Producing Producers: Women and Electronic/ Dance Music

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At the time of our meeting, Ashley lived in San Francisco's famous Haight-Ashbury district now overrun with chain stores such as The Gap and Ben and Jerry's. She lived in a large Victorian house with six roommates, which is fairly typical of twenty-something artists in this city. We walked down a long hallway, through the kitchen and down the stairs to the basement where all her belongings, including the technology she used to make electronic music, were stored in the single room she called home. Inspirational messages—some cut out of magazines and newspapers, others hand-written—adorned the walls, giving some order to the disheveled space. For the next few hours we lounged on a futon on the floor while Ashley related stories about what it was like to be a young woman with few connections to San Francisco's electronic/dance music scene while nevertheless trying to create music and have it heard. There was an experience from a live performance she had recently given that she wanted to talk about:

I was setting up my equipment and I disappeared for a minute. The band had taken my power strip and started plugging their stuff into it. The sound guy took it and gave it to the band, but I was going on before the band. [It] threw off my whole vibe. I'm a firm believer in making friends with the sound guy 'cause they make you or break you. Having the power strip stolen was a huge symbol of disrespect to me 'cause if I was a guy, and I hate saying this, I hate bringing in this if-I-was—a-guy statement, but it's true. If I was a guy setting up all my gear and I went to go to the bathroom and came back I doubt he would have stolen my power strip you know.\footnote{1}

With interviews as the primary source material, this article illustrates the processes by which commonplace discursive and material practices situate women outside of the production of electronic/dance music (E/DM) in San Francisco. Because women's efforts in E/DM production are in their infancy, this study is more concerned with the barriers women are experiencing than the strategies they are using to succeed. Nonetheless, our interviews with women who are in the early phases of producing E/DM suggested the importance of strategies including networking with male producers, and working to undo a lifetime of exposure to the gendered discourses that circulate in popular culture, social contexts, and educational environments. Our descriptions and commentary draw on a series of informal, open-ended

interviews with twenty-one female DJs and two producers working the large E/DM scene in San Francisco. Talks with the DJs began in the summer of 2003 and continued, on and off, through spring of 2006.

The principal author of this study, Farrugia, first became interested in researching women in E/DM after years of attending E/DM related events and buying E/DM. Farrugia and Swiss collaborated on this project because they were interested in bringing their differing backgrounds, ages, and disciplinary lenses to the materials and data that Farrugia had gathered. The essay is part of Farrugia's larger book-length project about women in E/DM that first began as a dissertation. The interviews referred to throughout the essay were recorded on a mini-disc and then transcribed. Although the women interviewed are mainly DJs, the essay focuses on producing because many of the DJs interviewed believe that the next step in trying to distinguish themselves from other DJs and gain status within E/DM culture is to find the desire, invest the time, and acquire the skills necessary to produce music.

Farrugia initially made contact with the DJs in 2003 via an Internet mailing list called Sisterdjs. In addition to the original twenty-one interviews, there were thirteen follow-up interviews in 2006. The ages of the women interviewed ranged from 18–40 at the time of the initial interviews; with the exception of two women who are Asian Americans, all of the DJs interviewed are white. The educational and class backgrounds of the DJs varied though more than half described themselves as middle-class. Some had attended college and received degrees in majors such as dance, media arts, graphic design, and English. Only one DJ had a college degree in music, but many of the women had played traditional (non-electronic) musical instruments in middle school or high school.

In drawing on these interviews, we are employing what Angela McRobbie calls "identity ethnography" (1992). That is, we are exploring how the narratives told by female DJs structure and are structured by personal meanings and experiences in the E/DM scene, and how they are bound up with larger cultural narratives and organizational practices. McRobbie uses the term in response to what she perceives as the privileging of the study of "discursive identities" at the expensive of "interactive research on groups and individuals who are more than just audiences for texts" (1992:730). In other words, an "identity ethnography" is useful because it assumes a theoretical position that considers women as producers of texts and culture; it begins from a position which assumes that identity is fluid and continually being remade and predicated on social groups. Such an approach provides a useful perspective from which to investigate the "lived experiences" of women in E/DM culture and, more specifically, about the social identity of female DJs and producers. This approach calls for an understanding of existing power dynamics in order to encourage change. The interviews encouraged women

to reflect on the role of gender and social power on their personal experiences, biases, and goals; a process McRobbie refers to as "self-interrogation." In our study, women were invited to share their stories about working in a particular music scene, E/DM in the Bay Area, the kind of local stories that have been largely ignored in popular and academic discussions about E/DM (Poschardt 1998; Reynolds 1999; Sicko 1999; Silcott 1999).

As E/DM developed in the 1980s and 1990s, producers in cities such as London, Berlin, Detroit, and Chicago were building on existing music genres—reggae, dance hall, disco, among others—to create new kinds of dance music. Besides experimenting with existing genres, musical innovators were creating new sounds by using bass and drum machines, often in unexpected ways. E/DM had historically been composed using synthesizers, drum machines, samplers, and additional analog gear.² Over the past decade, however, various digital software programs and hardware have been added to the mix.

In the early years, the primary venues for E/DM were clubs and raves. Daniel Martin argues that gender hierarchies are undermined in these spaces because E/DM "decenters the subject, refusing the pop star or the cultural icon as the glorified subject" (1999:92-93). Hesmondhalgh agrees that dance music audiences place an emphasis on genre rather than on performer (1998). Such analyses do little, however, to show how the E/DM scene subverts dominant ideologies with respect to gender norms within the popular music industry. The current situation of women in E/DM culture is similar to other popular music genres such as punk (Reddington 2003), hip-hop (Rose 1994; Guevara 1996; Pough 2004), and indie rock (Kruse, 2003; Leonard 2006). For example, Tricia Rose argues that women were not encouraged to contribute to the production of hip-hop culture in the Bronx in the 1970s and when they chose to do so the efforts of female breakdancers, graffiti artists, and rappers were often overlooked (1994). Similarly, Helen Reddington argues that female instrumentalists have been written out of the history of punk in England despite the presence of numerous female musicians in bands at the time of punk's formation (2007).

In Site and Sound: Understanding Independent Music Scenes, Holly Kruse writes at length about women's involvement at independent record labels and the problems female artists encounter at the distribution level (2003); Marion Leonard is concerned with how female rock performers negotiate the gendering of rock as masculine (2006); and other critics have addressed gender differences in terms of the consumption of popular music (Straw 1997; Thornton 1996). As Holly Kruse notes, "the gendered power relations of mainstream music production and consumption were to a large degree reproduced in indie music culture" (2003:138), a genre which critics associate with local or trans-local scenes or culture, with independent record

labels, and a diverse range of musical influences from punk to electronica (Kruse 1993; Kruse 2003; Leonard 2006). An understanding of the gender relations to which Kruse (2003), Leonard (2006), and others refer requires some knowledge of the politics of both the music industry and the space of the recording and production studio.

First, we will distinguish DJing from producing. Until fairly recently, the primary means of acquiring E/DM was to frequent specialty record stores that sold tracks predominantly as 12-inch singles on vinyl—that is, until the 2000s when more E/DM became available on CD and eventually as digital downloads. In order to be able to mix tracks—on vinyl, CD, or as mp3s—a DJ must have access to the necessary equipment. At minimum, a DJ setup consists of two turntables (or CD mixers), a mixer, headphones, amplifier, and speakers. To accommodate digital downloads, additional mp3 mixing software is also needed. When tracks are mixed they create the illusion of one continuous track that could potentially—and often does—go on for hours. The product of this practice is what is known as a "DJ set." A DJ's talent and economic worth are assessed in part on her ability to create continuity and maintain interest on the dance floor. But in addition to musical skills, DJs have to be successful public relations people because the number of gigs DIs receive is determined in part by their popularity and visibility in the E/DM scene.

Producers, on the other hand, create the tracks that are eventually pressed and sold to DJs. Producers spend most of their time working with keyboards, software, and other production gear, including samplers, drum machines, and synthesizers. The producer is usually afforded the luxury of not having to make constant public appearances because the tracks themselves, through distribution and circulation, act as public relations material in lieu of public appearances.

The Music Industry and Recording Studio Politics

Following the lead of Marion Leonard (2006), the term "music industry" is used here to refer to a broad range of institutions such as record companies and studios, and individuals including musicians, producers, and staff. Both major and independent record labels—whose interdependence is critical to the industry's modes of operation—are considered to be part of the business (Hull 2004; Negus 1992).

There has been much discussion in recent years concerning the impact of the recording industry's oligopolistic state and gate-keeping processes on the kinds of artists who secure record deals, the artistic process of making music, and the end goals of record companies who are increasingly concerned with their financial portfolio (Hull 2004; McLeod 2002; Negus

1998, 1999). In *Producing Pop*, Keith Negus suggests that "the boundary between the recording industry and potential artists is not so much a gate where aspiring stars must wait to be selected and admitted, but a web of relationships stretched across a shifting soundtrack of musical, verbal and visual information" (1992:46). Negus further argues that the broader cultural patterns within which a company is situated need to be considered in order to understand how these relationships work. Pertinent to this essay is his statement that "the 'intuitive' assumptions that staff make when acquiring the most suitable new artists and pieces of music are based on beliefs informed by a series of gender, class and racialized divisions" (1999:21).

Researchers who have examined the gendered divisions within the dance music industry thus far have noted that most DJs and producers are men (Fikentscher 2000; Reynolds 1999); few women are found in other powerful industry positions such as label owners or club managers. As early as 1988 Angela McRobbie noted that women in the music industry observed that higher management and key decision-making jobs were dominated by an "old boy network" or "boy's club." Writing on E/DM a few years later she notes:

it is still much easier for girls to develop skills in those fields which are less contested by men than it is in those already occupied by them. Selling clothes, stage-managing at concerts, handing out publicity leaflets, or simply looking the part, are spheres in which a female presence somehow seems natural (1994:145).

These observations echo the situation in the broader popular music industry (Negus 1992), including, surprisingly perhaps, the findings of indie rock scholars (Kruse 1993, 2003; Leonard 2006). In Kruse's words, "nothing about the social and economic organization of alternative music necessarily seeks to subvert the white, patriarchal structures of the mainstream music establishment" (1993:40). As a genre, indie rock embodies a do-it-yourself philosophy and the popular understanding is that it is more open to female participation than other forms of rock because it is not associated with an overtly masculinity agenda. Yet, Leonard's extensive study is the latest to argue that the genre is still "produced as a *gendered culture* that affects those who work within it" (2006:4; italics in original).

Leonard's research is based on a decade of participating in and observing the ways in which gendered notions of rock music and the culture of the music industry are maintained and reproduced (2006). A recent report on female DJs and sound engineers in the UK, for example, concluded that while 5–15 percent of working DJs are women, the figure is much smaller for female sound engineers who comprise only 2–5 percent of sound engineers,

mostly concentrated in live sound engineering (Smail 2005, cited in Leonard 2006:52). Research on the music industry and production studios offers some suggestions as to why this might be the case.

Historically, the studio environment has been constructed as a male space that exudes an "all lads together comraderie" generally not available to women whose place in the music industry came to be limited to the press department (Steward and Garrett 1984, cited in Negus 1992). Louise Meintjes's (1993) comprehensive ethnographic work on the politics of Zulu music production in the South African music industry in the early 1990s offers some insight into how and why the studio space is a tightly guarded territory. Meintjes describes the studio space as both magical and a fetish, consisting of complex interiors including "the internal workings of electronic machines, the components of sounds, and the interiority of the artist" which together enhance the aura of the studio (1993:98). At one point in her research a studio engineer contemplates excluding her from a recording session in order to preserve both the creative processes at work and the studio's aura so as not to demystify its symbolic value and the engineer's compositional processes. She notes that the "magician-like status of the studio's technicians increases concomitantly with the expansion of aura of the studio and its technology" (101). In other words, from a producer's perspective, allowing outsiders access to this male-centered, technology space would demystify the production process and potentially lower the symbolic and/or use value of the studio space.

Social boundaries rooted in technical knowledge and language also exacerbate studio labor divisions (Porcello 1991). Although Porcello's study is primarily concerned with the shift from formal student/apprentice to professional sound engineer, his analysis of conversations between producers and students in sound recording studios suggests additional factors that can discourage women from engaging in the studio space or using studio or electronic gear to make their own music. In this study, Porcello analyzes conversations between producers and students who are part of a sound-recording technology program at a public Texas university. He argues that the success of these programs is determined by how well students can reproduce the complex technical discourse—full of metaphors, industry terminology, and abbreviations—that is essential to a sound engineer's ability to build a professional identity that exhibits competence. Given that most women do not show an interest in E/DM beyond the dance floor until they are in their 20s and 30s, the college program route is not an option for most of them.

Porcello also points out that in order to gain admission to the program, applicants must be accepted as regular students in music school, a process that requires performance auditions and some knowledge of music theory.

Academia has historically not been a significant route into E/DM production. Similar to hip-hop artists, many E/DM DJs and producers have had little or no formal musical training. Consequently, "tricks of the trade" and the associated technical language are especially difficult for women to access given the informal environments in which these things are shared in E/DM culture.

Gender and Power in the E/DM Scene

Like other music scenes, E/DM in the Bay Area is constituted through practices and relationships created within social and geographic spaces. The record shop is a case in point. As E/DM culture grew in the 1990s in the US, specialty record shops quickly became male-dominated spaces where knowledge was shared and social networks developed between collectors, producers, and DJs. In turn, the first female E/DM DJ collective was established in 1996. Calling themselves Sister SF because of their geographical base in San Francisco, the group is the oldest ongoing female DJ collective in the US.

Over the years the collective has maintained a strong public presence both in the Bay Area and on the Web. Sister SF successfully creates and circulates resources and encouraging stories about female DJs via their website, www.sistersf.com. The site receives thousands of hits per month.³ Female DJs in San Francisco are now commonplace because of the visibility that collectives such as Sister SF bring to the field, but the women Farrugia interviewed noted that female DJs continue to be viewed as exceptions elsewhere. And even within the liberal atmosphere of San Francisco, they noted, men continue to comprise the majority of record label owners, club managers, and artist booking agents, perpetuating a "boy's club" mentality. Consequently, it is difficult for women to obtain DJ gigs without putting extra time and energy into self-promotion.

Forest Green, a San Francisco DJ best known for having mixed the soundtrack to Groove, a big-budget film about the local rave scene (Sony, 2000), explains how the need to self-promote—even after her success with Groove—affects her interest in producing:

My job as a DJ is 80 percent being out, talking to people, promoting events. 20 percent of it or less is buying records and practicing. The rest is all promotion, being in people's face. Producing, most of the producers I know, I don't see them out that much. Unless they're playing, they're probably out producing because it takes a lot of time and that's a little scary for me. You stop going out and all of a sudden people forget about you.⁴

Who are the "people" Green refers to above? While DJs, including Green, sometimes play music festivals that are open to people of all ages, more often the women interviewed perform at bars and club events that are open to adults twenty-one and over. The audiences at such events are mostly white Bay Area residents in their 20s and 30s. Green fears that instead of complementing her work as a DJ, producing music will hinder her DJ career because more time in the studio means having less time communicating with people and performing in public. This is despite the fact that the most popular and economically stable artists are generally those who both DJ and produce.

Indeed a number of the DJs re-interviewed in 2006, including Green, were beginning to learn how to produce music. In addition to economic concerns, female DJs were also motivated to explore producing because of what Annie Shaw (DJ XJS) and others called a "frustrating lack" of tracks produced by women. These women were aware that in the sometimes disorganized and uncertain economic world of independent labels, it is not unusual for producers to not get paid or to get paid poorly for their production efforts. But their actions were motivated in part by goodwill, wanting to get women on the E/DM map as producers.

As our earlier outline of music industry politics suggests, labels can determine whether or not an artist is signed. Since the days of disco, major record labels have been forming specialist dance divisions in an effort to attract musicians and staff with the credibility and subcultural knowledge so valued in dance music culture. Although the relations between the majors and independents vary from one label to the next, it is significant that much dance music is released on labels with ties to the majors that honor the traditional, socially constructed gender roles discussed above. In most cases, label managers, owners, executives, and A&R representatives are men, while women are employed as public relations personnel. Tyler Stone, one of the two female producers interviewed, claims that it is extremely difficult to get independent labels to press her tracks. While she had some success with this process in the early 1990s, her experience was that as E/DM's popularity grew it became more conservative with white, heterosexual men becoming its key players. This was very different from its early days in which African American and Latino men, a larger number of whom were homosexual, dominated the scene (Fikentscher 2000). As the cultural environment changed and the scene's structure came to more closely resemble that of the mainstream popular music industry, it became even less likely to find women producers. As Tyler Stone notes:

I was it [women producers] for at least a couple years and it was a different scene back then. Way less hetero, way more gay, much easier to be

a woman. It got harder and harder. So I went from going to [the World Music Conference] and being able to go, "hey girl" and do that whole thing to being asked "whose girlfriend are you?"⁵

Typically women have DJ'd as much as possible, worked to get their names on party fliers, made demo CDs, and learned how to build websites to further their visibility. As we mentioned in the introduction, a number of women who have done all of these things believe that the next step in distinguishing themselves from other DJs and in turn advancing their careers is to produce music. It is these women, including DJ Amber, who often referred to the move from DJ to producer as a "natural" next step. In 2003, DJ Amber was a full-time DJ who expressed an interest in learning how to produce tracks. Most DJs at the time of the 2003 interviews were experiencing difficulties in what was then the economically depressed dot-com bust era. Yet, at the same time, one music-related booking agency was attempting to specialize in a roster of women clientele. DJ Amber was one of the women approached by the agency:

I was like, oh I get it. He's like I can't market you if you don't have any tracks. I was like I'll have a track for you. He was like push, push, push. You get marketed around just having a track, then if it's a hit, people are buying it. Then they'll book you to come play. It's just something you have to do. [I] think I'll love it once I get over the technical hurdle.⁶

Amber was interviewed again in 2006, this time at a DJ school where she was an instructor. She explained that she had made little progress with producing. In fact, she had recently reevaluated her priorities and decided to return to full-time, non-DJ related employment for the first time in four years. Her reasons for doing so included not wanting to travel extensively for DJ gigs and having less desire to deal with "shady people" in the industry, including event promoters who try to "get away with" paying DJs less than the agreed upon amount.

Amber's case is fairly representative: her interest in teaching DJ classes but not producing music puts her in the category of many women who work in jobs that involve helping others or require strong interpersonal skills, such as the public relations departments that have come to be women's places in the music industry (Kruse 2003; Negus 1992). The gendered stratification that women experience in work-related settings impacts their confidence and desire to work with technology in other settings as well. The perpetuation of discourses and practices—both within and beyond the music industry—that situate women as outside the technology sphere produces a culture that has few opportunities for women to participate in technology-centered spaces. In turn, women have little confidence in their abilities to engage in

the production of E/DM. Of course feminist and cultural studies scholars alike agree that technology is not neutral or inherently masculine; rather, uses of technology are shaped by convention and social practices as well as the circulation of popular narratives and economic relations (Oldenziel 1999; Wajcman 2004).

Moreover, the limited access women have to vital social networks that consist of male DJs, label owners, and producers, impinges upon their ability to access E/DM production "gear" because individuals starting out often need the help of friends and access to their bedroom studios. E/DM production studios generally consist of some combination of hardware such as synthesizers, drum machines, samplers, and monitors, as well as high-end digital audio workstations and MIDI sequencers. In theory, the process of creating E/DM has been democratized by home computers and music production software. Before the explosion of PCs, producing E/DM required the purchase of analog equipment, so building a home studio could be extremely costly. Since the 1990s however, anyone with a personal computer and some software can now become an E/DM producer—or so the myth goes.

Purchasing production gear and DJ equipment, however, can still be costly and is a potentially risky investment even in the digital age. A bedroom DJ setup is likely to cost upwards of \$1000, and a production studio's equipment needs can be much greater and more costly. In addition to the initial equipment costs, DJs need to constantly purchase fresh, original tracks in order to acquire bookings at clubs and E/DM events. Few of the women interviewed regularly secured paid gigs and of those who did, not many of them were able to live off of those earnings. Most women invest their time and money in their DJ practices because of their love of the art of DJing and not because it clearly leads to financial gain. On average, the women interviewed spent around \$100–150 a month on music, although it is not unusual for individuals to spend much more. During her first six months of DJing, Barbara Mayers [DJ Barbarella] spent \$300 a week on records. She now owns around \$20,000 worth of vinyl. As a teen trying to buy records, Ilana Pearlman [DJ Blondie] babysat to save money to buy records:

I always thought to myself: two hours of babysitting is one record. I started thinking of everything in my life in terms of how much a record would cost. Oh I shouldn't buy that shirt—that's three records. It was really funny. It gets really expensive, \$10 a record ends up being \$12 a record with tax, times all my records. That ends up being a lot of money.⁹

For many women like Ilana, the process of saving up money to purchase records is a difficult process. The fact that women in most occupations,

music- related or otherwise, continue to earn unequal pay compared to men, even for the same work, makes the situation worse. And the money spent on DJ tools like records often leaves little leftover for production tools.

Talking about why she has not yet made a serious effort to produce music, Forest Green highlighted knowledge acquisition and financial investment.

It's the long hard road yet one that I've chosen, but I'm hoping that my computer background in video production will help me with music production. I have lots of friends who are producers and have their own labels. It's not like starting from ground zero. I want to build my own studio and have it be mine like all the other women producers that I know who have their own studios and I respect that. A whole other level of money—spending to get all your gear and then there's a whole other level of learning all about gear and technology.¹⁰

The DJs interviewed were comfortable using not only DJ technologies such as turntables and mixers, but also computer technology. Still, many of the women had little confidence in their abilities to engage in the production process. As early as 1985, Cynthia Cockburn observed that women "may push the buttons but they may not meddle with the works" (12). More than two decades later this still seems to be the case. Many women spoke at length about using their interpersonal skills to develop favorable reputations in the scene, but few felt comfortable pursuing interests that required them to bracket familiar skills and learn new technical skills. DJ Amber:

I was not the person at my house pulling apart transistor radios and building little circuit boards—that was my brother and I didn't even ask him what he was doing. I didn't know and I didn't care. My brother's work made funny noises. I thought that was cool and that was about it. Women are less prone to be that sort of tinkering minded; they're not the ones who program the clocks on the VCR. I hate to generalize but it's the truth. 11

But let's compare DJ Amber's comments to Ashley Adams's [Seeress]. Adams was the only woman interviewed who was producing E/DM but was not a DJ. Her situation is rare in San Francisco for a number of reasons, namely that the strong presence of female DJs in the city generally encourages women to pursue DJing before they adopt an interest in producing and second, the proliferation of dance clubs in the city is an incentive for women with a keen interest in E/DM to pursue DJing as an extra income source. Atypically, Adams traces her interest in producing to her childhood, long before she was introduced to E/DM:

My mom and dad thought I was going to be an engineer because when I was little I was taking apart my radios and stuff. My producing all started with Liz [Wheeler] handing me a drum machine a year ago. It was almost intuitive. I figured it out on my own. I was making songs on it on my own. Now that I have all these crazy robots [analog gear] and I have to have a pep talk with myself before I sit down and I'm like, you're going to shift into your logical thinking brain and you're not going to be intimidated by this stuff because someone on this planet somewhere programmed it and made it. You know this is not out of your realm of accessibility. 12

Ashley's relationship to technology is unique among those interviewed. Still, in 2006 Adams reported that she still undergoes a constant mental struggle with herself over her abilities. Said another way, her confidence and previous experience were not enough to bring her to producing. There was a necessary third element—a social intervention—that set her on her path. It was making contact with a female DJ whose boyfriend owned a drum machine that finally set Ashley on the course to making music. Still, as of 2006, she had yet to have any of her tracks accepted and distributed by a label.

Most women said that learning how to DJ was a solitary process. Any training or instruction women received rarely went beyond a brief "how to" session, usually from a male friend. Of course even with little experience, most people have some knowledge of how to put a record on a turntable; they have a point of reference from everyday life from which to begin learning how to "play" with records, some direction from which to learn how to scratch, tweak, and blend beats.

Compared to DJing, producing music with software or with synthesizers and samplers is a much less intuitive process; music production gear offers few cues on sight as to how to make it work. Learning how to produce usually involves learning some sort of "techno speak" similar to learning a new language, and many women perceive the learning curve to be very steep indeed. DJ Amber:

I can write plenty of songs in my head, and I do all the time but there's this logic gap where the software and intricacies of getting audio quality just right and balanced and all this garbage. It's a huge hurdle, which has nothing to do with why I got into DJing, which is why I think you find so many DJs being non-producers. The one doesn't meld well with the other. You have to kinda walk yourself over there, roll your eyes, alright I gotta do it but then I think: in fact I know I'll grow to love it but for right now, this stupid software is getting in my way of being creative.¹³

Many of the women knew that the best way to learn how to produce is to find a more experienced producer to work with, but reported on the difficulty

of finding someone who was willing to share his/her knowledge and with whom they felt comfortable.

In many music scenes—as Simon Frith (1981), Sarah Thornton (1996), and others have found in their own research—people gain access to "insider" knowledge and become "in the know" by networking, hanging out in record stores, clubs, cyberspace, and studios. But as we mention above, the social spaces and conversations that may encourage women to produce are often off limits to them. Writing about her experiences as a sound engineer, for instance, Boden Sandstrom (2000) notes that many men are unwilling to share the powerful position of controlling sound, limiting opportunities for women to receive hands on training.

Subjects' gendered relationship to rock and pop music culture based on the practices and relations of pop music as it is carried out in everyday talk is another reason that helps explain women's continued marginality in music production (Kruse 2003). Research that examines teens' discussions about pop music shows that adolescent boys tend to talk about instruments and equipment whereas girls of the same age tend to talk more about lyrics, whether a song is danceable, and the stars themselves (Steward and Garratt 1984, cited in Kruse 2003).

The assumption that women are not technically adept is reinforced in popular culture in other ways as well. Music magazines, not only those that focus on E/DM or production gear, are filed under the Men's Interest sections at Barnes & Nobles, and advertisements in E/DM magazines such as Remix and XLR8R usually feature men in ads for drum machines and music composition software. Female DJs are more often featured superficially in television and magazine advertisements to sell products with mass appeal such as Nivea skin cream, Twix candy bars, and Dell computers, as opposed to music production or DJ technology. Generally, the DJ's name is absent from these ads, too, which leaves the audience wondering whether or not the women in the ads are DJs or simply models hired to make a product look hip. For instance, a recent Dell ad features a college-aged woman with red and blonde streaked hair in jeans, a black and silver t-shirt, and a vest accessorized with a Puma bracelet, baseball cap and sunglasses. The Dell laptop computer in front of her sits on an unfinished plank of wood suspended by two stacks of plastic crates mimicking a typical DJ turntable setup -- but the only technology visible in the ad is the laptop, speakers, and a pair of headphones the model is holding up to her right ear as she imitates a DJ's posture when mixing records. Nowhere is E/DM mentioned; it is clearly a generic ad aimed at college students.

Cockburn, Rose, and Baker believe that the confidence of women grows when men are removed from the scene (Cockburn 1985; Rose 1994; Baker

2008). In other words, women find the presence of other women more motivating than the presence of men. Ilana Pearlman [DJ Blondie] said that the biggest reason why she was reluctant to learn about music production for years was because of the overwhelmingly male presence in the production scene. DJ Blondie explains:

There's maybe two women producers out of the thousands of psy-[chedelic] trance producers. No one ever wants to show you how to do it; they just expect you to know. When you go over to a guy's house and they tell you they're going to teach you, they DJ the whole time, where a girl would be like yeah cool now let me hear you try it. Guys always table hog¹⁴ because they want to show off. So with the whole technology thing you're intimidated because everyone else is trying to show off, especially guys who are dominant, who are very aggressive, [and] want to be in the spotlight.¹⁵

Unlike Sister SF and the more recent San Francisco female DJ collective Femme DJs, no comparable collective exists for promoting the efforts of female E/DM producers and few women are part of existing male-centered collectives. The Thinkbox collective is a case in point. Based in Windsor, Ontario, the group describes itself on its website as being "centered on the exploration and innovative use of material and technique to produce works that develop complex questions to simplified answers about art, technology, and the nature of multi-media creation." Typical of most music/technology collectives, no women are included on Thinkbox's "collective members" page.

Cockburn's (1985) observation that women continue to be passive users much more than they are active producers of technology related projects and artifacts may help explain why there are few women in multi-media or E/DM production collectives like Thinkbox. It also sheds light on how it is that female-centered collectives like the Sister SF DJ collective have resulted in the inclusion of more female DJs not only in San Francisco but also in places like Portland, Oregon, New York City, and Denver as additional chapters of Sister develop in these locales. Research on role modeling indicates that the presence of same sex role models can greatly influence the type of activities and interests in which individuals choose to invest as they get older. For instance, as role models for girls, female technology teachers "can more directly change attitudes for both girls and boys about careers for females in technological fields" (Fiore 1999). A similar collective for women involved in the production side of E/DM might be equally beneficial to increasing the number of women who want to produce.

Still, a few women who have already proven themselves as DJs are making progress with producing. Denise Rees [DJ Denise], a prominent,

full-time Bay Area DJ, considers producing a step that will further her already successful career in the music industry, helping her expand both her fan base and income. Because of her DJ success, she has access to local male producers. As she tells it:

It's definitely a matter of if you know someone. Same thing with wanting to be a DJ, but it seems like there are so many DJs out there that it's probably a lot easier to find someone with turntables than to find someone with a studio and actual gear. So I think that might have a little influence on why not as many girls are making beats, but I mean there's no reason why. I'm really itching to do it just because there's stuff that I want to hear that I haven't heard yet and it's in my head and I want to get it out there, but I know that it's a lot harder to make something. What you're thinking is very hard to transcribe onto the gear that you have.¹⁷

Like other women, DJ Denise emphasizes the difficulty and the skill level involved in making a track, the necessary access to gear, and the importance of having a mentor; yet, she also says that there is no reason why women cannot make music. The clear contradictions in her comments are not easy to resolve. Since the 1980s a postfeminist climate has increasingly dominated the popular culture and media landscape (McRobbie 2004). This postfeminist sensibility superficially positions girls and women as in control of their own destinies but in reality it does little to change gendered power dynamics at play in the wider culture. Denise's statement at first acts as evidence of the ways in which postfeminist discourses conceal the rigid gender order still in play. More importantly though, her contradictory position as a woman who struggles against this order's norms while simultaneously espousing the postfeminist proviso of women's independence from such norms demonstrates the way this postfeminist philosophy actually limits the independence it suggests women have. If there really is no reason why women cannot make music, then those who do not—or cannot—are reduced to independant (failed) agents, not part of a broader system of gendered oppression.

Besides not having access to supportive social networks, another problem for many women relates to the timing in their lives—that is, the age when they begin to take an interest in DJing or producing. With one exception, the women interviewed were in their 20s and 30s. Having already reached adulthood, many have family and work responsibilities. The current situation of women in E/DM is similar to the situation of women in rock bands. In her study of skill acquisition in rock bands, Mary Ann Clawson (1999) found that 87.5 percent of the men (21 of 24) compared to 26 percent of the women in her study joined their first bands before high school graduation. Almost half (47 percent) of the women in her study did not join bands until they were past college age—at which point they had significant catching

up to do. Equally important is the fact that individuals tend to have less free time once they move into their 20s and 30s. And compared to men, few women are "superstar DJs" which means that most have to work other jobs in addition to being DJs, thus having less time to devote to their E/DM interests. As Katie Pollard [DJ KT] told Farrugia:

Of the DJs I know, the women tend to have more stuff going on in their lives besides just being a DJ, like being a student, having a demanding job, or having a family. A lot of guys do too but there are also a bunch of guys I know, and these are the ones who are writing music, who don't have much else to do besides music all the time. They either have a job that's not really demanding or they don't have a job at all. I don't know why there are more guys in that category and more of the women I know are out doing other stuff but that seems to be the case. 18

Similar to Katie, who is a statistician, several of the women interviewed had day jobs that required them to work with computers and many of them expressed a lack of desire to spend their evenings and weekends learning how to use music-making software. As mentioned earlier, most of the women interviewed related their love of DJing to its social aspects such as meeting new people and interacting with a crowd. DJ Samira, a web designer, explains:

For me, it's like the oral tradition where you have that immediate call and response. A lot of the way your story is told is being dictated by your audience. The nature of it is changing as a result of the audience that is immediately there, and I really like that about spinning. It's pretty much the only thing I do in my life that I do straight from the gut. I never plan my sets no matter how much I try. My CDs are very different from my live sets. I like to collaborate with people. ¹⁹

Additionally, female DJs often claim that they are more social as people than their male counterparts. Unlike male DJs, whom our interviewees claim often have a cool and static presence behind the turntables, female DJs interact more with their audiences—via visual cues like eye contact and dancing to the beat of the music.

Strategies for Change

Although the constraints women face in getting started with music production are not unique to E/DM, they are exacerbated in San Francisco's E/DM scene because the music relies so heavily on non-traditional instruments—samplers, drum machines, mixers, digital audio workstations and so on—to which girls and women are rarely introduced in school or via their social

networks. The hopeful news is that several studies, including a study regarding the computer attitudes of white middle-class suburban eleven- and twelve-year olds on the south coast of England, (North and Noyles 2002) found that girls (far more than boys) did not believe that computer use was unchangeably linked to factors such as gender and mathematics background. The results of a US-based yearlong study concerned with the meanings that 250 middle school students assign to computers are also significant here as music production is increasingly happening via computers and specialty software. While neither boys nor girls mentioned using the computer for music production, girls seemed to be more open-minded regarding its capabilities. Girls defined computers as "multi-use tools" and often described the computer by saying "it's whatever you want it to be" compared to boys who had a more narrow view of the technology. Boys identified computers as machines or toys that let you do things quicker and easier (Christie 2008).

This gradual demystification of computers and the shift in the way girls and women think about computer technology that has been ongoing for years now is leading to more women expressing interest in the field of E/DM production, especially in San Francisco where so many women, including several in this study, work with computers on a daily basis. However, additional changes need to take place both inside and outside the classroom for the curiosity many women in this study expressed about making music to translate into women not only producing E/DM but having their material reach the public. More women moving into powerful positions at the level of club management and at record labels is another change that could lead to more recognition for female E/DM producers.

The music classroom is yet another space that needs to be considered. In an article that examines where classroom music education fits into the lives of teenagers, Sloboda notes that classroom music instruction as currently conceptualized and organized is an inappropriate vehicle for mass music education in the twenty-first century (2001). Schools seriously lag behind what is available in out-of-school environments when it comes to technological resources and "know how." One recent study (Cooper 2007) found that even when music-making technology is introduced into the classroom, old social patterns are reproduced. A six-week project that involved teaching ninth-grade students to make music using the software program Dance eJay found that while both boys and girls expressed confidence in using the program, boys were more emphatic in their confidence while girls expressed less interest in using the technology. In turn, a far greater number of boys than girls attended the optional Friday lunch hour "music technology club," creating yet another male-dominated electronic music learning space.

The production efforts of women like DJ Denise and Ashley Adams [Seeress] in the San Francisco Bay Area speak to changes that are underway even if they are not yet highly visible at record stores or live events. Samesex role modeling, collaborative processes, and women-centered collectives like Sister SF continue to encourage women in San Francisco to DJ and perhaps will eventually do the same in regards to producing. Conceivably such modeling can help reduce the negative impact that factors like the social construction of music technologies as masculine, the male-dominated music industry and production studios, familial responsibilities, expendable income, and leisure time have on women's abilities to access production technologies and spaces.

Cooper's study also found that in the classroom, 87 percent of girls were partial to composing music in groups compared to only 64 percent of boys (2007). Thus, like Rose's call to action for women in hip-hop (1994), and Leonard's encouragement of female involvement in indie rock (2006), we suggest that female-centered music-making environments and production collectives could similarly provide the social and cultural access to technology needed to increase the activity of female E/DM production in San Francisco and elsewhere. As for electronic music and music education, given the amount of time spent in school, it's clear that schools are a central place where girls internalize music knowledge, narratives, and structures. How their experiences there contribute to their engagement with music technologies once they leave high school has yet to be studied in any significant way. But considering the amount of recent work that has advanced popular music as an important pedagogical subject, we may soon see electronic/dance music and its deep roots in education enter the social imaginary.

Notes

- 1. Ashley Adams, personal interview, June 2006.
- 2. The term "gear" is used in E/DM to refer to the technology needed to DJ, compose music, and perform live music sets. Examples of the technology include a range of analog gear such as turntables, mixers, synthesizers, drum machines, and samplers. Since the 1990s, personal computers and specialty software have been added to the list of gear needed to produce E/DM.
- 3. Annie Shaw [site webmaster], personal interview, May 2006.
- 4. Forest Green, personal interview, June 2003.
- 5. Tyler Stone, personal interview, June 2006.
- 6. Amber Nixon, personal interview, June 2003.
- 7. For instance, according to Wilson (2003) only 19 percent of computer science students at the college level are female.

- 8. Tweakheadz lab, self advertised as "the best site for learning music production" (tweakheadz.com), advertises components for a "low cost" studio set up at over \$1100 in addition to the cost of a personal computer. The "mac (computer) dream studio" components total \$12,000.
- 9. Ilana Pearlman, personal interview, June 2003.
- 10. Amber Nixon, personal interview, June 2003.
- 11. Amber Nixon, personal interview, June 2003.
- 12. Ashley Adams, personal interview, June 2003.
- 13. DJ Amber, personal interview, June 2003.
- 14. "Table hog" refers to someone who dominates the turntables and the amount of time DJing.
- 15. Ilana Pearlman, personal interview, June 2003.
- 16. For more information visit http://www.thinkbox.ca/mandate.
- 17. Denise Rees, personal interview, May 2006.
- 18. Katie Pollard, personal interview, July 2003.
- 19. Samira, personal interview, May 2006.

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