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Microwave DJs

A Revisit of Farrugia and Swiss's "Tracking the DJs" (JPMS, 17.1)

Back in 2006, I attended a party in San Francisco that was billed as a "Tribute 2 the Mobiles." The event was an homage to the Bay Area mobile disc jockey crews from the 1980s, and great care was taken to replicate the sounds and sights of the era, including an array of era-appropriate speakers, lighting rigs, even a smoke machine. There was one very modern inclusion, however: in the 1980s, all the invited DJs would have been lugging crates of vinyl records, but on this night, most of them just brought a small, portable hard drive instead. Using the popular DV (digital vinyl) product, Serato Scratch Live—which most simply refer to as "Serato"—they were able to access thousands of songs from a laptop yet still play them using special vinyl records and normal turntables. As I joked at the time: carrying all that music in their pocket was a way for these veteran mobile DJs to become even more mobile.

Today, digital DJ tools are so commonplace that using "digital" as a modifier feels redundant. Yet, as ubiquitous as these technologies have become, they are still contemporary enough that distinctions between older (analog) and newer (digital) forms of DJing practice continue to carry weight within myriad DJ communities. These distinctions—and their attendant tensions—are precisely what Rebekah Farrugia and Thomas Swiss set out to explore when they published "Tracking the DJs: Vinyl Records, Work, and the Debate over New Technologies" in 2005 (*JPMS, 17.1*), an exemplary example of research into how emergent digital DJ tools were being received and debated over among practitioners.[1]

To someone on the dance floor, these debates might not seem particularly significant—besides the telltale glow of a laptop screen, it's difficult to see if a DJ is spinning analog or digital. But as Farrugia and Swiss, among others, have explored, the method by which "DJs DJ" is anything but immaterial to them, reflecting unofficial values of work, labor and skill. Especially at the time of its publication, "Tracking the DJs" may have been the first major scholarly article to examine the impact of changing digital technology on DJ practices and values. Prior articles focused more on the relationship between

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1. Rebekah Farrugia, and Thomas Swiss, "Tracking the DJs: Vinyl Records, Work, and the Debate over New Technologies," *Journal of Popular Music Studies*, vol. 17, no. 1: 30–44.

technology and DJ technique—how scratch DJs/turntablists make use of various controls on turntables and mixers for example—but no one had yet examined how an emerging shift away from analog technology would play into self-conceptions of DJ work itself. In this sense, Farrugia and Swiss were adding onto a tradition within *JPMS* of exploring the nature of technology and DJ practices, dating back to previous articles that include Daniel Hadley's "'Ride the Rhythm:' Two Approaches to DJ Practice" (*JPMS,* 5.1) and Kai Fikentscher's "'Supremely clubbed, devastatingly dubbed': Some observations on the nature of mixes of 12-inch dance singles" (*JPMS,* 4.1). The importance of "Tracking the DJs," however, has to do with the timing, given that the primary technology it centered on. Vinyl emulation was still in the early stages of diffusing throughout DJ communities, but Farrugia and Swiss were prescient in predicting the coming paradigm shift these tools would instigate.

Vinyl emulation is more commonly referred to by the seemingly oxymoronic term "digital vinyl." The most popular, current DV technology allows DJs to use "control" records, which are conventional pieces of vinyl encoded with a time code signal. That, in combination with proprietary software and hardware, helps control the play of music files stored on a laptop.[2] In essence, with DVS, the tactile experience of DJing is unchanged; it feels like one is DJing with analog records and turntables even if digital technology makes the system work.

My first experience with DVS came in late 2002. A friend of mine had just acquired Traktor's Final Scratch—the primary product Farrugia and Swiss discuss in their article—and as my friend demonstrated its use, I had an inkling of how transformative it could be. There was no discernible latency in using the control records to manipulate sound files on the computer; had it not been for the visible presence of the laptop, performing mixing and scratching techniques on Final Scratch felt and sounded the same as if I were using analog vinyl.

Despite my initial amazement, however, I was still caught off-guard by how rapidly similar technology would be adopted by DJs over the next few years. By the time of that 2006 party in San Francisco, a newer competitor with a similar product—Serato's Scratch Live—had become ascendant and critical masses of DJs I knew openly embraced a technology that seemingly made their vinyl collections non-essential.[3] I began hearing that

2. For interested readers who want to understand the basics of DVS technology: a regular vinyl record is encoded with a tone signal that is read by any conventional stylus. That signal is then run to a converter box—sometimes built directly into a DJ mixer—that is connected to a laptop, usually via USB. The signal, as read by computer software, provides instructions on how a digital music file—such as an MP3—should be played. The software, in turn, plays the song file back to the converter box which, in turn, guides the music into a DJ mixer. From the DJ's point of view, however they manipulate the control vinyl is what they hear coming through the DJ mixer. If they slow down the control vinyl, the song will slow down. If they scratch with the vinyl, the program can replicate exactly the same sounds of scratching. To put it another way, a normal piece of vinyl has permanent audio information encoded onto it. With a DVS, the audio information is now stored on a hard drive instead, with the vinyl being used to control the playback of said information. As I have stressed, the tactile experience of DJing is fundamentally unchanged despite the completely different way in which audio information is stored and accessed.

3. At the time of Farrugia and Swiss's research, the authors discussed the then-pioneer in this field, Traktor's Final Scratch, a DVS package first introduced in 2002. Just as their article entered production in late 2004, however, a new competitor had emerged: Scratch Live, developed by New Zealand's Serato Audio Research. Though Serato was not first-to-market, they entered into a partnership with the Rane corporation to directly integrate their DVS technology into Rane's respected line of DJ mixers, beginning what would become an industry standard: Rane's TTM 57SL (the "SL" being short for "Scratch Live"). Within just a few years, Serato would dominate the DVS market, a position they continue to hold today via Scratch Live and their newer (but very similar) package, Serato DJ.

longtime DJs were liquidating thousands of their records since, as they saw it, if they possessed a digitized copy of the songs on those records, the actual vinyl became extraneous.

Until recently, I wasn't aware of Farrugia and Swiss's article, an oversight made all the more embarrassing by the fact that in 2010, I conducted a very similar research project to theirs, using online forums and message boards to collect about 180 survey testimonials to how soul, funk and hip-hip-hop DJs were reacting to digital DJ tools. Besides presenting findings at the 2010 Pop Conference, I never published this research but coming across "Tracking the DJs" spurred me to revisit the topic, and by extension the role of technology in defining what it means to be a disc jockey if discs themselves become irrelevant.

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It's worth returning to the early 2000s moment that "Tracking the DJs" captures—modern DJing culture on the cusp of a technological transformation. Since the late 1960s advent of the modern DJ mixer, the basic technology behind DJing had remained strikingly static: two turntables, a mixer, and records. Small innovations made DJing easier—pitch control on turntables, headphone cueing and EQ filters on mixers—but otherwise, for decades, the "work" of DJing, as Farrugia and Swiss describe it, remained fundamentally unchanged. Two sets of skills applied: the act of DJing (cueing, mixing) and the accrual of both records and knowledge about them (locating/listening). Digital technology irrevocably had an impact on both.

Prior to vinyl emulation, the first major challenge to traditional DJ work came from compact disc players designed for DJ use, often described as "CDJs" after the popular Pioneer line. The rollout of CDJs into the DJ community happened at a relatively slow pace during the 1990s and was deeply contentious, given how they replaced fundamental DJ tools: records and record players. From anecdotal observation, "CDJing" tended to bifurcate the DJ community into distinct camps. Vinyl DJs did not use CDJs and vice versa.

By contrast, vinyl emulation, as noted, preserved all the core, tactile tools, and forms of DJing: you still used vinyl records on turntables to cue, play, cut, scratch, speed up and slow down sounds. In Everett Rogers's classic diffusion theory, this is what's known as "compatibility," i.e. "the degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters."[4] In my 2010 research, the number of respondents who had adopted DV technology was three times greater than those who had adopted CDJs, a ratio I partly attributed to the compatibility factor.[5]

Even though vinyl emulation was a less contentious form of technology, its adoption sparked a predictable backlash from some corners, especially online forums. Offline, one of my favorite examples came from hip-hop's DJ Premier of Gang Starr, who in 2006 released a mixtape, *No Talent Required,* whose cover included the image of a peeling

4. Rogers, Everett. *Diffusion of Innovations.* 4th ed. (Simon and Schuster, 2010), 15.
5. The tactile familiarity of Serato is an important dimension to its compatibility with traditional DJ norms, but there are other practical factors at play. Serato is designed to be seamlessly added onto existing DJ equipment, namely any standard mixer and turntables, while CDJing requires new CD players and reorganizing one's audio station to accommodate the new devices. For a beginning DJ, these differences may be less prohibitive, but for DJs who already own vinyl DJing equipment, vinyl emulation is the more compatible, less expensive, adaptation.

sticker that read "MIXTAPE MADE WITH ACTUAL RECORDS"; behind it was a pair of CDJs and the Serato Scratch Live package.[6] The year 2006 was also when the term "microwave DJs" was supposedly coined and circulated on online message boards, the idea being that much like a microwave oven made cooking fast and easy, digital DJ technology circumvented traditional DJ skills.[7]

As both Farrugia and Swiss's and my research has shown, the critique of "microwave DJs" isn't simply technological, it's also deeply pedagogical, speaking to ways in which DJing, as a craft, is learned and mastered. Vinyl emulation is one of several developments, some feel, that threatens to remove meaning from "becoming a DJ." By the mid-2000s, the emergence of the MP3 as a dominant digital music format, along with the expansion of affordable high-speed, broadband internet access, led to unprecedented online music sharing. In our current era of music streaming, this may seem wholly unremarkable, but in the mid-2000s the idea that practically any song one desired could be located and secured with a few clicks upturned older forms of musical attainment. Farrugia and Swiss noted that "the fact that anyone with a computer and Internet connection can download mp3s . . . bothers some DJs. The physical labor and economic capital spent by the DJ who goes in search of that 'perfect record' loses value."[8] They described the "labor of listening," which included listening through records in order to find the desirable ones to purchase or add into a mix. Add in time spent to memorize labels, producers, personnel, etc., to say nothing of physically searching for records to possess. Digital DJing threatened to short-circuit these processes.

In my 2010 research, many of my respondents had similar complaints to Farrugia and Swiss's 2002 respondents. Here is a sampling:

> I think that there has always been some rite of passage for playing your set in the sense that with analog, in order to play a certain track the DJ has to put in endless hours of digging to find that gem. If you can just buy an MP3 online and use it [in] a set later that day, in my opinion, you haven't earned to right to play it yet. (Chris, five years' DJing experience)

> I think people should have a strong foundation and skills/knowledge before graduating. Digital tools make it too accessible, and it's made the truly great DJs less appreciated now that anybody with a laptop or some CDs or MP3 player is a DJ. (Matt, 10 years' DJing experience)

> These tools have made it easy for today's DJ who doesn't have skills. Most of these tools come with BPM matchup, whereas I took a watch and counted for a minute.[9] (James, 20+ years' DJing experience)

6. It must be noted: DJ Premier has also been a primary contributor to BET's Cypher series of annual, televised freestyles with rap music notables and at least as far back as 2007, he can be seen using the Serato system in the videos.

7. "Microwave DJs" was the title of my 2010 Pop Conference paper, and at least one scholar has traced the term's origin to Serato's Scratch Live user forums from 2006: Sirois, Andre G. "Scratching the digital itch: A political economy of the hip-hop DJ and the relationship between culture, industry, and technology" (Ph.D. diss., University of Oregon, 2011,) 307–308.

8. Farrugia and Swiss, 2004, 35.

9. BPM = beats per minute. Knowing the BPM of different songs is necessary to help tempo-match them during mixing. DJing software often calculates the BPM for the user.

The underlying implication is that there is a normative and acceptable path to acquiring DJing skills and that digital technology undercuts those processes, especially when mixing can be outsourced to software, and your song library depends less on record stores or garage sales and more on search engine skills.

This all, in turn, is perceived as cheapening the value bestowed upon veteran (analog) DJs as well as undermining the legitimacy of younger (digital) DJs. I especially found the idea of earning the "right to play" certain songs fascinating as it speaks to an ethos where music is a form of scarce capital that only a select few can legitimately acquire, let alone share. If Walter Benjamin saw mechanical reproduction as liberating art from ritual, these DJs lament digital reproduction for freeing music from the rituals of discovery and procurement.

Notably though, while these testimonials stand out for how they express a distinct DJing ethos, they didn't constitute a universal perspective. Nearly two-thirds of my respondents who used digital DJ tools reported having no regrets or concerns about their conversion. This seemed especially true among more experienced DJs; one of the most surprising results I found is that the more experienced a DJ was, the greater the likelihood that they mostly or exclusively used digital DJing in their professional practice. When respondents reported at least 10 or more years of DJ experience, their rate of digital DJing was 20 percent higher than those who reported fewer years of experience. It may be that younger DJs were more idealistic about staying "true" to tradition by favoring vinyl DJing.[10] It may also be that more experienced DJs, who perform constantly, recognize the convenience of traveling to gigs without bulky, heavy records.

Convenience, however, seemed to come with certain costs. For veteran DJs, there was the concern over how digital tools have made DJs lazier, including themselves. As one respondent noted,

> Serato tends to make my job of learning my tracks from front to back somewhat obsolete. This makes the gig easier to prepare for, but my technical skills and general knowledge takes a kick since I don't have to practice hitting the breaks at the rights times or blending (Chris, five years' DJing experience)

Notably, even though nearly 80 percent of my respondents thought digital tools made DJing easier, less than half thought it made them better DJs.

I ascribed this gap to another theme: digital technology was a tool, but the existence of the tool didn't necessarily yield better results. As Jojo, a DJ with more than 20 years' experience, suggested, "Like in warfare the tools of war change, the objective of war does not. The objective of a DJ is to move the crowd and entertain. The digital DJ is doing the same thing with different tools." Mac, a six-year veteran DJ, stated similarly: "If it's adding something creative expression-wise and can still rock the party, then I don't see what the problem is." In other words, what both emphasize is that outcomes are more important than means. If a DJ can "rock a party" using digital tools, for these respondents there are no "cheating" or shortcuts involved; the primary "work" of DJing is still being performed.

10. Moreover, tools like Serato are expensive enough that younger DJs may not be able to afford them yet; several respondents said they've held back from conversion because of cost.

This same sentiment was echoed by at least one of Farrugia and Swiss's respondents, GYS, who told them, "As long as you're doing something creative on the fly . . . isn't that what really counts for a DJ?"

Digital DJing did, however, create a different area of concern for the work of DJing: work as competitive, compensated labor. This is different from the aspect of "work" discussed in Farrugia and Swiss's study, but in my sample it was a recurrent anxiety. Lloyd, a DJ with ten years of experience, said bluntly, "The market is way over-saturated with mediocre DJs," while Harvey, an eight-year veteran DJ, argued, "Some people use it to cut corners and take gigs away from better DJs." Evan, who had ten years of experience, elaborated further: "It makes it too easy for new jacks to start DJing and as a result, areas become over-saturated with shitty DJs."

This notion of "over-saturation" speaks to the competitive market of DJs seeking paid gigs. The rise of digital DJing in the first decade of the 2000s seemed to stir anxieties around the idea that the technology was lowering the bar of entry and therefore contributing to a surplus of DJs that threatened to undercut wages and/or prevent more experienced DJs from being hired. This rise also coincided with DJ training schools that offered to teach newcomers technical skills previously learned through more informal relationships; structured—and fee-based—classes could also be seen as a "shortcut." Some schools even offered marketing strategies to help DJs navigate the lucrative nightclub circuit. One example I came across in 2010 was STADJ, a Brooklyn-based DJ academy founded in 2008 that trained people to become professional models *and* DJs, apparently using exclusively digital DJ tools, such as Serato and CDJs.[11]

In my experience, there is a perpetual anxiety among older DJs that younger DJs will underprice them and/or push them out of the gig marketplace. I've seen nearly identical sentiments expressed by DJs talking about what it was like to compete for gigs in the late 1970s, an era with no technological interventions as profound as vinyl emulation. While digital tools may take the blame, the inherent volatility of the DJ marketplace is at the root of these concerns.

WAX ON, WAX OFF: THE FUTURE OF DIGITAL DJING

At the time their article appeared, Farrugia and Swiss described vinyl emulation as being in an "embryonic stage," but as we know now, the tool reached maturity in only a matter of years. Digital technology has become a permanent, albeit still contentious, part of contemporary DJ practice. One telling sign is how it's become commonplace for DJ parties to advertise themselves as "100% vinyl," a proclamation that, 20 years ago, would have seemed absurd to have to make.[12]

11. Ponchione, Alissa. "Model DJs." Nightclub & Bar. https://www.nightclub.com/operations/model-djs. One of STADJ's model/DJs was named DJ Vinyla, who, despite spelling her name with "vinyl," appeared in promotional photos using a CDJ.

12. The growing trend to advertise parties as "100% vinyl" does suggest one unexpected outcome: rather than making vinyl irrelevant, digital DJing has helped enhance vinyl's symbolic value, at least among a segment of audiences.

In the conclusion to their article, Farrugia and Swiss return to their core interest around how digital technology affected "issues of value and evaluation around shifting definitions of what constitutes the work of the DJ."[13] Those debates are anything but settled even now, and I would suggest that what we've seen over this time span isn't only limited to notions of "work," but also speaks to an existential crisis around the idea of DJing itself. If technology lowered the threshold to become a DJ, it also opens the question of what it means to be a DJ? For example, one pet peeve I've heard from working DJs is that the presence of a laptop can invite patrons to assume it's a magical jukebox at their disposal. If a DJ doesn't have a particular song on their computer, the patron might ask them to "just download it." I've also witnessed cases where patrons offered to plug in their iPods or smartphones to play a desired song. It's long been the case that the analog DJ transcended the limits of technology to make their set seem limitless; does the seeming limitlessness of digital technology threaten to transcend the need for the DJ?

This is meant to be a rhetorical question, especially since I don't want to hastily add DJs to the long list of professions supposedly made irrelevant by technology. When I asked my respondents what they thought defined "a good DJ," the most popular answer was that "they have to be able to read a crowd," and this emphasized what is arguably the most important role that DJs continue to play, "orchestrators of this 'living' communal experience," as Sarah Thornton once put it.[14] DJs are still evaluated less by technical skills than by an ability to keep people on the parquet by reacting dynamically to the delicate social chemistry of the dance floor. Those are skills that require experience and intuition, abilities that no program can teach or replicate (though perhaps the programmers at Spotify are working on a 'crowd reading' algorithm as we speak).

One last thought, to which I welcome Farrugia and Swiss's input, concerns the future of that most central of all DJ technologies: the turntable. DVS were able to quickly pervade DJ communities because of their compatibility with existing equipment, especially turntables and mixers. But while companies like Serato and Traktor continue to tinker with DVS products, the primary development of many DJ-centric companies has been toward "controller" units that effectively replace the analog "two turntables and a mixer" set-up with a single device that can be used to mix, and sometimes scratch, in addition to applying dozens of filters and sound effects. In some cases, the controllers are meant to mimic the visual layout of the analog set-up; at least for controllers that include scratching capabilities, you still need some kind of rotating platter. Many DJs, however, have abandoned any pretense of a system that resembles even a facsimile of turntables; a friend of mine DJs exclusively using the program Ableton Live, which can be controlled with only a laptop keyboard. As I noted at the very beginning, these are all examples of DJing without actual discs, and they call into question whether the term "spinning" is on the verge of becoming an anachronism.

And yet . . . one of the main DVS developments of 2018 that I saw circulate within DJ social media channels was a new product called Phase. Resembling an oversized pack of

13. Farrugia and Swiss, 2004, 40.
14. Sarah Thornton, *Club Cultures: Music, Media and Subcultural Capital* (Hanover, NH: Wesleyan University Press, 1996), 96.

gum, the Phase device can sit on any conventional analog turntable and can read its "rotational data" to transmit time-code data back to popular DVS software products via a small receiver. In essence, Phase takes the basics of vinyl emulation and whittles things down further by eliminating the need for tone-arms, needles or control vinyl.[15] All you need is a rotating platter; even a plastic, portable turntable can provide that, but the key point here is that it still requires a turntable, and therefore the mechanics of how a DJ might use a turntable. It's too early to know if Phase will take off—at the time of this writing, its manufacturer was only taking pre-orders—but I interpreted the social media curiosity around it to at least signify that the turntable, as a physical device, still attracts the figurative and literal investment of DJs.

I keep returning to the act of DJing as a manual performance of tactility.[16] There is still value in seeing a DJ's hands sweep across the plot of space typically reserved for turntables even if technology has made this act unnecessary. I think about my favorite quote from Farrugia and Swiss's article, where a respondent, Diana, compares watching DJs DJ to watching painters paint: "It's the difference between watching a painter mix the paints and seeing the painting come together with the brush strokes piecing together a visually pleasing result. Or watching a painter taking already prepared elements and just taping them properly to the canvas." Even now, as digital tools are in their third decade of development, it may be that people still enjoy seeing DJs work their brush strokes from the stage. ∎

15. Phase does need some kind rotating platter to spin upon, but technically speaking, that doesn't need to be a record. A stiff felt slipmat, for example, would suffice.

16. My late high school Latin teacher would point out here that "manual" comes from the Latin *manus*, meaning "hands."