cornell University Press, 1990.

Adorno, Theodor. *Minima Moralia*. Scotts Valley: CreateSpace Independent Publishing Platform, 2011.

———. "On the Fetish-Character in Music and the Regression of Listening (1938)." In *Essays on Music*, translated by Susan H. Gillespie. Berkeley: University of California Press, 2002.

———. *Quasi Una Fantasia: Essays on Modern Music*. Reprint edition. New York: Verso, 2012.

Adorno, Theodor W. *Aesthetic Theory*. Edited by Robert Hullot-Kentor. Minneapolis: University of Minnesota Press, 1998.

———. *Philosophy Of New Music*. Edited by Robert Hullot-Kentor. Minneapolis: University of Minnesota Press, 2006.

Agamben, Giorgio. *Homo Sacer: Sovereign Power and Bare Life*. Translated by Daniel Heller-Roazen. Stanford: Stanford University Press, 1998.

———. *The Open: Man and Animal*. Translated by Kevin Attell. Stanford: Stanford University Press, 2003.

Aguilera, Jasmine. "New Horror Film by Omar Rodríguez López, 'Amalia,' Premieres in Paris." *Latino Rebels*, October 29, 2018. https://www.latinorebels.com/2018/10/29/amalia/.

Ahmed, Sara. *Living a Feminist Life*. Durham: Duke University Press, 2017.

———. *The Promise of Happiness*. Durham: Duke University Press, 2010.

———. *What's the Use?: On the Uses of Use*. Duke University Press, 2019.

Almén, Byron, and Edward Pearsall, eds. *Approaches to Meaning in Music*. Bloomington: Indiana University Press, 2006.

Anderson, Ben. "A Principle of Hope: Recorded Music, Listening Practices and the Immanence of Utopia." *Wiley on Behalf of the Swedish Society for Anthropology and Geography* 84, no. 3/4 (2002): 211–27.

Anzaldúa, Gloria, Norma Cantú, and Aída Hurtado. *Borderlands / La Frontera: The New Mestiza*. 4th edition. San Francisco: Aunt Lute Books, 2012.

Arendt, Hannah, and Margaret Canovan. *The Human Condition*. 2nd edition. Chicago: The University of Chicago Press, 1998.

Ashby, Arved Mark. *The Pleasure of Modernist Music: Listening, Meaning, Intention, Ideology*. Rochester: University of Rochester Press, 2004.

Attali, Jacques, and Susan McClary. *Noise: The Political Economy of Music*. Translated by Brian Massumi. Minneapolis: University of Minnesota Press, 1985.

Augoyard, Jean-Francois, and Henri Torgue. *Sonic Experience: A Guide to Everyday Sounds*. Translated by Andra McCartney. Ithaca: McGill-Queen's University Press, 2006.

Bachelard, Gaston, and Patrick A. Heelan. *The New Scientific Spirit*. Translated by Arthur Goldhammer. Boston: Beacon Press, 1986.

Bachelard, Gaston, and John R. Stilgoe. *The Poetics of Space*. Translated by Maria Jolas. Reprint edition. Boston: Beacon Press, 1994.

Balibar, Étienne. *Politics and the Other Scene*. Translated by Christine Jones, James Swenson, and Chris Turner. New York: Verso, 2002.

Barad, Karen. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham: Duke University Press Books, 2007.

Barham, Jeremy. "Scoring Incredible Futures: Science Fiction Screen Music, and 'Postmodernism' as Romantic Epiphany." *The Musical Quarterly* 91, no. 3/4 (2008): 240–74.

Barnett, Michael, Heather Wagner, Anne Gatling, Janice Anderson, Meredith Houle, and Alan Kafka. "The Impact of Science Fiction Film on Student Understanding of Science." *Journal of Science Education and Technology* 15, no. 2 (April 2006): 179–91.

Barthes, Roland. *Image-Music-Text*. Translated by Stephen Heath. New York, NY: Hill and Wang, 1978.

Bartkowiak, Mathew J., ed. *Sounds of the Future: Essays on Music in Science Fiction Film*. Jefferson: McFarland & Company, Inc, 2010.

Battaglia, Debbora, ed. *E.T. Culture: Anthropology in Outerspaces*. Durham: Duke University Press Books, 2006.

Baudrillard, Jean. “Simulacra and Science Fiction.” *Science Fiction Studies* 18 (November 1991): 309–13.

Beer, Gillian. *Open Fields: Science in Cultural Encounter*. Oxford: Clarendon Press, 1999.

Bellows, Andy Masaki (editor), and Marina (editor) McDougall. *Science Is Fiction: The Films of Jean Painlevé*. Cambridge: MIT Press, 2000.

Benham, Thomas Alonzo. “Voices of the Satellites.” Smithsonian Folkways Recordings. Accessed April 19, 2020. https://folkways.si.edu/voices-of-the-satellites/sounds/album/smithsonian.

Benjamin, Walter. *The Work of Art in the Age of Its Technological Reproducibility, and Other Writings on Media*. Edited by Michael W. Jennings, Brigid Doherty, and Thomas Y. Levin. Cambridge: Belknap Press, 2008.

Bennett, Jane. *Vibrant Matter: A Political Ecology of Things*. Durham: Duke University Press, 2010.

Berlant, Lauren, and Sianne Ngai. “Comedy Has Issues.” *Critical Inquiry* 43, no. 2 (January 2017): 233–49.

Bernes, Jasper. “Communism Might Last a Million Years.” *Commune* (blog), October 14, 2018. https://communemag.com/the-shield-of-utopia/.

———. *The Work of Art in the Age of Deindustrialization*. Stanford: Stanford University Press, 2017.

Bernstein, Leonard. *The Unanswered Question: Six Talks at Harvard*. Kultur Video, 2002.

Bethke, Bruce. “Etymology of Cyberpunk.” Cyberpunk!, October 2, 2017. http://project.cyberpunk.ru/idb/etymology_of_cyberpunk.html.

Bijker, Wiebe E., and John Law, eds. *Shaping Technology / Building Society: Studies in Sociotechnical Change*. Reissue edition. Cambridge: The MIT Press, 1994.

Bloch, Ernst. *The Utopian Function of Art and Literature: Selected Essays*. Translated by Jack Zipes and Frank Mecklenberg. Cambridge: The MIT Press, 1989.

Bloor, David. *Knowledge and Social Imagery*. Chicago: University of Chicago Press, 1991.

Booker, M. Keith. *Monsters, Mushroom Clouds, and the Cold War American Science Fiction and the Roots of Postmodernism, 1946-1964*. Westport: Greenwood Press, 2001.

Boon, Timothy. *Films of Fact: A History of Science in Documentary Films and Television*. New York: Wallflower Press, 2008.

Borradori, Giovanna. *Philosophy in a Time of Terror: Dialogues with Jurgen Habermas and Jacques Derrida*. Chicago: University of Chicago Press, 2004.

Bould, Mark, and China Miéville, eds. *Red Planets Marxism and Science Fiction*. Middletown: Wesleyan University Press, 2009.

Bousé, Derek. *Wildlife Films*. Philadelphia: University of Pennsylvania Press, 2000.

Brinkhurst-Cuff, Charlie. "Why Is the History of Punk Music so White?" *Dazed*, November 12, 2015. https://www.dazeddigital.com/music/article/28372/1/why-is-the-history-of-punk-music-so-white.

Bulkeley, Rip. "Harbingers of Sputnik: The Amateur Radio Preparations in the Soviet Union." *History and Technology* 16, no. 1 (1999): 67–102.

Burmester, David. "Electronic Media: Science Fiction on Film." *The English Journal* 74, no. 4 (April 1985): 90–92.

Butler, Judith. *The Force of Nonviolence: The Ethical in the Political*. New York: Verso, 2020.

Cadena, Marisol de la, and Mario Blaser, eds. *A World of Many Worlds*. Durham: Duke University Press Books, 2018.

Cahill. *Zoological Surrealism: The Nonhuman Cinema of Jean Painlevé*. Minneapolis: University of Minnesota Press, 2019.

Cahill, James Leo. "Forgetting Lessons: Jean Painlevé's Cinematic Gay Science." *Journal of Visual Culture* 11, no. 3 (December 2012): 258–87.

———. "On the Plurality of Worlds: Jacques Yves Cousteau and Louis Malle's *Silent World*"." Presentation at the University of Chicago, May 2018.

Calafell, Bernadette Marie. *Monstrosity, Performance, and Race in Contemporary Culture*. New York: Peter Lang Inc., 2015.

Caldara, Jon. "Transparency Is for Government, Privacy Is for People." *The Denver Post* (blog), March 18, 2017. https://www.denverpost.com/2017/03/18/transparency-is-for-government-privacy-is-for-people/.

Canguilhem, Georges, Paola Marrati, and Todd Meyers. *Knowledge of Life*. Translated by Stefanos Geroulanos and Daniela Ginsburg. New York: Fordham University Press, 2008.

Carnap, Rudolf. "Empiricism, Semantics, and Ontology." *Revue Internationale de Philosophie* 4 (1950): 20–40.

Caroti, Simone. "Science Fiction, Forbidden Planet, and Shakespeare's The Tempest." *CLCWeb: Comparative Literature and Culture* 6, no. 1 (March 2011).

Carroll, Noel. *The Philosophy of Horror: Or, Paradoxes of the Heart*. New York: Routledge, 1990.

Cassetti, Francesco. *Eye of the Century: Film, Experience, Modernity*. New York: Columbia University Press, 2008.

Cavarero, Adriana. *For More than One Voice: Toward a Philosophy of Vocal Expression*. Translated by Paul Kottman. Stanford: Stanford University Press, 2005.

Chion, Michel. *Guide des objets sonores: Pierre Schaeffer et la recherche musicale*. Paris: Buchet/Chastel, 1994.

Chion, Michel, and Walter Murch. *Audio-Vision: Sound on Screen*. Translated by Claudia Gorbman. 14th edition. New York: Columbia University Press, 1994.

Chris, Cynthia. *Watching Wildlife*. Minneapolis: University of Minnesota Press, 2006.

Clark, Suzannah, and Alexander Rehding, eds. *Music Theory and Natural Order from the Renaissance to the Early Twentieth Century*. Cambridge: Cambridge University Press, 2001.

Collins, Harry M., and Trevor Pinch. *The Golem: What You Should Know About Science*. 2nd edition. Cambridge: Cambridge University Press, 2012.

Cousteau, Jacques. "EP-125 Why Man Explores" a Symposium sponsored by NASA, 1976.

USA Today. "Cousteau's Grandson Talks of Life Undersea," June 25, 2014. https://www.usatoday.com/videos/news/nation/2014/06/25/11358913/.

Cox, Christoph, and Daniel Warner, eds. *Audio Culture: Readings in Modern Music*. New York: Continuum, 2004.

Crowther, Bosley. "Screen: Beautiful Sea; 'Silent World' Opens at the Paris Here." *The New York Times*, September 25, 1956, https://www.nytimes.com/1956/09/25/archives/screen-beautiful-sea-silent-world-opens-at-the-paris-here.html.

Csicsery-Ronay, Istvan. *The Seven Beauties of Science Fiction*. Middletown: Wesleyan University Press, 2011.

"Cybernetic Deconstructions: Cyberpunk and Postmodernism." *Mosaic: An Interdisciplinary Critical Journal* 23, no. 2 (Spring 1990): 29–44.

Daston, Lorraine. "The Naturalistic Fallacy Is Modern." *Isis* 105, no. 3 (September 2014): 579–87.

Daston, Lorraine, and Peter Galison. "The Image of Objectivity." *Representations* 40, (Autumn 1992): 81–128.

Daston, Lorraine, and Fernando Vidal, eds. *The Moral Authority of Nature*. Chicago: University Of Chicago Press, 2003.

David Foster Wallace Interview on *Charlie Rose (1997)*. Accessed April 19, 2020. https://charlierose.com/videos/23311.

Davis, Angela Y., and Neferti X. M. Tadiar, eds. *Beyond the Frame: Women of Color and Visual Representation*. 2005 edition. New York: Palgrave Macmillan, 2005.

Davis, David Brion. "Some Themes of Counter-Subversion: An Analysis of Anti-Masonic, Anti-Catholic, and Anti-Mormon Literature." *The Mississippi Valley Historical Review* 47, no. 2 (1960): 205–24.

Delany, Samuel R., and Matthew Cheney. *The Jewel-Hinged Jaw: Notes on the Language of Science Fiction*. Revised edition. Middletown: Wesleyan University Press, 2011.

Delany, Samuel R., and Ken James. *Longer Views: Extended Essays*. Middletown: Wesleyan University Press, 1996.

Deleuze, Gilles, and Felix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. Minneapolis: University of Minnesota Press, 1987.

Derrida, Jacques. *The Animal That Therefore I Am*. Edited by Marie-Louis Mallet. Translated by David Wills. New York: Fordham University Press, 2008.

Descola, Philippe. *The Ecology of Others*. Translated by Geneviève Godbout and Benjamin P. Luley. Chicago: Prickly Paradigm Press, 2013.

Dolar, Mladen. *A Voice and Nothing More*. Cambridge: The MIT Press, 2006.

Dolman, Everett C. *Astropolitik: Classical Geopolitics in the Space Age*. Routledge, 2005.

Donnelly, K. J. *Occult Aesthetics: Synchronization in Sound Film*. New York: Oxford University Press, 2014.

Donnelly, K. J., and Philip Hayward, eds. *Music in Science Fiction Television: Tuned to the Future*. New York: Routledge, 2012.

Douglas, Deborah G. *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*. Edited by Wiebe E. Bijker, Thomas P. Hughes, and Trevor Pinch. Cambridge: The MIT Press, 2012.

Drott, Eric. "The End(s) of Genre." *Journal of Music Theory* 57, no. 1 (March 1, 2013): 1–45.

Dyson, Frances. *Sounding New Media: Immersion and Embodiment in the Arts and Culture*. Berkeley: University of California Press, 2009.

Eidsheim, Nina Sun. *Sensing Sound: Singing and Listening as Vibrational Practice*. Durham: Duke University Press, 2015.

Einstein, Albert, Boris Podolsky, and Nathan Rosen. "Can Quantum-Mechanical Description of Physical Reality Be Considered Complete?" *Physical Review* 47 (1935): 777–80.

"El Paso, TX | Data USA." Accessed April 21, 2020. https://datausa.io/profile/geo/el-paso-tx/.

Enzensberger, Hans Magnus, and Michael Roloff. *The Consciousness Industry: on Literature, Politics and the Media.* New York: Seabury Press, 1974.

Erlmann, Veit, ed. *Hearing Cultures: Essays on Sound, Listening and Modernity*. English Edition, New York: Bloomsbury Academic, 2004.

Eshun, Kodwo. *More Brilliant Than the Sun: Adventures in Sonic Fiction*. 10th Anniversary Edition, London: Interlink Pub Group Inc, 1999.

Esposito, Roberto. *Bios: Biopolitics and Philosophy*. Translated by Timothy Campbell. Minneapolis: University of Minnesota Press, 2008.

Ewell, Philip. "Music Theory's White Racial Frame." Plenary Speaker presented at the Society for Music Theory, Columbus, OH, November 7, 2019.

Feeley, Jennifer L., and Sarah Ann Wells, eds. *Simultaneous Worlds: Global Science Fiction Cinema*. Minneapolis: University of Minnesota Press, 2015.

Feldman, Martha, and Judith T. Zeitlin. "The Clamor of Voices" in *The Voice as Something More: Essays toward Materiality*. Chicago: University of Chicago Press, 2019: 3–33.

Fenves, Peter. *The Messianic Reduction: Walter Benjamin and the Shape of Time*. Stanford: Stanford University Press, 2010.

Ferguson, Russel, Martha Gever, Trinh T. Minh-Ha, and Cornel West, eds. *Out There: Marginalization and Contemporary Culture*. Cambridge: The MIT Press, 1992.

Flanagan, Owen. *Science of the Mind.* 2nd edition. Cambridge: A Bradford Book, 1991.

Ford, Phil. "Taboo: Time and Belief in Exotica." *Representations* 103, no. 1 (August 2008): 107–35.

Forrest, Jennifer. "Scripting the Female Voice: The Phonograph, the Cinematograph, and the Ideal Woman." *Nineteenth-Century French Studies* 27, no. 1/2 (1998): 71–95.

Foster, Thomas. "Cyber-Aztecs and Cholo-Punks: Guillermo Gómez-Peña's Five-Worlds Theory." *PMLA* 117, no. 1 (January 2002): 43–67.

Franzosa, Susan Douglas. "Introduction: Reframing the Landscape of the 1950s." *Counterpoints* 43 (1999): 1–16.

Freedman, Carl. *Critical Theory and Science Fiction*. Middletown: Wesleyan University Press, 2000.

———. "Kubrick's '2001' and the Possibility of a Science-Fiction Cinema." *Science Fiction Studies* 25, no. 2 (July 1998): 300–318.

Galison, Peter. *How Experiments End*. Chicago: University of Chicago Press, 1987.

Galloway, Alexander R. *The Interface Effect*. Malden: Polity Press, 2012.

Galloway, Alexander R., Eugene Thacker, and McKenzie Wark. *Excommunication: Three Inquiries in Media and Mediation*. Chicago: University of Chicago Press, 2013.

Garcia, Russ. *Fantastica: Music from Outer Space*. CD. Liberty Stereo, 1957.

Gendron, Bernard. *Between Montmartre and the Mudd Club: Popular Music and the Avant-Garde*. Chicago: University of Chicago Press, 2002.

Dailymotion. "Gérard Mordillat Critique 'Le Monde Du Silence' Avec Le Commandant Cousteau." Accessed April 20, 2020. https://www.dailymotion.com/video/x2x2i7l.

Glassy, Mark C. *The Biology of Science Fiction Cinema*. Jefferson: McFarland & Company, Inc., 2001.

Goddard, Scott. "Some Notes on Maurice Ravel's Ballet 'Daphnis et Chloe'-I." *Music & Letters* 7, no. 3 (1926): 209–20.

Goldman, Vivien. *Revenge of the She-Punks: A Feminist Music History from Poly Styrene to Pussy Riot*. Austin: University of Texas Press, 2019.

Gómez-Peña, Guillermo. *Ethno-Techno: Writings on Performance, Activism and Pedagogy*. Edited by Elaine A. Peña. New York: Routledge, 2005.

González, Jennifer A., C. Ondine Chavoya, Chon Noriega, and Terezita Romo, eds. *Chicano and Chicana Art: A Critical Anthology*. Durham: Duke University Press Books, 2019.

Goodman, Steve. *Sonic Warfare: Sound, Affect, and the Ecology of Fear*. Cambridge: The MIT Press, 2012.

Gormely, Ian. "At the Drive-In Interpolating Relations of Complexity." *exclaim!*, June 21, 2017. http://exclaim.ca/music/article/at_the_drive-in-interpolating_relations_of_complexity.

Goss, Madeleine. *Bolero: The Life of Maurice Ravel*. Whitefish: Kessinger Publishing, LLC, 2010.

Grebowicz, Margret (editor). *SciFi in the Mind's Eye: Reading Science through Science Fiction*. Chicago: Open Court, 2007.

Griffin, Matthew, Susanne Herrmann, and Friedrich Kittler. "Technologies of Writing: Interview with Friedrich A. Kittler." *New Literary History* 27, no. 4 (1996): 731–42.

Gunning, Tom. "Moving Away from the Index: Cinema and the Impression of Reality." *Differences: A Journal of Feminist Cultural Studies* 18, no. 1 (2007): 29–52.

Haas, Lynda. "Review: Of Waters and Women: The Philosophy of Luce Irigaray Reviewed Work(s): Marine Lover of Friedrich Nietzsche by Luce Irigaray and Gillian C. Gill; The Irigaray Reader by Luce Irigaray and Margaret Whitford; Philosophy in the Feminine by Margaret Whitford." *Hypatia* 8, no. 4 (1993): 150–59.

Habell-Pallan, Michelle. *Loca Motion: The Travels of Chicana and Latina Popular Culture*. New York: NYU Press, 2005.

Halberstam, Jack. "What the Storm Blows In." *Bully Bloggers*, March 23, 2020. https://bullybloggers.wordpress.com/tag/jack-halberstam/.

Halberstam, Jack (published under Judith). *Skin Shows: Gothic Horror and the Technology of Monsters*. Durham: Duke University Press Books, 1995.

Hansen, Mark B. N. *Feed-Forward: On the Future of Twenty-First-Century Media*. Chicago: University of Chicago Press, 2015.

Hansen, Miriam. *Cinema and Experience*. Berkeley: University of California Press, 2012.

Haraway, Donna. *Donna Haraway: SF, Speculative Fabulation and String Figures: 100 Notes, 100 Thoughts*. Bilingual edition. Ostfildern: Hatje Cantz, 2012.

———. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Routledge, 1990.

———. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminism Studies* 14, no. 3 (1988): 575–99.

———. "Tentacular Thinking: Anthropocene, Capitalocene, Chthulucene" *Journal #75* (September 2016). Accessed April 20, 2020. https://www.e-flux.com/journal/75/67125/tentacular-thinking-anthropocene-capitalocene-chthulucene/.

———. *Primate Visions: Gender, Race, and Nature in the World of Modern Science*. New York: Routledge, 1990.

———. *Staying with the Trouble: Making Kin in the Chthulucene*. Durham: Duke University Press, 2016.

Hayles, Katherine. "Speculative Aesthetics and Object-Oriented Inquiry (OOI)." *Speculations: A Journal of Speculative Realism* 5 (2014): 158–79.

Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago, Ill: University of Chicago Press, 1999.

Hayward, Philip, ed. *Off the Planet: Music, Sound and Science Fiction Cinema*. Bloomington: Indiana University Press, 2004.

Hayward, Philip, ed. *Widening the Horizon: Exoticism in Post-War Popular Music*. Eastleigh: John Libbey Publishing, 1999.

Heimerdinger, Julia. "'I Have Been Compromised. I Am Now Fighting against It.' Ligeti vs. Kubrick and the Music for 2001: A Space Odyssey." *Journal of Film Music* 3, no. 2 (September 13, 2011): 127–43.

Heinlein, Robert A., Basil Davenport, C. M. Kornbluth, Alfred Bester, and Robert Bloch. *Science Fiction Novel: Imagination and Social Criticism*. 3rd edition. Chicago: Advent Publishing Inc., 1971.

Hennefeld, Maggie, and Nicholas Sammond, eds. *Abjection Incorporated: Mediating the Politics of Pleasure and Violence*. Durham: Duke University Press Books, 2020.

Hernández, Roberto D. *Coloniality of the US/Mexico Border: Power, Violence, and the Decolonial Imperative*. Tucson: University of Arizona Press, 2018.

Hofstadter, Richard. "The Paranoid Style in American Politics." *Harper's Magazine* (November 1st, 1964). https://harpers.org/archive/1964/11/the-paranoid-style-in-american-politics/.

Hollings, Ken, and Erik Davis. *Welcome to Mars: Politics, Pop Culture, and Weird Science in 1950s America*. Berkeley: North Atlantic Books, 2014.

Holmes, Thom. *Electronic and Experimental Music: Technology, Music, and Culture*. 4th edition. New York: Routledge, 2012.

Huang, Erin Y. *Urban Horror: Neoliberal Post-Socialism and the Limits of Visibility*. Durham: Duke University Press Books, 2020.

Hughes, Thomas P. *American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970*. Chicago: University of Chicago Press, 2004.

———. *Human-Built World: How to Think about Technology and Culture*. Chicago: University of Chicago Press, 2005.

Ihde, Don. *Expanding Hermeneutics: Visualism in Science*. Evanston: Northwestern University Press, 1999.

———. *Listening and Voice: Phenomenologies of Sound*. 2nd edition. Albany: State University of New York Press, 2007.

San Diego Union-Tribune. "In El Paso's Wake, a Corrido Honors the Dead and Points Fingers at the Villains." *San Diego Union-Tribune*. August 10, 2019. https://www.sandiegouniontribune.com/entertainment/music/story/2019-08-10/el-paso-shooting-corrido-walmart.

Irigaray, Luce. *Marine Lover of Friedrich Nietzsche*. Translated by Gillian Gill. New York: Columbia University Press, 1991.

Istvan Csicsery-Ronay, Jr. "The SF of Theory: Baudrillard and Haraway." *Science Fiction Studies* 18, no. 3 (1991): 387–404.

Jacoby, Russell. *Picture Imperfect: Utopian Thought for an Anti-Utopian Age*. New York: Columbia University Press, 2007.

Jacques, Derrida. *Rogues: Two Essays on Reason*. Translated by Brault Pascale-Anne and Naas Michael. Stanford: Stanford University Press, 2005.

James, Edward, and Farah Mendlesohn. *The Cambridge Companion to Science Fiction*. Cambridge: Cambridge University Press, 2003.

Jameson, Frederic. *The Political Unconscious: Narrative as a Socially Symbolic Act*. Ithaca: Cornell University Press, 2014.

———. *Archaeologies of the Future: The Desire Called Utopia and Other Science Fictions*. New York: Verso, 2005.

———. *Postmodernism, or, The Cultural Logic of Late Capitalism*. Durham: Duke University Press, 1992.

———. *The Cultural Turn: Selected Writings on the Postmodern, 1983-1998*. New York: Verso, 2009.

Johnson, Julian. *Out of Time: Music and the Making of Modernity*. New York: Oxford University Press, 2015.

Johnston, John. *The Allure of Machinic Life: Cybernetics, Artificial Life, and the New AI*. Cambridge: A Bradford Book, 2010.

Johnston, Keith M. *Science Fiction Film: A Critical Introduction*. Berg Film Genres Series. New York: Berg, 2011.

Joubert-Laurencin, Herve. *Opening Bazin: Postwar Film Theory and Its Afterlife*. Edited by Dudley Andrew. New York: Oxford University Press, 2011.

Kahn, Douglas. *Noise, Water, Meat: A History of Sound in the Arts*. Cambridge: The MIT Press, 2001.

Kane, Brian. *Sound Unseen: Acousmatic Sound in Theory and Practice*. New York: Oxford University Press, 2014.

Kassabian, Anahid. *Ubiquitous Listening: Affect, Attention, and Distributed Subjectivity*. Berkeley: University of California Press, 2013.

Kellner, Douglas. "Jean Baudrillard." *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, (Winter 2019). https://plato.stanford.edu/archives/win2019/entries/baudrillard/.

Keniston, Kenneth. *The Uncommitted: Alienated Youth in American Society*. Boston: Harcourt, Brace & World, 1965.

Kim-Cohen, Seth. *In the Blink of an Ear: Toward a Non-Cochlear Sonic Art*. New York: Bloomsbury Academic, 2009.

Kirksey, Eben, ed. *The Multispecies Salon*. Durham: Duke University Press Books, 2014.

Kittler, Friedrich. "Number and Numeral." *Theory Culture Society* 23, no. 7–8 (2006): 51–61.

Kittler, Friedrich A, Geoffrey Winthrop-Young, and Michael Wutz. *Grammophone, Film, Typewriter*. Stanford: Stanford University Press, 1999.

Klapcsik, Sandor. *Liminality in Fantastic Fiction: A Poststructuralist Approach*. McFarland, 2012.

Klein, Naomi. *The Shock Doctrine: The Rise of Disaster Capitalism*. New York: Metropolitan Books, 2007.

Kramer, Lawrence. *Classical Music and Postmodern Knowledge*. Berkeley: University of California Press, 1995.

Kuhn, Thomas S., and Ian Hacking. *The Structure of Scientific Revolutions: 50th Anniversary Edition*. Chicago: University of Chicago Press, 2012.

Landa, Manuel De. *A Thousand Years of Nonlinear History*. New York: Zone Books, 2000.

Landecker, Hannah. "Microcinematography and the History of Science and Film." *Isis* 97, no. 1 (March 2006): 121–32.

Langer, Jessica. *Postcolonialism and Science Fiction*. London: Palgrave Macmillan, 2011.

Landsberg, Alison. *Prosthetic Memory: The Transformation of American Remembrance in the Age of Mass Culture*. New York: Columbia University Press, 2004.

Latour, Bruno. *An Inquiry into Modes of Existence: An Anthropology of the Moderns*. Translated by Catherine Porter. Cambridge: Harvard University Press, 2013.

———. *On the Modern Cult of the Factish Gods*. Durham: Duke University Press Books, 2010.

Laudadio, Nicholas. "'Sounds like a Human Performance': The Electronic Music Synthesizer in Mid-Twentieth-Century Science Fiction." *Science Fiction Studies* 38, no. 2 (2011): 304–20.

Lawrence, D. H. *Mornings in Mexico*. Victoria: Benediction Classics, 2012.

Laxton, Susan. *Surrealism at Play*. Durham: Duke University Press Books, 2019.

LeBaron, Anne, "Reflections of Surrealism in Postmodern Musics" in *Postmodern Music/Postmodern Thought*. ed. Judy Lochhead and Joseph Auner. New York: Routledge, 2001.

Le Guin, Ursula K. *Dancing at the Edge of the World*. Grove Press, 1997.

Lepselter, Susan. *The Resonance of Unseen Things: Poetics, Power, Captivity, and UFOs in the American Uncanny*. Ann Arbor: University of Michigan Press, 2016.

Lerman, Nina, Ruth Oldenziel, and Arwen P. Mohun, eds. *Gender and Technology: A Reader*. Baltimore: Johns Hopkins University Press, 2003.

Limón, José E. "Folklore, Social Conflict, and the United States-Mexico Border." In *Handbook of American Folklore*, edited by Richard Mercer Dorson. Bloomington: Indiana University Press, 1983.

Liu, Alan. "Remembering the Spruce Goose: Historicism, Postmodernism, Romanticism." *South Atlantic Quarterly* 102, no. 1 (January 1, 2003): 263–78.

Livingston, Julie. *Self-Devouring Growth: A Planetary Parable as Told from Southern Africa*. Durham: Duke University Press Books, 2019.

Loeffler, Zachary. "'The Only Real Magic': Enchantment and Disenchantment in Music's Modernist Ordinary." *Popular Music* 38, no. 01 (January 2019): 8–32.

Long, Michael. *Beautiful Monsters: Imagining the Classic in Musical Media*. Berkeley: University of California Press, 2008.

Longus. "Daphnis and Chloe (The 1896 Athenian Society Translation)." Wikisource accessed Sept. 13, 2019. https://en.wikisource.org/wiki/Daphnis_and_Chloe_(The_1896_Athenian_Society_Translation)

Lorde, Audre. *Sister Outsider: Essays and Speeches*. New York: Crossing Press, 2012.

Love, Heather. "Truth and Consequences: On Paranoid Reading and Reparative Reading." *Criticism* 52, no. 2 (2010): 235–41.

Luckhurst, Roger. "The Science-Fictionalization of Trauma: Remarks on Narratives of Alien Abduction." *Science Fiction Studies* 25, no. 1 (1998): 29–52.

MacDonald, Scott. *Adventures of Perception: Cinema as Exploration*. Berkeley: University of California Press, 2009.

———. *Avant-Doc: Intersections of Documentary and Avant-Garde Cinema*. New York: Oxford University Press, 2014.

———. "Jean Painlevé: Going Beneath the Surface." *The Criterion Collection* (blog). Accessed June 12, 2015. http://www.criterion.com/current/posts/1098-jean-painleve-going-beneath-the-surface.

———. *The Garden in the Machine: A Field Guide to Independent Films about Place*. Berkeley: University of California Press, 2001.

MacKenzie, Megan, and Alana Foster. "Masculinity Nostalgia: How War and Occupation Inspire a Yearning for Gender Order." *Security Dialogue* 48, no. 3 (June 1, 2017): 206–23.

Marcuse, *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. 2nd edition. Boston: Beacon Press, 2012.

Masataka, Nobuo, and Leonid Perlovsky. "Music Can Reduce Cognitive Dissonance." *Nature Precedings: Pre-Publication Research and Preliminary Findings.* Accessed April 11, 2018 http://precedings.nature.com/documents/7080/version/1

Massumi, Brian. *Parables for the Virtual: Movement, Affect, Sensation*. Durham: Duke University Press, 2002.

———. "The Autonomy of Affect." *Cultural Critique* 31 (1995): 83–109.

Mather, Philip. "Figures of Estrangement in Science Fiction Film." *Science Fiction Studies* 29, no. 2 (July 2002): 186–201.

May, Elaine Tyler. *Homeward Bound: American Families in the Cold War Era*. 4th edition. New York: Basic Books, 2017.

McCaffery, Larry (editor). *Storming the Reality Studio: A Casebook of Cyberpunk and Postmodern Science Fiction*. Durham: Duke University Press, 1991.

McClary, Susan. *Conventional Wisdom: The Content of Musical Form*. Berkeley: University of California Press, 2000.

McCormack, Derek P. *Atmospheric Things: On the Allure of Elemental Envelopment*. Durham: Duke University Press Books, 2018.

McCray, W. Patrick. "Amateur Scientists, the International Geophysical Year, and the Ambitions of Fred Whipple." *Isis* 97, no. 4 (December 2006): 634–58.

———. *The Visioneers: How a Group of Elite Scientists Pursued Space Colonies, Nanotechnologies, and a Limitless Future*. Princeton: Princeton University Press, 2012.

McDougall, Walter A. *The Heavens and the Earth: A Political History of the Space Age*. Baltimore: Johns Hopkins University Press, 1997.

Mcginn, Colin. *The Mysterious Flame: Conscious Minds in a Material World*. New York: Basic Books, 2000.

McGinn, Colin. *The Problem of Consciousness: Essays Towards a Resolution*. Cambridge: Wiley-Blackwell, 1993.

McQuiston, Kate. "'An Effort to Decide': More Research into Kubrick's Music Choices for 2001: A Space Odyssey." *Journal of Film Music* 3, no. 2 (September 13, 2011): 145–54.

———. *We'll Meet Again: Musical Design in the Films of Stanley Kubrick*. New York: Oxford University Press, 2013.

Merkley, Paul A. "'Stanley Hates This But I Like It!': North vs. Kubrick on the Music for 2001: A Space Odyssey." *The Journal of Film Music* 2, no. 1 (2007): 1–34.

Merla-Watson, Cathryn Josefina, and B. V. Olguin, eds. *Altermundos: Latin@ Speculative Literature, Film, and Popular Culture*. Los Angeles: UCLA Chicano Studies Research Center Press, 2017.

Metzer, David. "The Power Ballad." *Popular Music* 31, no. 3 (October 2012): 437–59.

Mezzadra, Sandro, and Brett Neilson. *Border as Method, or, the Multiplication of Labor*. Durham: Duke University Press Books, 2013.

Mezzadra, Sandro, and Brett Neilson. *The Politics of Operations: Excavating Contemporary Capitalism*. Durham: Duke University Press Books, 2019.

Miéville, China. *Perdido Street Station*. New York: Del Rey, 2001.

Mitman, Gregg, and William Cronon. *Reel Nature: America's Romance with Wildlife on Film*. 2nd edition. Seattle: University of Washington Press, 2009.

Morales, Ed. *The Latin Beat: The Rhythms and Roots of Latin Music, from Bossa Nova to Salsa and Beyond*. Cambridge: Da Capo Press, 2003.

Moreno, Jairo. "Imperial Aurality: Jazz, the Archive, and U.S. Empire" in *Audible Empire: Music, Global Politics, Critique*. Durham: Duke University Press, 2016: 135-160.

Morton, Timothy. *Hyperobjects: Philosophy and Ecology after the End of the World*. Minneapolis: University of Minnesota Press, 2013.

Mulvey, Laura. "Visual Pleasure and Narrative Cinema." In *Feminist Film Theory: A Reader*, edited by Sue Thornham. 58–69, Edinburgh: Edinburgh University Press, 1999.

NASA, et al. *Why Man Explores*. Hillsboro: University Press of the Pacific, 2005.

Naylor, Paul. *Poetic Investigations: Singing the Holes in History*. Evanston: Northwestern University Press, 1999.

Nelson, Craig, *The Age of Radiance: The Epic Rise and Dramatic Fall of the Atomic Era*. New York: Scribner, 2014.

Niebur, Louis. *Special Sound: The Creation and Legacy of the BBC Radiophonic Workshop*. New York: Oxford University Press, 2010.

Nodelman, Perry. "The Cognitive Estrangement of Darko Suvin." *Children's Literature Association Quarterly* 5, no. 4 (1981): 24–27.

Noland, Carrie. "Red Front/Black Front: Aimé Césaire and the Affaire Aragon." *Diacritics* 36, no. 1 (Spring 2006): 64–84.

Nora, Pierre. "Between Memory and History: Les Lieux de Mémoire." *Representations* 26 (Spring 1989): 7–24.

Nye, David E. *American Technological Sublime*. Reprint edition. Cambridge: The MIT Press, 1996.

Okiji, Fumi. *Jazz As Critique: Adorno and Black Expression Revisited*. Stanford: Stanford University Press, 2018.

Olson, Harry, and Herbert Belar. "Electronic Music Synthesizer." *Journal of the Acoustical Society of America* 27, no. 3 (January 1955): 595–612.

Painlevé, Jean. "Exemple de Surréalisme: Le Cinéma." *Surréalisme* 1 (October 1924).

———. *Science Is Fiction: 23 Films by Jean Painlevé*. DVD. The Criterion Collection, 2009. http://www.criterion.com/films/1286-science-is-fiction-23-films-by-jean-painleve.

Paredes, Américo. *"With His Pistol in His Hand": A Border Ballad and Its Hero*. Austin: University of Texas Press, 1958.

Paris, Henry Samuel. "Row Erupts in France over Famed Sea Explorer Jacques Cousteau's 'disgusting' Abuse of Marine Life." The Telegraph, July 8, 2015. https://www.telegraph.co.uk/news/worldnews/europe/france/11726747/Row-erupts-in-France-over-famed-sea-explorer-Jacques-Cousteaus-disgusting-abuse-of-marine-life.html.

Parker, James. "The Whitest Music Ever." *The Atlantic*. August 4, 2017. https://www.theatlantic.com/magazine/archive/2017/09/the-whitest-music-ever/534174/.

Pateman, Carole. *The Sexual Contract*. Stanford: Stanford University Press, 1988.

Patterson, David W. "Music, Structure and Metaphor in Stanley Kubrick's '2001: A Space Odyssey.'" *American Music* 22, no. 3 (2004): 444-474.

Patteson, Thomas. *Instruments for New Music*. Oakland, Calif: University of California Press, 2015.

Paulus, Irena. "Stanley Kubrick's Revolution in the Usage of Film Music: 2001: A Space Odyssey (1968)." *The Journal of Film Music* 40 (2009): 99–127.

Peña, Manuel. *Música Tejana: The Cultural Economy of Artistic Transformation*. College Station: Texas A&M University Press, 1999.

———. "The Texas-Mexican Conjunto." Borders and Identity. Accessed February 18, 2020. http://smithsonianeducation.org/migrations/bord/txmxcon.html.

Perales, Monica. *Smeltertown: Making and Remembering a Southwest Border Community*. Chapel Hill: University of North Carolina Press, 2010.

Pick, Anat. *Screening Nature: Cinema Beyond the Human. Edited by Anat Pick and Guinevere Narraway*. Edited by Guinevere Narraway. New York: Berghahn Books, 2013.

Piekut, Benjamin. *Henry Cow: The World Is a Problem*. Durham: Duke University Press Books, 2019.

Pinch, Trevor, and Frank Trocco. *Analog Days: The Invention and Impact of the Moog Synthesizer*. Cambridge: Harvard University Press, 2004.

Platt, Russell. "Clarke, Kubrick, and Ligeti: A Tale." *The New Yorker*. Accessed April 20, 2020. https://www.newyorker.com/culture/goings-on/clarke-kubrick-and-ligeti-a-tale.

Price, David H. *Threatening Anthropology: McCarthyism and the FBI's Surveillance of Activist Anthropologists*. Durham: Duke University Press, 2004.

Rabkin, Eric S. *Science Fiction: A Historical Anthology*. New York: Oxford University Press, 1983.

Rabkin, Eric S. "Science Fiction and the Future of Criticism." *Modern Language Association* 119, no. 3 (May 2004): 457–73.

Radano, Ronald, and Tejumola Olaniyan, eds. *Audible Empire: Music, Global Politics, Critique*. Durham: Duke University Press Books, 2016.

Ragland, Catherine. *Musica Nortena: Mexican Migrants Creating a Nation Between Nations*. Philadelphia: Temple University Press, 2009.

Redfield, Marc. *The Politics of Aesthetics: Nationalism, Gender, Romanticism*. Stanford: Stanford University Press, 2003.

Renault, Gregory. "Science Fiction as Cognitive Estrangement: Darko Suvin and the Marxist Critique of Mass Culture." *Discourse* 2, no. Mass Culture Issue (1980): 113–41.

Reyes, David, and Tom Waldman. *Land of a Thousand Dances: Chicano Rock "n" Roll from Southern California*. Revised edition. Albuquerque: University of New Mexico Press, 2009.

Reymann, Markus, and Francesca von Habsburg. *Tidalectics: Imagining an Oceanic Worldview through Art and Science*. Edited by Stefanie Hessler. Cambridge: The MIT Press, 2018.

Ritchey, Marianna. *Composing Capital: Classical Music in the Neoliberal Era*. Chicago: University of Chicago Press, 2019.

Robinson, Kim Stanley. "Dystopias Now." *Commune* (blog), November 2, 2018. https://communemag.com/dystopias-now/.

Rodgers, Tara. "Toward a Feminist Epistemology of Sound." In *Engaging the World : Thinking After Irigaray*, edited by Mary C. Rawlinson, 195–214. Albany: State University of New York Press, 2016.

Rodríguez-López, Omar. "Omar Rodríguez-López." *Bandcamp*. Accessed March 21, 2020. https://orlprojects.bandcamp.com.

Roosth, Sophia. "Screaming Yeast: Sonocytology, Cytoplasmic Milieus, and Cellular Subjectivities." *Critical Inquiry* 35 (2009): 332–50.

Ross, Alex. "Space Is the Place." *The New Yorker*. Accessed April 20, 2020. https://www.newyorker.com/magazine/2013/09/23/space-is-the-place.

———. *The Rest Is Noise: Listening to the Twentieth Century*. New York: Picador, 2008.

Roy, Arundhati. "The Pandemic Is a Portal." Financial Times, April 3, 2020. https://www.ft.com/content/10d8f5e8-74eb-11ea-95fe-fcd274e920ca.

Russ Garcia, his Vocal Choir and Orchestra. *Sounds In the Night*. New York: AAMCO Records, 1958.

Sanders, Steven M. (editor). *The Philosophy of Science Fiction Film*. Lexington: University Press of Kentucky, 2008.

Schafer, R. Murray. *The Soundscape*. Rochester: Destiny Books, 1993.

Schrader, Barry. *Introduction to Electro-Acoustic Music*. Englewood Cliffs: Longman Higher Education, 1982.

Schwartzman, Roy. "Engenderneered Machines in Science Fiction Film." *Studies in Popular Culture* 22, no. 1 (October 1999): 75–87.

Hoagland, Erica and Reema Sarwal, eds. *Science Fiction, Imperialism and the Third World: Essays on Postcolonial Literature and Film*. Jefferson: McFarland & Company Inc., 2010.

The Criterion Collection. "Science Is Fiction: 23 Films by Jean Painlevé." *The Criterion Collection* Accessed April 20, 2020. https://www.criterion.com/films/1286-science-is-fiction-23-films-by-jean-painlev.

Sconce, Jeffrey. *Haunted Media: Electronic Presence from Telegraphy to Television*. 2nd edition. Durham: Duke University Press Books, 2000.

Sedgwick, Eve Kosofsky. *Touching Feeling: Affect, Pedagogy, Performativity*. Durham: Duke University Press Books, 2003.

Shapin, Steven. *The Scientific Life: A Moral History of a Late Modern Vocation*. Chicago: University of Chicago Press, 2010.

Shaviro, Steven. *Cinematic Body*. Minneapolis: University of Minnesota Press, 1993.

Siddiqi, Asif A. "The Space Review: Sputnik Remembered: The First Race to Space." *The Space Review*, October 9, 2017. https://www.thespacereview.com/article/3344/1.

Silverman, Kaja. *The Acoustic Mirror: The Female Voice in Psychoanalysis and Cinema*. 5th edition. Bloomington: Indiana University Press, 1988.

Simcox, David. "Immigration, Population, and Economic Growth in El Paso, Texas." CIS.org. Accessed April 21, 2020. https://cis.org/Report/Immigration-Population-and-Economic-Growth-El-Paso-Texas.

Simone, Alina. "Mystery of the Mondegreen, or, Who Was the First Band to Smuggle the Word 'Masturbate' onto the Billboard Top 100?" In *Madonnaland: And Other Detours into Fame and Fandom*, 69–96. Austin: University of Texas Press, 2016.

Smithsonian Folkways Recordings. "Man in Space: The Story of the Journey - A Documentary." *Smithsonian Folkways Recordings*. Accessed April 19, 2020. https://folkways.si.edu/man-in-space-the-story-of-the-journey-a-documentary/sounds/album/smithsonian.

Socolow, Jefferson Pooley, Michael J. "Orson Welles' War of the Worlds Did Not Touch Off a Nationwide Hysteria. Few Americans Listened. Even Fewer Panicked." *Slate Magazine*, October 29, 2013. https://slate.com/culture/2013/10/orson-welles-war-of-the-worlds-panic-myth-the-infamous-radio-broadcast-did-not-cause-a-nationwide-hysteria.html.

Sokal, Allan, and Jean Bricmont. *Fashionable Nonsense: Postmodern Intellectuals' Abuse of Science*. London: Picador, 1998.

Solomon, Matthew, ed. *Fantastic Voyages of the Cinematic Imagination: Georges Melies's Trip to the Moon*. Albany: State University of New York Press, 2011.

Spivak, Gayatri Chakravorty. "The Rani of Sirmur: An Essay in Reading the Archives," *History and Theory* 24, no. 3 (Oct. 1985): 247-272.

Sontag, Susan. "The Imagination of Disaster" in *Against Interpretation and Other Essays*. New York: Picador, 2001: 209-225.

Stengers, Isabelle. *Cosmopolitics I*. Translated by Robert Bononno. Minneapolis: University of Minnesota Press, 2010.

———. *Cosmopolitics II*. 3rd edition. Minneapolis, Min. London: University of Minnesota Press, 2011.

Stewart, Kathleen. "Atmospheric Attunements by Kathleen Stewart." *Rubric*, no. 1 (2010): 2-14.

Stosuy, Brandon. "The Mars Volta: Amputechture Album Review." *Pitchfork*, September 12, 2006. https://pitchfork.com/reviews/albums/9406-amputechture/.

Suleiman, Susan Rubin. *Subversive Intent: Gender, Politics, and the Avant-Garde*. Cambridge: CreateSpace Independent Publishing Platform, 2012.

Suvin, Darko. *Defined by a Hollow: Essays on Utopia, Science Fiction and Political Epistemology*. New York: Peter Lang AG, 2010.

———. *Metamorphoses of Science Fiction*. New Haven: Yale University Press, 1979.

Den Tandt, Christophe. "Cyberpunk as Naturalist Science Fiction." *Studies in American Naturalism* 8, no. 1 (2013): 93–108.

Taruskin, Richard. *Music in the Early Twentieth Century: The Oxford History of Western Music*. Revised edition. New York: Oxford University Press, 2009.

Taylor, Timothy D. *Strange Sounds: Music, Technology and Culture*. New York: Routledge, 2001.

Telotte, J.P. "Human Artifice and the Science Fiction Film." *Film Quarterly* 36, no. 3 (1983): 44-51.

Tenner, Edward. *Why Things Bite Back: Technology and the Revenge of Unintended Consequences*. Reprint edition. New York: Vintage Press, 1997.

Thacker, Eugene. *Biomedia*. Minneapolis: University of Minnesota Press, 2004.

———. *Starry Speculative Corpse: Horror of Philosophy*. Charlotte: Zero Books, 2015.

———. *Tentacles Longer Than Night: Horror of Philosophy*. Charlotte: Zero Books, 2015.

Thompson, Henry Howard. "Screen: A Double Bill; 'Watusi' Arrives With 'The Mysterians.'" *The New York Times*, July 2, 1959, sec. Archives. https://www.nytimes.com/1959/07/02/archives/screen-a-double-bill-watusi-arrives-with-the-mysterians.html.

Thompson, Marie. *Beyond Unwanted Sound*. New York: Bloomsbury Academic, 2017.

Thompson, Sharon, Lydia Hayes, Daniel Newman, and Carole Pateman. "The Sexual Contract 30 Years on: A Conversation with Carole Pateman." *Feminist Legal Studies* 26, no. 1 (April 2018): 93–104.

Thorpe, Charles. *Oppenheimer: The Tragic Intellect*. Chicago: University of Chicago Press, 2006.

Thrift, Nigel. *Non-Representational Theory: Space, Politics, Affect*. New York: Routledge, 2007.

Tiffany, Daniel. *Toy Medium: Materialism and Modern Lyric*. Berkeley: University of California Press, 2000.

Tuck, Donald H. *The Encyolopedia of Science Fiction and Fantasy through 1968: A Bibliographical Survey of the Fields of Science Fiction, Fantasy and Weird Fiction through 1968; Vol. 1.* Chicago: Advent Publishers, 1974.

Uexküll, Jakob von, and Dorian Sagan. *A Foray into the Worlds of Animals and Humans: With A Theory of Meaning*. Translated by Joseph D. O'Neil. Minneapolis: University of Minnesota Press, 2010.

Berlant, Lauren. "Genre Flailing." *Capacious: Journal for Emerging Affect Inquiry*. June 3, 2018, 156–162.

Varese, Edgard, and Chou Wen-Chung. "The Liberation of Sound." *Perspectives of New Music* 5, no. 1 (1966): 11–19.

Various Artists. *The Science of Sound*. CD. New York: Smithsonian Folkways Records, 1958.

Verma, Neil. *Theater of the Mind*. Chicago: University of Chicago Press, 2012.

Villalobos, Jose Pablo, and Juan Carlos Ramirez-Pimienta. "Corridos and La Pura Verdad: Myths and Realities of the Mexican Ballad." *South Central Review* 21, no. 3 (2004): 129–49.

Voegelin, Salome. *Sonic Possible Worlds: Hearing the Continuum of Sound*. New York: Bloomsbury Academic, 2014.

Wadkins, Katherine E. ""Freakin' Out": Remaking Masculinity through Punk Rock in Detroit." *Women & Performance: A Journal of Feminist Theory* 22, no. 2–3 (July 1, 2012): 239–60.

Dillon, Grace L. ed. *Walking the Clouds: An Anthology of Indigenous Science Fiction*. Tucson: University of Arizona Press, 2012.

Wall-Romana, Christophe. *Cinepoetry: Imaginary Cinemas in French Poetry*. New York: Fordham University Press, 2012.

Walser, Robert. "Eruptions: Heavy Metal Appropriations of Classical Virtuosity." *Popular Music* 11, no. 3 (October 1992): 263–308.

Wark, McKenzie. *Molecular Red: Theory for the Anthropocene*. New York: Verso, 2016.

Warwick, Kevin. "How 'Book Your Own Fuckin' Life' Kept DIY Bands on the Road in the 90s." *Vice* (blog), March 6, 2019. https://www.vice.com/en_us/article/ywyzpm/the-story-of-the-diy-publication-that-kept-bands-on-the-road-for-decades.

Watkins, Holly. *Musical Vitalities: Ventures in a Biotic Aesthetics of Music*. Chicago: University of Chicago Press, 2018.

———. "The Pastoral After Environmentalism: Nature and Culture in Stephen Albert's Symphony: RiverRun." *Current Musicology* 84 (Fall 2007): 7–24.

———. "Toward a Post-Humanist Organicism." *Nineteenth-Century Music Review* 14, no. 1 (April 2017): 93–114.

SIGMA: The Science Fiction Think Tank. "What Is SIGMA?" Accessed April 19, 2020. http://www.sigmaforum.org/.

White, Ed. "The Value of Conspiracy Theory." *American Literary History* 14, no. 1 (March 1, 2002): 1–31.

Wilson, Charles. "György Ligeti and the Rhetoric of Autonomy." *Twentieth-Century Music* 1, no. 1 (March 2004): 5–28.

Winter, Alison. "Screening Selves: Sciences of Memory and Identity on Film, 1930-1960." *History of Psychology* 7, no. 4 (2004): 367–401.

Wolfe, Gary K. *The Known and the Unknown: The Iconography of Science Fiction*. Kent: Kent State University Press, 1979.

Wood, Gordon S. "Conspiracy and the Paranoid Style: Causality and Deceit in the Eighteenth Century." *The William and Mary Quarterly* 39, no. 3 (July 1982): 401.

Young, Elizabeth. *Black Frankenstein: The Making of an American Metaphor*. New York: NYU Press, 2008.

Young, Mark. "Digital Aurality and the Science-Fictional Public Sphere." *Science Fiction Studies* 43 (2020): 123-139.

Zarlengo, Kristina. "Civilian Threat, the Suburban Citadel, and Atomic Age American Women." *Sings* 24, no. 4 (Summer 1999): 925–58.

Zizek, Slavoj. *The Plague of Fantasies*. 2nd edition. London: Verso, 2009.