Interrogating the Live: A DJ Perspective

[Electronic Version]

Paul Bell

Submitted in fulfilment of the degree of PhD, Newcastle University, 2009

Contents

Preface

This PhD is driven by practice-led research that interrogates the notion of 'live' performance in a mediatised culture. At its core it is concerned with the tension between body and machine. Argued from a DJ perspective the work addresses issues raised by creative tools and platforms currently being developed and distributed. Questions of digitally technologised and mediatised versus analogue creative media inform a position on the challenges posed by 'remediated' live uses of technologies, particularly as read against more traditionally held views of liveness. On the one hand, solo practical work directs an investigation into existing and emerging DJ technologies; negotiating a path between an analogue paradigm rooted in Turntablism and the virtual world of digital media. On the other, a series of collaborative projects explore the DJ as a 'live' ensemble player, confronting the paradoxical whilst gaining insight into contemporary conditions of musical creativity.

The textual commentary provides a self-critical narrative of a personal research process informed by DJ practice and musicology scholarship. Questions relating to liveness are dealt with at the outcome of each stage of the process and critical positions devised. The practical projects are informed by several years' sustained interest and empirical enquiry into improvisation with audio and visual materials. Included in this submission are a number of CDs and DVDs containing this work. Without wanting to initiate a detailed debate on the relationship between 'theory' and 'practice' my own position is that I consider the written element of this thesis – the references to cultural/media theory and writings by practitioners working in my field – as inextricable from the music making itself. Readings have influenced my thinking which has in turn affected my practice, and I have used practical enquiry to problematise what has been said or written in relation to my discipline. The practice/theory debate has gathered momentum since artists began bringing their research into the academy. However, a simple polarisation of *a posteriori* and *a priori* knowledge has a tendency to lead us in

circles and, having fallen victim to many heated discussions concerning the relevance of theory to practice and how to resolve the problem, it is my own belief that the two sides cannot be separated. For that reason I have chosen not to engage with the debate in this thesis, as I believe that this would have detracted from the larger research aims of my project.

On the topic of collaborative research - such as that carried out with John Ferguson in the Tron Lennon duo, for example - I do not consider my own contribution to be fifty percent of the work, instead I believe that myself and my collaborators have invested one hundred percent respectively, for each has had his own specific research agenda that happened to find its impetus in collaborative music making.

Finally, given the critical context of mediatisation to the practical work hereinafter, some readers may be surprised to see photographic slides set to music as part of the documentation. Though it may seem incongruous the format serves to condense history, providing a narrative of the processes that encapsulate the work of the creative practitioner, processes that are often overshadowed by the product such as the sense of occasion leading up to a performance and the technologies or tools that facilitate the creative process.

List of Media*

Audio CDs

01 Paul Bell - *Anti Telos*

1. Subort Mick……5:58
2. Lute Devis……5:46
3. Sacred Music……4:58
4. When I Need You……5:18
5. Voice Crack……4:53

02 Tron Lennon - *Olivia Newton-Tron EP*

1. BBS Part 1 (featuring John Ayers on clarinet)……6:35
2. BBS Part 2 (featuring John Ayers on clarinet)……4:26
3. JTT……6:30
4. Thank you Reverend……7:03
5. The Fly……6:13

03 Paul Bell & Robert van Heuman – *Digital vs. Analogue*

1. One……4:50
2. Two……3:06
3. Three……6:59
4. Four……5:55
5. Five……2:08

04 Paul Bell - *STEIM Artistic Residency Recordings*

1. Voices……5:51
2. Industrial Beast……3:23
3. Robotics Monknut……5:01
4. Watertape……6:30
5. Horns……2:27

05 DJ Sniff & Paul Bell – *Hybrid Turntablism*

1. Vester 4:55
2. Low Blower……3:50
3. English Pigs……4:12
4. Science Friction……4:01
5. Brass Off……2:27
6. Modulator……1:58

DVD Videos

01 *Solo Performance*

1. Tripswitches……11:49
2. Sound 09 Festival……..16:32

02 *Video & Gesture*

1. Live Cinema……11:06
2. Don't Think Feel……...2:26
3. A Short Film About VJs……...4:10

03 *DJ Motion Capture*

1. Improv 1……3:10
2. Improv 2……2:45
3. Improv 3……4:10
4. Improv 4……3:15

04 Tron Lennon @ *Blue Rinse*

1. Performance……...11:37

05 Tron Lennon – *Improvisation 1 & 2*

1. Improvisation 1……5:37
2. Improvisation 2……3:29

06 Tron Lennon – *Mini Tour*

1. Newcastle – Side Cinema.....19:47
2. York – Winning Post……..14:05
3. Norwich – queen Charlotte……...22:22
4. The Hague – Tag Gallery……6:57
5. Berlin – Salon Bruit……26:22
6. Berlin – Club Transmediale……..16:29

07 DJ Sniff & Paul Bell @ *Tripswitches*

1. Main Performance……..18:43
2. Encore……3:57

08 *Slideshows*

1. DJ Motion Capture……2:04
2. The Road to Transmediale 08……2:30
3. Digital vs. Analogue……2:08
4. DRHA 08……2:11
5. STEIM Artistic Residency……2:26

* Please note that the electronic version contains hyperlinks to media originally submitted in CD and DVD format. This work can also be accessed at http://www.itchymuzik.com/.

Introduction

> Electronic dance music … meets the criteria of what in the 1970s we thought must be coming but could not yet see, although it did not turn out to be what anyone back then was expecting. In fact, many of us absolutely detest this kind of music.[1]

> [T]he claim that a DJ just 'plays' other people's music is what haunts me day and night.[2]

As a DJ with a background in electronic dance music I have always experienced some degree of hostility toward my performance practice and musical discipline. Admittedly most of it has been facetious in its intent, nevertheless such derision stems from a culturally ingrained disposition that a DJ is not a real musician because he or she plays other people's music. Furthermore, in comparison to music made with traditional instruments, electronic dance music is assembled with, and performed by, machines therefore removing human agency from the act of music making, or so it is believed. I became very much aware of these anxieties when taking a class in free improvisation, not because I was being undermined by my peers, rather I found it problematic integrating the turntable into an ensemble, utilising it as an instrument alongside traditional players. Subsequently, I began studying Hip Hop Turntablism, learning to scratch in the hope that producing (as opposed to reproducing) sound would make me a more accomplished musician. Hip Hop Turntablism has its own form of improvisation with an extensive vocabulary of techniques requiring hours of practice and repetition in order to realise them, but at the same time as I was learning these techniques I was continuing to investigate freely improvised music making, which seemed to contravene the improvised practice I was developing as a

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[1] Bob Ostertag, 'Human Bodies, Computer Music', *Leonardo Music Journal*, 12 (2002), 11-14 (11).
[2] Takuro M. Lippit, 'Play or Playback', *Alternative Turntable Music Forum*, 2009, http://forum.itchymuzik.com/viewtopic.php?f=7&t=56 (28th July, 2009).

Hip Hop turntablist. This anxiety over live performance led to a collaborative project with John Ferguson, a fellow PhD candidate with a similar enthusiasm for improvisation. We formed the Tron Lennon duo in order to conduct practice-led research into improvised music making and to address issues with regard to the nature of electronic music performance. My own interest in experimental Turntablism led also to the inception of the *Alternative Turntable Music Forum*,[3] an on-line community of turntable practitioners and electronic musicians. These resources have provided much of the impetus for my interrogation into 'the live'.

During my four years of practice-led research a number of themes have arisen in relation to my interrogation of live performance from a DJ perspective. Chapter 1 opens with an account of the distinction between the live and the recorded drawing on the practice of experimental turntablist Christian Marclay whose aesthetic is driven by a desire to make 'dead' recordings live again. Addressing Pierre Schaeffer's research into psychoacoustics I aim to problematise Marclay's assumption. Following a discussion on technological permeation I consider Philip Auslander's theory on 'liveness' whereby he argues against positions that put the live and the recorded into a simple opposition to one another, emphasising the paradoxical nature of 'live' performance in a technologically mediated society. The chapter concludes with a discussion of 'live electronic music', a discipline that sets itself in opposition to electronic musics predicated on the use of recordings and automation. Chapter 2 examines the apparent contradiction in recording improvised music, engaging opinion from practitioners in the field. This is followed by a practical investigation into documentation and how video was employed in the Tron Lennon duo to foreground gesture legibility, addressing issues that emerged as a result. A discussion on editing improvisation brings the chapter to a close. In chapter 3 the subject is gesture and interface wherein I illustrate how improvisers of electronic music have sought to touch sound or bring a sense of their corporeal presence through the music, an anxiety grounded in a belief that analogue/digital repetition obscures physicality. A discussion on immediacy develops in which I outline

[3] http://forum.itchymuzik.com/

the ostensible differences between music technologies and musical instruments. Following this, with reference to media theory I call attention to an emerging hybrid paradigm whereby DJ technology combines analogue and digital potential; through a series of practical projects I demonstrate how I have grappled with the issues raised. Chapter 4 discusses the role of unpredictability in the development of my improvised turntable practice, my position regarding the creative process, and how Tron Lennon embraced the seemingly autonomous aspects of electronic technology as a way to elicit the unforeseen. Drawing on Nick Couldry's idea of 'a virtuosity in finding' I explain how working with unpredictability negates traditional understandings of instrumental mastery founded on technical ability and control. Proceeding from this I consider indeterminacy and improvisation, approaches that apparently negate one another, and how they are brought together in my own practice. The chapter concludes with an analysis of unpredictability in improvised performance. Chapter 5 looks at unpredictability in analogue/digital repetition; an oxymoronic proposition which problematises claims made in chapter 3 with respect to human agency and machines. By comparing the work of two leading Detroit Techno DJs - Jeff Mills and Richie Hawtin - I aim to show how discovery-led process and embodied agency continues to flourish within a repetitive, technology-driven genre. In light of this realisation, and through my collaborative work with two practitioners from STEIM (the Studio for Electro-Instrumental Music) in Amsterdam, I reveal how physical gesture and digital repetition have been negotiated within my improvised music making.

Chapter 1. Orientation – The Live and the Recorded

1.1. The Poles of the Live and the Recorded

There is a historically situated distinction between the live and the recorded. Traditionally, live performance is diametrically opposed to recording; the former full of life and replete with real-time interaction; the latter, the antithesis of the live, a dead recorded object lacking in physical presence, as Steve Wurzler points out:

> As socially and historically produced, the categories of the live and the recorded are defined in a mutually exclusive relationship, in that the notion of the live is premised on the absence of recording and the defining fact of the recorded is the absence of the live.[4]

The advent of recording in the late nineteenth century created this binary opposition, prior to recording there was no notion of the live as music was an ephemeral event, 'predicated on its own disappearance'.[5]

Put into opposition, as it often is, with the live, sound recording has frequently been categorised as 'dead', and this is an aspect of recorded sound that has motivated the work of experimental turntablist Christian Marclay, an artist whose music and conceptual frameworks have impacted on and informed the development of my own creative practice. In the late 1970s, when the turntable was emerging as a musical instrument in Hip Hop culture, Marclay was also exploring its performance potential, but with a very specific goal in mind:

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[4] Steve Wurzler, 'She sang live, but the microphone was turned off: the live, the recorded and the *subject* of representation', in Rick Altman (ed.) *Sound Theory Sound Practice* (New York, London: Routledge, 1992), 87-103 (89), cited in Philip Auslander, *Liveness: Performance in a Mediatized Culture* (London: Routledge, 1999), 3.

[5] Chris Cutler, 'Plunderphonia', in Christopher Cox & Daniel Warner (eds.) *Audio Culture: Readings in Modern Music* (New York: Continuum, 2007), 138-156 (138). However, to assume that the idea of the 'live' was concurrent with the act of recording may in fact be a prochronism, as Philip Auslander has noted: 'the *Oxford English Dictionary's* earliest examples of the word "live" in reference to performance come from the mid-1930s, well after the advent of recording technologies … If the word history is complete, then the concept of live performance came into being not at the appearance of the basic recording technologies that made the concept possible but only with the maturation of mediatized society itself'. Auslander, *Liveness*, 52-53.

> I've always had this theory that recorded sound is dead sound, in the sense that it's not "live" anymore. Old records have this quality of time past, this sense of loss. The music is embalmed. I'm trying to bring it back to life through my art.[6]

For Marclay, a recorded object is a dead object and making recordings live again is a theme that resurfaces time and time again in his work. In 1985, for example, he provided a novel take on the turntable as musical instrument producing a performance art piece entitled *Ghost (I Don't Live Today)*,[7] recorded live at the Kitchen in New York. In it Marclay utilises a Phonoguitar; a custom turntable he plays like a guitar strapped around his neck. In the performance he manipulates Hendrix records whilst imitating the icon guitarist's corporeal stage antics, even creating feedback by shoving the Phonoguitar into the path of an amplifier. Marclay's Phonoguitar performances 'reactivated what was essentially live music frozen in the recording of it', as Emma Lavigne has put it.[8] His strategy for overcoming the fixity, created by the medium of recording, employs destructive methods in order to break through this reification. 'In my performances, I destroy, I scratch, I act against the fragility of the record in order to free the music from its captivity', he reveals.[9] Preparing his records through 'abusive manipulation' techniques; using sticky tape to force the needle to skip in rhythmical patterns, drilling holes off-centre to produce eerie, portamento effects, and slicing records into different segments before gluing them back together to create clicky, percussive composites, Marclay seeks to extract sounds from the turntable and vinyl that were never intended by the original manufacturers and/or artists. For Nicolas Collins, 'the notion of "playing" records actively rather than passively finally came into its own' in Marclay's performances.[10]

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[6] Christian Marclay, 'DJ Culture Quotations', in Christopher Cox & Daniel Warner (eds.) *Audio Culture: Readings in Modern Music* (New York: Continuum, 2007) 327.
[7] Christian Marclay, 'Ghost (I Don't Live Today)' (Switzerland: Eight & Zero, 2007).
[8] Emma Lavigne, 'A Walk on the Wild Side: Fragments for a Punk Aesthetics', in Jean-Pierre Criqui (ed.) *Replay Marclay* (Zurich, JRP Ringier, 2007), 87.
[9] Ibid., 90.
[10] Nicolas Collins, 'Live Electronic Music', in Nick Collins & Julio d'Escriván (eds.) *The Cambridge Companion to Electronic Music* (Cambridge: Cambridge University press, 2007), 50. Note that there is a pejorative undertone in that a regular DJ plays records 'passively', a point to which I will return later in this thesis. For an illuminating example of Marclay performing with four turntables see his appearance on *Michelob presents Night Music* from

Marclay's attempts to make recordings live again, however, do not end with his stage performances; in the same year as his Phonoguitar performances he released *Record Without a Cover*,[11] a project foregrounding the physical destruction of the vinyl medium that has been integral to his performance aesthetic. Those who purchase a copy of the record are advised, 'do not store in a protective package', to encourage surface noise and other blemishes to accrue on the medium over time. Adopting a Cagian perspective Marclay maintains that 'all those sounds [pops, clicks, and scratches] are acceptable, as much as the sounds recorded in the groove', thus ensuring the vinyl medium remains in-flux, and in turn, alive.[12] It can be argued that Marclay has many parallel interests with the late John Cage, in particular the significance he has placed upon achieving the unique by challenging the immutability of recordings; performances with his constantly-evolving records share conceptual resonances with performances of Cage's indeterminate compositions which can not be repeated even though there is a score to be followed; as Cage put it, 'when performed for a second time, the outcome is other than it was'.[13]

Marclay's rationale about the recorded object being analogous to death is a common trope in theories of the live; Herbert Molderings, for example, has deemed the recording a 'petrified vestige of a lively process'[14] (I explore this idea further in Chapter 2 in relation to recording improvised performances). As shown, Marclay aimed to address the issue of immutability by exploiting the fragility of the vinyl medium. However, digital audio does not easily lend itself to degradation, and what is more, when looped the sound is identical every time; this has led to accusations that digital sound - perhaps more so than analogue - is therefore devoid of life. According to Jaron Lanier:

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the late 1980s. The film can be viewed at: http://www.youtube.com/watch?v=IIFH4XHU228&NR=1 (10th September, 2009).

[11] Christian Marclay, 'Record Without A Cover' (New York: Recycled Record, 1985).

[12] Tom Patterson, 'Mini Documentary', *Christian Marclay*, 2002, http://www.pbs.org/wnet/egg/231/marclay/index.html (4th June, 2007).

[13] Cage, *Silence*, 39.

[14] Herbert Molderings, 'Life is No Performance: performance by Jochen Gerz', in Gregory Battock & Robert Nickas (eds.) *The Art of Performance: A Critical Anthology* (New York: E. P. Dutton, 1984), 166-180 (172-3), cited in Auslander, *Liveness,* 41.

> Digital production usually has an overtly regular beat because is comes out of a looper or a sequencer. And because it uses samples, you hear identical microstructure in sounds again and again, making it seem as if the world were not alive while the music was playing.[15]

The conventional wisdom that recordings are fixed, repetitive, dead objects is not, however, an infallible truth. If we were to think for a moment about repeated listening, about a recording we've listening to countless times, we would arrive at the conclusion that our experience of it is not the same every time we hear it. Moreover, when listening to looped audio material, whether it be from vinyl or a sequencer, the sound written into the medium may well be identical, yet our listening alters the sound insofar as the sound we are hearing is a perception. This is an insight Pierre Schaeffer had from his research into psychoacoustics, '[b]y repeated listening to the same recorded sound fragment, the emphasis is placed on variations of listening'.[16] Through his work into closed grooves (literally closing a record groove in on itself to produce a loop) he showed the sound was 'always identical yet always capable of revealing new characteristics when heard over and over again'.[17] Phenomenology can perhaps also explain why some continue to view recordings and loop-based musics as lifeless, unchangeable objects when our perceptions inform us otherwise. For example, the Kantian distinction between *phenomenal* and *noumenal* reality demonstrates that critics of the act of recording, and repetition in general, are actually referring to the noumenon - the thing-in-itself; but we can only know the phenomenon - the thing as we perceive it. In other words, even if recorded objects are 'fixed' in themselves, we perceive them as changing because our perception is 'live'.

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[15] Jaron Lanier, 'Where Did the Music Go?', in Paul D. Miller (ed.) *Sound Unbound: Sampling Digital Music and Culture* (Massachusetts: The MIT Press, 2008), 385-390 (388).
[16] Michel Chion, *Guide des objets sonores: Pierre Schaeffer et la recherche musicale* [*Guide to Sound Objects: Pierre Schaeffer and Music Research*] (Paris: INA-GRM/Buchet-Chastel, 1983), 12.
[17] Ibid., 13.

1.2. Technological Permeation

Up to the mid-twentieth century a recording was considered a mere document of a live event insofar as the actual live performance 'served as the authoritative principle by which the recording was evaluated'.[18] In the latter half of the twentieth century (from 1958)[19] the recording studio and multi-track tape played a decisive role in the reversal of the 'authoritative' relationship between the live and the recorded as musicians could construct illusionary 'live' performances that never actually took place: a 4-track enabled instruments to be recorded separately and balanced against one another at a later date; musicians could record in isolation from the rest of a band/ensemble rendering face-to-face interaction superfluous; songs could take weeks, even months, to produce thereby shattering the former temporality of the music-making and/or recording process - its real-time function.[20] At one time, direct recording to vinyl disc demanded that all musicians occupy the same space and that technical requirements such as microphone placement, equalisation, acoustics, balancing/mixing instruments, be realised prior to recording.[21] The use of effects and dynamics processing equipment – delays, reverbs, equalisers, compressors, etc – emerging at the same time, played a significant role in this break with tradition. For example, reverb was often used to produce artificial environments and could locate a performance in any space. In addition, tape splicing techniques developed by avant-garde composers Pierre Schaeffer and Karlheinz Stockhausen in the early 1950s truly exploded the possibilities for imaginary performances; unlike the unyielding record disc magnetic tape was extremely flexible offering malleability akin to that of film in the visual arts thus greatly facilitating accurate editing and compositing. When utilised in the production of

[18] Kai Fikentscher, 'On the Performative Technology of 12-Inch Vinyl', in René T. A. Lysloff & Leslie C. Gay Jr (eds.) *Music and Technoculture* (Middletown, CT: Wesleyan University Press, 2003), 290-315 (292).
[19] This being the year multi-track tape recording entered the studio.
[20] It is said that members of Pink Floyd took regular breaks whilst recording *The Dark Side of the Moon* to attend football matches and watch *Monty Python's Flying Circus* on TV. John Harris, *The Dark Side of the Moon* (Da Capo Press, 2005) 101-102.
[21] Michael Chanan, *Repeated Takes: A Short History of Recording and its Effects on Music* (London: Verso, 1995) 144. For example, in the 1920s, the extreme dynamic of Louis Armstrong's cornet required that he play at a greater distance from the microphone (and the other musicians of his Hot Five and Hot Seven ensembles), as there was no other way to balance the different amplitudes of the instruments. Fikentscher, '12-Inch Vinyl', 292.

ensemble-based music these technologies and techniques resulted in compositions that were unperformable onstage. The Beatles were one of the first popular bands to fully exploit the studio; *Revolver* (1966), for example, employed splicing and reverse-tape techniques as well as multi-tracking. They quit touring to focus on an album 'composed for recording rather than performance', the outcome of which was *Sgt. Pepper's Lonely Hearts Club Band*.[22] In light of these developments it was only a matter of time before acts started to introduce recording technologies to the stage, especially when compact (and portable) digital alternatives began emerging in the early 1980s.

When music technologies and automated processes entered into the realm of live performance there was a growing fear that performances were becoming more like recordings and therefore becoming somehow 'less live'. Of course, there was always a certain amount of controversy over the nature of so-called 'live' performances, especially within musics that were preoccupied with recreating, as closely as possible, the recorded version of a song; a condition that provoked Jacques Attali to famously write, 'public performance becomes a simulacrum of the record',[23] though it is worth noting that something to the same effect was recorded by Adorno in 1938 when he asserted that '[t]he performance sounds like its own phonograph record'.[24] Such statements mark a history of suspicion towards electronic technology as something that threatens the authenticity of the human, evident in the uproar of Dylan 'going electric' at the 1965 Newport Folk Festival, and later, 'music technologies' like drum machines and computers eliminating human agency from music production. However, the lip-synching scandal of 1990 involving pop act Milli Vanilli ostensibly ushered in a new era of simulated musical performance. For Paul Théberge, it was the 'culmination of nearly a decade of concern over the

[22] Chanan, *Repeated Takes,*143.
[23] Jacques Attali, *Noise: The Political Economy of Music* (Minnesota: University of Minnesota Press, 2003), 85.
[24] Theodor Adorno, 'On the Fetish-Character in Music and the Regression of Listening', in Richard Leppert (ed.) *Essays on Music* (Berkeley, Los Angeles, London: University of California Press, 2002), 288-317 (301).

status and legitimacy of live performance in an era of sequencers, samplers and backing tapes'.[25]

In his work on the notion of 'liveness' Philip Auslander disputed the dialectical arguments made in contemporary performance studies and culture at large about the live and the recorded, which he sees as particularly problematic when trying to account for live performance that utilises technological reproduction; 'the common assumption is that the live event is "real" and that mediatized events are secondary and somehow artificial reproductions of the real'.[26] Auslander's argument stems from the idea that, as a culture, we have grown accustomed to the television experience being a live, home viewing event - which is what it originally was - even when what is being viewed may today be in fact a recording.[27] What is more, the televisual format now permeates the 'entire spectrum of live performance genres'[28] and we need only consider the gigantic displays that embellish stadium sporting arenas and musical events - relaying the action in real-time to increase the sense of proximity for the viewer - to witness the scale of this incursion. 'To put it bluntly', Auslander writes, 'the general response of live performance to the oppression and economic superiority of mediatized forms has been to become as much like them as possible'.[29] For Auslander, in our current mediatised culture the recorded interpenetrates the live and vice versa to such an extent that binary oppositions between live and mediatised performances are no longer sustainable. As I mentioned at the beginning of this chapter the idea of 'live' did not exist before recording and for that reason Auslander positions the neologism 'liveness' as 'a relation of dependence and imbrication rather than [as an] opposition' to the mediatised.[30] Moreover, '[f]ar from being encroached upon, contaminated, or threatened by mediation, live performance is always already inscribed with traces of the possibility of

[25] Paul Théberge, *Any Sound You Can Imagine: Making Music/Consuming Technology* (New England: Wesleyan University Press, 1997), 231, cited in Auslander, *Liveness*, 86.
[26] Ibid., 3. The *Compact Oxford English Dictionary* entry for the word 'live' figures it as the negation of recorded: '(of a musical performance) given at a concert; not recorded'. 'Live', *Ask Oxford*, http://www.askoxford.com:80/concise_oed/live_2?view=uk (6th November, 2009).
[27] A point which adds weight to my previous assertion with respect to perception being live.
[28] Auslander, *Liveness,* 7.
[29] Ibid., 7.
[30] Ibid., 53.

technical mediation (i.e., mediatization) that defines it as live'.[31] Building on Jean Baudrillard's critique of media and high-tech society Auslander makes the following case:

> The paradigm that best describes the current relationship between the live and the mediatized is the Baudrillardian paradigm of *simulation*: "nothing separates one pole from the other, the initial from the terminal: there is just a sort of contraction into each other, a fantastic telescoping, a collapsing of the two traditional poles into one another: an IMPLOSION." Baudrillard states … "*this is where simulation begins."* … As the mediatized replaces the live within cultural economy the live incorporates the mediatized, both technologically and epistemologically. The result of this implosion is that a seemingly secure opposition is now in a state of anxiety, the anxiety that underlines many performance theorists' desire to reassert the integrity of the live and the corrupt, co-opted nature of the mediatized.[32]

The important point here is that binary oppositions have not been resolved (in a Hegelian dialectic sense) rather they have been completely dissolved; there is no longer enough of a tension between the live and the mediatised to sustain their opposition. Baudrillardian criticism does, however, have its problems for it apparently favours technological determinism as there is no longer a dialectic to negotiate.[33] From my perspective as a DJ I can see how such a theory might validate claims that a club DJ just plays records; that the art form is in effect simulationist. Then again, there are also strong arguments that would support the idea that the club DJ occupies, and continues to negotiate, the interstices of the live and the recorded within mediatised performance, and that there remains a dialectical tension between them. Furthermore this is increasingly achieved by deploying technological developments that have otherwise been figured as *threatening* the continued existence of the art form (discussed in Chapter 5). With respect to this DJ-ing must therefore be seen as a manifestation of the discursive relationship between the live and the recorded, and so it is understandable why some

[31] Ibid., 53.
[32] Ibid., 39.
[33] For Sarup, Baudrillard 'fails to see that media are a contested terrain, an arena of struggle.' Madan Sarup, *An Introductory Guide to Post-Strusturalism and Postmodernism* (Hemel Hempstead: Harvester Wheatsheaf, 1993), 167. Keller has also noted that Baudrillard 'posits an autonomous technology'. George F. Keller, 'Jean Baudrillard After Modernity', *International Journal of Baudrillard Studies*, 3/1 (2006).

theorists have focused instead on technology's permeation, as opposed to determination, of musical practices.[34]

1.3. Live Electronic Music

In an interesting twist on the interpenetration of the live and the recorded in mediatised performance Nicolas Collins has recently written about 'live electronic music'. Adopting an all too familiar position he writes, 'it is a general human habit to view the technological and the organic as opposites'.[35] In the case of electronic technology, applied in the production of music, Collins reaffirms the idea that it is most often employed to assist the creation of complex compositions that are impossible to perform live and that they generally remove the notion of skill from the act of music making:

> Isn't the purpose of electronics to do things for us so we don't have to do them 'live' ourselves? To record, perfect and play back performances so we can listen while cycling stationarily? To facilitate the creation of inhumanly intricate compositions that spew themselves out of speakers at the touch of a button, instead of all the messy sliding about on strings?[36]

For Collins, triggering recordings is the most widely accepted method of presenting electronic music in live performance, yet he asserts that electronic technology may offer a 'more profound power' capable of 'new and volatile connections'.[37] Accordingly, he configures 'live electronic music' as both a response and a challenge to electronic music performance based on recordings and automated processes (club DJ-ing, for example) and, in particular, he sees it as an attempt to *resolve* the ideological distinction that continues to separate the technological and the organic. Auslander's above mentioned critique of the desire of performance theorists to 'reassert the integrity of the live and the corrupt, co-opted nature of the mediatized' seems pertinent here. In addition, it is worth noting that Collins is critical of recording rather than mediatisation but fails to see how they interpenetrate; and how his

[34] Jeremy Gilbert & Ewan Pearson, *Discographies: Dance Music, Culture and the Politics of Sound* (London: Routledge, 1999), 110-145.
[35] Collins, 'Live', 38.
[36] Ibid.
[37] Ibid.

own practice involves mediatisation which must therefore allow for the inclusion of the recorded.

It should be no surprise that the notion of live electronic music emerged around the same time that magnetic tape was gaining a foothold as a compositional/performance tool, however, it was a particular reaction to avant-garde loudspeaker music in concert halls throughout the 1950s that prompted its coming into being. John Cage is often cited as the innovator of the discipline since it was he who first took issue with the playback of recordings from magnetic tape. For Cage, tape music was literally disembodied and therefore problematic to the notion of live performance:

> I was at a concert of electronic music in Cologne and I noticed that even though it was the most recent electronic music, the audience was all falling asleep. No matter how interesting the music was, the audience couldn't stay awake. That was because the music was coming out of loud speakers. Then, in 1958 … we were rehearsing the *Williams Mix*, which is not an uninteresting piece, and the piano tuner came in to tune the piano. Everyone's attention went away from the *Williams Mix* to the piano tuner because he was live.[38]

Though his earlier piece, *Imaginary Landscape No. 1*[39] (1939), composed for amplified Chinese cymbals and variable speed turntables playing test tone records, is credited as the very first live electronic piece, *Cartridge Music* (1960) for amplified small sounds was an explicit endeavour on Cage's part 'to make electronic music live',[40] a move that rejected the predictability and fixity of the recorded. Disenchanted with formal tape composition and its lack of physical presence Cage tried a different tack that would place human performers, as opposed to machines, at the heart of the electronic music concert. In *Cartridge Music* he removed the phonographic pick-up cartridges from turntable tone arms and instructed performers to produce sounds without records; the styli were replaced with small objects such as toothpicks, feathers, springs, and anything else capable of fitting into the cartridge aperture and sounds generated by stroking, bouncing, vibrating, etc. A

[38] Thom Holmes, *Electronic and Experimental Music* (New York: Routledge, 2008), 377.
[39] John Cage, *Imaginary Landscape No.1*, performed by Doris Dennison, John Cage, Margaret Jensen, Xenia Cage (Germany: Wergo, WE6247-2, 1994).
[40] Joel Chadabe, *Electronic Sound: The Past and Promise of Electronic Music* (New Jersey: Prentice Hall, 1997), 81.

seminal work, *Cartridge Music* set a precedent for the acceptance of accidental and unforeseen events in electronic music performance (my subject in chapter 4), in particular those sounds that resulted from electronic accident, 'all events, ordinarily thought to be undesirable … are to be accepted', the score advises.[41]

Taking this into account there is a paradoxical reasoning at work in the mind of live electronic musicians especially those approaching the discipline from a Cagian perspective;[42] on the one hand, they appear to want to repair the cause-effect links - that seem to have been broken by reproduction technologies - by physically causing the sound, yet, on the other hand, they embrace the unpredictability and instability afforded by machines breaking away from their intended role as sites of repetition. Circuit benders like Reed Ghazala and Hardware Hackers like Nicolas Collins crack open cheap electronic toys to make sound-producing instruments by touching the audio circuitry, whilst foregrounding the unpredictable nature of such actions.[43] For these live electronic musicians the 'live' is equated with haptics, which they see as reintroducing a sense of the physical; physical contact then becomes enough to prove that they are 'doing it live' even though the inherent unpredictability of their systems assumes an autonomy that stands beyond their control, in which case physical presence becomes a defining factor of live electronic music confirmed by Cage's aforementioned observation with regard to the 'live' piano tuner.

In general, live electronic music is a product of the belief that the body is participating once again in the music making process, that the human is having an effect on the music, not just pressing buttons to facilitate the playback of recordings as Collins has it. Collins's particular mission is to provide 'electronic alternatives to the computer - ways to bridge the gap between the sound world of a generation raised in an electronic culture and

[41] Collins, 'Live', 41.
[42] I will consider an alternative approach to live electronic music in Chapter 3 that has been primarily concerned with gesture legibility and virtuosity.
[43] Reed Ghazala, *Circuit-Bending: Build Your Own Alien Instruments* (Indianapolis: Wiley Publishing, 2005). Nicolas Collins, *Handmade Electronic Music: The Art of Hardware Hacking* (New York: Routledge, 2006).

the gestural tradition of the hand'.[44] He writes, 'what the computer offered in the way of power and universality was obtained at the expense of touch'.[45] As a DJ interrogating how the live and the recorded interpenetrate one another the notion of touch has been the source of much anxiety and impetus within my own practice-led research.[46] In many ways, the DJ has already bridged the gap to which Collins alludes, yet obviously Collins does not see the club DJ in particular as doing anything live because they are working with recordings: 'most turntable playing these days is used to create a seamless, beat-matched sequence of tracks, with the occasional discrete scratch accent on top - less about performance *per se* than replaying the music of others'.[47] To maintain that a DJ is somebody who simply plays records is to disregard the extremely important element of touch in playing a record, not just in scratching; mixing records together is physically mediated. That said, Collins is not the first and he will certainly not be the last to question whether DJ-ing is worthy of being a live art form and there was a point at which I was inclined to agree with this idea; however, the process that the rest of the thesis will be accounting for has led me to reappraise this position.

[44] Nicolas Collins, 'Handmade Electronic Music', *Nicolas Collins*, http://www.nicolascollins.com/handmade.htm (14th September, 2009).
[45] Ibid.
[46] Discussed in Chapter 3.
[47] Collins, 'Live', (50).

Chapter 2. Improvisation and Recording

2.1. Why Document?

In some circles improvisation[48] is considered 'the live' *par excellence* for it involves not simply recreating repertoire but *creating* music in the here and now; 'occupy[ing] the time and space of its production, and only that', as Paul Hegarty puts it;[49] it is therefore seen as being unique and unrepeatable. By documenting my own improvised music making I have brought together these apparently oppositional factors and raised questions about the nature and intent of such recordings. For example, when improvisation is recorded is the recording a document of an improvisation, in which case is it adequate? Is the recording a different piece of work to the improvisation? Does it come closer to a composition by being repeatable and by being taken out of the specific moment of its creation? There is also the ethical question as to whether a recording of an improvisation should be edited or not. Aside from grappling with these questions there were two reasons for my decision to record my improvised practice: first, there was the important issue of providing a portfolio of practical research to support this doctoral submission; in other words, I had no choice but to record. Second, motivated by my anxiety that a DJ is seen as someone who just plays other peoples' records, I was keen to investigate how recording could be used to elucidate the ambiguities inherent in live electronic music, ways of showing that I was really 'doing it' live.

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[48] I am aware of the problematic and ambiguous nature of this term yet I have decided to stick with it for the sake of appellation. For example, John Cage was vehemently against the idea of improvisation believing that it could only produce music based on habit, that it precluded discovery, which is why he favoured indeterminacy. George Lewis, however, has disputed such claims arguing that Cage's understanding of the new is tainted by Western European sensibilities. Lewis writes, '[b]uried within [the] Eurological definition of improvisation is the notion of spontaneity that excludes history and memory. In this regard, "real" improvisation is often described in terms of eliminating reference to "known" styles"'. Though Cage would have never described his music as improvisatory it seems to be an umbrella term for describing unorthodox approaches to music making no matter how erroneous this might actually be. I address this topic in chapter 4. For Cage reference see, David Borgo, *Sync or Swarm: Improvising Music in a Complex Age* (New York: Continuum, 2005), 21. For Lewis reference see, George Lewis, 'Improvised Music after 1950: Afrological and Eurological Perspectives', in Christopher Cox & Daniel Warner (eds.) *Audio Culture: Readings in Modern Music* (New York: Continuum, 2007) 278.

[49] Paul Hegarty, *Noise/Music: A History* (New York: Continuum, 2008), 50.

2.2. The Paradox in Documenting Improvisation

Documenting improvisation would appear to contravene not only the particular motivations of some improvisers but also the integrity of improvised music making. Indeed, many improvisers have resisted the idea of recording although some are inconsistent with this. The British guitarist Derek Bailey who devoted much of his life to pursuing what he termed non-idiomatic music said, 'one of the enduring attractions of improvisation is its momentary existence: the absence of a residual document', a sentiment undermined by the Incus record label he established alongside Tony Oxley and Evan Parker in 1970 in order to release many of his own improvisations.[50] For others, recording is a pointless affair precisely because it nullifies spontaneity; Larry Soloman insists that a recording of an improvisation 'upon replay, is no longer an improvisation'.[51] Paraphrasing avant-garde composer Vinko Globokar, whose work has utilised both improvisation and indeterminacy, David Borgo writes, 'recordings of this music should be listened to once and then discarded'.[52] Although Cage expressed antipathy toward improvisation, as he believed it involved playing what one already knows,[53] he was nevertheless interested in the live rather than the recorded and was all too aware of the contradiction in fixing his works to magnetic tape for this resulted in music that was no longer indeterminate of its performance. Even so this did not prevent recordings from being made, perhaps the most significant example being his infamous silent piece, *4'33"*, which, for Cage was, among other things, the ultimate manifestation of his 'wish to give up his attempts to control sound', to free it from fixity.[54] Though Cage did maintain that a recording of such a work 'has no more value than a postcard', in that 'it provides a knowledge of something that happened, whereas the action was a non-knowledge of something that had not yet happened'.[55] Christian Marclay's polemic against the fixity of recording is also diminished when taking into consideration the

[50] Derek Bailey, *Improvisation: Its Nature and Practice in Music* (Da Capo Press, 1993), 35.
[51] Lewis, 'Improvised Music', 279.
[52] Borgo, *Sync,* 30.
[53] I will demonstrate how I have questioned this assumption in Chapter 4.
[54] John, Cage *Silence: Lectures and Writings by John Cage* (Middletown, CT: Wesleyan University Press, 1973), 10.
[55] Michael Nyman, *Experimental Music: Cage and Beyond* (Cambridge: Cambridge University Press, 1999), 10.

albums he has produced. However, this may not entirely be the case; on *More Encores: Christian Marclay Plays with the Records of …*[56] he improvises with records by renowned musicians such as Louis Armstrong, Chopin and Hendrix, to name a few. However, on the final track he plays with his own records, which could perhaps be understood as an attempt to keep them live (only to then record the result). As though aware of the paradox in recording his performances Marclay's efforts to remain faithful to his ideological position can be witnessed in what is arguably his *magnum opus*: *Tabula Rasa*. True to its name the collaborative piece with Flo Kaufmann begins with an empty (uncut) vinyl disc; Marclay elicits sounds from his turntables, treating them solely as sound objects without vinyl, the sounds are then cut to vinyl via a lathe operated by Kaufman and passed back to Marclay for further manipulations. Cutting several discs with which to perform as soon as the sounds are petrified within the vinyl medium Marclay brings them back to life. In a sense what we are left with is a perpetual to-ing and fro-ing between the live and the recorded.

Contrary to the positions expressed above, and in line with his 'Afrological' point of view, George Lewis finds 'new layers of meaning are spontaneously discovered' through repeated listening, moreover, recordings 'seem to renew themselves when viewed in a more expansive temporal context'.[57] In other words, they are not as fixed or as dead as Marclay *et al.* would have us believe. Whether or not a recording can capture the essence of an improvisation or continue to deliver spontaneity there is clearly a practical problem in that it is impossible to capture the physical presence as well as the space and time of the live performance. Cornelius Cardew wrote that '[w]hat we hear on tape or disc is indeed the same playing but divorced from its natural context'.[58] Others have taken a more general position, for Peggy Phelan, for example:

> Performance cannot be saved, recorded, documented, or otherwise participate in the circulation of representations of

[56] Christian Marclay, *More Encores: Christian Marclay Plays with the Records of …* (UK: ReR Megacorp, ReR CM1, 1997).
[57] Lewis, *'Improvised Music',* 279.
[58] Nyman, *Experimental Music*, 10.

> representations: once it does so, it becomes something other than performance. To the degree that performance attempts to enter the economy of reproduction, it betrays and lessens the promise of its own ontology.[59]

Giving substantial support to Phelan's claims Peter Shapiro has also drawn attention to this quandary; highlighting the inadequacies in Marclay's *Records*,[60] a compilation of collages the artist made during the 1980s, Shapiro states:

> The only problem with *Records* is that Marclay is just as much a performance artist as he is a sound manipulator and you miss him callously throwing the objects that he has created out of abused records onto the crowd or onto the floor at gigs, actions which form an integral part of his set.[61]

Even though recording improvisation appears somewhat antithetical it does have its practical uses; recordings are extremely useful in helping to establish and disseminate traditions, for instance. In addition, because improvised musics have very little commercial appeal a recording is often seen as a way to help procure a live gig rather than just as a revenue stream. It is within the context of these concerns and considerations that I have had to evolve my own position on the role of recording in improvisation.

2.3. How to document?

The practical problem of capturing physical presence in an audio recording seemed like an issue that could perhaps be resolved by video documentation. Furthermore, due to the ambiguity as to the source of sounds in improvised electronic music - something which is often encountered from both the performer's and the audience's perspectives - a video document displaying multi-camera angles and close-up shots seemed to offer a way of clarifying

[59] Peggy Phelan, *Unmarked: The Politics of Performance* (London New York: Routledge, 1993), 146, cited in Auslander, *Liveness*, 39.
[60] Christian Marclay, *Records* (US: Atavistic, ALP062CD, 1997).
[61] Peter Shapiro, 'Deck Wreckers: The Turntable as Instrument', in Rob Young (ed.) *Undercurrents: The Hidden Wiring of Modern Music* (London: Continuum, 2008), 170.

causal ambiguity by separating out the strands of the ensemble thus making the indeterminate more causal.

In chapter one, using Auslander's critique of contemporary culture, I addressed how the mediatised has seized the live's position in the cultural economy, that TV is the dominant cultural form and how the live now seeks to emulate televisual intimacy. The propinquity offered by video editing techniques in order to achieve a sense of immediacy and physical presence has, of course, been used to simulate a sense of presence in the popular music video, '[d]irectors of music videos rely on multiple media and elaborate editing to create an immediate and apparently spontaneous style; they take great pains to achieve the sense of "liveness" that characterises rock music'.[62] As a child who grew up watching MTV during the 1980s/90s it should therefore come as no surprise that I should want to exploit these techniques in order to try to capture a sense of 'the live', which were first applied in Tron Lennon's[63] *Improvisation 1 & 2*.[64] The objective was to produce video documentation that elucidated the legibility of performance gesture by cutting to whoever was producing sound and so highlighting the gestural interaction of the duo. I had already begun to explore visual documentation in my solo turntable work, looking at ways of magnifying scratching techniques and hand gestures in much the same way a loudspeaker amplifies sound; the hand movements involved in scratching are generally microscopic yet, when amplified, produce an enormous, detailed sound, thus I began searching for a visual equivalent which led to Motion Capture work with Dave Green at Culture Lab Newcastle.

The Vicon Motion Capture System[65] (commonly used in the animation market, biomechanics and ergonomics research) was a specific investigation into new ways that we might capture spontaneous, improvised performance. Sensors were attached to gloves and mounted at specific points on a pair of turntables and high definition cameras situated in close proximity to allow gestural hand

[62] Jay D. Bolter & Richard Grusin, *Remediation: Understanding New Media* (Massachusetts: The MIT Press, 2000), 9.
[63] Improvisation duo worked on with John Ferguson between September 2005 and November 2008 which work is here included.
[64] See *Improvisation 1 & 2*: http://www.itchymuzik.com/transmedialeaward/.
[65] 'Vicon Home', *Vicon*, http://www.vicon.com/ (2nd December, 2007).

and platter movements to be tracked. Four improvisations were captured; two in a Hip Hop turntablist style and two exploring more freeform approaches inspired by my research into Christian Marclay's performance practice.[66] Once the motion capture data had been analysed by a computer the improvisations were explored further within Vicon's Tracker software.[67] The idea was to navigate the virtual space, itself an improvisatory process, to gain unique insights into these minute performance gestures, which could be investigated from any angle imaginable. In terms of the virtual objects' behaviour a decision was made to leave a small trace in order to emphasise the complexity of the gestural hand movements that went into producing the sounds, which also worked well aesthetically. I consider the DJ Motion Capture project an extension of what Marclay investigated in *Gestures*[68] (1999), which was an explicit attempt to foreground the techniques employed in his materialist approach to Turntablism. This video work, composed for four screens, shows Marclay intervening in the playback of records; only his hands are seen as he executes a multitude of different gestures, an idea illustrating Auslander's point about televisual immediacy that Marclay has carried into his live performance work; in *Tabula Rasa* close-up shots of himself and Flo Kaufmann performing adorn huge projection screens located around the performance area, increasing the proximity and thus the sense of 'liveness', as Auslander has it.[69] *Tabula Rasa* is therefore a prime example of the kind of 'mediatized' performance to which Auslander has called attention, for it illustrates what I have termed a 'live-documentation' approach (i.e., the investigative techniques characteristic of documentation deployed live). Although Motion Capture possibilities enhanced proximity, this was gained at the expense of other visual details as the human body is represented by a series of dots and squiggles. What is more, as I observed when working with the Motion Capture system and 'live-documentation' strategies, the direction

[66] See *DJ Motion Capture*: http://www.itchymuzik.com/djmocap/. It is perhaps worth noting that the gloves were extremely restrictive making it difficult to perform specific techniques.
[67] 'Vicon Tracker', *Vicon*, http://www.vicon.com/products/vicontracker.html/ (2nd December, 2007). I am indebted to Dave Green for his artistic vision in utilising the software.
[68] The work was exhibited alongside Marclay's other video works at the Musée de la musique, Paris, 9th March – 24th June 2007.
[69] At *Maria am Ostbahnhof* (Club Transmediale 08) no fewer than twelve screens enveloped the space.

of focus is no longer the physical performance but the televisual representation, which is generally the case at mediatised events (a point to which I will return in chapter 3 with respect to Tron Lennon's audiovisual performances).

Phelan's aforementioned remark about a live performance becoming something other than performance when recorded is something Tron Lennon experienced first hand through the work *Improvisation 1 & 2*, submitted to the Transmediale Festival for art and digital culture in Berlin, 2008. It was our aim to secure a performance at Club Transmediale as it was hosting the theme 'Unpredictable', which seemed to chime with our music making practice.[70] To our amazement we not only got the gig but *Improvisation 1 & 2* was nominated for the Transmediale Award. In Tron Lennon we endeavoured to preserve the integrity of our live performances in our documentation, however, we always viewed the recording as of secondary importance to the actual live performance. After the initial excitement over the opportunity to showcase our work at an internationally acclaimed event had subsided, concern began to set in. Rather naively we presumed our live performance would be accessed for the award nomination not the video documentation. Following email contact with the festival organisers we were dismayed to learn of their predilection for what we considered a mere document of a lively process. The mediatised asserting its precedence over the live: had we succeeded in capturing the essence of improvised music making? Or were the organisers seduced, perhaps even fooled, by our efforts to achieve a sense of liveness? I believe the answers are one and the same.

Up until this point we had never entertained the idea that what we had created in *Improvisation 1 & 2* was an artwork in its own right and to some extent we never fully recovered from it. On the run up to Transmediale we began to obsess about documentation and other ways we might approach it. For example, whereas *Improvisation 1 & 2* made use of three static cameras we decided it would useful to have two additional 'roaming' cameras that could follow the action and also provide more angles to use when compiling the

[70] Unpredictability will be discussed further in chapter 4.

finished document in the video editing suite. The document was made using Final Cut Pro video editing software within which we explored split screen arrangements to draw further attention to our interactions, the result of which was *Tron Lennon @ Blue Rinse* recorded in November 2007.[71] Satisfied by the results of this investigation we were able to persuade a fellow postgraduate student to act as our cameraman and accompany us to Transmediale. However, several weeks prior to our departure for Berlin our cameraman was taken seriously ill thus we had to abandon our plans. Instead we agreed to use just two cameras taking wide-angle shots, arranged in such a way that they would capture close-ups of our hands as well as the other performing in the background.[72]

Procuring a handful of gigs on the way to Berlin it soon became apparent that documentation was getting in the way of the music making; as if to confirm the inescapability of the domination of the live by the recorded we seemed more concerned with setting up cameras correctly, getting the best angles to capture the performance, and remembering to press the record button[73] than with the gig in hand, and our gig at Salon Bruit, Berlin was to prove this was without doubt the case. The performance space at Salon Bruit was too small to house all our equipment and we were thus forced to play a technologically stripped-down set (though we still managed to place a camera on a tripod at the back of the room).[74] Probably because we were not so concerned about capturing the performance it was by far the most successful gig on the mini tour with audience members praising our efforts, and it felt 'right' whereas the other gigs did not (I shall discuss the apparent reasons for this in more detail in chapter 3 when I address gesture and interface).

Having amassed a considerable amount of audiovisual material from the mini tour we then had to think about how best to present it. Disconcerted by the idea that *Improvisation 1 & 2* had effectively usurped the live performance we conceded that our editing techniques were indeed creating something

[71] See *Tron Lennon @ Blue Rinse*: http://www.itchymuzik.com/bluerinse/. Blue Rinse was a monthly concert organised by postgraduate music students at Newcastle University.
[72] See Side Café, Newcastle: http://www.itchymuzik.com/trontour/.
[73] In an ironic turn of events I forgot to set two of the cameras to record at our Club Transmediale performance.
[74] See Salon Bruit, Berlin: http://www.itchymuzik.com/trontour/.

altogether different from what we were trying to achieve. What is more, the subjective nature of the cuts (between camera angles) in *Improvisation 1 & 2* and *Live @ Blue Rinse* meant the viewer was experiencing a preconceived version of the performance. In response to this a decision was made to display the materials on four simultaneous split screens thus allowing the viewer to make up their own mind, and in turn, to circumvent any bias as to what constituted the performance on the part of Tron Lennon.[75]

One method Tron Lennon did not explore, and which may have been useful with hindsight, is the format Detroit Techno DJ Jeff Mills implemented on *Exhibitionist*.[76] Though *Exhibitionist* may look like just another instructional DJ video it was in fact 'initially designed as a live programming application' in response to the demands of the world party circuit.[77] The original idea behind the project was to perform a DJ set in multiple locations simultaneously around the globe. However, preliminary enquiries into 3D holograph projection[78] failed to transpire due to the impracticalities of installing the necessary custom hardware into the average nightclub, instead Mills produced the *Exhibitionist* DVD as it could be easily incorporated into the existing club apparatus. Videoed from three different angles with close-up shots of Mills performing his virtuosic brand of Turntablism on his trademark three-turntable set-up - which the viewer can switch between at any point in the performance - *Exhibitionist* therefore aims to resolve a particular problem with TV viewing in that 'televisual discourse fails to replicate the perceptual discourse of the spectator's eye because whereas in the theatre [or club] spectators direct their own vision, the television camera does not permit them to choose their own perspectives'.[79] By permitting the viewer to select their own perspective they can decide how to view the performance; they can 'navigate' around Mills as he performs to create the illusion that they are

[75] See Tag Gallery, The Hague: http://www.itchymuzik.com/trontour/. You will notice the use of visual materials which will be discussed in chapter 3.
[76] *Exhibitionist*, by Jeff Mills, 2004, 225 min. (DVD, Axis Records).
[77] Sleeve note. Ibid.
[78] Just two years later at the 2006 Grammy Awards Musion's *Eyeliner System* was used to project a 'live' performance by animated band the Gorillaz alongside a virtual Madonna who emerged minutes later in the flesh. 'Gorillaz & Madonna – Grammy Awards 2006', *Musion Eyeliner*, http://www.eyeliner3d.com/gorillaz_madonna_grammy_awards.html (20th May, 2009).
[79] Auslander, *Liveness*,19.

occupying the same space. Additionally, Mills ostensibly believes a DVD of himself DJ-ing is just as authentic a performance as one requiring his physical presence for *Exhibitionist* was envisaged as a DJ set in its own right, to be screened in nightclubs whilst the real Mills performed elsewhere.[80] *Exhibitionist* thus exemplifies the Baudrillardian notion of *implosion* whereby the live has become the recorded and vice versa.[81] Yet, the point must also be made that, as a celebration of the recorded, DJ culture was always going to allow for this development.[82]

Had Mills succeeded in his pursuit of holographic projection then the *Exhibitionist* project would have literally involved the simulation of physical presence, in turn raising further questions with regard to the notion of liveness in mediatised culture; evidently that time is upon us as we are already witnessing a resurgence in 3D cinema, an early sign of a turn towards holographic projection perhaps?[83] *Exhibitionist* is fascinating because Tron Lennon were searching for the best way to document improvised practice and an approach such as Mills's would have been beneficial to the research. However, it is questionable whether this would have ultimately resulted in the desired effect as the duo were averse to the documentation superseding the live performance, which is obviously the impetus behind the *Exhibitionist* project.

[80] It is my own understanding that this never transpired as such. However, Mills did use the DVD in his DJ sets on the *Exhibitionist* tour in 2004. For example, I saw Mills perform at *Disco Noir*, Newcastle upon Tyne (5th March, 2004). During his set he disappeared from the turntables at which time *Exhibitionist* was projected onto a large screen situated behind the DJ booth. Sometime later Mills reappeared, rather dramatically, through a miasma of dry ice to take over the turntables.

[81] As was discussed in chapter 1.

[82] *Exhibitionist* was also a particular reaction to the incursion of computer automation on the club DJ art form, which I discuss in chapter 5.

[83] The film critic Mark Kermode made a provocative remark about the effectiveness of 3D cinema, defiant that cinema was not the best usage of the medium he said, 'I've seen loads of movies and I've never, never, never seen a good 2D movie where I thought, this was really great but I wish it was in 3D because I'm feeling distanced from the image … I think it's possible that, actually, an entirely new entertainment universe is before us but I don't think it's cinema'. I believe this 'new entertainment universe' resides in holographic musical performance. *The Culture Show*, Episode 13, BBC2, 2009/2010.

2.4. Editing Improvisation

Though camera angle edits were employed in Tron Lennon's video documentation attempts were always made to preserve the continuity of a performance, thus we did not delete or recompose footage (although I concede that such edits did in fact alter the relationship of the recordings to the performances). Yet editing audio recordings was a very sensitive issue and there was some disagreement about how to approach it, the reasons for which could be traced to our respective musical backgrounds. It is interesting to note that John Ferguson's background as a live performer is coupled with an anxiety towards recording, whilst my own background as a DJ, which is primarily about selection of recordings and their playback revealed an anxiety towards live performance, resulting in a problematic but nonetheless very rich dynamic in our collaborations.

From the initial stages of my doctoral research it was important for me that I did not edit recordings of my improvised performances. In fact, improvisation was a means of overcoming not only my anxiety with playback but also the desire to refine and rework materials and/or ideas being, as it is, music made in the here and now.[84] For this reason most of the documentation accompanying this thesis is unedited as I am more interested in capturing the spirit of my playing than recreating an illusionary performance through edits.[85] In such a situation the document becomes a composition and so anything it can say about the nature of improvised music is inevitably compromised.

Parallels can be observed in Jeff Mills's official DJ mixes; unlike the conventional method of utilising multi-track recording software to compile and mix a set of tracks Mills prefers to do it live with absolutely no editing. In *Live at The Liquid Room – Tokyo*[86] Mills champions the messier sound emerging from his multi-deck negotiations and the same is also true of *Exhibitionist*. Another reason for not editing is that this imposes a reading on what 'happened', which may prevent us from revisiting the material and uncovering

[84] Discussed in more detail in chapter 4.
[85] Tron Lennon did, however, explore 'in studio' composition using recordings made of the duo's improvisations. See *Olivia Newton-Tron EP*: http://www.itchymuzik.com/olivia/.
[86] Jeff Mills, *Live at The Liquid Room – Tokyo* (London: REACT Music, REACT CD77, 1996).

new insights because, as I discussed earlier and also in Chapter 1, repeated listening affords this potential.

Recordings carry expectations, which is why efforts were made to produce the highest fidelity possible and to create a likeness through multi-tracking, the use of dynamic effects such as compression and equalization, and, where necessary, a touch of reverb to add some sense of locality. In doing this I am not trying to fool the listener into believing they have been transported back in time to the performance, rather I am exploiting audio production techniques that are essential in creating the sense of a 'good' recording in order to question whether such a move is really necessary in the first place.

The nature of improvised electronic music means there will be not only more 'mistakes' and 'accidents' than other kinds of music,[87] but these unintentional elements will be more readily accepted into the music than they might be in other genres. However, they can often be undesirable when listening back to a recording as recordings force certain types of listening, particularly in the way that they dislocate the music produced from the act of producing it; for this reason there have been many situations within my own research where the experience of what felt like great playing at the time was annulled by listening back to the recording and vice versa.[88] Cardew's aforesaid observation about dislocation of context seems applicable here and further problematises the notion of documenting improvisation. Obviously then, one of the concerns in removing or recomposing material is that one may actually be eradicating the very thing that made the improvisation what it was, for example, in Jeff Mills we hear the human behind the electronic music (see chapter five for more on this). There is also the problem that the edited recording will become the memory, which I find problematic because, over time, one might forget what actually did take place.

If divorced from its natural context then why not proceed to edit? In this regard, the recording of Tron Lennon's Club Transmediale performance proved to be a point of contention in the duo. The consensus was that the

[87] To be discussed in chapter 4.
[88] An anxiety that led Tron Lennon to pursue 'in-studio' composition, the result of which was *Olivia Newton-Tron EP*.

performance could have gone a whole lot better; allocated a forty-five minute time slot, which seemed to breach the improvisation ethos,[89] it was perhaps the most difficult gig we ever played, and it received mixed reviews: '[s]ometimes I thought the performance was a little flat, it kind of ran out of steam a little bit before it was picked back up by one or the other', wrote Stuart Hill.[90] Listening back to the performance this was evidently the case and our instinctive reaction was to 'polish' it through editing and post-production. However, in light of my own position I resisted the temptation, furthermore I was becoming accustomed with the idea that such risky music making frequently resulted in frustrating performances; for me, that is the nature of improvised electronic music whereas John was equally at ease compositing the favourable playing moments. Following Tron Lennon's Transmediale exploits the duo were invited to contribute a new work to Sound Museum FM and, as a compromise, we decided to compose it in the studio from fragments of improvised playing.[91] We endeavoured to approach it as if it were actually a live performance; a laborious process not least because of subjective differences as we struggled to imagine our ideal improvised performance, a recording that would be illustrative of the Tron Lennon duo.

In response to the questions that were proposed at the beginning of this chapter, recordings are indeed inadequate at documenting improvisation and by editing them they begin to resemble compositions. In my own opinion, Tron Lennon's *Club Transmediale* video is our most successful attempt at documentation, not because it captures the essence of the 'live' or physical presence, but because it is not distorted by subjectivity (through multi-camera set-ups or editing); it is not intentionally trying to become something other than what it was. Though shot from one perspective we must accept that this is generally how music performances are experienced especially those that

[89] In my own opinion, an improvisation should last for as long as it needs to be.
[90] Stuart Hill, 'CTM08 – Tron Lennon', *Hair E*, 2008, http://hairentertainment.com/CTM/TronLennon/ThomasAnkersmit (30th January, 2008). Hill is more complimentary towards our second performance, he writes '[t]he second half was a lot more fluid'. Another online reviewer wrote how we promised a lot but delivered very little, however, I am no longer able to locate the source of this review. To view the performances see Club Transmediale, Berlin: http://www.itchymuzik.com/trontour/.
[91] Just to be absolutely clear editing a live recording is different to constructing a piece from scratch. See *Olivia Newton-Tron EP* track 4: http://www.itchymuzik.com/olivia/. Alternatively search for Tron Lennon at Sound museum FM: http://soundmuseum.fm/.

happen onstage. Taking this into consideration I must also draw attention to my preference for video (as opposed to audio) documentation, a testament to the proximity afforded by the televisual in revisiting ‘live’ events.

Chapter 3. Gesture and Interface

> True experience is conceived as close and practiced knowledge of what is at hand. The hand touches, has practical experience of life … To touch the world is to know the world.[92]

One of the key concepts that I have not yet discussed, that in practical terms is also an example of how the recorded and the live interpenetrate one another, is the idea of musical gesture. I discussed in chapter 2 how performance gesture can be understood as the legibility of the performer's actions to the audience, but there is another related dimension, which is the way that performer and interface interact to produce the sound. For example, the turntablist's gesture is the means by which they bring the recording back into the live, it is the trace of the human action that imprints itself upon the recorded material like, for Walter Benjamin, 'the handprint [*spur*] of the potter clings to the clay vessel'.[93]

3.1 Sound as Gesture

As an electronic dance music DJ looking to utilise the turntable as a musical instrument in ensemble playing I became anxious that my background in mechanically repetitive music, as well as replaying music that I had not created myself, could in fact be stifling my own self-expression. I therefore sought ways to move beyond 'repetition' and to challenge the fixity of recordings so that I might play a more active role in the production of sound. In turntable scratching the vinyl record is a particular kind of interface between physical gesture and the sonic trace of that gesture in the sound that flows out of the loudspeakers. Given that the turntablist is deemed a craftsman, using the turntable as a tool to produce sounds through gestural hand interaction, I surmised that physical intervention and tactile control would help alleviate my

[92] Esther Leslie, 'Walter Benjamin: Traces of Craft', *Journal of Design History*, 11/1 (1998), 5-13 (6).
[93] Ibid.

own particular anxiety concerning mechanical/digital repetition, reproduction, and fixity.

In the preceding chapters I acknowledge the influence of Christian Marclay on my practice-led research, however, within the experimental Turntablism genre there are a number of other established figures worthy of recognition, some of whom I have been fortunate to witness live during the course of my research such as Philip Jeck, Janek Schaefer, eRikm, DJ Sniff and, of course, Christian Marclay.[94] Of all these experimentalists I have been the most captivated by the live performances of eRikm, for the physicality of his performances, the manner in which he interacts with, negotiates, and deconstructs the vinyl record, decimating any notion of fixity in the medium.[95] Exploring interface is a constituent element of his particular type of Turntablism to the extent that the sound world he creates results almost entirely from gestural action; there is a direct correlation between his bodily manoeuvres and the sonic results, between cause and effect. Utilising a set-up that encompasses two Technics turntables, a DJ mixer, and three Korg Kaoss Pad effects boxes his performances might be figured as being 'hyper-virtuosic'; there is never a static moment for he is continuously intervening in the recorded material, denying it the right to play back in its intended state. I propose that eRikm's musical objective is sound *as* gesture therefore the recorded materials in themselves are not so important, evident from his apparent disregard for genre distinctions and the way he treats vinyl without due regard, casting records to the floor like the trash they represent. Marclay's influence on him is indisputable, but he has advanced the genre through the excessively corporeal aspect of his freely improvised performances. Thus I came to view free improvisation and gesture as homologous. Matthew Sansom has observed that free improvisation shows some analogies to Abstract Expressionist art, maintaining that automatic painting methods employed by Surrealist painters such as Joan Miró, André Masson and Max Ernst are

[94] Other noteworthy figures are Martin Tétreault, Otomo Yoshihide, DJ Olive, Marina Rosenfeld and Toshio Kajiwara - artists with whom I am familiar from audio recordings and YouTube videos - as well as lesser-known artists such as James Kelly and Damian Marhulets who post work to the *Alternative Turntable Music Forum*: http://forum.itchymuzik.com/

[95] For example, see 'eRikm solo performance', *You Tube,* *http://www.youtube.com/watch?v=X2BmRDXIMIQ&feature=player_embedded* (14th December, 2008).

antecedents to the *action painting* practices of Jackson Pollock *et al.*, which foreground the physical act of painting in much the same way free improvisation foregrounds the physical act of music making.[96] Citing the parallels in Abstract Expressionism and free improvisation Sansom holds that:

> The emphasis upon process and material qualities enabled by "freedom" from the image and more (traditionally) formal concerns is paralleled by "freedom" from functional harmony and/or traditional modes of compositional construction, resulting in a direct engagement with the medium of sound and the processes of musical creation.[97]

The 'direct engagement with the medium of sound' to which Sansom refers is an interesting proposition when applied in an experimental turntablist context. Viewed from Sansom's perspective, eRikm's apparent indifference to the recorded material itself suggests that it is the processes involved in making the sound one's own that identify eRikm's musical creativity, even though it may often seem that it is the medium that is of primary significance to those who work with recordings. Paul Hegarty reaffirms this sentiment when he writes:

> These media contain completed music, and act as a type of storage that fixes performances … the turntable, sampling and glitching all try to break through this reification. In so doing, they use pre-existing material and work on that material through the materiality of its storage.[98]

eRikms incessant intervention in prerecorded sound foregrounds both the materiality of the vinyl medium and the body as site of production whilst resisting the intended purpose of the turntable as an autonomous playback device.

3.2. The Body and the Machine

Marxist critique has maintained that machines eliminate human agency from production, that they remove the notion of skill from the act of making. The

[96] Matthew Sansom, 'Imagining Music: Abstract Expressionism and Free Improvisation', *Leonardo Music Journal*, 11 (2001), 29-34 (31-32).
[97] Ibid., 32.
[98] Hegarty, *Noise/Music*, 181.

warm, chaotic, animated human body is held in opposition to the cold, repetitive, lifeless machine. Karl Marx proposed a distinction between the tool and the machine. For Marx, a tool is something that extends our capabilities whereas we are subject to the machine. Tim Armstrong, drawing on Marx, writes that the machine 'is independent of the human and has an external source of power. The tool, on the other hand, is knitted to the body, extending its powers'.[99] For many, the Club DJ is merely a slave to the machine, encroaching on and debasing 'real' performance practice by reproducing other peoples' music.[100] Culturally, there is a marked difference between a DJ and a turntablist; where a DJ plays other peoples' records a turntablist, or turntable instrumentalist, is regarded as a craftsman deploying the turntable as a tool for his or her own creative expression, revivifying the recorded object through physical gesture. This distinction first occurred in Hip Hop culture; Babu of the Californian turntable crew The Beat Junkies coined the term, scribing 'Babu The Turntablist' on his mixtapes,[101] a move that saw him axe the 'DJ' prefix so as to set himself apart from those who just 'played records'. Rob Swift of rival New York turntable crew The X-Ecutioners describes how 'during the early nineties you had Club DJs, House DJs, Radio DJs … *we* want[ed] to have a concrete, specific identity'.[102]

For Bob Ostertag, the tension between the human body and the machine is what 'structures our time and civilization'.[103] In a paper entitled *Human Bodies, Computer Music* he identifies what he believes is a serious problem in electronic music making:

> I think most musicians working with electronics are probably not very satisfied with the state of electronic music today, and the crucial missing element is the body. Many of us have been trying to solve this problem for years but we have been

[99] Tim Armstrong, *Modernism, technology and the body: A cultural study* (Cambridge: Cambridge University Press, 1998), 79.
[100] As I referred to in chapter 1, Nicolas Collins does not consider Club DJ-ing a live art form as it involves 'replaying the music of others'. Collins, 'Live', (50).
[101] *Scratch*, by Doug Pray, 2002, 87 min. (DVD, Momentum Pictures UK).
[102] Ibid. My emphasis. The desire to differentiate on grounds of authenticity and skill is not unique to Hip Hop Turntablism as Club DJs sometime prefer the term 'deejay' in order to distinguish themselves from the radio DJ, which in turn denigrates the skill involved in the latter.
[103] Bob Ostertag, 'Human Bodies, Computer Music', *Leonardo Music Journal*, 12 (2002), 11-14 (14).

> notoriously unsuccessful at it. How to get one's body into art that is as technologically mediated as electronic music, with so much technology between your physical body and the final outcome, is a thorny problem.[104]

In chapter 1 I alluded to the idea that the ultimate goal for the live electronic musician is to reconcile the organic and the technological, or to put it another way, the body and the machine. This would certainly appear to be the case for Ostertag who credits the most successful electronic music ever made to Jimi Hendrix, writing that 'it is ... hard to imagine a musician on any instrument in any genre integrating his/her body into the performance as totally as Hendrix did … his guitar and his body appear as one'.[105] The motivation behind Ostertag's exposition derives from a comment made by his collaborator Pierre Hérbert; paraphrasing Hérbert Ostertag writes, 'the measure of a work of art is whether one can sense in it the presence of the artist's body. If so, then it is a success, and if not, it's a failure'.[106]

Ostertag is bitterly denunciatory toward music grounded in mechanical or digital repetition, in particular he 'detests' electronic dance musics for the ways in which they ostensibly subordinate the body to the machine; clearly he is anxious about the erasure of the body by recording and reproductive technologies but perhaps more importantly he believes machines obscure the legibility of gesture and so eradicate the physical aspect of performance. In an attack on electronic dance music performance Ostertag had the following to say:

> One could argue that making dance music with computers is a backdoor way of getting the human body back into the music – however, the bodies are the audience's, not those of the performers. So the physical bond of the performance is that everyone is dancing, while the performers hide behind a light show or a fog machine.[107]

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[104] Ibid., 11.
[105] Ibid., 13. Interestingly Ostertag believes Christian Marclay 'did the same for the turntable', I will go into more detail as to why some practices are considered more successful than others when I address the distinction between music technologies and musical instruments in the following sub-section of this chapter.
[106] Ibid., 11.
[107] Ostertag, 'Human Bodies', 12.

Aside from his general abhorrence for electronic dance music it is the layers of technological mediation between hand and sound that concerns Ostertag. Observing the immediacy in playing the theremin he remarked that it 'used actual skin capacitance as the central element in controlling the instrument … one could literally stick one's fingers right into [it]'.[108] However, to further problematise the practical dilemma identified by Hérbert Ostertag writes:

> It is not that it is impossible to put a sense of one's body into art made with assistance from machines. Hérbert is talking about a sense of the corporeal presence of the artist emanating from the work. It is not *necessary* that an artist "touch" an image or instrument in order to achieve this result, but it certainly helps.[109]

3.3. Gesture and Interface

The problem of how to get the body into electronic music is exacerbated by the integration of the laptop into live performance, as Simon Emmerson has observed, '[p]hysical gesture need no longer *cause* the sound in a physical sense'.[110] As I mentioned in chapter 1, a distinction can be made between two different approaches to live electronic music. Where analogue electronics are concerned, such as in the practices of Reed Ghazala and Nicolas Collins, the experience feels very intuitive, literally 'hands-on', as there is a direct connection between body and electronic circuitry, not unlike the turntablist with vinyl. However, in contrast to the turntablist's gestural interplay this interaction is actually not especially legible to an audience, but then again this is not so much of a problem because touch and physical presence are enough to validate the sense of 'liveness' for these musicians. The laptop, on the other hand, whilst no less illegible, is not capable of yielding the same sense of immediacy. Moreover, in computer music random models are often employed to evade repetition in the hope that such moves will instill a sense of the human, and though random algorithms do insinuate the messy side of human interaction through their chaotic behaviour, nevertheless they often

[108] Ibid., 13.
[109] Ibid., 11.
[110] Simon Emmerson, *Living Electronic Music* (Aldershot: Ashgate Publishing, 2007), 111. Original emphasis.

appear too arbitrary and thus inhuman. This was a charge made against Cage with regard to his endeavours to eliminate choice from the music making process through insisting upon aleatoric (chance) processes that involved flipping coins, rolling dice and using computers to generate random numbers in order to produce his scores. One of Cage's contemporaries, Earle Brown, recounts the sense of disconnection random processes bestowed on an audience:

> One minute, thirty-three seconds someone goes "chic-boom", forty-four seconds later an instrument goes "blup". I sat through a lot of concerts of chance music, my own and other people's, and I really felt that that was a very cold thing'.[111]

Rather than attempting to imbue digital systems with life by utilising random algorithmic processes the main focus for (digital) live electronic musicians like Ostertag is gesture legibility. Ostertag describes his anxiety over the lack of gesture legibility in the digital era:

> It had been problematic enough with a synthesizer, sitting on stage and carefully moving a knob a fraction of an inch, disconnecting a patch chord here and reconnecting it over there – with none of it correlating with a direct change in the sound that the audience might perceive as related to the physical motion. With the emergence of laptop as instrument, the physical aspect of the performance has been further reduced to sitting on stage and moving a cursor by dragging one's finger across a track pad in millimeter increments.[112]

Designing interfaces capable of the kinds of expression that would resolve the issues raised by Ostertag has been pursued with gusto at STEIM (the Studio for Electro-Instrumental Music) in Amsterdam, where the artist's 'goal is to enhance rather than impoverish gestural skills, by devising tools that are just as responsive and expressive as conventional instruments, but that truly exploit the "meta-control" features of computerized systems, their exponential and algorithmic functions'.[113] The Hands, a tactile music performance interface developed by STEIM's founding father, the late Michel Waisvisz, is the literal manifestation of the idea of 'touch' that is central to STEIM's

[111] Bailey, *Improvisation*, 64.
[112] Ibid., 12.
[113] Sally Jane Norman, Michel Waisvisz & Joel Ryan, 'Touchstone', *STEIM*, 1998, http://www.crackle.org/touch.htm (21st November, 2006).

philosophy. Like Ostertag, Waisvisz was dissatisfied with the mechanical/digital precision of sounds emanating from high technologies but also the role of performer as operator. Likening contemporary laptop music to the esoteric electronic music of the 1950s, he notes:

> [T]oday's laptop music culture has reverted to a similar exploration of the performer's role as an 'operator' or 'sound process manager'; someone who controls, tweaks, navigates the electronic sound creation process in a very distant, minimal effort strategy and mistakenly suggesting the making of music is a purely cerebral affair.[114]

For Waisvisz, the objective was the physical control of sound and uncovering new interfaces beyond the keyboard paradigm. In the late 1960s, prior to The Hands, Waisvisz and Geert Hamelberg constructed the Crackle Circuit (later to become the Crackle Box), a circuit of '"malformed" oscillators that were very unstable and highly sensitive for finger connections'.[115] By directly touching different parts of the circuit with his fingers new connections were formed; the skin acting like a patch cable through which the capacitance of the electronics, and therefore the sounds emitted, was controlled by pressure. However, in The Hands, the sound-producing media are MIDI-controlled digital synthesizers as opposed to analogue electronics meaning touch occurs indirectly and is therefore heavily technologically mediated by sensors, network protocols and custom software.[116] Nevertheless, although highly mediated, The Hands were also highly legible in terms of performance gesture; data from the sensor technology mapped onto MIDI-driven synthesizers in such as way as to ensure this legibility, even though there is not the direct bodily contact of the crackle box. In light of this, I would like to addresses a point about virtuosity; with analogue live electronic music virtuosity is not an issue, in fact it is bypassed altogether since unpredictability

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[114] Michel Waisvisz, 'Crackle History', *STEIM*, 2004, http://www.crackle.org/CrackleBox.htm (21st November, 2006). It is worth noting that Waisvisz's critique of the laptop comes many years after the development of the Crackle Box and The Hands.

[115] Ibid. The concept of integrating the skin by touching the circuitry figured prominently in the emergence of the Circuit Bending and Hardware Hacking scenes, a topic I discussed briefly in Chapter 1.

[116] Waisvisz used LiSa (Live Sampling) software developed at STEIM by Frank Baldé: http://www.steim.org/steim/lisa.html

fundamentally negates control, which is of course essential to virtuosity.[117] In digital live electronic music I suggest that virtuosity is the means by which gesture is made legible, and this kind of virtuosity is very evident in Waisvisz's work with The Hands. However, he himself was to later become more critical of digital live electronic music practice, especially the efforts to make gesture legible, suggesting that the creative aspects of his former practice in analogue circuitry had not been surpassed but had instead been inhibited by the move into digital media:

> [W]e will have to operate beyond pushing buttons and activating sensors, beyond isolating gestures and mapping data and parameters … beyond assuming the concept will create music … we should abolish the illusion of control … get inspired by change, miscalculation, invested instinct, insightful anticipation, surprise and failure.[118]

3.4. To Cause or Not to Cause: Music Technologies vs. Musical Instruments

We have a culturally ingrained idea that the more invisible a technology is *as* a 'technology' the less it mediates human action. The success of this transparency is predicated on the correlation of cause and effect. Traditional acoustic instruments tend not to involve causal ambiguity as the bond between physical gesture and sound remains highly legible. An audience can *see* the musician producing the sound via the hand or mouth; the result, sonic vibrations from a plucked string or an oscillating reed, is easily recognisable as the direct product of physical, human actions. As a consequence, traditional acoustic instruments often appear more 'authentic' and 'real' than music technologies such as turntables, drum machines, samplers, and

[117] I am referring here to the conventional understanding of the term, which has to do with mastery of an instrument; excelling in technique and execution. That is not to say this is the only kind of virtuosity. I will discuss this topic further in chapter 4.

[118] Michel Waisvisz, 'Manager or Musician? About virtuosity in live electronic music. Do we operate our electronic systems or do we play them?', in Norbert Schnell, Frédéric Bevilacqua, Michael Lyons, Atau Tanaka (eds.) *NIME 06 Proceedings* (Paris: Centre Pompidou, 2006), 415 (415). The apparent reasons for Waisvisz's remark may have resulted from the failed promise of remediation, a topic to which I turn later in this chapter.

computers that only approximate or imitate the real.[119] This ontological distinction has to do with what Gilbert and Pearson have termed an 'index of visibility' in which they identify a hierarchy within technology.[120] They note that it would be imprudent to assume that it is only since the advent of the microchip that technology has entered the music-making process.[121] On the contrary they argue that music making has always involved the use of technology, evident from the plethora of musical instruments which are, to all intents and purposes, technologies designed specifically for the production of sound. The more susceptible a technology is to the control of the hand the more it appears to extend the performing body. This explains how, in Hip Hop, the turntable is now considered an instrument in its own right; through the immediacy of his or her actions the Hip Hop turntablist renders the turntable less visible as a technology by reducing the amount of apparent mediation between an action and the resulting sound. The Scratch, moving a record back and forth with the hand, is a physical gesture analogous to a bow moving across strings under tension, or as John Oswald has put it:

> A phonograph in the hands of a "HipHop/scratch" artist who plays a record like an electronic washboard with a phonographic needle as a plectrum, produces sounds which are unique and *not* reproduced – the record player becomes a musical instrument.[122]

Oswald's comment is the apotheosis of the anxiety I face as a Club-oriented DJ exploring musical performance. Evidently, the correlation of physical gesture and sound is a sign that the Hip Hop turntablist has overcome the technological; he *produces* sound via the skill of his hand, rather than simply reproducing it. In other words, in not simply playing other peoples' records, but creating 'unique' sounds, seemingly *ex nihilo* in front of an audience, the turntable becomes a musical instrument, a tool rather than a machine. 'The turntable is a musical instrument as long as you can *see* it being a musical

[119] There is a historically situated idea that the phonograph reproduces rather than produces sound. Count de Moncel, *The Telephone, The Microphone and The Phonograph* (London: C. Kegan Paul & Co., 1878), 307-351.
[120] Gilbert & Pearson, *Discographies*, 112.
[121] Ibid., 111.
[122] John Oswald, 'Bettered by the Borrower: The Ethics of Musical Dept', in Christopher Cox & Daniel Warner (eds.) *Audio Culture: Readings in Modern Music* (New York: Continuum, 2007) 131-137 (132).

instrument', explains Rob Swift.[123] In DJ terms, the title 'musician' is therefore reserved for those who have chosen to make virtuosity, let us call it mastery of a technology, their primary musical discourse. By contrast, Club DJs are criticised for their lack of musicianship, evident from performance theorist Stan Godlovitch's statement that '[t]he DJ may call attention to a certain sound, frame it, occasion it, exhibit it, display it, show it off, but, the DJ does not make it - with or without skill'[124] and from Nicolas Collins's remark (quoted earlier). Part of the problem here has to do with the Club DJ being in actuality a real-time composer but because they are doing this live they are appraised in relation to their performance rather than their compositional skills. Perhaps part of the difficulty lies in the fact that the DJ has played a significant role in the dissolution of the composer/performer dichotomy, and the emergence of a differently configured relationship between composition and performance, but the notion of performance skill has remained relatively unchanged. Godlovitch believes a direct connection between cause and effect is an indication of skill, of creativity, and he assumes a position resonant with Benjamin's comment about the handprint of the potter referred to at the start of this chapter, believing that if actions are not the 'immediate products' of the hand they will 'record no story about the … immediate physical intervention'.[125] His evaluation is therefore grounded on the notion of performance skill, and little credit is given for the creativity evidenced by the newer figuration of the DJ as real-time composer.

3.5. Digital DJ Tools

The development of tactile interfaces that allow multiple modes of connectivity between the virtual and physical realm is now the primary concern for musicians and manufacturers alike. Controllerism or 'the art of manipulating sounds and creating music live using computer controllers and software'[126] is an emerging practice and there are some impressive 'Controllerists' working

[123] *Scratch*, Pray. My emphasis.
[124] Godlovitch, *Musical Performance*, 113.
[125] Ibid., 100.
[126] 'Home', *Controllerism*, http://www.controllerism.com/ (3rd February, 2009).

in the field.[127] However, many commercially-available MIDI controllers tend to lack the tactile qualities of analogue hardware as inexpensive sensors and light-weight plastic controls/casing replace circuit boards and robust knobs, faders, etc.

Although the vinyl record is no longer a commercially viable playback medium, being replaced by CDs in the early 1980s and then compressed digital audio in the late 1990s, the DJ turntable has ensured the survival of the vinyl medium, and vice versa, due to the uniqueness of their combined performative function. The imminent arrival of technologies capable of playing digital audio whilst retaining vinyl tactility and turntable haptics generated much excitement among DJs hungry to exploit digital audio's potential. Stanton's *Final Scratch*[128] was the first commercial product to accomplish this goal in the late 1990s, facilitating the inception of the digital vinyl system (DVS). The crucial innovation came in the development of vinyl records cut with time-code; an analogue signal that could be tracked and decoded into digital control data with software running on a computer, essentially making it possible to map a digital audio file existing on a computer hard drive onto a conventional turntable, allowing physical manipulation of digitally-stored sound files via a 'real' record. How does it work? When the stylus traces the grooves of the time-code vinyl the computer interprets the signal to determine direction, speed of playback, and the precise location of the stylus thus allowing synchronisation with a digital audio file. Other commercially available examples of DVSs are Rane's *Serato*,[129] Native Instruments' *Traktor Scratch*,[130] and the lesser-known *Binky Toy* developed by Ms Pinky.[131]

Through a combination of digital and analogue technologies these systems have effectively simulated many of the DJ's lexicon of tasks. For example, whereas the analogue DJ uses his fingers to hastily scour his record crates in

[127] Such as Moldover, for example; see 'Moldover's Approach to Controllerism', *YouTube*, http://www.youtube.com/watch?v=L2McDeSKiOU (3rd February, 2009).
[128] Stanton, 'What is Final scratch', *Stanton DJ*, http://www.stantondj.com/v2/fs/whatisfs.asp (16th May, 2009).
[129] Rane, 'Scratch Live', *Rane*, http://www.rane.com/scratch.html#gpm1_2 (16th May, 2009).
[130] Native Instruments, 'Traktor Pro', http://www.native-instruments.com/newreleases/#/en/products/dj/traktor-scratch-pro/ (26th October, 2008).
[131] Ms Pinky, 'Binky Toy', *Ms Pinky*, http://www.mspinky.com/WreckedSystem_BinkyToy.html (9th, November, 2007).

order to single out the right record, what we might call the 'hybrid DJ' can select music via the vinyl itself. Rane's *Serato* achieves this by including a 'bonus track' cut with an audio signal, which, when played, instructs the program to enter 'scroll' mode thus enabling the user to navigate through virtual playlists using forward/backward record movements. To select a different folder or 'virtual crate' the stylus is placed within the record's lead-out track, cut with a different audio signal, to allow the program to enter the 'crate' mode. When the desired file is found it can be loaded automatically by moving the stylus to the beginning of the record; this has a twofold effect of ensuring the song selection task remains tactile whilst rendering the computer less visible as a technology thus enhancing the illusion that the computer emulation appears to be 'real'.

In a post to the *Alternative Turntable Music Forum* entitled 'Digital Turntablism: What are the New Directions?' Takuro Lippit a.k.a. DJ Sniff draws attention to the successful emulation of the analogue DJ setup whilst querying what else these tools might be capable of.[132] This idea has been the chief preoccupation in his research; in 2006 he wrote:

> Simulation and efficiency of existing practice is the main focus of these tools … These products promote a future that evokes the familiar past … it is questionable whether these products will bring anything more to the practice than relieving the DJ's chronic shoulder pain.[133]

We are led to believe that digital media supplant earlier forms of analogue media, their purpose being to 'convince consumers that the new medium improves on the experience of older ones', as Bolter and Grusin have put it.[134] Challenging the notion of the 'new' in new media, a term synonymous with computing technology, they argue that far from being new, new media actually consolidate older media through a process of remediation: '[w]hat is new about new media comes from the particular ways in which older media

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[132] Takuro M. Lippit, 'Digital Turntablism: What are the New Directions?', *Alternative Turntable Music Forum*, 2009, http://forum.itchymuzik.com/viewtopic.php?f=7&t=32 (29th January, 2009).
[133] Takuro M. Lippit, 'Turntable Music in the Digital Era: Designing Alternative Tools for New Turntable Expression ', in Norbert Schnell, Frédéric Bevilacqua, Michael Lyons, Atau Tanaka (eds.) *NIME 06 Proceedings* (Paris: Centre Pompidou, 2006), 71-74 (71-72).
[134] Bolter & Grusin, *Remediation*, 68.

refashion themselves to answer the challenge of new media'.[135] Yet they also note how older media do not simply disappear but can 'absorb and repurpose' digital media, therefore remediation 'operates in both directions', apparent from the use of computer-generated imagery prevalent in Hollywood action-adventure films, for example.[136] The examples the authors provide are in reference to visual media; photography remediated painting, film remediated photography, etc. That new media are equally prevalent in music production remediation can also be witnessed in the plethora of virtual instruments (VSTs) that began surfacing in the mid-90s, accurately mimicking the sound (as well as the look) of classic analogue synthesizers, and the virtual turntable graphical user interfaces (GUIs) of software DJ applications around the turn of the millennium. Far from superseding analogue media digital emulations actually neglect the physical side of the music making process, a defining factor in the emergence of the 'Controllerist' culture we are witnessing today.

DVSs epitomise what Bolter and Grusin call the double logic of remediation. On the one hand, they provide *transparent immediacy* not unlike traditional musical instruments, appearing to extend the body and erasing their technological attributes, '[i]t is the notion that a medium could erase itself and leave the viewer in the presence of the objects presented, so that he could know the objects directly'[137] and, on the other hand, *hypermediacy* wherein vast amounts of extremely sophisticated digital media are exploited in order to make this immediacy possible; 'hypermediacy is opacity – the fact that knowledge of the world comes to us through media'.[138] The key here is time-code vinyl making the experience appear as if it were 'unmediated',[139] providing an illusion that the audio being controlled is written to vinyl when in

[135] Ibid., 15.
[136] Ibid., 48.
[137] Bolter & Grusin, *Remediation*, 70.
[138] Ibid., 70-71.
[139] This notion of unmediated is complex – epistemologically, mediation is culturally and historically contingent, '[w]hat seems immediate to one group is highly mediated to another' write Bolter and Grusin. Ibid. 71. For example, the legend of Bob Dylan's use of an electric guitar at a folk festival in 1965 sparked outcry because the instrument was seen as being inauthentic, mediating Dylan's expression even though microphones and electronic amplification were part of the live performance apparatus. A parallel situation was witnessed in DJ Culture with the emergence of software DJ applications that were thought to bastardise the art form, in particular the traditional – and therefore more authentic - turntable/DJ mixer set-up, which is, of course highly mediated also (discussed in more detail in chapter 5).

actual fact it exists only on hard disk. The conclusions that Bolter and Grusin draw are that '[o]ur culture wants both to multiply its media and to erase all traces of mediation: ideally, it wants to erase its media in the very act of multiplying them'.[140] Evidently, this was the case with The Hands (and the STEIM project in general); Waisvisz's performances were so intensely actual in their realisation that he truly succeeded in not only bridging the cause-effect divide created by digital technologies, but in doing so, he was able to erase the layers of technology that lay in his hands.[141] What is more, describing his *cut 'n play* system – a crossfader-triggered sampler - DJ Sniff writes: '[t]his system succeeds in integrated real-time sampling into the quick movements of the turntablist without disrupting the flow'.[142] On top of this, by pushing the computer to one side (DJ Sniff) or accessing it wirelessly (Waisvisz), this erasure is also complete in a literal sense.

To return to the question of what are the new directions in Digital Turntablism the answer would appear to reside in the confluence of random and/or rapid access to digital sound and performer tactility: the co-dependence of digital and analogue, in which case, Hybrid Turntablism is a more appropriate term. Since Ostertag's vociferous objection to 'the state electronic of music' at the tail-end of the twentieth century we have witnessed an extensive move into a hybrid era spurred on by a desire for tangible interfaces that enable the physical to be mapped onto the virtual, or what Joel Ryan has poetically dubbed 'physical handles on phantom models'. Ryan writes, '[t]he image with which the artist works to realize his or her idea is no longer a phantom, it can be touched, navigated and negotiated with'.[143] As further testimony to the idea that digital media function in a constant dialectic with analogue media, in his investigations into the relationship between technology and material culture Steve Anderson posits the emergence of a 'digital analogue' paradigm that 'foregrounds the material basis of digital production … seemingly in defiance

[140] Ibid., *Remediation*, 5.
[141] During a STEIM orientation course in September 2007 I was fortune enough to experience an intimate demonstration of The Hands in which Waisvisz was literally crushing beats in the palms of his hands.
[142] Takuro Lippit, 'Cut 'n Play', *DJ Sniff*, http://www.djsniff.com/toolz/cutandplay.html (18th, September, 2007).
[143] Joel Ryan, 'Some Remarks on Musical Instrument Design at STEIM', *STEIM*, http://www.steim.org/steim/texts.php?id=3 (21st November, 2006)

of the conventional wisdom that digital media are characterized by dematerialization and disconnection from the physical world',[144] a fitting tribute to what is presently occurring in the world of DJ-ing with the DVS wherein frictions between the body and technology, analogue and digital remain as drivers of a particular 'hybrid' creativity.

At a time when many are exploring live sampling in software programs like *Max/MSP*, *LiSa*, and the more commercially viable *Live* developed by Ableton, Christian Marclay's and Flo Kaufmann's *Tabula Rasa* is live sampling done with analogue means. Though their four turntables and colossal vinyl-cutting lathe might look gratuitous - 'surely', we might say, 'they could achieve the same results using a laptop and some time-code vinyl' - the way in which they emphasise the technology behind the music making process, whilst in no way attempting to achieve virtuosity, seems to me to be resisting the two strategies of remediation that have seduced both Ostertag and Waisvisz, although Waisvisz was, as I have indicated, to change his mind and become dissatisfied with his earlier judgment.

3.6. Practical Projects

In the following section I discuss a series of practical projects informed by the issues outline above.

3.6.1. Anti Telos

In *Anti Telos*[145] the turntable is explored alongside a Korg ES-1 rhythm production sampler. At this very early stage in my research I was investigating ways to augment the standard DJ set-up so I began integrating studio technology. Musically, I was inspired by Philip Jeck's aesthetic preference for pitching-down records in order to reveal new aspects of the recording: '[w]hen you slow a record down that much other things start appearing out of the

[144] Steve Anderson, 'Aporias of the Digital Avant-Garde', *Digital Humanities Quarterly*, 1/2 (2007), 1-16 (1-2).
[145] See *Anti Telos:* http://www.itchymuzik.com/anti_telos/.

sound' he notes.[146] Not only does this give the music a melancholic quality it is also one strategy for overcoming the fixity of the record. Additionally, Christian Marclay's ideas on revivifying recorded objects provided creative sustenance.

Reluctant, as I was at this time, to physically take control of the vinyl medium with my hands and fully foreground the turntable – for a Club DJ the record is touched only to correct a mix or to cue a track – the goal was to first overcome the machine aspects of the technologies that had for so long obscured my body. It was therefore important for me to challenge the sampler in addition to the turntable because of its association with repetition, loops being the fundamental building blocks of electronic dance music. Instead of programming beats in different meters to challenge, say, 4/4 monotony, which was an approach championed by the likes of Aphex Twin and Square Pusher through their 'scatological' rhythm experiments in the mid-90s - a daunting prospect for somebody like myself who was developing an aversion for 'in-studio' composition - I began investigating the *phasing* technique pioneered by the American minimalist composer Steve Reich, a technique that he discovered by accident and which led to the piece *It's Gonna Rain* (1965). For me, the approach was of particular relevance to my research project as it used repetition against itself, to pose questions, rather than forcing repetition into new moulds as seemed to be the case in the works of Aphex Twin *et al.*, where painstakingly-complex programming tactics were deployed to challenge the formulaic, 'four-on-the-floor' nature of techno music.[147] Central to my interrogation of mechanical/digital repetition, reproduction, and fixity was the needle drop,[148] exploited in order to produce fractured rhythms, which I

[146] Philip Sherburne, 'Memory Machines: Turntablism's Alternative Tradition Part II', *Wax Poetics*, 01/09 (2004), 30-38 (38).

[147] Kim Cascone agrees that this was the particular motivation behind the emergence of genres such as glitch and IDM, he writes, '[a]t some point in the early 1990s, techno music settled into a predictable, formulaic genre serving a more or less aesthetically homogeneous market of DJs and dance music aficionados. Concomitant with this development was the rise of a periphery of DJs and producers eager to expand the music's tendrils into new areas'. Kim Cascone, 'The Aesthetics of Failure: "Post-Digital" Tendencies in Contemporary Computer Music', *Computer Music Journal*, 24/4 (2000), 12-18 (15).

[148] A technique pioneered by Hip Hop legend Theodore Livingston a.k.a. Grand Wizard Theodore (also credited for the invention of the scratch technique) that involves dropping a stylus on a vinyl record as it plays on a turntable. Ulf Poschardt, *DJ Culture* (London: Quartet Books Limited, 1998), 170. I discuss this technique in more detail in the following chapter.

sampled for use in the Korg. Preparing a turntable in such a way as to force the needle to skip in the groove provided polyrhythmic counterpoint to the loops coming from the sampler, in turn facilitating phasing attributes.[149]

Brian Eno's *Music for Airports* (1978), originally a sound installation at Cologne Bonn Airport in Germany, used phasing as a compositional strategy by employing multiple tape loops of varying length so as to avoid the possibility of the materials returning to their original state, an approach favoured by Reich. I explore this strategy in *Voice Crack*[150] using Ableton Live software, carrying forward the needle drop technique and performing a series of scratching gestures which ebb and flow throughout the piece. As my primary interest was live performance I chose to have some control over the process, mapping phantom models (virtual faders, auxiliary effect sends, etc) onto physical handles - to borrow Ryan's expression – so that parameters could be manipulated in real-time, which can be heard on the filter-delayed, fractured vocal/strings line forming the backbone of the piece. Though not overtly concerned with physical gesture *per se Anti Telos* was nevertheless an invaluable first step in my quest towards getting my body into electronic music production, to making the turntable a tool as opposed to a machine.

3.6.2. Video and Gesture

Concurrent with my investigations into performance gesture – using video to accentuate Tron Lennon's interactions and so eradicating any ambiguity with respect to who was producing what sound (as I discussed in chapter 2) - was the idea that the video medium itself could be used to further foreground musical gesture, as a visual equivalent to the sonic trace (like the gestural traces in the *DJ Motion Capture* project). In the past five years there has been

[149] The piece *When I Need You* (track 4: http://www.itchymuzik.com/anti_telos/) is a good example of this strategy. For an example of me performing live with this set-up see http://www.itchymuzik.com/solo-tripswitches/. Tripswitches is a monthly showcase for experimental audiovisual artists working in Newcastle upon Tyne. It is worth noting that tracks 1 to 3 are recorded in one take with no editing whereas track 4 has additional overdubs - scratching and needles drops. This was due to my experimentations with needle dropping techniques emerging later, however as they seemed to chime with the project I decided to use track 4 as the basis for further experiments. Track 5 was recorded later again.

[150] See track 5: http://www.itchymuzik.com/anti_telos/.

an exponential growth in multi-media performances that combine live music and live visuals. As I outlined in chapter 1 live performance cannot be separated from mediatised performance to the extent that we expect some kind of onscreen visual accompaniment at live shows. VJ culture is now well established in nightclubs the world over and Cycling 74's *Max/MSP/Jitter* the software of choice for those with an appetite for designing custom video tools. However, live visuals have tended to follow the visualisation format found in most media players where abstract imagery is generated in accordance to what is happening in the music.

My initial inspiration to work with visuals came after seeing Christian Marclay's *Replay* exhibition at the Musée de la Musique, Paris, in June 2007. In the installation *Video Quartet* (2002) Marclay juxtaposes found Hollywood film clips on four projection screens. Conscious of the current trend in multi-media performance I was keen to investigate if such a work could be performed live, as a kind of DJ set. My investigations led me to Ms Pinky's *Interdimensional Wrecked System*[151] - a proprietary DVS designed within the *Max/MSP/Jitter* programming environment for multi-media performance - and a subsequent investigation into *Maxi-Patch* software.[152] My first solo performance using *Maxi-Patch* and time-code vinyl is shown in *Live Cinema*.[153] Temporally, the system was very efficient and my immediate impression was that the time-code vinyl worked exactly like regular vinyl as I manipulated video back and forth, and it was a revelation controlling video in real-time with my hands. Following my initial experience, however, I observed moments in which the video remained stationary when I performed specific scratching techniques.

[151] Ms Pinky, 'Interdimensional Wrecked System', *Ms Pinky*, http://www.mspinky.com/WreckedSystem_Overview.html (16th, July, 2007).
[152] Ms Pinky, 'Maxi-Patch', *Ms Pinky*, http://www.mspinky.com/WreckedSystem_MaxiPatch.html (16th, July, 2007).
[153] See *Live Cinema*: http://www.itchymuzik.com/livecinema/. The piece was performed live at Tripswitches 6th November 2007. The term Live Cinema was originally used to describe the accompaniment of live music to silent movies, essentially providing a soundtrack. The definition was expanded sometime around 2005 to account for collaborative work between audio and visual artists producing sound and image in real-time. 'Live Cinema', *Club Transmediale*, http://www.clubtransmediale.de/archive/ctm05/live-cinema.html (2nd February, 2008). However, the definition must now accommodate the fact that, due to technologies such as MS Pinky's *Interdimensional Wrecked System*, tools are now available whereby audio AND visual can be governed by a single performer.

Later, it transpired that short scratches such as 'scribbles'[154] were, on occasion, executed within and not across video frames, inevitably preventing movements on-screen. Furthermore, as video requires an extraordinary amount of processing power the computer would automatically reduce the frame rate to compensate for this strain and at times the output frame rate was a pitiful 5 frames per second.[155] In spite of the apparent deficiencies in the system the experiment was to inaugurate additional explorations into the notion of video *as* gesture in the Tron Lennon duo.

The idea was to integrate visuals into our improvised practice and treat them like audio material, inscribing gesture into them. However, the PAL video standard had revealed a serious flaw; a resolution of 25 frames per second made it impossible for me to imprint infinitesimal gestures (such as those evidenced in *DJ Motion Capture*) onto pre-existing video. Unable to rectify this issue my response was to only select video materials best suited to emphasising gesture, video that contained ample movement thus allowing my turntable antics to be more easily assimilated by an audience; scribble scratching techniques were to be avoided. Whereas my own use of video was concerned with trace - the direct correlation of gesture (i.e., what was physically happening to the record being mapped onto the playback of video) - John adopted an alternative approach developing a *Max/Jitter* patch that allowed the actual form of the performing body to intervene in the pre-recorded visual material; effectively converging musical and performance gesture onscreen.[156]

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[154] A technique performed by tensing the forearm muscles of the scratching hand in order to rapidly move the record back and forth.

[155] Frustrated I began researching other ways I might control video composing the piece *Don't Think Feel* (see http://www.itchymuzik.com/dont-think/) in *Final Cut Pro* video-editing software, exploring split screen arrangements and the movement/placement of images. Following this initial inquiry I began researching what, if any, existing tools could make this possible when I was introduced to a computer scientist conducting research into interactive table design. I am presently collaborating in the development of a tactile controller that can be used to control spacial dynamics within Live Cinema/VJ performance. See *A Short Film About VJs*: http://www.youtube.com/watch?v=1dB26FldkFs.

[156] A MIDI crossfader was utilised to facilitate cutting between our separate video outputs so to lessen the density resulting from the simultaneous playback of multiple video streams, which in turn established further connections between physical (crossfader) performance gesture and what was showing onscreen. See *Tag Gallery, The Hague*: http://www.itchymuzik.com/trontour/.

From our investigations into video *as* gesture we observed that the audience's gaze was often directed towards the visuals and not our physical bodies; in our attempt to foreground gesture, to prove we were producing everything live, we neglected the fact that physical presence is already enough to validate the live aspect of a performance.[157] Ironically, the visual material in some ways actually detracted from the physical presence and agency we were intent on emphasising.

3.7. Considering Immediacy in Digital Media

One of the major criticisms of digital media is the lack of immediacy. Unlike analogue media elaborate mapping systems must be pre-configured if one is to gain tactile control of digital audio. My investigations using Ms Pinky's *Interdimensional Wrecked System* revealed an overall latency, a noticeable delay between the physical action and the resultant sound when performing fast scratching techniques, rendering technical precision almost impossible. Obviously, the amount of latency is equivalent to the time it takes to encode the time-code signal, parse and process the digital information, and decode the results. With analogue, the effects are instantaneous and so appear immediate, without mediation. Aside from latency issues other factors concerning the inferiority of this DVS emerged. For example, when the time-code vinyl played back at very slow speeds the sound quality either degraded into noise or simply stopped altogether. This was due to the fact that the tracking software requires a strong input signal to perform correctly, but strong levels are unattainable with very slow movements. This was something I found difficult to adjust to since I had developed a liking for playing records extremely slowly. Moreover, in the Tron Lennon duo we appeared to be falling victim to the idea that technology would solve all our problems, that consuming more of it would grant us greater immediacy. On the mini European tour our transit van was bursting with all manner of technology, which included our set-ups and means of documentation. In chapter 2 I

[157] In relation to this an audience member remarked, 'why do you need to have the visuals?' *Sound, Sight, Space and Play (SSSP) 2008*, De Montfort University, May 2008.

mentioned how the Salon Bruit gig in Berlin was the most successful on the tour; with no option but to play a technologically stripped-down performance I came to realise just how much the DVS - as well as all the other technology around us - had inhibited the practice I had been nurturing for three years. For the first time in months I felt alive, there was nothing to get in the way of my body, no latency, no plastic controllers, just two turntables, a DJ mixer and some real vinyl.

Chapter 4: Negotiating Unpredictability

The anxiety to make gesture legible for the sake of an audience and my interest in touching the sound does not exhaust the subject of the relationship between the live and the recorded. In chapter 1 I commented on the seemingly paradoxical nature of live electronic music grounded in an analogue/Cagean aesthetic, the double logic of intent and unpredictability that inspires the work of Reed Ghazala and Nicolas Collins who endeavour to *cause* electronic sound by physically touching the components on printed circuit boards, whilst embracing the unforeseen circumstances that result from the dislocation of cause and effect in electronic technology. This antagonism between control and autonomy, gesture legibility and unpredictability has permeated my DJ practice from the moment I decided to freely-improvise with recordings.

4.1. The Creative Process

For me, creativity has always involved discovery. As a studio composer I would often mess around with synthesizers, twiddling knobs and tweaking presets until I found a sound that I liked. Similarly, I would combine sampled material through means of trial and error and work with the forms suggested by their conflation. In other words, I often had no clear idea of where the process was leading me or indeed what the end product would be. In describing to Eric Tamm the heuristic nature of what he terms 'in studio' composition, Brian Eno states:

> [Y]ou no longer come to the studio with a conception of a finished piece. Instead, you come with actually a rather bare skeleton of a piece, or perhaps with no starting point. Once you become familiar with studio facilities, or even if you're not actually, you can begin to compose in relation to those facilities. You can begin to think in terms of putting things on, putting something else on, trying this on top of it, and so on, then taking some of the original things off, or taking a mixture

> of things off, and seeing what you're left with – actually constructing a piece in the studio.[158]

Tamm elaborates:

> The traditional composer works like a modern architect planning a building … "specifying all the dimensions and all the materials and where all the pipes go". The empirical in-studio composer, on the other hand, gets a hold of a few bricks and maybe some mud, and just starts building a hut by trial and error, guided by no particular plan but by his evolving sense of what the result might be: his image of the hut may well undergo significant changes by the time the hut is finished: … "You couldn't specify a mud hut with an architects drawing. It's far too complex an entity"'.[159]

My relationship with studio practice, however, is one of ambivalence. Having no idea where I was going it was often difficult knowing when to stop, when a piece was finished. As a consequence, I developed an antipathy towards editing and refinement because of the devastating affect it had had on my creativity, almost never finishing compositions and/or completely ruining them due to the insatiable pursuit of perfection, of reaching an ending. Ed Sarath has written an astute account of the compositional process that helps to locate my position:

> The composer may enter and freely traverse the past-present-future continuum of a work, assuming the vantage point of the future to review and possibly alter the past or that of the past to view and rework the future. The temporality of the composer thus has *cumulative* and *reversible* qualities, whereby relationships between events and their pasts and futures may be conceived.[160]

The twentieth century figurative painter Francis Bacon, whose compositional approach illustrates a striking resemblance to that described above by Eno, was all too aware of the 'reversible qualities' in composition, destroying many of his paintings as a result.[161] In an interview with David Sylvester, Bacon acknowledges this fact:

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[158] Eric Tamm, *Brian Eno: His Music and the Vertical Color of Sound* (Da Capo Press, 1995), 63.
[159] Ibid., 65.
[160] Ed Sarath, 'A New Look at Improvisation', *Journal of Music Theory*, 40/1 (1996), 5.
[161] One might argue that I could 'undo' actions with digital tools in a way that Bacon could not. Even so, this did not prevent the ruining of ideas.

> I painted a head of somebody, and what made the sockets of the eyes, the nose, the mouth were, when you analyzed them, just forms which had nothing to do with eyes, nose or mouth; but the paint moving from one contour into another made a likeness of this person I was trying to paint. I stopped; I thought for a moment I'd got something much nearer to what I want. The next day I tried to take it further and tried to make it more poignant, more near, and I lost the image completely … I tend to destroy the better paintings. I try and take them further, and they lose all their qualities, and they lose everything. [162]

My approach to DJ practice was likewise grounded in discovery; finding records to mix together and not knowing what the result would sound like until the moment it was happening. However, I was to become frustrated by performance conventions where the goal was to recreate a pre-conceived mix (in Club DJ practice) or to devise a routine (in Hip Hop DJ practice). Furthermore, geared towards technical execution the beat-matching/mixing technique involves blending records together so as not to disrupt the flow or continuity of the music; accidents involving 'clashing beats' - where one record begins to fall out of time with the other thus producing unwanted syncopation – or skipping needles – resulting from damaged vinyl or vibration - are generally considered anathema in Club-orientated DJ practice. I often felt that such customs, through shunning the accidental and the unforeseen, precluded discovery, that the creative process stopped the moment performance began, that recreating previously realised ideas was an extremely stressful ordeal. I was therefore facing a creative quandary. On the one hand, my studio practice was replete with discovery-led process, yet the ability to reverse this process, to refine ideas, would often result in the decimation of works. On the other hand, though DJ performance evaded refinement by being 'live', this was at the expense of discovery as chance encounters, accidents, the unforeseen, were forestalled by the demands of a normative practice and repertoire. To bypass these problems I turned to improvisation, a practice where the future is not yet manifest and the past unchangeable, where music making is a real-time negotiation.

[162] David Sylvester, *The Brutality of Fact: Interviews with Francis Bacon* (Oxford: Alden Press, 1987), 12-17.

4.2. Relinquishing Control

In chapter 1 I remarked how Cage's *Cartridge Music* ushered in a new era of electronic music predicated on accidental encounters. It was a landmark piece foregrounding new relationships between performer and instrument beyond the conventional approach of instrumental mastery and the notion of intent. Cage challenged the myth of creation *ex nihilo* in preference to discovery-led processes involving appropriation and misuse. The piece evolved out of the composer's affinity for chance encounters and indeterminate processes in an explicit attempt to move beyond virtuosity and control. Shunning the conventional score and methods based on fixed relationships between sounds, Cage favoured random juxtapositions, printing instructions on transparent sheets which performers overlaid in different configurations to devise a structure for a specific performance.[163] *Cartridge Music* was an investigation into small objects through electronic amplification; due to the nature of Cage's graphic scores how and when to play the objects, replace them with other objects, and alter their dynamics via an amplifier, was open to interpretation by the performers. In the case of manipulating dynamic controls situations could arise whereby extreme amplification might result in the form of feedback, humming, howling or indeed no sound at all; one player could literally curtail another's sound by attenuating the volume rendering actions ineffective. The piece was therefore abundant in both ambiguous sounds and silences which some performers found counter-intuitive; Philip Corner, who performed the piece in the late 1960s, has alluded to the unpredictable (and often alien) nature of performance predicated on indeterminate notation:

> To me it was a very shocking idea that when you make a preparation on whatever basis, that it doesn't do anything. Not only doesn't it do anything that has to do with your idea of what the preparations should be, but it doesn't do anything at all. David Tudor was suggesting that you could accept that. You could do something where your action didn't have any discernable result. I guess that's really the extreme example of the disinterested action.[164]

[163] Chadabe, *Electronic Sound*, 82-83.
[164] William Fetterman, *John Cage's Theatre Pieces: Notations and Performances* (Amsterdam: Harwood Academic Publishers, 1996), p 67.

Corner's account provides a good overview of what it can feel like working with systems that appear to have a life of their own, systems beyond our immediate control. In the Tron Lennon duo, working with vinyl and responding to hand-made electronic circuits and circuit-bent children's toys, the music produced was highly unpredictable due in large part to the instability of these media. The desire to touch sound did not guarantee control and there were often instances of disinterested actions similar to those described above by Corner. However, whereas Corner was frustrated by this relinquishing of control Tron Lennon actively explored ambiguity and unpredictability as a strategy to encourage musical creativity; '[t]hrough the exploration of indeterminate and dysfunctional systems, we embrace ambiguity as creative tool and catalyst, a strategy to probe, provoke and generate', so went our dictum.[165] Nevertheless, there was still a desire to foreground the live nature of our work, that we were causing the sounds to happen even though our instruments sometimes suggested otherwise.

4.3. A Virtuosity in Finding

In the previous chapter I addressed the notion of virtuosity from the perspective of live electronic musicians working in the digital realm, how practitioners such as Bob Ostertag and Michel Waisvisz have been preoccupied with the notion of virtuosity as 'mastery' of a technology/instrument, a consequence of their efforts to make gesture legible. I also mentioned how analogue live electronic musicians circumvent this notion of virtuosity due to the inherent unpredictability in their equipment. However, I would like to suggest that there is another kind of virtuosity which has to do with 'finding'.

[165] Paul Bell & John Ferguson, 'The role of Ambiguity within Musical Creativity', *Leonardo Electronic Almanac*, http://www.leonardo.info/lmj/lmj17supp_ferguson.html (2007). A shorter, updated version of the paper featured in the Fools Gold 'Practice and Improvisation in performance' publication: Paul Bell & John Ferguson, 'Tron Lennon discuss Collaborative Practice', *Fools Gold*, 1 (2008).

Nick Couldry's idea of 'a virtuosity in finding' or 'the ability to imagine new sounds and discover an individual voice', as David Borgo puts it,[166] offers an alternative take on the idea of virtuosity. Where greater or lesser degrees of unpredictability is concerned the objective cannot be to command (for this is an impossible pursuit) but rather to *negotiate*. The ostensibly paradoxical rationale of live electronic musicians' obsession with touch can thus be figured as an attempt to get closer to the unpredictability of their systems so as to be in a better position to foster and negotiate its force.

Not every experimental turntablist is comfortable with the idea of unpredictability. Some find improvisation with records problematic, as Janek Schaefer, inventor of the Tri-Phonic Turntable,[167] explains:

> [I]f I find a locked groove in a record because I've stuck an object on it, I know what it sounds like, and I want that to happen again ... I don't want to just go into no-mans land, I want to know what I'm working with. If you play a saxophone and you improvise, you know what notes are what. But if you play a record player and it doesn't hit the same spot, then you don't know what you're gonna do! And I like to know what I'm gonna do, basically![168]

Whereas Schaefer is noticeably apprehensive about the instability of the vinyl record I, however, embraced this unpredictable quality for its potential to elicit the unforeseen and in turn inspire new musical directions. When the needle skips a groove, for example, I view it as a gift. Moreover, developing a fondness for the detached sound material that resulted from the needle drop technique (in my efforts to move the sampler out of its repetition and the turntable beyond being more that just a machine, as I discussed in the previous chapter) I began to investigate it further in performance, a decision that was in part motivated by Eddie Prévost's claim that the improvising musician 'cannot know what sound [the instrument] … will emit … [that] he will be uncertain of this until the moment of making music'.[169] As working with

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[166] Borgo, *Sync,* 33.
[167] Janek Schaefer, 'Tri-Phonic Turntable', *Audioh*, http://www.audioh.com/projects/triphonic.html (27th, April, 2005).
[168] Miriam Rainsford, 'Recorded Delivery - an interview with Janek Schaefer', *Mstation,* http://mstation.org/jschaefer2.html (4th, May 2005).
[169] Eddie Prévost, *No Sound is Innocent* (Small Press, 1997), 133-134.

recordings seemed to contravene this tenet of improvisation I considered it imperative not to know the material before playing it, in some cases I actually selected records at random before gigs so as to be completely unfamiliar. This also led to a decision not to audition any material in headphones prior to utilising it, resulting in an aesthetic consistent with that of Elliot Schwarz when he said:

> [I]mprovisation … is most exciting when it creates adventure, a quality of unpredictability, a certain *danger* … I've developed an attachment - almost an aesthetic preference - for accidents, unplanned occurrences, the opportunity to unravel a knot in real-time-performance situations.[170]

It is not uncommon to see experimental turntablists performing without headphones for precisely the reason outlined above, meaning they are unaware of the sound until the moment it emerges from the loudspeakers. Whilst this increases the sense of danger as actions cannot be undone, it also serves as the literal realisation of Prévost's above mentioned claim with regard to not knowing what sound the instrument will make. In this respect experimental Turntablism can be regarded as improvisation ('the live') *par excellence*, an idea that is not without a sense of irony. The experimental turntablist therefore not only responds to the sounds that others have produced but also his or her own sounds. Though the emphasis is on 'finding' it is not simply a case of skipping haphazardly through a record until a desired sound is discerned rather it involves incessant negotiation and re-negotiation, whatever sound emerges must be worked into the musical dialogue presently under way.

4.4. Indeterminacy vs. Improvisation: The question of discovery

Taking *Cartridge Music* as an example, indeterminate composition would appear to involve instances of both chance and improvisation since the performers were able to 'interpret' the score, an idea supported by Derek Bailey: '[i]ndeterminate composition, which might be described as any kind of composition in which the composer deliberately relinquishes control of any

[170] Elliot Schwartz, 'Forum: Improvisation', *Perspectives of New Music*, 21/1-2 (1982/83), 70.

element of the composition, seems to be concerned with utilising two quite different concepts; aleatoric and improvisation'.[171] In fact Cage believed that indeterminacy was fundamentally incompatible with improvisation stating that he had 'always been opposed to improvisation because you do only what you remember'.[172] Cage therefore employed aleatoric or chance techniques for he was adamant that improvisation lacked the potential for discovery, that one's background interfered in the musical process and that to discover something new the experience must be autonomous, other to the self. George Lewis observes how 'Cage's own statement that "improvisation is generally playing what you know" leads naturally to his opinion that improvisation "doesn't lead you into a new experience"'.[173] One might argue that it is questionable whether traditional acoustic instruments are capable of accessing the indeterminate, the autonomous, since they are designed to be controlled, highly legible, without ambiguity; Schaefer's aforementioned remark about the saxophonist knowing the notes would seem to imply this was the case. Although Ben Watson has claimed that Bailey 'evolved a personal language beyond the parameters of any known technique', I question whether such a thing is actually possible, given the embodied nature of Bailey's practice.[174] Whereas Cage strives to legislate against the remembered, this is not the case for Bailey. I hear Bailey's music in terms of gestural interaction; you can see and hear the cause of his playing through his fingers. Just as with eRikm's Turntablism the music results from human agency and action, not from an *a priori* abstract schema. It is not so much a case of moving beyond 'any known technique', or beyond 'what you remember', so much as it is allowing the body free play with the gestures of instrumental interaction.

As to reaffirm the apparent opposition between indeterminacy and improvisation Elliot Schwarz and Daniel Godfrey claim that 'Cage's indeterminacy should be distinguished from improvisation, in that the latter is

[171] Bailey, *Improvisation*, 60.
[172] John Cage & Joan Retallack, *Musicage: Cage Muses on Words, Art, Music* (Hannover, NH: University Press of New England, 1996), 270.
[173] George Lewis, 'Improvised Music', 278.
[174] Ben Watson, *Derek Bailey and the Story of Free Improvisation* (London: Verso, 2004), 1.

directed to a known end.'[175] Lewis, however, is critical of this outlook for it presupposes that his own Jazz improvisation, 'whose character is "known", cannot be truly spontaneous or original'.[176] In experimental Turntablism indeterminacy and improvisation appear to coexist; records are cultural artefacts, the materials pre-exist - they are 'known' - one cannot deny the cultural reference because reduced listening[177] is impossible. What is more, the vinyl medium is highly tactile and expressive, yet the instability afforded by the medium and the recorded material itself has the potential to allow us to imagine a sense of its autonomy. This seems to resonate with George Lewis's distinction between the Afrological and the Eurological; David Borgo has written a succinct synopsis of Lewis's position:

> An Afrological perspective implies an emphasis on personal narrative and the harmonization of one's musical personality with social environments, both actual and possible. A Eurological perspective, on the other hand, implies either absolute freedom from personal narrative, culture, and conventions – an autonomy of the aesthetic object – or the need for a controlling or structuring force in the person and voice of the "composer".[178]

If there is truth in the idea that improvisers cannot escape what has been learned (I am by no means suggesting this cannot lead to discovery), we might think of experimental Turntablism as inhabiting an intervening space between Lewis's Afrological and Eurological distinctions, for the objective is to combine (Afrological) improvisation with (Eurological) indeterminate strategies - problematising both the Cagean idea that improvisation only involves playing what one already knows, and the notion that autonomous aesthetic objects are necessarily separate from personal and cultural narratives.

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[175] Elliot Schwarz and Daniel Godfrey, *Music Since 1945* (California: Wadsworth/Thompson Learning, 1993), 92, cited in Lewis, 'Improvised Music', 278.
[176] ibid., 278.
[177] In Schaefferian theory reduced listening is the attempt to suppress the perception of sound so that it may be heard on its own terms as a 'sound object'. 'Reduced Listening', *Ears: ElectroAcoustic Resource Site*, http://www.ears.dmu.ac.uk/spip.php?rubrique219 (18th September, 2009).
[178] Borgo, *Sync,* 22.

4.5. Practical Project

Though unpredictability has featured prominently in my improvised practice one particular work stands out as a good example of unpredictably in practice.

4.5.1. *Improvisation 2*

In *Improvisation 2*[179] there are clear instances of unpredictability and indeterminacy at work, and the performance demonstrates how these factors can be negotiated, and in turn provide a platform from which to project new ideas. The performance begins with a series of EQ-filtered needle drops in which I create fractured rhythms using a Mario Lanza song as my source material. For the first forty-five seconds of the piece John Ferguson is tussling with a modified *Speak and Spell*,[180] producing irregular pulses through which an occasional voice snippet from the electronic speech synthesizer can be heard. During this time the *Speak and Spell* crashes and so requires a reset after which John utilises a modified switch to 'grab' and manipulate a sample of the voice synthesizer, varying the pitch of the pulse he has created via an additional, modified rotary knob. The *Speak and Spell* 'coming back to life' initiates a short passage of musical dialogue comprising cuts, scratches, and sporadic pulses, culminating with more needle dropping and then a pause in the sound. After some fleeting acknowledgement (a glance and a smile) the dialogue resumes but is short-lived, curbed by yet another *Speak and Spell* crash and more silence as the device is reset for a second time. Careful attention to the onscreen visual before the camera switches to John reveals that the Lanza record is in fact playing but no sound is heard because the needle has fallen onto a groove in between songs.[181] Realising this I hastily rotate the record so as to find the beginning of the song which enters the sonic spectrum as a high-pitched squeal. This momentary burst of

[179] For example, see *Improvisation 2*: http://www.itchymuzik.com/transmedialeaward/.
[180] An educational toy for children produced in the 1970s by Texas Instruments.
[181] I believe that this moment of silence is a good illustration of the 'disinterested action' for there is clearly intent on the part of both performers yet the discernable result is the opposite of what was expected to happen.

'Alvinized'[182] sound was not something I found aesthetically pleasing evident from the way I immediately curtail its entrance. However, realising that I must build on this accidental event I continue to allow the record to rotate at high speed, negotiating and shaping the material with EQ in response to the pulsating rhythms emanating from the *Speak and Spell*. With the platter rotating at such a pace the end of the song is soon reached, this break in the sound leads me to return to the needle drop tactic again; in other words, I am responding to the sounds as they emerge through chance, allowing the form of the music to emerge from these interactions. In the 'wobbly' Lanza vocal scratching that follows, the needle lands on a sibilant which I begin to explore as John superimposes a sound evocative of electronic bagpipes on fast forward until the energy dissipates and the music draws to a close.

4.6. Predictability

Initially the needle drop technique had provided a way to generate dialogue, although in time I became disillusioned with the episodic nature of the music produced in this way as it felt as though it lacked structure or narrative. Additionally, by placing too much emphasis on the moment at hand and the instability of the technologies with which I was working, I began to notice a familiarity in the responses; ironically the unpredictability was becoming, well, rather predictable - so Cage may have had a point after all. Frustrated, I was eager to find a way out of the quandary in which I found myself, the solution eventually coming from the most unlikely of places: digital repetition.

[182] To borrow John Oswald's expression, meaning 'chipmunked'.

Chapter 5. Unpredictability in Analogue/Digital Repetition

As I have already indicated there are two clear strands to my practice; on the one hand there is agency/intervention, on the other, the recorded/repetition. In chapter 3 I discussed how I explored means to inscribe gesture into sound and video so as to address my anxiety with respect to reproduction and fixity, how I also abandoned analogue/digital repetition which I aligned with the machine and a lack of human agency - utilising the needle drop technique to break the vinyl record and the turntable out of this repetition. In chapter 4 I explored the idea of unpredictability as a way to elicit the unforeseen but was to eventually become disenchanted with the sporadic, episodic nature of the music and techniques employed.

Through an encounter with Robert van Heuman of STEIM I began to take a renewed interest in repetition - not only in how I might employ it within my own improvised practice but also how it was being used in Detroit Techno music, a genre synonymous with repetitive rhythms, machines and music technology. Researching the work of two of the genre's leading figures, Jeff Mills and Richie Hawtin, I uncovered something truly unexpected. In my shunning of repetition I failed to take account of those who work within and express themselves through analogue/digital repetition. What is more, Bob Ostertag's writing on the subject - his aversion to electronic dance music because of the precision of its beats, and his 'missing' body claim - contributed to my own dissociation from electronic dance music as well as 'regular' DJ practice. However, in the course of my investigations it became apparent that Mills and Hawtin, far from being subject to repetition, articulated an agency within it, conveying a similar sense of rigour toward creative practice as those affiliated with the early 1980s New York 'Downtown' scene (Nic Collins) or STEIM in Amsterdam (Michel Waisvisz). Moreover, these DJs were confronting the body/machine problematic head-on as opposed to renouncing what they didn't understand through Marxists' readings of contemporary culture. A DJ at the tail end of the analogue paradigm Mills has expressed similar concerns to those of Ostertag believing that digital technology will eventually supplant the

DJ. By contrast, Hawtin is a fervent admirer of technological innovation who is more than willing to give up the turntable in his search to uncover new modes of expression in the digital paradigm.

Though I have not included Techno music *per se* in my practical submission I believe that it would merit investigating these two DJs further as they have in different ways influenced both my creative work and thinking – embracing repetition whilst retaining the integrity of improvisation and discovery-led process.

5.1. Jeff Mills

In chapter 2 I addressed Jeff Mills's attempt to produce a 'live programming application', a DVD that could act as a DJ set in its own right thus replacing the physical DJ - a practical solution to the incessant requests from promoters on the world party circuit. On closer inspection, and in light of recent comments made in The Wire Magazine, *Exhibitionist* perhaps unwittingly signified the onset of an anxiety over the future of the Club DJ art form:

> I think the artform of DJing will run its course. Meaning, it will stop when the people feel it's not so important. And I don't think that time is too far away. It's going to happen naturally because of the way the technology is moving … I can clearly see the time is not far off when the music is just programmed, and the people are passive to it, and they dance and go away.[183]

Adornian readings aside,[184] Mills's remark seems plausible when one considers how the DJ art form has been transformed since the advent of digital technologies. However, I believe the conclusions he draws in this assertion do not necessarily follow, especially when one takes into account the burgeoning DJ market – the drive to gain tactile control over the digital, and the hybrid creativity we are seeing as a result. Furthermore, exactly what

[183] Derek Walmsley, 'Jeff Mills: When Worlds Collide', *The Wire Magazine*, 300 (2009), 33-37 (33).
[184] Theodore Adorno, 'On Popular Music', in Simon Frith & Andrew Goodwin (eds.) *On Record: Rock, Pop, and the Written Word* (London: Routledge, 1990), 301-314.

Mills is inferring by 'just programmed' requires some clarification, something I hope to address through an examination of his background.

As a former Hip Hop DJ in Detroit (around the mid-1980s), Mills, known then as 'The Wizard', fronted his own radio show on WDRQ; cutting, scratching, and beat juggling an eclectic mix of records during his live broadcasts.[185] At the time, the Detroit Techno genre was beginning to establish itself through productions by the 'Bellville Three' (Juan Atkins, Derrick May and Kevin Saunderson) peaking in 1988-89. With Techno gaining notoriety in Europe the Bellville Three would often leave Detroit for increasing periods of time to pursue DJ-ing opportunities, effectively creating a void for other promising talents to exploit. Seizing the opportunity Mills and a cluster of his contemporaries soon established themselves as the vanguard of Detroit's second-wave, producing Techno of a discernibly harder and faster nature. Following successes with Underground Resistance[186] Mills ended his tenure with the label in 1992 to pursue DJ-ing just like the first-wavers before him, drawn to Europe by the success of UR releases like the *Riot EP*[187] and *X-101: Sonic Destroyer*,[188] which were 'very much in sync with the euro hardcore sound'.[189] He established his own record label, Axis, through which he released many of his own productions. The label was also to serve as a conceptual springboard for Mills's insatiable predilection for futurological frameworks: '[t]heories and subjects of substance is the elementary element that fuels the minds of our Axis', so the creed goes on record sleeves and in web page biographies.[190]

As Mills moved into Techno music, though there was a contrast to be heard in musical style, he never abandoned the turntable skills he developed as a Hip Hop DJ. He made his name as a Techno DJ, pushing the boundaries of what was possible by incorporating the dexterity of Hip Hop Turntablism into Club

[185] Brewster & Broughton, *Last Night*, 347-348.
[186] A collective/label Mills established with Mike Banks in the late 1980s.
[187] Underground Resistance, *Riot EP* (USA: Underground Resistance, UR-010, 1991).
[188] Underground Resistance, *X-101: Sonic Destroyer* (USA: Underground Resistance, UR-013.5, 1991).
[189] Simon Reynolds, *Energy Flash: A Journey Through Rave Music and Dance Culture* (London: Picador, 2008), 207.
[190] Jeff Mills, 'AXIS History', *AXIS Records* http://www.axisrecords.com/ (14th March, 2009).

DJ practice, in turn injecting a much-needed element of risk taking in the art form. Utilising loops rather than completed tracks he pioneered the use of locked record grooves in the genre;[191] *Cycle 30,*[192] for example, was conceived in relation to the idea that music repeats itself every thirty years. Comprising nine locked grooves of various beat/synth loops and three minimal compositions for layering/mixing, the record augmented creative potential within Techno music DJ-ing for musical structure could be improvised on the fly, as Mills reveals:

> I did the loops to explain that a track has no beginning and no end. It also changes your thinking as a DJ. The record is not building up – you have to build it into your mix. It takes skill to play it … When people start to produce records because they know a certain crowd will like it, it defeats the purpose. It is no longer an artform … It is not my thing to produce a sure hit record. Too many people are doing it at the moment.[193]

Much of Mills's work is characterised by a body/machine dialectic. For example, his *Purpose Maker* label (a sub-label of Axis established in 1995) pays homage to the physical, human body with record sleeves and labels replete with close up shots of different body parts. Elaborating on the Label's launch Mills remarked:

> The theme of the exhibition is the physical aspects of the person known as "The DJ". The hands, ears, arms and fingers were the parts of the body that I felt were the most important and that should be displayed in a manner where each part stands alone. These are the parts that physically make the music happen.[194]

It is obvious that Mills considers the physical, human body as essential to the performance of Techno music (in many respects undermining Ostertag's position that this music excludes the body of the creator), testimony to his performance background in Hip Hop Turntablism where his efforts to

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[191] A technique that can be traced back to Pierre Schaeffer's 'closed groove' experimentations in the 1940, as I mentioned in chapter 1.
[192] Jeff Mills, 'Cycle 30' (USA: AXIS Records, Axis-008, 1994).
[193] Benedikt Laube, 'Reaching Out with Jeff Mills', *ele-mental*, 1994, http://www.ele-mental.org/ele_ment/con.versations/reaching.jeff.mills.html (18th March, 2009).
[194] Cyclone, 'Jeff Mills', *Hardware Corp*, http://www.hardwarecorp.com.au/Artists/Int/Jeff_M/Jeff_M.html (18th March, 2009).

command the machine - making the turntable transparent by overcoming its technical limitations through virtuosity alone - were carried into Club DJ practice. It should therefore come as no surprise that he foresees the current shift towards digital media as the beginning of the gradual dissolution of the Club DJ art form as a 'live' practice. For Mills, music that is 'just programmed' signifies the loss of a real-time spectacle and the kind of virtuosity that enables the human body to be heard amongst machines. Then again, *Exhibitionist* was an overt attempt to capture this spontaneity, although the project does seem somewhat undermined by his earlier comment about programmed music and passivity.

Mills's decision not to edit-out mistakes – clashing beats and skipping needles - in his *Live at The Liquid Rooms – Tokyo*,[195] I believe was an explicit attempt to foreground his virtuosity within repetition. He is hailing the listener to notice that he is doing it live; physical intervention into the medium, where fixity and repetition are disrupted or modified, thus stands as an indicator of human agency, in turn allowing for unpredictability in repetition. For Mills, the tactility of the vinyl medium and the physical interaction one encounters through a turntable ecology is without question under threat from digital media. Reflecting nostalgically upon the *Exhibitionist* project he concedes that one day 'we might like to have this information to remind us of how things used to be, how unique it was'.[196] Mills's claims are not unwarranted as existing software has, for example, made redundant the beat-matching skill that has been fundamental to the analogue DJ paradigm.

5.2. Richie Hawtin

Richie Hawtin has been at the forefront of the Techno music genre helping to develop new tools and shape new roles for the DJ for over a decade having collaborated on a number of unprecedented developments including Stanton's *Final Scratch*, Ableton's *Live*, and more recently Native Instruments' *Traktor Scratch Pro*. In the mid-90s he developed a distinctive use of dynamics,

[195] As discussed in chapter 2.
[196] Walmsley, 'Jeff Mills', 37.

isolating specific audio frequencies with equalisation (EQ) and utilising volume controls to create sets driven by the motility of his audio spectrum manipulations as opposed to the latest big tunes. In 1997, building upon his sonic explorations into the dynamic possibilities of sound Hawtin began integrating recording studio equipment into his DJ setup, before manufacturers had taken the initiative to build audio effects into their DJ mixers. For that reason Hawtin was ahead of his time, augmenting the regular turntable setup with a frequency isolator (Vestax *DCR 1200 PRO*) and hardware effect processor (Ensoniq *DP/2*) that could be manipulated via an expression pedal (Roland *EV-5*). To complete his performance ecology a Roland *TR-909* drum machine was added enabling a profusion of beats and rhythms to be woven into the mix.

In 1999 Hawtin embarked on a series of *DE9* projects with the specific aim of exploring both existing and emerging technologies and how they might be employed within DJ performance, as Hawtin put it, 'an outlet where I can experiment with my thoughts on where the idea of DJ-ing and performance are headed in the future'.[197] The first installment *Decks, EFX & 909*[198] illustrated the practice he had initiated two years earlier. This was followed by *DE9: closer to the edit*[199] (2001) which saw Hawtin make more than 300 edits from over 100 tracks, producing loops ranging in length from one note to four bars. With the aid of Stanton's *Final Scratch* DVS he then set about recombining the loops as if it were an 'audio jigsaw puzzle'.[200] In addition, the software was able to auto-synchronise the tempos of the audio loops, a pivotal moment in the history of the DJ art form for it eliminated the hitherto vital beat-matching skill. Innovative as the technology was it could only cope with a maximum of twenty seconds per audio file before things would fall out of time, and manual cuing was still required via time-code vinyl. Further technological developments – more powerful computers and software updates

[197] Transitions sleeve note.
[198] Richie Hawtin, *Decks EFX & 909* (London: Mute Records, NOMU72CD 5016025682522, 1999).
[199] Richie Hawtin, *DE9: closer to the edit* (London: Mute Records, NOMU90CD 5016025683017, 2001).
[200] Ibid. Sleeve notes.

- would soon resolve this issue, however the vinyl medium's position in the DJ art form would no longer be a central concern for the virtual DJ.

DE9: Transitions[201] (2005) was to herald the death of the turntable for Hawtin as he turned his attention to Ableton's *Live*. Working with an understanding that the DJ need no longer synchronise or manually cue music, as this was automated in software,[202] Hawtin could instead indulge in 'a new era of the mix, that of the transition'.[203] As the laptop computer reached a state of omnipotence, and software updates became more regular, by 2005 it was possible to synchronise entire tracks without the whole thing resembling a Steve Reich *Drumming* composition. For Hawtin this was an epiphany; whereas *DE9: closer to the edit* was restricted to loops, *DE9: Transitions* was a realisation of the new creative possibilities on offer to the DJ, for now potentially hundreds of compositions could be freely mixed together. The turntable, however, was nowhere to be seen. Although this move away from the turntable would appear to signify a loss of tactility, this is not entirely the case. Fuelled by his commitment to the *DE9* project he has provided consultation and beta testing on Native Instruments' *Traktor Scratch Pro* (*TSPro*) - building on the original *Traktor Scratch* DVS with an additional two virtual turntables – and Allen and Heath's *Xone:3D* MIDI DJ controller,[204] aiding the development of what appears to be an extremely versatile interface. *TSPro* makes it possible to combine time-code vinyl, CDs burned with control data and virtual turntables that can be manipulated via the *Xone:3D*. This has enabled Hawtin to 'find a way to bring the personality and humanity through'[205] the technology - evidently expression, tactility, and

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[201] Richie Hawtin, *DE9: Transitions* (London: Mute Records, NOMU150DVD 0094633900509, 2005).
[202] *Live's* 'Warp' algorithm automatically calculates the tempo of an audio loop using beat-detection techniques that analyse amplitude transients in order to determine BPM, adjusting (or 'stretching') the audio to match the master tempo specified in software. It is worth noting that the algorithm is best suited to four-on-the-floor music where transients are easily discernable - the software does not perform well with music containing human time keeping.
[203] Sleeve notes. Hawtin, *Transitions*.
[204] Allen and Heath, 'Universal DJ Controller', *Allen and Heath,* http://www.allen-heath.co.uk/US/news_story.asp?view=228 (26th October, 2008).
[205] Richie Hawtin, 'Richie Hawtin on the Art and Science of DJ-ing', *Native Instruments*, 2008, http://www.native-instruments.com/#/en/products/dj/traktor-pro/?content=13 (26th October, 2008).

embodied agency continue to be primary objectives for DJs exploring the digital realm.

Like Mills, Hawtin's DJ sets are driven by the need to create unique patterns of syncopation through the use of loops, and with *TSPro's* virtual turntable function he has elaborated this strategy. The function allows him to access and remix loops non-linearly by exploiting the random access potential of digital audio, 'constructing, deconstructing, [and] reconstructing'[206] on the fly. He brings the unpredictable into repetition by deploying a 'virtuosity in finding' approach to music making; creating loops in real-time and using repetition against itself not unlike Reich's 'phase' technique, except that Hawtin has the tools to negotiate and intervene in the forms by deciding when he wants to re-synchronise the loops.[207] The result is an extremely dense and complex mix, which, when combined with EQ and effects, far exceeds what Mills could have ever imagined or achieved with turntables alone. However, materialists might argue that Hawtin is seeking a kind of perfect representation, a presence without rupture, interference, or noise, in other words, a music lacking in human physicality. Against this I would maintain that Hawtin's objective is the same as any improviser hoping to negotiate the evanescent, as he revealed in a recent interview with Chris Sharp: 'I'm always trying to create something new, something in real-time – a moment that you can just about grasp before it slips out of your fingers'.[208] The arguments made toward DJ-ing and electronic dance music performance (discussed in chapter 3) by Stan Godlovitch, Bob Ostertag, and Nic Collins appear tenuous given what Hawtin is striving for, how he is continuing to define himself through ever-expanding amounts of technological mediation. Furthermore, it seems ironic that Techno should find itself the host of such investigation given its affiliation with the machine, as Sharp acknowledges:

> The quest this ambition reveals borders on the paradoxical; Hawtin is still dreaming of the optimal way to combine – through technology – the thrilling serendipity of live improvisation with the carefully calibrated, perfectly weighted

[206] Ibid.
[207] He achieves this using a 'macro' technique – mapping multiple functions to one parameter so that all four loops will reset at the push of a button.
[208] Chris Sharp, 'Up for Renewal', *The Wire Magazine*, 296 (2009), 36-41 (40).

> impact of computer music. It's a quest that has led him to a strange, fertile, intermediate zone, suspended – like the music of the Bellville Three – between the emotional pull of a flawed human reality and the immaculate pleasures of a slick, machine-tooled utopia.[209]

5.3. Practical Projects

Inspired by the work of Mills and Hawtin, but also my encounters with Robert van Heuman and Takuro Lippit a.k.a. DJ Sniff of STEIM, the following projects outline how I have incorporated analogue/digital repetition into my improvised practice

5.3.1.Digital vs. Analogue

In June 2008 Robert van Heuman (managing director of STEIM) completed a two-week artistic residency at Culture Lab, Newcastle. During his residency we played together as a duo; I opted for a basic analogue DJ setup (still not convinced that DVSs could facilitate the kind of immediacy I demanded), van Heuman utilised *Lisa X* (STEIM's custom live sampling software) in conjunction with several Faderfox MIDI controllers and a gaming joystick. Curious to see if his system could match the immediacy of the turntable I challenged him to a digital versus analogue duel.[210] As we played I became aware of Robert's use of repetition, he appeared to be using it on his own terms rather than succumbing to it, throwing my own material back at me and allowing it to repeat before distorting it via his joystick manipulations. He would take samples without my knowing and reintroduce the material into our improvisations, giving the music a sense of narrative, the sampled material acting like a memory of where we had been and where we were heading. The experience was a revelation for it provided insight into how repetition might be used in improvised music, something I had avoided in my duo work with Tron

[209] Sharp, 'Up for', 40.
[210] See *Digital vs. Analogue*: http://www.itchymuzik.com/digitalanalogue/. To view slideshow documentation see *Digital vs. Analogue*: http://www.itchymuzik.com/slideshows/.

Lennon through our investigations into gesture *as* sound. It would seem that Robert had found a way to get his embodied agency into a productive association with recording and repetition without the need for direct analogue inscription, a sense of 'corporeal presence' as Ostertag would have it. This was a critical turning point in my research for it made me want to explore repetition, the very thing I had understood as being anathema to improvisation, and I considered it an opportunity to move beyond the episodic nature of gestural improvisation by reinvesting repetition into my improvised practice.

5.3.2. Repeating the Needle Drop

The tension between control and unpredictability in my improvised turntable practice that I addressed in the previous chapter initiated an experiment whereby efforts were made to gain some control over the unpredictable needle drop. The musical results from this technique had tended to be episodic, but rather than abandoning it completely I thought about how I might repeat initial needle drops. My encounter with Robert van Heuman in the *Digital vs. Analogue* project - in which a sense of narrative was achieved through live sampling, allowing previously improvised moments to be revisited and renegotiated thus taking the music beyond the episodic - and my subsequent investigations as to how I might utilise live sampling whilst retaining tactile control led me once again to Ms Pinky's *Interdimensional Wrecked System*. Through utilising time-code vinyl in combination with Ms Pinky's vinyl tracking *Max/MSP* object the idea was to develop a patch that would facilitate the simultaneous recording and mapping of needle dropped samples from real to time-code vinyl to allow further manipulation of the fragmented rhythms with my hands. Enlisting the help of fellow PhD candidate and expert *Max/MSP* programmer Will Schrimshaw a prototype patch was designed for use with a Behringer *FCB1010* MIDI foot controller; the decision to access recording/mapping parameters with my feet allowed my hands to be free for executing the needle drop. The patch was designed so that the instant the pedal (mapped to a record object in Max/MSP) was released the sample

would immediately load onto the adjacent turntable ready for manipulations via the time-code vinyl. Functionality to record and recall up to four separate samples as well as re-write new material was designed into the patch. I showcased this system at Digital Resources in the Humanities and Arts (DRHA) 2008, Cambridge where Tron Lennon gave a collaborative paper presentation and two performances/demonstrations. In the first of our performances an Indian classical record is used as source material for live-sampled needle dropping with a pulsing accompaniment from a hand-made circuit utilising light sensor technology.[211] The experiment was a moderate success as I was able to preserve a sense of continuity by allowing the needle-dropped sample to loop whilst maintaining tactile control over the material, restructuring the broken rhythmical content by intervening in it. The technology, however, was problematic; the Max/MSP patch unstable - not in a way conducive to creativity – failing to record and load samples on occasions.[212] Additionally, the foot controller did not integrate smoothly into my existing DJ set-up - hidden from view by a table housing my equipment it was impossible to select a pedal without first taking a step back for a brief glance; literally a step out of the creative moment. Obviously the system was inadequate for use in improvisation where rapid interaction and immediacy are essential for sustaining musical dialogue.

From my experiments with this system I began to question whether physical control over the sampled material via time-code vinyl was the best way to approach live sampling, and if there was a better way to make use of sampled material such as evidenced by Robert van Heuman.

[211] To view a slideshow see *DHRA 08*: http://www.itchymuzik.com/slideshows/. The music accompanying the slideshow is an excerpt from our first performance. The paper presentation was entitled *The Role of Unpredictability in Musical Creativity*.
[212] The cause for this instability purportedly a consequence of the Ms Pinky object writing audio directly to disk (rather than to RAM) via the *sfrecord~* object.

5.3.3. Hybrid Turntablism

In November 2008 I completed an artistic residency at STEIM with an agenda to explore new DJ technologies.[213] Prior to heading out to Amsterdam I took an interest in the Korg *Zero4* DJ mixer, with hybrid capabilities it appeared to offer precisely what DJs have been eagerly anticipating; on the one hand, a regular mixer offering the kind of tactility one would expect from analogue equipment, on the other hand, a MIDI controller providing hands-on access to the digital realm. Apprehensive about the promise of new technology I nevertheless went ahead and purchased the device. Arriving in Amsterdam I was confronted by a wealth of DJ technology including MIDI controllers, turntables with MIDI capability, integrated hardware and software systems, and DVSs. Takuro Lippit a.k.a. DJ Sniff who is, at the time of writing, an artistic director at STEIM, amassed this technology during his tenure. As part of my residency I also wanted to metaphorically 'cut' my own vinyl by collating samples from a variety of sources that could be consolidated into one audio file and controlled with time-code vinyl. The idea being that these samples would eventually become a DJ tool I could learn to play like an instrument - in much the same way a Hip Hop turntablist becomes familiar with battle vinyl[214] – and, in so doing, have a rich creative resource at my disposal that would in turn eliminate the need to change records during performance, sustaining the creative moment.

During my residency I played in a duo with DJ Sniff in which we both utilised hybrid DJ set-ups. Whereas I was exploring a DVS (using one PDX-3000 and one Technics 1200 turntable) and *Zero4* (internal sampler and effects) - drawing sounds from the virtual 'DJ battle vinyl' I had put together - Sniff employed his *Cut 'n Play* system, a crossfader-triggered module built within Max/MSP.[215] In conjunction with this he used one turntable playing real vinyl

[213] To view slideshow documentation see *STEIM Artistic Residency*: http://www.itchymuzik.com/slideshows/. An account of my investigations can be viewed at STEIM's Project Blog: http://steim.org/projectblog/?p=414.
[214] A vinyl record consisting entirely of samples (sound effects, film dialogue, drum loops, etc) used for scratching in turntablist performance.
[215] Takuro Lippit, 'Cut 'n Play', *DJ Sniff*, http://www.djsniff.com/toolz/cutandplay.html (18th, September, 2007).

and a set of DSP effects manipulated via a USB controller.[216] The aesthetic for 'finding' (that I discussed in the previous chapter) permeates the music I produced with DJ Sniff. Though we are both working with digital repetition, samples are taken in real-time and negotiated in accordance with the mood of the music. Whereas Sniff achieves this via his crossfader-triggered sampler I utilise the *Zero4's* sampler to seize the sounds issuing from vinyl, shaping them with the sampler's loop divide controls to sustain this otherwise ephemeral material. What is more, once the *Zero4's* sampler is engaged the sounds coming from vinyl are no longer heard; only when the sampler is disengaged does the sound return. I exploited this function for it allowed me to work with unforeseen sounds - in much the same way as the needle drop technique, only I now had a way to extend the material through means of digital repetition - by momentarily disengaging the sampler to allow a new sound to emerge. This is most apparent in *Brass Off*[217] - from two minutes into the piece I begin to prolong snippets of the saxophone sample with which I am working, soloing for a minute or so with the sampler as DJ Sniff provides percussive accompaniment.

Perhaps the most appropriate experience to emerge during my STEIM residency came through my experimentations with the *Zero4's* internal sampler through which I found a way to reintroduce digital repetition into my practice and have it work alongside my turntable interactions.[218] Furthermore, I had discovered a way to work to bring the unpredictable - a sense of discovery - into repetition whilst enjoying embodied agency.

5.3.4. Solo Performance

Having explored a variety of hardware/software and hybrid DJ technologies my preferred performance set-up now consists of a Pioneer CD turntable (*CDJ-1000MK3*), a Vestax vinyl turntable (*PDX-2000MK2*), and a Korg *Zero4*

[216] For an example of our respective approaches see *DJ Sniff & Paul Bell @ Tripswitches*: http://www.itchymuzik.com/duo_djsniff/.
[217] For example, see track 5: http://www.itchymuzik.com/hybrid_turntablism/.
[218] See STEIM Residency Recordings: http://www.itchymuzik.com/steim_residency_recordings/. Four pieces document my experimentations with the *Zero4's* internal sampler.

DJ Mixer - for me these devices afford the kind of immediacy I demand as an improviser whist providing the best of what the analogue and digital have to offer. What I find most appealing about the *CDJ* is the combination of random access capability and hands-on interaction. Using memory location markers or 'hot cues' I can store/recall samples on the fly, and adjust loop start and end points via the 7-inch jog wheel, giving me greater access to (and control over) digital repetition. On the analogue side, the *PDX's* ultra-pitch and start/break speed adjustment functionality has enabled me to pursue my aesthetic for slowing-down real vinyl, permitting tactile feel that only records can provide. Lastly, the *Zero4* is the hub of my set-up - its effects, EQ and sampler granting further possibilities for working and transforming recorded materials in real-time.[219]

[219] For example, see *Sound 09 Festival*: http://www.itchymuzik.com/sound09/.

Conclusion

When I began this research project four years ago it had been my intention to develop ways that recorded material could be used in spontaneous music making, problematising and moving beyond the contradictions such a move appears to entail. Anxious about the Club DJ's musicianship, and disillusioned with studio practice, I had turned to improvisation so as to explore and utilise the turntable as a musical instrument. Tensions between body and machine led me to Philip Auslander's work on mediatised culture and a subsequent investigation into what it meant to be a live performer working with recordings. Whereas Auslander was arguing against the idea that live events were superior to those that are mediatised, illustrating how the live and the recorded interpenetrate one another, practitioners working in the field of 'live electronic music' were eager to maintain the distinction. From my research into this genre I became aware of a particular dislike for Club DJs; whereas those around me had lightly mocked my apparent lack of musicianship and my penchant for music made with machines, live electronic musicians were resolute in their claims that the Club DJ was categorically not a musician, DJ-ing was not a live art form, and electronic dance music artificial. For Bob Ostertag, the physical human body is obscured by electronic technological mediation, the rupturing of cause and effect making it difficult to determine the human agency behind electronic music production. For Nicolas Collins, touching the innards of electronic equipment is a means of bringing the body back into electronic music even though there may be no direct correlation between gesture and sound. Seduced by the rhetoric of these practitioners I rejected analogue/digital repetition in favour of gestural interaction, inscribing gesture into recorded materials in order to prove to an audience that I was producing it live. Addressing the relationship between gesture and interface and drawing on Bolter and Grusin's theory of remediation I demonstrated how Michel Waisvisz's own pursuit of transparent immediacy in The Hands was an effort to repair the cause-effect chains broken by digital media; an attempt to make gesture legible that ultimately resulted in a virtuosity akin to mastery. Describing the antagonism between control and unpredictability that has

permeated my own improvised turntable practice I outlined how Tron Lennon aimed to foster the latter's potential, which was gained at the expense of narrative, and how the episodic nature of the music impelled me to reconsider the motives behind my music making. In my work with Robert van Heuman and Takuro Lippit a.k.a. DJ Sniff of STEIM (the Studio for Electro-Instrumental Music) in Amsterdam, I gained new insights into the way digital repetition can be used in improvised music making, as they had effectively uncovered a way to bring their embodied agency into a productive relationship with repetition. This experience compelled me to reconsider the Club DJ art form that I had hitherto disregarded wherein I observed similar anxieties to those bemoaned by Ostertag; Jeff Mills's belief that the emerging digital paradigm would ultimately displace analogue DJ practice, an anxiety that led to *Exhibitionist* - a 'live programming application' designed to remind the new paradigm of the virtuosic art form it was leaving behind. Evaluating Jeff Mills's and Richie Hawtin's use of repetition in Detroit Techno music I came to appreciate their respective practical endeavour, that the apprehension towards analogue/digital repetition was more imaginary than factual, for just like van Heuman and DJ Sniff they were making repetition work on their own terms. In my quest to address my own anxiety with respect to live performance - to overcome repetition, reproduction, and fixity - I came to realise that an investigation into physical gesture was incomplete without its apparent other, that music makers must at least explore and combine the cogent attributes of repetition in the analogue and the digital domains with the tactile engagement of embodied agency.

Of course, in a field like my own – a technology-centric art form such as DJ-ing – things are constantly evolving and this thesis is, in a sense, a report on where I have been with it. As technology continues to develop so too does the fervour for new modes of expression. At the time of writing, partnerships are developing between some of the leading DJ technology manufactures who aim to amalgamate the most powerful aspects of their products. Ableton recently announced they will be joining forces with Rane's *Serato* to combine *Live's* production and real-time remixing capabilities with the latter's time-code

vinyl technology,[220] and they have collaborated with Cycling 74, authors of the *Max/MSP* visual programming environment, to develop *Max for Live.*[221] Whether or not these technologies will deliver what has been promised remains to be seen but I am eager to continue exploring and problematising their potential.

In a mediatised culture the 'live' in live performance is a paradoxical assertion for it cannot escape the recorded, in which case the DJ should have nothing to be anxious about, being a product of the mediatised condition. Auslander's Baudrillardian 'this is how it is' reading of contemporary culture, in common with most post-structuralist positions, seems to suggest a lack of agency, but for many artists working with recordings and fixed media such a reading seems overly reductive. My research has been expressly concerned with finding spaces where agency is possible beyond the normative approaches to musicianship, and how to deploy this in my own work, as well as investigating the work of others. My journey has taken me through gestural interaction, technological mediation, unpredictability, and digital repetition and has led me to arrive at two broad categories of the live. For live electronic musicians and experimental DJs the 'live' appears to be concerned with overcoming the mediatised elements of a performance, making the technological and the reproducible invisible through gestural intervention, shifting the focus of art that is dependent on mediatisation away from a traditional emphasis on its reproductive aspects. This, however, is not the only strategy; for someone like Hawtin the live is about an embodied agency *within* mediatisation where direct gestural inscription is not the main issue. The quandary is rather how to foreground reproduction whilst granting active performer participation. It is therefore the musical choice made in real time that is live and this does not require a performative spectacle for its validation, one in which efforts are made to map physical actions onto sonic outputs. Consequently, the live is not an absolute state but a relative proposition that is contingent on a multitude of factors, and which takes different forms under different circumstances. If there is any commonality across the spectrum of the 'live'

[220] Ableton, 'Serato and Ableton announce creative partnership', *Ableton*, 2009, http://www.ableton.com/serato-partnership (18th March, 2009).
[221] Ableton, 'Max for Live', *Ableton*, 2009, http://www.ableton.com/extend (18th March, 2009).

where music is concerned it can only be that production takes place in the moment. Taking this claim into consideration and the unequivocal role of reproductive media in contemporary performance practice, the personal anxiety expressed at the beginning of this thesis has been laid to rest. However, this should not be taken as an indication that the conflict between the body and the machine has been decided, for it is a dialectic that will continue to drive practical and theoretical enquiry for centuries if not millennia to come, as Ostertag astutely reasons:

> The fact that musicians have not resolved this tension indicates no failure of imagination on their part. It cannot be *solved* in the sense of a solution that can make a problem disappear. It can only be *experienced* in various ways.[222]

[222] Ostertag, 'Human Bodies', 14. Original emphasis.

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