Pink Noise: Women on Electronic Music and Sound

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Introduction

I first made electronic music in the mid-1980s when I was about twelve years old, using an Apple IIe computer that my father brought home from work. I was absorbed in it for months, coaxing melodies out of programs I wrote in the BASIC language. As a self-taught musician who had played piano for years without formal lessons, for me the computer was simply a new means of working with sounds. As I had with the piano, I would figure it out mostly by trial and error. Today, I still play the piano, and I also compose with MIDI instruments, digital audio, and the programming language SuperCollider (Rodgers 2006; MacDonald 2007). I often attribute my facility with electronic music to my father’s interests and support. He is a self-described audiophile and early adopter of computer technologies, and he shared with me his record collection, enthusiasm for home recording, and knowledge about hi-fi audio systems and computers. It came as a surprise, then, when recently I unearthed in a closet an old 78 that my mother recorded as an amateur pianist in high school. Mom cut a record? I asked a few more questions and found out that in the early decades of the twentieth century, my great-aunt was a pianist for silent films in Albany, New York, and my grandmother used a stenotype machine in her work as a secretary. In a small town in western New York, my other grandmother was a Morse telegrapher and teletypist at her job with an agriculture company in the 1940s. So while my father’s audiophilia was an obvious lineage for me to identify and claim, it turned out there were clear precedents for music and computing experience in generations of women before me in my family. Even after I had conducted dozens of interviews for this collection and its online predecessor Pinknoises.com, I still defaulted to stereotypical assumptions about gender, audio, and computer technologies in my personal history.
The terms technology and music are often marked as male domains, and the trenchancy of associated gendered stereotypes seems to gain force when these fields converge in electronic music (McCartney and Waterman 2006, 43). This book attempts to disentangle these potent assumptions and open possibilities for imagining relationships of sound, gender, and technology differently. It endeavors a feminist intervention in historiography—suggesting what feminisms can do for electronic music cultures—and it proposes what sound, as a category of critical and aesthetic analysis, can offer to feminist concerns.

**Project Overview**

This book is a collection of twenty-four interviews with women who are DJs, electronic musicians, and sound artists. The interviews investigate the artists’ personal histories, their creative methods, and how issues of gender inform their work. This project emerged out of technical interests, social connections, and political affinities in my trajectory as a musician and scholar. During the past decade, I have moved from being an electronic dance music producer in New York, to a graduate student in an experimental electronic music program in Oakland, to a professor of sound at an arts college in Boston, to a doctoral student in Montreal, and—to quote a house classic by Crystal Waters—back to the middle and around again. In all these contexts I have encountered a curious lack of representation that profoundly underestimates the presence and diversity of expressions by women working with sound as a creative medium over the last century. Others have conjured this absence with wonderful, experiential analogies. DJ Mutamassik says: "When you look at how many cultures the women have been making the drums and beating them as well, you realize that we’re living in a secretive Masonic society or something." Annea Lockwood called it “this great hole, a black hole of no info” about women composers (interview with author, September 25, 2004). Another artist remarked that her entrée into the world of electronic music felt as if she had landed on a planet where something had happened to make all the women disappear.

I first ventured into this so-called black hole or alien planet in the late 1990s when I set up a home studio for making electronic music. As I began to research production methods, I found that the spaces where knowledge circulated—primarily music stores and online discussion forums—were often populated by men who boasted about technical knowledge and were unhelpful to newcomers in the field. Many men were supportive, but electronic music cultures overall seemed to discourage or deny women’s participation. This was made clear by the lack of substantive coverage of women in electronic music magazines and history books.

My own impulses to learn electronic music production and start the website Pinknoises.com felt quite different. In addition to my established curiosity with music and computers I was inspired by the legacy of Riot Grrrl, the grassroots movement in the early 1990s that catalyzed feminist art making and political activism (see Kearney 1997). I also was motivated by the pervasive spirit in the United States in the late 1990s for creating online communities that could transcend geographic boundaries, and by feminist writing on rock, hip-hop, and hip-hop. My interest in music’s relationship to cultural politics gained fervor after I read the anthology Rock She Wrote (McDonnell and Powers 1995), Tricia Rose’s Black Noise (1994), and an article by Ann Powers (1994) that encouraged more work by women as instrumentalists—which I took up as a call to arms. And, along with some other women of my generation who make electronic music, I have been inspired by traditions of women’s music and political activism.

In 2000, I established Pinknoises.com to promote the work of women making electronic music, to make resources on production methods more accessible to women and girls, and to provide an online space where issues of music and gender could be discussed. Curious to locate and talk with other women in the field, I sent e-mails to various online forums and soon heard from six artists. I interviewed them about their music backgrounds, creative methods, and ideas about gender and electronic music culture. Those interviews formed the primary content for Pinknoises.com’s launch, along with essays and links about studio setup and production techniques. With the help of our web designer, Karen Choy, and occasional contributions from other artists and writers, we updated the site with new interviews and articles for about three years and, after that, much of the content remained archived online.

The website and book have evolved using “friendship as method” (Tillmann-Healy 2003, 734), because with many of the artists my research methods have blended with mutual efforts to build friendships and cultivate professional support. I devote the majority of the pages...
vocal techniques with digital sampling and effects, attended one of
AGF’s performances with interest (interview with author, October 31,
2004). The feminist electro-pop band Le Tigre draws inspiration
from Yoko Ono and Laurie Anderson. Eliane Radigue, who for thirty
years has developed a signature style of subtly changing analog synthesizer
drones, collaborates with a younger generation, including AGF and
the electronics improviser Kaffe Matthews. To take stock of this new
audio culture, this book offers glimpses of contemporary electronic
music practices through stories of several generations of women, all
of whom are active cultural producers at the time of this manuscript’s
assembly. It provides a genealogical investigation of a present
moment, tracing lives and careers that intersect with each others’ and
with broader historical developments in the field.

The interviews are organized thematically because juxtapositions
of genre and generation can reveal how sound and audio technolo-
gies connect otherwise divergent experiences. Sounds are points of
departure to realms of personal history, cultural memory, and politi-
cal struggle. At stake, on one level, are questions of who has access to
tools and opportunities for creative expression, and how women art-
ists are represented in mainstream media. Moreover, the interviews
show how women engage sound to work creatively with structures
of time and space, or voice and language; to challenge distinctions of
nature and culture using sound and audio technologies; to question
norms of technological practice; and to balance their needs for produc-
tive solitude with collaboration and community. The section themes
situate the artists’ work ( provisionally, since their work is multifac-
ted and changing) within categories such as time, space, nature, and
embodiment. These topics are based on resonances among the inter-
views in each section and forge connections between electronic music
practices and feminist philosophy, media, and cultural studies. The
themes also depart from familiar tropes like “noise” and “experiment-
alisn” in existing electronic music histories, which, I will argue, have
thus far conjured a canon of male composers and writers.

This collection will contribute the sounds and stories of some
women to historical accounts which have thus far left them out. Yet
its relationship to electronic music historiography is not to advocate
an unattainable completeness in historical accounts but to be con-
cerned with how histories are contained and contested in movements
of sound in the present. It is thus necessary to lay out a broad critique
of gender issues across multiple histories that electronic music inheres, including affiliations with militarism in the evolution of audio technologies, a logic of reproduction that operates in audio discourses and practices, and the politics of electronics manufacturing in a music culture that privileges planned obsolescence. Together these factors have informed electronic music histories by delimiting who and what counts in such matters as invention, production, and making noise.

**Noise and Silencing in Electronic Music Histories**

Much like technologies used in electronic music practice, electronic music histories have been imagined and structured according to tropes of noise and silence (see Kahn 1999; Cox and Warner 2004). Histories of electronic music often begin with a prominent origin story, the avant-garde noise of the Futurists in the early twentieth century. In the beginning, the story goes, there was Luigi Russolo’s Futurist manifesto, *The Art of Noises* (1913), a bold celebration of the sounds of machines, modern industry, and war. Origin stories tend to normalize hegemonic cultural practices that follow, and in electronic music, “the beauty celebrated by aestheticians is often stained with such things as violence, misogyny, and racism” (McClar 1991, 4; see also Kahn 1999, 56–67). Indeed, themes in Futurist writings seem to flow naturally into the colonialist discourses articulated to electronic sounds in Cold War popular culture, the sexist imagery that has characterized many electronic music albums and advertisements, and the militaristic language that inflects contemporary music-production terminology.

The tools for making electronic music are not innocent: true sound “mediums,” they are an interface to ghosts of technoscientific projects past. In the United States, links between audio and military technologies were well established by the 1920s. Broadcast radio developed in conjunction with military investment around World War I, and subsequent amplification and recording technologies emerged directly from wartime expenditures or were funded for their potential military applications. Noises of new technologies in World War II were of such magnitude as to motivate extended research toward the development of new methods for controlling sound, to safeguard effective communication in combat. Postwar research in psychoacoustics and communications that addressed these issues shared with early electronic music many of the same historical actors, machines, and institutions (Chan 1995; 8; Edwards 1996, 210–13, 220–21).

During the Cold War, electronic sounds became firmly lodged in the public imagination, especially in association with space age and atomic research. Space age pop music featured racially exoticized portrayals of women on album covers and used electronic sounds to signify the allure and anxieties of space exploration (Taylor 2001, 87–93). In 1962, the composer Herbert Brün recounted how stereotypes and fears of atomic warfare affected his audience’s opinions of electronic music: “Throughout the population, in all social circles, people, when speaking of electronic music, use phrases like the following completely unabashedly: ‘Electronic music is made of electrons. Electrons split atoms and a split atom is in some way part of the atom bomb, and one doesn’t fool with such things. Above all, it shows complete lack of taste and tact, to want to make music with weapons of death.’” (Brün 2004, 126). These associations persist today in the terminology of electronic music: DJs “battle”; a producer “triggers” a sample with a “controller,” “executes” a programming “command,” types “bang” to send a signal, and tries to prevent a “crash” (Katz 2004, 114–36; McCartney 1995; Peebles 1996, 12). The very act of making electronic music thus unfolds with reference to high-tech combat, shot through with symbols of violent confrontation and domination.

This persistent militaristic terminology and aesthetic priorities of rationalistic precision and control epitomize notions of male technical competence and “hard” mastery in electronic music production. These have produced and been constituted by their opposite: non-technical or “soft” knowledges and practices that are coded as female (McCartney 2002; Bradby 1993, 156–57; see also Turkle 1984; Oldenziel 1999). In their interview in this collection, Le Tigre explains how standards of male-defined technological innovation do not apply equally to women:

Johanna Fateman: It really struck us that, when men make mistakes, it’s fetishized as a glitch …
Kathleen Hanna: Something beautiful.
Johanna: And when women do it, it’s like …
Kathleen: … a hideous mistake.
Johanna: Right, it’s not considered an artistic innovation or a statement or an intentional thing.
Le Tigre maintains a goal of “technical innovation” for every project they do, but they define this standard on their own terms.

Much work by artists in this collection is likewise unfaithful to technoscientific priorities. Mira Calix, for example, is happy to use her new computer like a “big tape recorder” for compiling the eclectic mix of electronic, acoustic, and environmental sounds she incorporates into her compositions. She has little interest in the latest software developments and instead prefers to collect and record the sounds of unique wooden instruments. Annea Lockwood resists “fixing” recorded sounds with audio technologies, “cause I think they’re essentially not fixable. Except that of course through media, we think, we feel we can fix them. But sounds in their natural state . . . are not fixable, are they?” Lockwood’s recordings of rivers relay shifting movements of water and evoke transitory memories of place, defying the constraints of the recording medium on which the sounds are stored. Expressing a similar dissatisfaction with fixity, Laetitia Sonami strongly dislikes making recordings of her performances, in which she digitally transforms her voice through gestures of her hand: “The idea of commitment terrifies me—that you would have to commit a sound to a particular time . . . how do I know it should be there?” These artists cultivate technological sophistication in their work, but take out philosophical positions that run counter to using dominant technoscientific priorities of precision and control as ends in themselves.

The question of what it means “to make music with weapons of death,” while exaggerated in the Herbert Brün quote above, remains relevant given the pervasiveness of military origins and metaphors in electronic music technologies and practice. Indeed, electronic sounds might not be so compelling were it not for their associations with technologies of war—and, by extension, simulations of war in film and video games would not seem so realistic without their electronic soundtracks. Because the boundary between fiction and lived reality can be an auditory illusion that masks real struggles over life and death (see Haraway 1991, 149), work that challenges electronic music’s technoscientific priorities is all the more crucial.

Clara Rockmore’s performances on the theremin provide an alternative origin story for electronic music, one that may point toward better futures. Rockmore was the most widely recognized virtuoso of the theremin, a new electronic musical instrument in the 1920s. The theremin consists of two metal antennas that sense the position of the player’s hands; by moving each hand in proximity to the antennas, the player controls an oscillator’s frequency (pitch) and amplitude (volume). Rockmore’s performances, including a showcase of the instrument at Town Hall in New York in 1934, helped to establish electronic and experimental music as a viable art form in the public imagination (Chadabe 1997, 8–11; Martin 2003). Her Town Hall recital “left the audience spellbound that such artistic music floated on air from a source seemingly uncontrollable by human effort” (Darter and Armbruster 1984, quoted in Montague 1991, 21). The Washington Post noted that the theremin “plays as if by magic . . . toward it advances a young artist, Miss Clara Rockmore. Her right hand reaches toward, but stops short of the vertical rod. In so doing, she has penetrated the area of sound, and a beautiful tone results” (“Around the World” 1936). Rockmore was authoritative in performance; the Post’s commentary implies that she encroached on a phallic domain of virtuosity and technical mastery—reaching for the “vertical rod,” “penetrating” the area—but that these transgressions were justifiable by the novel and transportive qualities of the sound. A Times critic wrote: “Stunning in a crimson dress, she stood over the instrument and evoked sounds . . . By moving her hands and fingers in the air she achieved tonal agility comparable to that of a singer, and a living tone-quality” (“Novelty Feature” 1947, emphasis added). The spellbound audiences were presented with a performance of electronic music as embodied, affective engagement with technology, characterized by nuance and care.

Rockmore opened an “elsewhere” within electronic music discourses (de Lauretis 1987, 25): a space for mutual encounters between humans and technologies, between familiarity and otherness, that motivates wonder and a sense of possibility instead of rhetorics of combat and domination. In her work on the cultural politics of emotion, Sara Ahmed writes: “The surprise of wonder is crucial to how it moves bodies . . . wonder involves the radicalisation of our relation to the past, which is transformed into that which lives and breathes in the present” (2004, 180). Electronic music can move bodies by way of technologically mediated or generated sounds that provoke a sense of wonder. Laetitia Sonami describes the first time she heard a Putney VCS3 synthesizer as a student in the 1970s: “I was like, Wow, what is that? I was hearing sounds that were very crude, but still there was
This whole sense of magic, of electricity producing sounds in ways I could not fathom.” Sonami was motivated to develop an instrument that respects how technology is “a projection of our dreams, illusions, desires...” rather than one that reduces technology to an expression of “macho” control. So while the origin story of the Futurists infuses one’s orientation toward electronic music with violent noise, Rockmore’s mobilization of wonder—resonant in Sonami’s and others’ experiences decades later—suggests a different way to navigate the history. It calls for scrutiny of how electronic music can (or has failed to) express possibilities for more imaginative and ethical encounters with technology and difference now and in the future. It enacts a shift in emphasis from “weapons of death” to evocations of living.

Like noise, the function of silence as a privileged aesthetic category in electronic music discourses deserves critical attention. One of the most noteworthy works composed by John Cage, who is a central figure in electronic and experimental music histories, is 4’33”, the “silent piece.” This piece troubled notions of absolute silence and arguably helped to open Western music to a wider range of sounds (Chadabe 1997, 24–26). Cage’s body of work was innovative in the context of Eurological compositional traditions, but it has been taken up by some academics and journalists to define what constitutes “experimental” music in the broadest sense. This has worked to deny the influence of comparably innovative music practices by women and people of color (Lewis 1996; see also Oliveros 1984, 47–51). Thus, despite Cage’s own efforts to disrupt hegemonic silences, the centrality of his work in subsequent electronic and experimental music histories has often had the effect of silencing others.

Moreover, the process-oriented compositional strategies advanced by Cage that seek to erase or reduce the influence of a composer’s intent on the resulting music can be interpreted as a negation of identity; this may not be a universally desirable aesthetic for artists of historically marginalized groups who have suffered the effects of imposed forms of silencing and erasure. Indeed, feminists have often located empowerment within acts of breaking silences, by foregrounding aspects of identity. As Adrienne Rich said, “The impulse to create begins—often terribly and fearfully—in a tunnel of silence. Every real poem is the breaking of an existing silence, and the first question we might ask any poem is, What kind of voice is breaking silence, and what kind of silence is being broken?” (Rich 2001, 150; emphasis in original).

This is a useful question to put toward the politics of noise and silencing within electronic music histories. Just as recording engineers use the processing tool known as a noise gate to mute audible signals below a defined threshold of volume (like the hum of a guitar amp that would interfere with the relative purity of a guitar’s sound in the mix), arbitrary thresholds have often silenced women’s work in historical accounts. Some of the most important contributions to the study of electronic music and sound have positioned women as outside the scope of study (Kahn 1999, 13–14); defined DJ cultures as “distinctly masculine” with relative inattention to women’s participation in these cultures (Reynolds 1998, 274–75); or used observational statistics, such as that fewer than one in ten DJs is female, to explain women’s absence from the text (Fikentscher 2000, 124 n. 3). Another study that discusses women artists reached some unfortunately reductive conclusions—for example, that composer Suzanne Ciani was like “a woman in a man’s world who wanted to have it all” (Pinch and Trocco 2002, 170). All the above studies are formidable works of scholarship for the accounts that they provide, but their cumulative effect gives the impression that women are rarely present in DJ, electronic music, and sound art cultures; that they have not made significant contributions to these fields to the extent that men have; or that gender categories ultimately pose restrictions on professional survival.12

There are other rhetorical approaches that have marginalized women’s work in electronic music histories. The electroacoustic composer and scholar Andra McCartney has noted that Pauline Oliveros is often isolated as the only woman in textbooks that otherwise cover a variety of men’s work in detail. Recognition of Oliveros is crucial and admirable, but her isolation has at times positioned her work as representative of an essentialized, “feminine” aesthetic (McCartney 2006, 31). Pamela Z, in her interview here, discusses a similar problem in the context of compilation CDs that feature only one woman composer. Such tokenistic representation often means that women’s compositions are not analyzed in liner notes and album reviews with the level of rigor that men’s work receives. In their interview, Z and Maria Chavez also comment on the politics of stylistic comparisons, noting that journalists tend to compare their work reductively to other women artists (simply because they are women) or trace their musical aesthetics to well-known men (whose influence they would not
necessarily claim). This pattern enacts a double reinforcement of electronic music’s male lineage, gendering important stylistic developments as male, and grouping women together as other to this master narrative. Le Tigre likewise discusses how they would like to fit in with what is considered to be “real” electronic music, but formal technical and stylistic regimes seem to exclude their aesthetic. Pamela Z concludes that gendered and racialized representations in music media tend to reduce otherness to a palatable symbol: “like the woman on the mud flaps of the truck that’s the symbol of female form.”

Gender and Technology in Discourses of Sound Reproduction

Beneath the surface of these oversights and reductive representations, one obstacle to thinking women as producers of electronic music culture may be that they are always already entwined with a logic of reproduction—perpetuated in discourses of sound reproduction and materialized in related technologies—that ties women to age-old notions of passivity, receptivity, and maternity. Feminists have demonstrated that women provide the material foundations upon which cultural worlds are built, and male modes of thought operate by denying the debt they owe to the maternal space from which all subjects emerge (Irigaray 1993, 10–12; Grosz 1995, 121; Young 2005, 128). In founding texts of Western philosophy, reproduction was established as a process in which a mother contributed formless matter, to be given shape by the father: a mother was considered to be “a mere housing, receptacle, or nurse of being rather than a coproducer” (Grosz 1994, 5; see also Ahmed 2006, 71; Irigaray 1985; Spivak 1983).

In dominant discourses and practices of sound reproduction, technological forms and processes that are culturally coded as female or maternal have been systematically devalued and controlled. Histories of technology have routinely overlooked the active functions of “container technologies”—those technological forms associated with metaphors for female organs of storage and supply, and with types of labor traditionally done by women (Sofia 2000, 185). Magnetic tape is one such container technology, coded as a receptive matter to be given form and meaning by sound (Mumford 1966, 141; quoted in Sofia 2000). It is a kind of enabling background for electronic music, a passive (feminized) inscriptive surface employed to reproduce the workings of (male) culture.

Control of this medium of reproduction—and faithfulness to an “original” sound—has informed technical and aesthetic priorities in discourses of sound fidelity. These values, elaborated on in popular magazines beginning in the 1950s and implemented in common practice, positioned women as threats to the self-contained spaces of hi-fi that men sought to define in middle-class homes. Women embodied the very potential for loss of sound quality by threatening men’s requisite privacy to inhabit a controlled, domestic space in which they could cultivate an aesthetic appreciation of sound (Keightley 1996, 161). “Loss” was technically defined as the degradation in quality or clarity of recorded sound as it passes through the medium. In a similar way that women represented a threat to men’s control of hi-fi settings in the home, the (feminized) medium of sound reproduction constituted an interference with the purity of the signal. Hi-fi discourses advocated maximizing sound fidelity by guarding the signal against loss and making the medium as transparent as possible (Morton 2000, 13–47; Sterne 2003, 215–86). A classic, masculinist technological fantasy is at work in this example: male attempts to appropriate the maternal function with technology typically exhibit a conflicting, nostalgic investment in the figure of the mother, and an antagonism and desire to overcome it (Doane 1999, 23, 29). While the medium of sound reproduction is necessary for male subjects to certify their relationship and fidelity to an imagined origin, male claims to creation are asserted through masterful control and/or erasure of this medium.

In other discourses of audio technologies, male claims to creation have been bolstered by stories of male birth and a concealed dependence on laboring women’s bodies. In the mid-twentieth century, the distinctive, prized tone of Fender electric guitars relied on the laboring hands of Hispanic women workers, who meticulously wound pickups tighter than machines could (Smith 1995, 69; see also Rylan interview). Despite the crucial role of these workers, a biographer attributes the unique tone of the guitars to Leo Fender’s innovations as “an American original” inventor (Smith 1995, 283). With rhetoric that does similar work, stories of male birth have functioned throughout histories of technology to confer value upon inventions by men. Thomas Edison, Samuel Morse, and Alexander Graham Bell proudly referred to their inventions as their children, a strategy by which they claimed a full role in the creation of an artifact (Sterne 2003, 180–81). In fact, at the turn of the twentieth century, women were central to how the
uses of phonographs and records were defined in social contexts, often redirecting their intended designs (Gitelman 2006, 60–62).

Electronic music historiography continues to follow this pattern. *Modulations: Cinema for the Ear*, a feature-length documentary about the evolution of electronic music in the twentieth century, was released in 1998 and screened internationally. The film presents a historical narrative of electronic music that begins with the Futurists and John Cage and moves from Robert Moog, Kraftwerk, and the “pioneers” of Detroit techno to contemporary sonic experimentalists like Squarepusher and DJ Spooky. It celebrates “the nomadic drift of the posthuman techno sound” and identifies the emergence of a “universal electronic sound.” The credits list nearly eighty informants, all of whom are men. Patrilineality takes on an air of inevitability: a subtitle hails Karlheinz Stockhausen as “the grandfather of electronica”; the Detroit techno producers are described as “the successors” to the German pop-electronic group Kraftwerk; and in an interview about the film, the director, Iara Lee, positions John Cage over Brian Eno as “the father of ambient” (Lee 1998; Vaziri 1998).

In one of the only scenes where women appear in the film, which is framed before and after by men’s testimonials about the significance of the Roland TB-303 bass synthesizer in the history of electronic music, there is a fleeting glimpse of a Roland factory in Japan where women engage in repetitive labor assembling and testing keyboard synthesizers. The wide shot of many anonymous female laborers contrasts sharply with the close-up angles and star treatment of the individual male experts in the surrounding scenes. These scenes are accompanied by upbeat electronic dance music, characterized by repetitive musical structures and the seamless flow of a club DJ’s mix. The audio connects disparate economies of factory labor, studio production, and dance floor pleasure along the same continuum of a global—and supposedly universal—experience of electronic sound. Women are aligned with the reproduction of mass-produced goods, while men are positioned as cultural producers and arbiters of aesthetic innovation. Women laborers in the global economy are marshaled into a celebratory montage of cultural diversity; critical differences of gender, agency, and cultural power are lost in the mix. All the above examples suggest how historical narratives and technical discourses of electronic music have relied on metaphors of the feminine and maternal, as well as on women’s bodies more literally, to establish a male subjectivity in

sound and reproduce priorities of a male-defined culture. A patrilineal history of electronic music production is normative, and ideologies of sound reproduction circulate unmarked for a particular politics of gender.

To think against the grain of cultural ideologies that have aligned women with normative modes of heteronormative capitalist reproduction, and to construct electronic music histories differently, we can consider how sounds themselves are reproductive. Reproductive sounds are variously produced by bodies, technologies, environments, and their accompanying histories; reproduced in multiple reflections off reverberant surfaces or in recording media; producible within spaces of memory and storage that hold sounds for future playbacks; and productive, by generating multiple meanings in various contexts. To account for reproductive sounds in all their temporal depth is to challenge the patrilineal lines of descent and the universalizing male claims to creation that have thus far characterized dominant discourses in electronic music.

Alongside such moves to expand the scope of existing histories, there is still some consistency among surveys that suggest that women DJs and composers number one in ten or fewer (Fikentscher 2000, 124 n. 3; Bosma 2003, 9; McCartney and Waterman 2006; Katz 2006, 580–81). The question of who is counted in electronic music historiography is inevitably informed by the politics of social and professional networks, and by limited definitions and standards of achievement. What is important to take away is that the public face of electronic music—on CD releases, magazine covers, international festivals, scholarly publications—is typically male and does a certain kind of symbolic work. As Hanna Bosma points out, these forums “tell a tale of a world of creators and experts of electroacoustic music, and this probably influences the behaviour and thoughts of listeners, students, would-be composers and experts” (2003, 7–8). Another strategy is to emphasize the substance and diversity of work that has been accomplished by women, and this collection is a starting point for doing just that.

Throughout the history of electronic music, women have been influential as consumers and users of audio technologies; instrument builders and assemblers; directors, teachers, and students at academic electronic music studios; composers, instrumentalists, vocalists, and sound poets; producers, audio engineers, and software developers;
founders of record labels; events organizers and participants; and philosophers and critics.\textsuperscript{21} Rather than linger on observations that women may comprise only one in ten DJs or composers, we can re-frame the perspective by cueing Autumn Stanley’s revised history of technology (1983); with their myriad technological innovations and sounding practices, “women hold up two-thirds of the sky.”

Pink Noises and Feminist Waves

The interviews in this book demonstrate the relevance of feminist politics in “the cultural space of postfeminism” (McRobbie 2004, 6), which can be a formidable undertow to feminist movement. Portrayals of women in contemporary Western popular culture are post-feminist when “feminism is taken into account,” but only to be shown to be no longer necessary (8). Women in objectifying or exploitative frameworks claim to act out of personal choice, for their own enjoyment and individualist advancement. Postfeminist representations are common in mainstream accounts of electronic music, as many of the artists I interviewed attest. Jessica Rylan comments that “things were better for women in the 80s or 90s. It was certainly a lot less exploitative than it is now.” DJ Mutamassik critiques the images of “coquettes with drum machines” in hip-hop and music production magazines, whose skills as producers are overshadowed by attention to their voluptuous figures.\textsuperscript{22} A recent New York Times article epitomizes postfeminist contradictions, showcasing several women DJs who are embracing their role as arbiters of urban fashion now that their musical skills have been taken into account. As one woman says, “Just to be able to blend records is not enough anymore. You have to have a look” (La Ferla 2007). After working hard to gain public recognition for their technical proficiency, women face renewed pressure to cultivate their appearance. Several interviews in this collection address women’s negotiations of this atmosphere (see Passamonte and Maslen).\textsuperscript{25}

The artists express a range of opinions about gender in electronic music cultures. There are contradictory opinions among different women and within individuals as well. Some feel that gender has not played a memorable role in their artistic and professional experiences; others argue that cultural ideas about gender significantly inform expectations about musical and technical competence, dynamics of group improvisation, and even the timbral qualities of sound. Some feel that women have been marginalized through biased media representations and employment discrimination; some acknowledge that women can redirect these sexist stereotypes in their favor, capitalizing on them for career advancement. Some claim that women make music and communicate about technologies in ways that are essentially different from men, and that these differences should be validated. Other artists’ experiences point toward the myriad configurations of sexed bodies and gendered identities, indicating, for example, that masculine gender identifications should be integral to theories of women’s musical practices.

The artists adopt a range of strategies for addressing perceived gender issues in electronic music cultures. Some enthusiastically organize women and girls through community-oriented educational projects. Many of them attest that music production offers women and girls a way to gain confidence in their conceptual and technical abilities—skills that are also applicable in other areas of life. Others say that it is unfortunate, although necessary, that women continue to organize in this way. Some prefer not to discuss or emphasize gender issues because they consider this to detract from their progress in gaining recognition as an “artist” rather than a marginalized “woman artist.” Some claim not to think about gender issues at all unless others confront them with questions. Many artists harbor conflicting feelings within themselves and adopt various strategies in different contexts. For example, an artist’s attention to and interest in gender issues may change over her lifetime and may also shift situationally from the relative privacy of the home studio to the more public contexts of performances and media appearances.

The interviews here also explore the intersectionality of gender with other aspects of identity, including race, ethnicity, class, and sexual orientation. Some artists delineate particular gender stereotypes that emerge in culturally specific music traditions. Some describe the joint operations of reductive and exoticizing racial, ethnic, and gendered stereotypes, which generate multiple axes of discrimination in media and professional contexts. For some artists, early experiences of racial and/or class discrimination motivated them toward creative expression; these motivations may have facilitated their capacity to challenge traditionally gendered relationships to music technologies and performance. Some artists have been leaders in organizing queer communities and/or communities of color around electronic
dance music. In many cases, artists may be equally or more primarily invested in other aspects of identity than in a specific politics of gender; others aspire to a gender-neutral artistic identity. Many artists may not identify as feminist, because of personal or cultural reasons for being excluded from what they understand feminism to be. That said, the title Pink Noises encapsulates an energy of productive difference that has animated this project from its inception. There may well be important differences between how the artists situate their work and politics and how I frame the project here. It is my hope that the book will demonstrate how such differences—as well as various strategies and combinations of individual achievement and collective organization—can challenge and fortify feminist movement.

Perspectives of different generations of women are a crucial aspect of how this book documents and speaks to electronic music practice and contemporary culture. Typical "wave" models of feminism, which describe feminist movements as succeeding each other temporally in a linear historical progression, and tend to posit strictly defined generations of women as irrevocably at odds with each other's interests, are inadequate representations of women's complex identifications. Feminist waves might better be conceived as interacting sound waves. Sounds can be thought of as pressure and movements, doing cultural work. In the propagation of sound waves, the most audible impression may occur near the beginning of a sound's generation, but the wave reverberates through space indefinitely, continuing to intersect with and influence the trajectories of other sound waves as physical matter in ongoing interactions. Likewise, feminisms and the reactions to them do not go away but continue to reverberate in shared discursive spaces. How debates sound within and across these spaces depends upon one's orientation toward an argument, how one listens selectively, and how some claims are masked or augmented by their relative power or position.

Feminist debates are sounding practices, to borrow the term that Andra McCartney uses to describe the work of the composer Hildegard Westerkamp. Sounding evokes "the mariner's slow and careful navigation through unfamiliar waters," a practice by which one finds a way forward by listening closely to gain understanding (McCartney 2000). Pauline Oliveros's philosophy of Deep Listening constitutes another valuable approach. Deep Listening is a life practice of cultivating awareness of all sounds across all of spacetime, formulated through Oliveros's own feminist consciousness and techniques of meditation. It suggests that attending carefully to all sounds enables more mindful and constructive intersubjective experience (Oliveros 2005; Oliveros and Maus 1994). Feminist movement, then, is a continual negotiation of sounding and deep listening.

In the title of this project, pink serves as a marker of female difference, and noise as a site of disturbance and productive potential. Pink is the most pervasive hue in Western consumer culture for socializing girls toward acceptable modes of femininity. "Pink noise" is a term in physics and audio engineering referring to variations of white noise, or unstructured sound that contains every audible frequency. Pink noises have been filtered to emphasize low frequencies, resulting in equal distributions of energy per octave. Pink noise generators are commonly used in professional recording studios as test signals for sound systems; but while it plays a critical role in the operation of equipment, pink noise is typically kept out of the audible mix. Noise also has metaphorical connotations of discord and dissonance. In cybernetic theories, noise is a chaotic information source from which ordered patterns can be formed, as well as a disturbance that interferes with transmission of a signal. In this spirit, when I asked AGF whether she thinks the term "glitch" is appropriate for describing her music, she replied that "glitch" implies only a temporary disturbance, while: "I hope I am disturbing for a life time / :)." Drawing on these definitions, I introduce the following interviews as pink noises: sonic interventions from multiple sources, which destabilize dominant gendered discourses and work toward equal power distributions in the cultural arenas where sounds reverberate.

Notes


2. On the historical formation of "technology" as a seemingly neutral and universal term, through highly contested processes of gender, racial, and class differentiation, see Oldenziel 1999, 1-50. See also Wajcman 2004
for an overview of debates in feminist technology studies, and McClary 1991 on constructions of gender and sexuality in Western music.

3. Unless it is necessary to refer to a more specific creative practice, I will use the term "electronic music" to refer inclusively to electronically mediated sonic experimentation that takes many forms. It is worth noting, however, that some of the Pink Noises artists have turned away from the formal constraints or masculinism they associate with the term "music" and "composition," in favor of the term "sound." I understand feminism to mean various strategies and movements to end sexist oppression, contest unequal power relations across multiple axes of social difference, and rethink the norms of gendered subjectivity.


5. See Halberstam 2007; and Le Tigre's lyrics to "Hot Topic" (1999). Women's music in the 1970s tended to be associated with acoustic folk music, but events like the Michigan Womyn's Music Festival were the training ground for an early generation of women sound engineers as well (Sandstrom 2000; see also Matthews interview on music and the Greenham Common women's peace movement).

6. Pinknoises.com was reviewed in various music and general interest publications (see Neset 2001; "Separate and Equal" 2001; Warren 2003) and was nominated Best Music Web Site at the 2003 Webby Awards. See also Farrugia 2004 for discussion of how women have used online networks to make social and professional connections in electronic music cultures.

7. Other ethnographies would complement the perspectives in this volume. For example: women who use audio technologies nonprofessionally; women who work in industrial or commercial rather than artistic contexts; artists who are trans- or gender-queer-identified. On music in daily life, see Crafe et al. 1993. On gender in audio cultures, see Born 1995, 114–25; Gilbert and Pearson 1999, 83–109; Katz 2004, 31–36, and 2006; Keightley 1996; Perlmutter 2004; Schloss 2004, 57–58, 94; Straw 1997; Truss 2003. Pink Noises also addresses cultures of hearing. To theorize sound in ways that are inclusive of deaf cultures, feminists might build on themes of vibration and touch, as well as on relationships of signing and musicality (see Le Tigre interview).

8. Women may do this as a strategy of professional flexibility, and "this dialogic stance, rather than any one method or aesthetic position," can be read as a feminist aesthetics of sound (McCartney and Waterman 2006, 7).

9. Readers interested in a more chronological narrative of electronic and experimental music history, which includes information on some of the artists in Pink Noises, may consult Chadabe 1997.


11. Many other women in the Pink Noises interviews verbalize their early encounters with electronic music as a kind of epiphanic moment: "bang . . . this is what I've been looking for" (Matthews); "That's it!" (Radicke); "Whoa! . . . This is it" (Chavez).


13. In a relevant commentary on academic accounts of electronic dance music, Angela McRobbie summarizes how scholars have constructed it as "virtually a female-free zone": a domain in which recreational drug use, new technologies that dissolve human-machine boundaries, and a general sensibility of subcultural abandonment converge to offer "an escape from the whole bother of gender" (1999, 145–47). These accounts have tended to exhibit—and normalize—a lack of critical inquiry into how gender continues to inform the production and distribution of knowledge in these cultures.

14. Z's comment was allusive, but such iconic female figures appear throughout visual cultures of electronic music (Taylor 2001, 88–89; Sernior 2002). An event featuring Canadian women artists at an experimental music festival in 2004 displayed the infamous mud-flap woman on its promotional materials (Anna Fris, e-mail to author, April 18, 2008).

15. To be clear, in this section I am taking issue with how electronic music discourses produce gendered subjects and technological forms. The perpetuation or contestation of hegemonic cultural practices can be enacted by individual people of any gender.

16. Another example of an audio technology coded as female form is an early version of the phonograph, which required singers to direct their voice down the horn—a "curious gaping orifice"—when recording. This was apparently an unsettling experience for some men. The folklorist John Avery Lomax, who traveled across America recording music in the years 1908–10, reported: "I lost many singers because the cowboys didn't like the looks of it" (Brady 1999, 40).

17. For a more thorough analysis of the relationship between post-humanism, music technology, and Afro-diasporic cultural politics, see Weheliye 2002.

18. Such examples abound in electronic music cultures, and these proliferating lines of descent rather comically begin to tie themselves into knots. Kim Cascone (2000, 14) identifies Luigi Russolo as "the 'grandfather' of contemporary 'post-digital' music": the composer and engineer
Max Mathews (2008) has been called both "the father of computer music" and "the great-grandfather of techno"; DJ Frankie Knuckles, "the godfather of house" (Fikentscher 2000, 337).

19. For further discussion of how electronics manufacturing and toxic waste disproportionately affects the health and safety of women laborers and Third World communities, see the Rylan interview; Fuentes and Ehrenreich 1983; Grossman 1980; Pilar 2005.

20. For example, consumers of audio technologies typically are not considered to have invented the phonograph to the same extent as Thomas Edison; those on the dance floor are not recognized as producers of underground dance music culture to the extent that DJs are—and these roles are often gendered (Gitelman 2006, 63–64; Finn 2001).


Female Pressure (2008), an online database of women DJs, electronic music producers, and visual artists, currently lists 970 members from fifty-one countries. Women who are philosophers and critics, as well as composers, include Amacher (2004); Oram (1972); Oliveros (1984); Spiegel (2008); and Westerkamp (2000 and 2002).

23. These are variants of the machine-woman figure who has long served to market audio technologies; see Theberge 1997, 123–24, for a representative advertisement from 1989.


25. I am echoing bell hooks's use of the phrase "feminist movement," where the emphasized term movement encodes an active, progressive force that resists the exclusionary connotations of "a" or "the" feminist movement (see hooks 1984, 17–41). I also follow McCartney's and Waterman's observation that the attribution of agency to sounds (claiming that sounds do cultural work) offers a way to examine how the gender is "symbolically projected" (2006, 14–15; see also Diamond 2000, 107–8). For a pertinent analogy of feminist and radio waves, see Garrison 2005.

26. See Peril 2002. As Björk put it when discussing motivations behind the lyrics in her album Volta (Atlantic, 2007): "Part of it was having a little daughter and realizing what are we telling girls? [All] they want to do is be pretty and find their prince, and I'm like, what happened to feminism? ... There are actually other things than pink jars and losing a glass slipper" (Stosuy 2007).