

# ‘How do you know he’s not playing Pac-Man while he’s supposed to be DJing?’: technology, formats and the digital future of DJ culture

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## Abstract

*In light of the growing literature on DJ culture, this article explores how technological change is having a significant impact on specific areas of music production and distribution within contemporary electronic dance music culture. An ethnographic methodology is employed, based around research conducted in the Sydney dance music scene between 2002 and 2007. The aim of the article is to reveal some of the discourses and reactions in DJ practice that result from shifts in technology. With the increasing use of CDs, mp3s and computer programs such as Ableton Live, the notion that vinyl and turntables represent the authentic technology of DJ culture seems somewhat redundant. The physical movement required to mix vinyl records has meant that the associated skills of DJing have become bound up in notions of physical and visible manipulation of technology, and so the use of technology that does not require and afford such physical expression has raised questions around the fundamental skills of DJing. As such, it would seem that there needs to be a redefinition of the concept of DJing, and a reframing of the skills and abilities seen as being essential to DJ practice.*

## Introduction

As a form of popular music that is heavily reliant on technology for its production, dance music is tied to the period of its creation, and an oft cited reason for the quick turnover of dance music is that some of it dates rather rapidly. Certain technological advancements facilitated the birth of house music, with producers making use of sequencers, samplers, drum machines and synthesisers (such as the Roland TR-808 drum unit and the Roland TB-303 bass unit; see Kempster 1996, pp. 155–205; Reynolds 1998, pp. 24–7; and Osborne 1999, pp. 3–4 and 253–4). The importance of these machines to the development and progression of dance culture acts as a reflection of how, as Shuker explains, ‘new recording technologies have opened up new creative possibilities, and underpinned the emergence of new genres’ (Shuker 2002, p. 281), and as Barr notes, ‘the story of house music is, in many ways,

inseparable from that of the technology which gave birth to it' (quoted in Kempster 1996, p. 7). Yet despite this embracing of new technology, some of the debates around authenticity that are ingrained within dance music culture have resulted in 'moments of resistance' arising in response to certain technological developments (Farrugia and Swiss 2005, p. 33).

## Research methods

The ideas, opinions and interpretations of a selection of local DJs and other music industry practitioners who work in Sydney are central to this article's analysis of DJ culture within the city. These ideas, opinions and interpretations are the result of ethnographic research I conducted in the Sydney dance music scene between 2002 and 2007. In addition to the requisite nights out clubbing, this research involved qualitative interviews with 21 people (DJs, journalists and promoters) conducted over a period between September 2004 and October 2005. All interviews were conducted 'one-on-one', as opposed to in groups, and took place in locations such as bars, coffee shops and respondents' homes (Weber 1999, p. 321). Furthermore, between September 2002 and December 2004, I was also a participant-observer, working at the Sydney-based specialist dance music store Central Station Records, and it was here I made contact with most of my interviewees, either directly, in the sense that they were customers of the store and so I came into regular contact with them, or indirectly through networks of contacts I managed to establish during my work at the store. While ethnographic research of this nature is not without problems (Thornton 1995, pp. 105–7; Fikentscher 2000, pp. 17–18), I believe this was the best methodology to employ for this particular project, and as Brennan-Horley notes, 'what is clear is that detailed ethnographic research is required to understand the workforce and commercial dimensions of dance music culture' (Brennan-Horley 2007, p. 126).

In using the terms 'dance music' and 'dance culture', I am referring to the 'commercial', DJ-played music that one can hear in such Sydney clubs as Home, The ArtHouse, Slip Inn and Tank, and at various bars, pubs, festivals and events within the city area. The article is intended to complement and add to analysis that has previously been conducted of Sydney, and Australian, dance music culture (examples being Murphie and Scheer 1992; Homan 1998; Gibson and Pagan 2000; Brookman 2001; Luckman 2002; Slavin 2004; Brennan-Horley 2007). More generally, the article is intended to contribute to the growing literature on DJ culture around the world (examples being Fikentscher 1991, 2000; Klasco and Michael 1992; Langlois 1992; Haslam 1997, 2001; Rietveld 1997, 1998; Poschardt 1998; Reynolds 1998; Brewster and Broughton 2000; Farrugia and Swiss 2005).

The focus of the article is on some of the issues that have spun out from the recent developments in technology that have altered the production and distribution platforms used by DJs in their work. Such developments include the declining use of vinyl and turntables, the increasing use of mp3s and laptop computers, and the resultant lessening in importance of the record store and the increasing centrality of the Internet as the source from which DJs obtain their music. These developments have subsequently generated shifts in the understandings and perceptions of DJ skills and DJ work, essentially redefining the art and craft of the DJ. As outlined above, there is a significant body of literature on DJ culture, although there is

currently little material that explores the impact of recent technologies. An exception to this, and also a starting point for my own work, is the article by Farrugia and Swiss (2005) that similarly explores the impact of digital technologies on DJ practices, specifically the Final Scratch system, 'a hardware/software package that allows real-time manipulation of digital music files' (Farrugia and Swiss 2005, p. 30). This system involves placing two 'blank' vinyl records on turntables, which are then connected to a computer, allowing mp3s to be manipulated (mixed, scratched, and so on) in the same way as standard vinyl records. Therefore, with Final Scratch, vinyl records remain a central part of the act of DJing, albeit in a slightly modified way. In discussing the use of CDs, laptop computers and software packages such as Ableton Live, my aim is to push this debate further towards a complete shift away from the use of vinyl.

Through an analysis of discussions conducted on an Internet-based mailing list devoted to Detroit techno music, Farrugia and Swiss work through some of the issues that have arisen as new digital technologies, such as Final Scratch, have impacted upon DJ culture. Using the list postings as research material, they draw attention to the divergent and contrasting opinions that exist within dance culture with regard to these technologies, addressing areas such as changes to notions of DJ work, the increased accessibility of music, and shifts in understanding of DJ performance and skill. They conclude that the Internet debate they analysed was not simply about new technologies, but rather 'about issues of value and evaluation around shifting definitions of what constitutes the work of the DJ in an increasingly digital age' (Farrugia and Swiss 2005, p. 40). It is this idea of 'shifting definitions of DJ work' that forms one of the central areas of discussion in this article, which I have attempted to explore through the understandings and opinions of particular DJs who work in the Sydney dance scene. As such, this article is in part intended to be an extension and continuation of some of the ideas sketched by Farrugia and Swiss.

## The turntable

Despite the prevalence of machines such as samplers and drum machines within dance music (or rather the prevalence of their *sounds*, for the machines themselves are no longer in production as dance music producers today use software versions instead (Osborne 1999, p. 254)), it is the turntable that has become the central 'tool' of the DJ and that has achieved a wide degree of cultural recognition, in much the same way as the electric guitar is perceived as being integral to rock music culture. Théberge explains how, 'if there is any instrument that has achieved both the musical and the iconic status of the guitar in dance music, it is the turntable' (Théberge 2001, p. 15). The turntable of choice for most, if not all, DJs is the Technics SL-1200 which, as Osborne notes, has achieved seminal status within dance culture, 'largely because of the unfussy functionalism of its design' (Osborne 1999, p. 289; see also Klasco and Michael 1992, pp. 59–60). There are other turntables on the market, but the Technics model (and variations on it) has achieved such dominance that it is widely regarded as the 'industry standard'. In his study of New York dance culture, Fikentscher observes how most of the city's clubs and DJ record stores have 1200s installed, describing how they have become 'an industry standard since their introduction in the early 1980s' (Fikentscher 2000, p. 36).

Yet just as the music itself is continually evolving and changing, the technology that DJs use to perform their job is also undergoing a degree of change, and despite

this dominance of the turntable, and the level of authenticity that is ascribed to its use (Farrugia and Swiss 2005, p. 33), DJs in recent years have begun to embrace other platforms on which to play their music. In itself, this is an issue that generates impassioned and varied responses, making it an ideal topic for discussion.

## **The future of DJing and the continued relevance of vinyl**

Paralleling, and indeed amplifying, the 'ephemeral nature' of dance culture (Brewster and Broughton 2000, p. 432), the continuous progression and development of technology shapes and defines the dance scene, with new technologies affecting and informing the production of music and the practice of the DJ. In this respect, it is difficult to predict the future of DJing, although when questioned as to their opinions on this subject, those DJs interviewed put forward a variety of possible directions for the profession, all rooted in technological progression. One common theme seemed to be the eventual demise of vinyl, Sydney DJ Andrew James believing 'the days of heavy records are probably over' (Interview 2004).

It would appear that the continual advancement of technology will lead to a reduction in the number of DJs who use vinyl, which could eventually mean that the dance music record store, in its present form, will cease to exist. As the owner of the Sydney record store Spank Records, as well as being an active DJ within the local scene, Mark Murphy is concerned with current technological developments which are providing consumers with different sources for obtaining music:

You've really got to look at, and keep an eye on, where dance music is going, or if you don't you'll just get swallowed up. We were one of the first dance music stores in Sydney to have an online store ... and a weekly newsletter that goes out with sound samples. ... I think we are one of the most progressive, as in thinking, dance stores in Sydney. But vinyl in the future ... who knows? People have got to look at downloading, the way people are mixing, on what format ... you'd be stupid not to. (Interview 2005)

Despite the potential negative impact of the Internet on the continued existence of record stores, there are other factors that could help to sustain this existence. While he acknowledges the central role that new technology, such as the Internet, has in the methods he uses to source music, Sydney DJ Alan Thompson (who, prior to moving to Australia in 2004, lived and worked in the UK, and therefore is particularly well placed to comment on the international scope of dance culture) explains how the record store is still central to dance culture, not only in providing music to consumers, but also in providing a site for social interaction:

Going record shopping on a Thursday or a Friday can be a social thing. You'll see other DJs there ... well not so much in Sydney, but in London for instance, you'd bump into producers and they would pass on their new tune, so it's much more of a social gathering for DJs as well. It's a meeting point. We only get to see each other on a very rare occasion that we might be playing at the same club, whereas on a Friday afternoon at Black Market in London, you can guarantee that most of the top DJs in London will be in there at some point in the day. (Interview 2005)

This idea of record stores facilitating social interaction is hinted at by Farrugia and Swiss when they discuss notions of 'work' within DJ culture. As well as the activities of DJing that are enacted within a club environment, such as mixing and selecting music, work for DJs also involves the preparation necessary to be able to conduct

these activities. Such preparation involves 'locating and listening to records, nurturing a social network, and so on' (Farrugia and Swiss 2005, p. 34). We can thus see the record store not only as central to this process of locating music, but also as a venue that brings DJs together and creates an internal network within a particular local dance music scene.

Yet perhaps the perception of the record store as central to the development of dance scenes is now something of an anachronism. With the numerous advantages provided by the Internet, in regard to sourcing and purchasing music, it seems largely idealistic to suggest that people will continue to use stores because of the degree of social interaction that they generate. If DJs can obtain music earlier, cheaper and quicker by using the Internet, then they are most likely to make use of their local record stores far less frequently, if at all. Highlighting how the continued existence of physical 'bricks and mortar' record stores is by no means guaranteed, Sydney DJ Mark Alsop explains how he is increasingly using the Internet as the source from which he buys most of his music:

Most of my vinyl comes from London, and I do an order per week of that. . . . [I order the vinyl] over the Internet. . . . I went to a record shop, in Sydney, a month ago, for the first time in five months, and I used to go in at least once a week. Now, I sit at home every single day and listen to all the new releases [on the Internet], put it aside and buy it at the end of the week. Not good for local business is it? (Interview 2005)

Furthermore, with the increasing amount of music being made available to purchase in the form of mp3s, this impact on local business is made even more explicit. From a positive angle, the Internet can be seen as widening the scope for DJs when it comes to sourcing new music, shifting this essential part of DJ culture from locally based record buying to globally centred music purchasing. Yet at the same time, because of the way the Internet challenges the traditional practices ingrained within DJ culture, based around record shopping, of seeking out and obtaining 'tomorrow's big tune', it can also be seen in a negative light. As Farrugia and Swiss (2005, p. 35) observe, the ease with which anyone can access the Internet and download mp3s means that 'the physical labour and economic capital spent by the DJ who goes in search of that "perfect record" loses value'.

## Importing dance culture

As a recurrent theme in the existing literature on Australian dance music culture (see Murphie and Scheer 1992; Chan 1999; Gibson and Pagan 2000; Luckman 2001, 2002), the issue of dance music as something 'imported' and 'borrowed' from elsewhere has informed a significant amount of discussion concerning the origins and roots of club culture in Australia. Brookman acknowledges this when he describes how much of what has been written on dance culture in Sydney 'takes the perspective that the culture is merely the product of a displaced movement, namely that found in Europe and the United States' (Brookman 2001, p. 27), while Luckman (2002, p. 11) notes how 'contemporary dance music culture in Australia has erupted out of the meeting of . . . international influences and sounds'.

Indeed, such a notion has informed debates concerning the country's popular music in general for, as Hayward notes, 'whatever its achievements, Australian popular music has been principally derived from imported models' (Hayward 1992, p. 6), while McGregor, when describing the development of Australian rock 'n'



roll, states how 'in terms of *activity* Australia had developed its own rock culture but it was, like so much other Australian culture, highly derivative' (McGregor 1992, p. 91; author's italics). Morris describes Australian history as 'a compilation culture of borrowed fragments, stray reproductions, and alienated memories' (quoted in Park and Northwood 1996, p. 1), providing evidence of what Straw refers to, in his assessment of how early rock 'n' roll subcultures outside the Anglo-American axis simply imitated and mirrored their United States and British counterparts, as 'subsistence to the centres of cultural power' (Straw 2001, p. 70).

With the increasing use of mp3s, making reference to vinyl and the idea of dance music being distributed around the world on a physical format may seem dated. Certainly the idea of Australian dance music culture being behind the times (Park and Northwood 1996, p. 2; Connell and Gibson 2003, p. 268) has less relevance for contemporary DJs who can obtain music from anywhere in the world in a split second. Yet the perception that Australian dance music culture is heavily influenced by international developments remains a central part of the discourses that run throughout the scene, and indeed has perhaps been made more central than ever by the way the Internet has made it far easier to obtain music from different parts of the world. At the same time, I would suggest that dance music is not dismissed or rejected for not being local in origin, but rather is accepted simply as a representation of 'dance culture' as a whole. Concerns of 'localism' and 'internationalism' may make themselves evident in media discourse around the scene but, for the DJs and the clubbers, such concerns are an irrelevance during the ritual of the 'night out' for, as Gibson and Pagan outline, while the music played in Sydney's clubs may be from England, America or Germany, 'there is a sense in which participants do not identify the music with an "authentic" origin' (Gibson and Pagan 2000, p. 11). Obviously, the commercial availability, and indeed unavailability, of this music will impact upon the shape of the local scene. As Straw observes:

In any given cultural space, the provenance of punk singles, price of American alternative rock CDs, availability of 12-inch vinyl dance singles and access to information surrounding new musical commodities will shape the contours of regional/national musical cultures. Objects arrive at destinations bearing meanings which the distance of their travel and the manner of their acquisition have inscribed upon them. (Straw 2002, p. 165)

In this sense, it can be argued that the Sydney dance music scene is shaped and defined, in part, by the music that is imported into the city from abroad (whether tangibly on vinyl and CD, or intangibly on digital files), and thus the decisions of record store owners and DJs in selecting this music have a direct impact upon the music that participants in the scene are exposed to. Yet the central tenets and ideologies of dance culture do not reside in notions of tensions between local product and imported product, but rather in unique and specifically local interpretations and articulations of a wider global dance culture. As Alan Thompson explains, the influence of the UK scene is felt not only in Australia but all over the globe, emphasising the nature of contemporary dance music and club culture as inherently global:

Having DJed since 1990 and travelled all over the world, I've seen various countries change over the years, and what is predominant in that change is that the clubs themselves are marketing themselves, and their music policies, and the DJs, to what the UK does. You could stand in a club in Tokyo, in Montreal, in New York, or Singapore, or even Sydney, close your eyes and without knowing what is going on, you could be in a club in England. I do think that they do try to emulate what goes on in the UK, which is a good thing ...

The dance scene has a worldwide identity. I really believe that dance music is a world phenomenon, and we are all dancing to the same beat, but in different countries. (Interview 2005)

This suggests that contemporary dance music culture has been subject to an increasing degree of globalisation and we can see this as, in part, the result of new production and distribution technologies that have facilitated increased global interaction between dance music DJs and producers.

It is in this sense that dance culture is becoming more 'international', with geographically disparate scenes being closer in their stages of musical development than ever before. With this shorter time-frame for accessing and obtaining music, it would seem Straw's suggestion that 'the availability of vinyl has become one of the important ways in which national musical cultures remain differentiated' (Straw 2002, p. 175), is becoming less relevant for dance culture. As DJs rely less on the physical commodity of vinyl, and make increasing use of digital media, the international interconnectedness of dance culture will become even more developed. Sydney DJ and electronic music performer Seb Chan explains how certain practices intrinsic to DJ culture and the use of vinyl are being carried over into the use of digital forms, such as the notion of the 'dubplate' (a 'one-off', initial acetate pressing of a track) – in the process breaking down the stylistic boundaries and markers that used to divide scenes in different geographical locations:

I know lots and lots of DJs who are getting MP3 dubplates, effectively, via peer-to-peer, officially from artists, directly to play out at parties. It is totally bypassing borders, as such, because it is possible now. So it is hard to say now that these scenes have boundaries. They don't have national borders nowadays, but they certainly did before the ability to transmit music became so easy. (Interview 2005)

This idea of a 'global network' of dance scenes is reinforced by the increasing use of the Internet, as opposed to the more traditional form of the retail record store, as the source from which most DJs purchase their music, as Sydney DJ Paul Goodyear explains:

In the last couple of weeks I've just started downloading stuff from websites such as beatport.com, where you pay US\$1.49 and you're able to access [a particular] track. This site [features] a lot of new producers who put their music up on the site, and it won't be released for probably a couple of months. So for less than two Australian dollars per track, you've got something that's way ahead of release, the quality is fantastic, and it's much cheaper than spending twenty bucks on a piece of vinyl. (Interview 2005)

Changes in technology have thus brought about reconfigurations in the sources DJs purchase their music from, with several DJs relying less on the physical record store and more on Internet-based suppliers of music, these suppliers being either companies that ship physical product to the DJ, or websites that provide music in the form of downloads. In addition to this, technology has made it easier for DJs and producers in different geographical locations to share and distribute music.

## **Creating music, not just playing music**

While many DJs still use vinyl within their sets, there is an increasing move towards the use of CDs, often for reasons of practicality. A DJ can take a lot more tracks to a

club on a handful of CDs than a box full of vinyl will allow for. Furthermore, the development of computer software now allows DJs to mix directly from their laptop computers, thus negating the need for any kind of tangible sound-carrying format. In turn, all of this generates new understandings and interpretations of DJ practice, in the sense that different operational skills are required. This progression of technology could also, as Sydney DJ Goodwill suggests, both effect and affect an increasing diversification of sub-genres and clubbing crowds within the dance scene, through the way that:

... technology allows you to do something so different now. You used to be able to just get up and play a record, and it would go for seven minutes, and there's not much you could do with it. But now with a CD player I can loop sections of it, and add bits to it before I go out, and I can get rid of the breakdown if I don't like it. As technology becomes more palatable and it all goes towards laptops that you've already put the music into, you're going to be able to have so much influence on the music you're playing, so I think that the genres will become more stylised in that way. (Interview 2004)

This suggestion draws attention to the way the development of technology has continually affected the stylistic development of dance music, with the 12-inch single changing the length and sonic quality of disco music in the 1970s, and samplers and drum machines giving rise to Detroit techno music in the 1980s. Indeed, the links between technology and style development can be seen on a much broader scale in popular music, with rock 'n' roll and the electric guitar, and psychedelic music and studio trickery, as just two examples.

In the future, it would seem that DJs will rely less on vinyl, and make greater use of CDs and computers to perform their sets. Many DJs in the Sydney dance scene admit that they are making increasing use of CDs during their sets, rejecting vinyl in favour of a digital format that has a far greater degree of convenience. Goodwill estimates that 95 per cent of his set is played from CDs, and explains how after he has been record shopping, he will go straight home and record all the tracks onto his computer, edit them, 'master them a bit better, add acapellas ...', and then 'burn' them onto CD for his sets, so that now he takes 'about ten pieces of vinyl to a gig' (Interview 2004).

The development of technology has thus enhanced the work of the DJ, so that tracks can be altered and reshaped in order to fit the specific requirements of the DJ. Vocals can be added and tracks can be extended or shortened, allowing the DJ to have more control over the actual 'sound' of their set, which increases the extent to which they can impose their own personal, unique 'musical' identity upon it. DJs will often, having purchased a particular track, record it on to their computer, and re-edit and reshape it to their liking or to make it more appropriate for the style of music they play, perhaps taking out vocal lines or adding drum patterns. This also allows the DJ to indulge in a certain degree of artistic expression. Paul Goodyear uses such re-editing technology, which in turn has led him to use CDs instead of vinyl while DJing, allowing him to impose a personal interpretation upon the music he plays during his sets:

I buy everything on vinyl ... well most things anyway [because] sometimes you can't find a track on vinyl so you might need to buy the CD single, but most of the time I'm able to track everything down I want on vinyl. I bring [the track] back to my house, I put it into my computer, I normally re-edit the track, I take out the parts that I don't like, I might combine the vocal version with the instrumental or the dub, I might also combine the



acapella, and I'll make my own exclusive re-edits to play, and then I'll burn them on to a CD, and then I'll play the CD in the club. So pretty much most of what I play in the clubs has the Paul Goodyear touch on it. (Interview 2005)

With this, we can see how changing technology generates shifts in music production, while also shifting DJ skills into different territories. While not all DJs involve themselves in music production, it is clear how wider access to digital technologies, such as computer software packages, has made it easier for DJs to take on the role of producer. Previously, remixing or modifying a particular track to be played in a club would have required this track to be pressed on to vinyl, a laborious process in comparison to burning a CD (Farrugia and Swiss 2005, pp. 35–6).

### **CDs and mp3s versus vinyl**

There are, understandably, contrasting opinions regarding the extent to which technological developments will alter the role of the DJ and, more specifically, the talent, skill and ability needed to be a DJ. From one perspective, the increasing use of digital technology such as CDs and mp3s, and CD mixers such as the Pioneer CDJ-1000 which is becoming the digital equivalent of the Technics SL-1200 turntable, means it is seemingly easier to DJ. These machines have such a wide variety of features (pitch control and tempo control, looping facilities, reverse play, scratching facilities) that can be initiated at the flick of a switch, that there becomes less of an emphasis on skill, and more of an emphasis on being able to operate the machines properly. In contrast to this, there is the argument that such machines extend the boundaries of mixing and DJing, in that there are greater opportunities to manipulate and alter sounds.

Extending from this is the fact that, through using CDs, the DJ is presented with the option to increase the amount of music they can take with them to a particular performance. This is of significant advantage if the DJ is travelling around the world, in that a DJ can, with a handful of CDs, take all their required music on board an aeroplane, or alternatively, take a box full of vinyl that they have to store in the cargo hold and that they risk losing in transit. As CDs allow a DJ to take more music to a performance, then there exists the potential for a set to be generated that has a greater diversity and variety than a performance based solely on the playing of vinyl. As Sydney DJ Trent Rackus goes on to explain:

I still carry a crate of records with me, but CDs are definitely the way forward. It's digital, you can do more with it than you can with vinyl, you don't have records jumping, you don't have records warping, you don't have the wear and tear, you don't have the weight to carry. You can jump on a plane and play in another country, and sit on the plane with your twenty-four hours worth of music in your lap, whereas before you'd put all your 12-inches in a metal box, put them on to the belt as you go on the plane and watch them go down the conveyor [belt] and think, 'I hope I see you on the other side'. (Interview 2004)

This increase in convenience and amount of music means we can speculate on further emphasis being lent to dance music as a global phenomenon. A significant part of the Sydney scene revolves around the performances of international DJs, who have an appeal that differs to that of the local DJs and, in part, this appeal can be ascribed to the irregularity of their performances. A local DJ can be seen weekly, fortnightly or monthly, whereas an international may only make an appearance, at best, once

every year. When these international DJs play in Sydney, there is a perception that they will bring with them music that has yet to have an impact on the local scene, and thus go some way towards 'educating' the crowd. If they have the capacity to bring an increased amount of music over what vinyl would have allowed for, then this ability to introduce new music from different parts of the world is enhanced, exposing those involved in the Sydney scene to a wider, global dance culture. This will then, potentially, further emphasise the interconnectedness of local dance scenes around the world and, in turn, lessen the perceptions of time-lag discussed earlier.

Aside from the issue of convenience, the use of CDs and other technology by DJs is also framed by a discourse of what can be termed 'performance aesthetics'. This involves the assumption that part of the process of DJing incorporates an element of performance, and that this performance is validated by the handling of particular tools or formats. In this regard, DJing becomes as much about visual perception as it is about sound creation. While Sydney DJ Alex Taylor acknowledges the convenience of CDs and the increased musical possibilities that the use of CDs grants the DJ, he does highlight how CDs can actually serve to complicate the process of DJing. He explains how it can be easier to use and manipulate vinyl during track selection and mixing because of the speed with which one can access tracks, and points within those tracks, while he also suggests that using vinyl can be better from an aesthetic point of view as well:

It's a convenience thing. I used to be quite anti-CDs, but I've become more used to it, and actually better at using them. ... It's a lot more accepted now, and you can just do so much more with it. I've got [the track] straight away on CD, and if I want to edit it, I can do it really quickly ... I still buy things on vinyl, occasionally, because I still find that if I've got like three books of CDs, and it's just so much stuff ... that it's just too much. When you've got records, you're actually putting them on a plate, you kind of feed them [through] and they are there, whereas if you've got five or ten new CD tracks, you have to quickly listen to them. ... So I buy certain things on vinyl ... I am a lot quicker with vinyl. Obviously I've done it for a lot longer. The flair of it is a bit nicer, and the spinning it round, and it looks nicer than just sort of pushing a button. ... I still buy records ... there's still a lot of stuff [in record stores], but I'm getting probably a lot more stuff from the Internet. (Interview 2005)

For many within dance culture, this act of 'spinning', or 'mixing', records is an essential component of the DJing process, and the degree to which this spinning is successfully handled and manipulated becomes one marker of DJ skill. Again, for many within dance culture, to gauge the degree of success the act needs to be witnessed visually and so, while tracks can be mixed together on CD players and laptops, the use of vinyl has come to represent the authentic visual format of DJ culture. Thus, anything that negates the need for spinning is seen as stripping away one of the perceived essential skills of being a DJ. In this sense, the visual performance associated with DJing is intrinsically linked to the skills associated with DJing. Therefore, alterations and adjustments to this visual aspect result in similar alterations to the perceptions of DJ skill and how this skill is demonstrated.

While most DJs seem to be gradually making more use of CDs and less use of vinyl, Mark Murphy has taken the opposite approach, moving from CDs to vinyl. He explains how, as one of the first dance music DJs in Sydney to actually use CDs, he initially encountered a certain amount of cynicism and suspicion, as well as a lack of suitable equipment. This demonstrates the authenticity issues that surround the use of vinyl in dance culture, issues that are only now being successfully negotiated

through the way some of the world's most prominent DJs are making extensive use of the CD format during their sets:

It's funny. I think I was one of the first DJs in Sydney to actually mix with CDs specifically, and I had to carry my CD decks around with me to clubs back in '96, and there was such an attitude against CD DJs, because vinyl was so precious to people, and all the downloading boom had not happened yet, so most of the good stuff was on vinyl. So it was hard for me to get a lot of the good dance stuff on CD, and I had to take my CD players around with me to every gig, and as soon as I started switching to vinyl, and I did it gradually, I got so much more respect and so many more gigs. It was just bizarre. There was such an attitude towards people playing CDs back then. But now, every man and his dog are playing CDs, and it's easy to get music from the Internet, and it's easier to write a track, burn it on to CD and play it out that night. So times have changed a hell of a lot in a short space of time. (Interview 2005)

This quote provides an example of what Farrugia and Swiss (2005, p. 33) refer to as 'moments of resistance'. Here, the lack of people engaging with the technology served to render it as 'inauthentic', so that Murphy was subject to negative attitudes, no doubt grounded in a perception that, by using CDs, he appeared to lack the skills necessary to DJ with vinyl, and therefore could not be seen as an 'authentic' DJ. Once the technology became more accepted, then the attitudes began to change to something more positive. This would most certainly have been helped by the appearance of international DJs using CDs, which demonstrates the different ways in which local DJs and their international counterparts are perceived by participants in the local Sydney scene. Any attempt to change things or to shift the boundaries almost always has to be validated by the actions of international DJs before it is accepted by the local scene, regardless of what local DJs may or may not do. International DJs become the bearers of authentic dance culture, and as a part of that, what they do establishes the boundaries for perceptions of DJ skill.

Focusing on notions of subcultural capital and gate-keeping, Farrugia and Swiss conclude in their article that resistance to new technologies in DJ culture is more apparent at a grass roots level, rather than at the level of international DJs (or 'superstar DJs'). Seeking out and buying records, playing vinyl as a way of demonstrating skill, accumulating knowledge and record collections, and forming networks, are all part of the process local DJs (or 'grass roots' DJs) go through to establish themselves in a local scene, and thus there is more at stake for these DJs in the shift towards the use of digital technology. In contrast to this,

Superstar DJs have less to lose because they have already proven themselves to others in dance music culture – they have a certain amount of subcultural capital, and their positions no longer rely entirely on their knowledge, networks, and record collections. (Farrugia and Swiss 2005, p. 40)

It is this subcultural capital, or rather a *perception* of subcultural capital, that determines the way international DJs are seen as instigators of new sounds and new skill sets in DJ culture. For local DJs, it may not always be about having more to lose, for some have willingly embraced new technologies, regardless of any potential negative attitudes they may face. Yet it remains the case that for local DJs, successfully negotiating the hurdles of authenticity, new technology and skill is very much dependent on the actions of more prominent international DJs. As Paul Goodyear explains, the attitude of those within dance culture to the use of CDs will change as more of the well known and well established DJs begin to use and incorporate them into their sets:

Years ago the attitude was very much that you're not a real DJ unless you play vinyl. I think that's changing now. When people see the likes of Roger Sanchez and Danny Tenaglia, they play vinyl but they also play CDs as well, they play their own remixes. So that is definitely changing, but there was that whole snobbery in the beginning about not being a real DJ unless you play vinyl. It's like, 'Hello, what's the difference?', you've still got to mix them, they are both tracks, you've still got to be able to get them in time and be able to play with them. (Interview 2005)

Despite the acceptance of technology on the part of several DJs as outlined in the above quotes, and their excitement at the possibilities this technology opens up for the future of their profession, other DJs demonstrate more of a reluctance to consign vinyl to the history of dance culture. While he acknowledges the travelling advantages of CDs, Alan Thompson believes that carrying records around is an intrinsic part of DJing, and is not something that he is in any immediate hurry to stop doing merely for the sake of convenience:

I could probably DJ my whole set with CDs, but I don't want to. I want my vinyl, I want to put that 12-inch piece of plastic on the decks. Carrying records is part of the job. I would never change my whole box just to make it lighter to travel with. I know a lot of DJs do, they find it much easier to travel around the world with. ... For me, the whole reason why I DJ is what is happening in that two hours I'm DJing, not whether I have to carry a box of records or not, that's irrelevant. (Interview 2005)

Here, Thompson associates the act of DJing with a particular set of working practices, specifically the use of vinyl and the necessary effort required to transport that vinyl. From this, it can be seen how perceptions of authenticity have been generated around the use of vinyl. If 'carrying records is part of the job', then carrying CDs or using laptop computers potentially compromises the work and act of DJing. He may not explicitly state it, but for Thompson it would seem that vinyl represents the 'authentic' DJing format. Parallels can be drawn here with an observation made by Farrugia and Swiss (2005, pp. 38–9) that some participants in DJ culture see the labour and work associated with using vinyl as central to DJ performance.

The changes to DJ practice that the use of CDs and computers have brought about have necessitated a shift in the understanding of this practice, and essentially have altered the skills of DJing. For some DJs, this is a negative development, in that it has lowered the skill levels required to successfully mix and sequence music together. Sydney DJ Illya takes a cynical view towards DJing as it relates to the progression of the technology that is changing the very nature of his profession, suggesting that the use of new technology requires a redefinition of the role of the DJ:

Playing off laptops is rubbish. ... I don't think it changes the idea of DJing, because you are still playing music to an audience, but it just doesn't sit with me ... I don't like it. I don't know enough about [playing music off laptops] to give it any good points, but from where I'm sitting, it's shit. There doesn't seem to be much skill or effort in it, it's all loaded and simulated. ... Would you know if the DJ is actually doing anything, or just hitting a button? It's computerised, the tracks can be made to be the same speed, there's no skill involved. Is the DJ listening to them, and timing them, and getting them at the right speed? I'm sure on the computer program they would have been smart enough to think of pitch control, that's just logical. So therefore, isn't that you're getting paid to do nothing? (Interview 2004)

The use of computers to carry out the act of DJing has thus been defined by some DJs in comparative terms, so that vinyl and the use of turntables are established

as authenticating DJ practice, while computers, for the apparent lack of skill that is required to operate them in comparison to using vinyl, are dismissed as non-representative of authentic DJ culture. In this instance, technology is set up as stripping away the 'human agency' involved in DJ practice (Farrugia and Swiss 2005, p. 37). Yet taking such a view denies the possibility that computers actually enhance the DJing profession and allow for greater creative expression, while also ignoring the fact that, in some respects, using computers requires the DJ to be just as skilful and thoughtful as when they are using turntables. Simply because the skills change, it does not necessarily follow that the act of DJing is made any easier. Despite this, to a large extent using vinyl serves to validate the skills of a particular DJ with a clubbing crowd, while for DJs such as Alan Thompson, the use of vinyl is an essential part of DJing and of the effort that goes into it, and he explains how, at least for him, it will always remain the central format on which he plays the music for his DJ sets:

I use vinyl and CDs. It took me a long while to get into the CD thing, because I'm an old-school DJ and I love my vinyl. I don't want DJing to get too technological to be honest with you, because it stops me from being interactive with the vinyl or the music. ... Of course, a big part of DJing is choosing the music, but also it's putting it on the deck, and spinning it, and playing it and cueing it up. When you've got a computer doing that for you ... anybody could then come up, they could take it in turns from the dancefloor ... press a button and it's playing. ... I like to see my groove, I don't want to see LCD lights going up and down, I want to see a groove in the record ... Obviously, for other people it doesn't matter what platform it is, but for me, I don't want to be having a screen in front of me, and pressing buttons. That's not DJing to me. ... I don't think that people on the dancefloor know any different. You're still hearing the music mixed, it's still being chosen by the DJ, but certainly, from a platform point of view, I'm three decks and a mixer. (Interview 2005)

A similar 'pro-vinyl/anti-technology' perspective is outlined in some of the Internet postings discussed by Farrugia and Swiss (2005, pp. 33–4), when they quote one list participant as stating, 'Pushing buttons has nothing to do with DJ'ing as far as I am concerned', and another as saying,

So with Final Scratch nothing has changed about DJing? What about picking up a 12" black circular piece of vinyl, putting it on a rotating wheel, seeing where the grooves for the tracks and breaks are, putting the needle on the record, listening for cue points. ... (Farrugia and Swiss 2005, p. 39)

An interesting point in Thompson's quote is his description of interaction with the music, and his suggestion that an over-reliance on technology prevents such interaction from occurring. This again raises the issue of performance in DJing, or rather the notion of physicality in the act of DJing. The movements and actions required to mix and play vinyl records take on a particular significance here, feeding into the DJ's engagement with the music. This dissociation of technology from interaction with the music is perhaps a result of Thompson's own reluctance to pursue an overtly technological approach in his DJing.

As Thompson hints, despite the authenticity issues that surround the use of vinyl in dance culture, one has to question the extent to which a DJ's choice of format is actually relevant, for DJing is ultimately about the selection and sequencing of music rather than the use of specific technology. Furthermore, as this technology progresses and more and more DJs embrace the use of CDs, this 'hurdle of authenticity' seems easier to negotiate. Indeed, for a culture grounded so much in a constant



search for new and fresh music, it seems peculiar that it should have such an ingrained attachment to what is for most of the world an obsolete format (Farrugia and Swiss 2005, p. 30).

As Kempster observes, the progression of house music culture has been, and will continue to be, rooted in technology, stating that, 'if house music developed out of the invention of the synthesiser, then it follows that its continued development will be bound to further technological advances' (Kempster 1996, p. 202). For Trent Rackus, the Pioneer CDJ-1000 players have changed the whole practice of DJing significantly:

You can scratch with them, you've got the multi-media card where you can store cue points, you can loop, you can sample ... you can play to minus or plus one hundred per cent pitch, whereas on a [Technics] 1200 turntable you can go plus eight or minus eight per cent. I love my vinyl but I also like being in a position where I can take things to another level. It's a refreshing part of DJing, for me, to be able to go into a gig and know that if things get a little bit tough on the dancefloor with the vinyl that you've got, you've got this back catalogue of CDs with [hypothetically] twelve tracks on every CD. You see guys like Erick Morillo playing a four-hour set and not using any vinyl. (Interview 2004)

Yet despite such positive assessments of the creative opportunities that the use of CDs presents, technology which eradicates the need for any tangible format is treated more suspiciously by certain DJs, in that the lack of involvement and interaction that such technology seems to require and produce makes the act of DJing itself less interesting. For Sydney DJ John Devecchis, the advancement of technology, while saving DJs the trouble and pain of having to carry heavy record boxes, is not necessarily good for the practice of DJing, and he acknowledges how with changes in this technology come changes with the concept of DJing itself and the skills required for the job:

CDs I can handle, but playing through a laptop, how do you know the DJ is even playing? How do you know he's not playing a pre-recorded set? How do you know he's not playing Pac-Man while he's supposed to be DJing? I want to see the DJ doing something. I don't want to see him stood pressing buttons on a laptop. ... If it goes further than CDs, it's not DJing anymore. ... If they're mixing through laptops, you don't know what technology they're using to beat-mix. By then they'll be able to change the key of tracks, so they'll be able to key mix without even picking the records to do it. ... It's almost like the art of DJing has changed to engineering, and you'll be like an engineer DJing, and that, for me, is not using your ear to pick the tracks to play, that's using your technical brain skills to be able to change the key and the drum patterns while you're playing the tracks, and that's not DJing, it's engineering to a crowd. (Interview 2004)

Again, this reflects an association of DJing with certain visual characteristics. For Devecchis, the DJ must be seen to be actually DJing, which is demonstrated through handling particular physical formats like vinyl and CDs. In contrast, using a mouse or laptop keyboard strips away the sense of performance that is established through a DJ playing, mixing and spinning records on a set of turntables. Farrugia and Swiss also tease this perspective out from their research, describing how 'turntables leave the record in plain view of spectators, foregrounding the spatiality inherent in the technology of the record' (Farrugia and Swiss 2005, p. 39). The very invisibility of mp3s is perhaps, therefore, one of the reasons why they are currently treated with a certain degree of scepticism by some DJs and dance music participants, having an impact upon how skill and performance are perceived. This is

outlined in the following quote from Mark Murphy, who is also suspicious of the use of laptop computers by DJs. He highlights how the changes such use brings about for the practice of DJing raise issues concerning the performance and activity a DJ engages in during a set, although, as he acknowledges, such suspicions and similarly negative views of the technology may simply be a result of the way laptops are a relatively new addition to the array of tools a DJ uses, and therefore are being utilised in a largely experimental manner at the moment:

Personally, using a laptop changes the whole notion of DJing. When he played out here, Sasha played on a program called Ableton, and there were comments that he was very boring to watch because all he was doing was ... there was no performance. Mixing isn't performance-based, but at least you are doing something. He looked like he was checking his emails for God's sake! As perfect as it was, Ableton is a very, very good program, and it can be used so much better than what he did. Apparently he just mixed track to track ... I think he did other things, I'm not sure ... but it is in its infancy, that sort of stuff, so we are at the beginning of something new. But it does take away from mixing on vinyl, just by what you are seeing, because you're not doing much at all ... it goes back to DJs as performers. ... (Interview 2005)

### *Ableton Live*

A brief explanation of Ableton Live is required here (for further information see <http://www.ableton.com>). This is a piece of music software, for composing and arranging, that has been adopted by DJs as a sequencer and mixer for use in a live performance context. It allows for more complex mixes to be performed, with users able to mix several different sounds at once, essentially rearranging and restructuring tracks in the live performance environment. At the time of writing, it is radically altering the very act of DJing. Certain DJs are now using laptop computers to play their sets, using programs such as Ableton Live which allow them to reshape and restructure individual tracks, taking out vocals, adding bass lines, dropping in other vocals and thus, at least in theory, making the whole practice of DJing more inventive and varied. The issue that this raises is whether this use of new technology changes the notion of a DJ, making the job more like the work of a computer engineer, while the features that this technology has introduced have impacted upon the exact skills needed to be a DJ, with mixing now being easier through beat-matching facilities on computer programs. British-born DJ Sasha is perhaps the most well-known exponent of Ableton Live.

When I conducted the ethnographic research on which this article is based, Ableton Live was very much in its early stages as a DJ tool. While most of my interviewees were aware of it as a product, and aware of it as something that could potentially revolutionise DJing, none were actually using it. While it has certainly become more widespread within DJ culture, there is little evidence to suggest that it is going to become the main DJ tool any time in the near future. The various ways in which Ableton Live can be applied to DJing mean it could have any number of possible impacts. It can be used to simply mix tracks together, thus replacing the role of turntables and CD decks, or it can be used in much more complex ways, so that tracks are essentially recomposed in a live context. The former maintains the notion of the DJ as a selector and mixer of individual tracks, whereas the latter transforms the DJ into more of a producer-type figure. Any such transformation would essentially redefine the role of the DJ. Rather than actually generating any seismic shift in the concept of

DJing, Ableton Live will most likely remain primarily as a tool for studio composition and arrangement, and will simply take its place as one option among many available to DJs.

## The impact of technology on DJing practice

It would seem that the use of technology in DJing is implicitly aligned with understandings of skill and notions of performance. While dance club DJing is primarily about selecting, sequencing and mixing music, the visibility of performance is also a key factor. With regard to technology, different formats and different machines have varying impacts on this visibility. Vinyl and turntables, as the traditional 'tools' of the DJ, established the physicality of DJing, and so the act of spinning, mixing and manipulating records has become ingrained within DJ culture. Comparing and contrasting the different technologies now available to DJs, it becomes apparent how some technologies afford visible manipulation of music better than others. It is because of this that DJs who use records look like they are *physically* DJing, whereas DJs who use laptops are described as looking like they are 'checking their emails' or 'playing Pac-Man'.

Technology therefore has an impact not only upon the practice of DJing, but also upon the *perceptions* of the practice of DJing. Different technologies, or rather new technologies, have allowed DJs to approach their work with a variety of possibilities for the performance of pre-recorded music in the club environment. Contrasting vinyl with computer software such as Ableton Live, vinyl comes across very much with a sense of limitation and restriction, whereas the use of computers seems to increase the creative potential of the DJ. It is here, however, that the perceptions of DJing begin to shift. If the DJ is doing more than playing and mixing tracks, then they are arguably no longer a DJ, but rather a live music performer. It appears that DJing is being redefined by technologies.

The adoption of turntables and vinyl, and then more recently CDs, mp3s and Ableton Live by DJs demonstrates how technologies are taken up by particular people for use in specific contexts, and then modified and developed to suit these contexts. Technics turntables became the 'must have' for any self-respecting DJ and, in turn, the features of subsequent models in the Technics range were enhanced with the work of the DJ in mind. Similarly, as CDs began to creep into DJ culture, Pioneer developed its range of CD players specifically for DJs, incorporating a mixing wheel on top of the player to lend the technology the same requirement of 'physical manipulation' as vinyl turntables. Furthermore, Ableton Live has been taken beyond its use as a tool for music creation and composition, and applied to DJ practice in order to facilitate a more highly developed form of DJ-mixing.

This idea of taking technology and applying it in different ways from its initial intended use can be seen in other areas of electronic dance music culture, as Tjora (2009) discusses in his article on the Roland MC303 Groovebox. Applying and extending the notion of script (Akrich 1992) to an empirical study of users of the Roland machine, Tjora observes how different users employ the Groovebox in different ways, which can be dependent on such factors as what they are trying to achieve by using the machine, how familiar they are with operating it, and what other machines they may use alongside it. As Tjora explains, Akrich proposes the notion of script for analysing the relationship between users and technologies and so, like

a film script, 'technical objects define a framework of action together with the actors and the space in which they are supposed to act' (Akrich, in Tjora 2009, p. 162). Tjora extends and develops this to refer to the 'designer script' and 'user scripts' as a way of distinguishing between the different ways in which technologies may be employed. Some of these different applications of technical objects may go against 'what was intended by the designers' (Tjora 2009, p. 171). The use of Ableton Live as a DJing platform thus represents the following of a particular user script that differs from the designer script. Extending this further to DJ culture, we can see how different technological scripts are followed, with some DJs following a laptop-convenience script, whereas others may follow a vinyl-authenticity script. By following a particular technological script, DJs place themselves within a particular critical framework. Using a laptop, for example, could potentially attract criticisms based around perceived lack of fundamental DJ skills, counterbalanced by the convenience aspect. Thus, the perception of the skill of a particular DJ is dependent not just on the DJ themselves, but also on the technology they use.

As well as technology itself being affected by the contexts in which it is used, it can also be seen as actually affecting the practices that occur within these contexts. The use of vinyl and turntables, in requiring obvious physical movement, meant that the associated skills of DJing became bound up in notions of physicality. In this regard, technology has shaped the practice of DJing. As such, the example of the use of technology in DJ culture leads to more generally applicable points about the way people consume and interact with technology. As Hutchby notes in his article on technologies and the concept of 'affordances', 'technologies can be understood as artefacts which may be both shaped by and shaping of the practices humans use in interaction with, around and through them' (Hutchby 2001, p. 444). In dance music culture, we can see a variety of understandings and interpretations of technology, and it is these that generate the conflicts that exist around the use of such technology. Vinyl and turntables have come to represent the 'authentic' technology of DJ culture, not only because of their widespread use, but also because of the visible associations with performance that they afford. It is not only the judgements of DJs and clubbers that have determined how skill is assessed in DJ culture, but also the technology itself has served to establish the boundaries, alter the perceptions and shape the practices of what constitutes DJing.

Extending this idea of technology being understood as shaping of human practices, recent technological developments within DJ culture have presented DJs with a choice about how they can play their music in a club. When the only option was turntables, they might not have had this freedom of choice, but at the same time, DJs were not subject to the critique of skill level that occurs today with the use of other technologies. In the environment of contemporary club culture, therefore, DJs have been pushed by technological development into making a choice about how they go about their profession. With this choice come particular consequences. Choosing vinyl requires the effort of carrying records, establishes limitations around how much music can be taken to a gig and around how this music can be sonically manipulated during a performance and, perhaps more importantly, maintains perceptions of authenticity and skill. On the other hand, laptop computers provide convenience, and potentially increase creativity and musical variety during a performance, but also generate accusations of lower, or different, skill sets and of contradicting authentic DJ practice. Technological development has therefore pushed DJs to actively make a choice about how they perform their job, and to accept the consequences that come with this choice.

Ultimately, despite all these changes in technology and the issues raised, the main concern for any DJ should be with affecting the mood of a crowd through the music played, regardless of format, for, as Klasco and Michael note, 'no matter how sophisticated the setup, a deejay must be most concerned with building energy and changing the mood on the dance floor' (Klasco and Michael 1992, p. 62). While technology may alter the exact definition of a DJ, each clubbing crowd is unique, and thus, with the responses and reactions of these crowds, each DJ set has to be unique. Although DJs may become more like engineers, they will always need the ability to be able to read and gauge a crowd's reactions, and to respond to these reactions in the appropriate manner. The constant factor that will always remain at the very core of DJing is the ability to entertain through a selection and the sequencing of tracks, regardless of the technology used to generate this. Good DJs are not defined solely by their ability to use particular technology or to mix two records together seamlessly but also, and perhaps more importantly, by the order in which they sequence and play these records. Fikentscher explains how 'a DJ's technical skill is thus at best equal to his choices in repertoire' (Fikentscher 2000, p. 38), while Rietveld (1998, p. 9) defines the role of the house music DJ as 'to provide a sound track for the dance night and to put the right tunes in the right place at the right time'.

## Conclusion

Paralleling the quick turnover of dance music styles are the continual technological developments that shape and define dance culture, with DJs and dance music producers employing the latest machines and formats, and in the process altering the fundamental skills required for their craft. The past five years have seen DJs shift away from the use of vinyl as the preferred format on which to play music during their sets, with increasing use being made of CDs, as well as laptop computers and mp3s. Given that vinyl was such an ingrained part of dance culture, there have been certain authenticity issues that DJs have had to overcome as part of this technological change. The fundamental skills of DJing were established through the use of vinyl, and thus, if there is a change to the use of a format other than vinyl, then there are also changes to these fundamental skills. As I have attempted to demonstrate through this article, there are contrasting opinions within DJ culture as to the value of these changes and the effect these changes are having on the definition of DJing.

Working through these opinions and issues helps to construct a more informed and detailed interpretation of contemporary dance culture as it relates to DJ practice. At the same time, this discussion can be situated within the specific context of Sydney, in that analysing the opinions of those DJs who work within the Sydney scene allows for a deeper understanding of the practices that create and shape dance culture in the city.

The DJs who work within the commercial house music scene in Sydney have to deal with certain tensions, ideologies and authenticities that are imposed upon their work by clubbing audiences. With regard to the use of technology, local DJs have had to negotiate the emphasis that is placed on international DJs, in that these internationals are positioned as the leaders in their field, and thus any attempts by local DJs to incorporate a degree of radicalism into their sets, either through the music



played or the format on which this music is played, are often dismissed until they have been validated by the actions of an international DJ. As such, for those in the Sydney scene, international DJs become the bearers of dance culture's authenticities and so, while some of the local DJs may have been some of the first DJs in the world to incorporate the use of CDs into their sets, it would have taken the use of CDs by several internationals to authenticate such practice within the perceptions of clubbers in Sydney. The problem for local DJs is that their educational status is placed secondary to that of the international DJs, thus making it more difficult for the local DJs to play unfamiliar sounds and to use unfamiliar technology.

One probability is that the DJ will always have a role in club culture, for the uniqueness and spontaneity of a night out is created by the work of the DJs and the relationship they establish with the dancers on the floor in front of their DJ box. The uncertainty lies in the methods and equipment the DJ will use in the future to carry out this work and create this relationship. As is the case with the ephemeral nature of the music and the constantly shifting terrain in which dance culture is played out, DJ practice has a degree of continual progression; thus DJ culture, as with the dance scene, needs to be understood as a fluid and evolving element of club culture. Similarly, technological development should be understood as facilitating this continual progression. Yet because of some of the perceptions outlined in this article, which are ingrained within dance culture, in relation to DJ skill, visible manipulation and physical performance, there exists a contradictory attachment to vinyl. Using an old and dated format seems to go against the progressive principles that underpin the creation of contemporary dance music.

The adoption of CDs, mp3s and Ableton Live lends emphasis to this idea of DJ culture as fluid and evolving, while the continued use of vinyl demonstrates the way technology can be bound up with perceptions of skill, aesthetics and authenticity. The progression of DJ culture, in a technological sense, seems to be partially held back by the association vinyl has with DJ skill and capability. As such, it is not sufficient to simply suggest that as the use of digital technology becomes more widespread in DJing it will become more accepted by clubbing audiences. Rather, as clubbers witness more and more DJs employing technology other than vinyl and turntables, then their understandings and perceptions of what it means to be a DJ will change, and this may require a redefinition of the concept of DJing, and a reframing of the skills and abilities seen as being essential to DJ practice. As more and more DJs move away from using turntables, the ability to seamlessly mix *with vinyl* becomes less important. While not using vinyl would be seen, for some, to go against the very fundamental principles of DJing, the days of vinyl-less dance scenes cannot be far away.

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