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Abstract

When making music in the style of contemporary Trance and Drum n Bass, a composer/producer does not need to have a theoretical understanding of Traditional Western European musical principles to compose interesting music. The basic working material is no longer pitch, but timbre. Using an analysis of specific musical works within these genres, this paper will demonstrate that while western melodic and harmonic forms are still evident in these musics, timbre is foregrounded as the basic working material of the composer.

In these musics, Timbres are being manipulated to create sonic textural variations and sequential structures that in this discussion are referred to as Timbral Cadential cycles. The notion of at Timbral Cadence, or a movement from musical instability to stability, is a good starting point for an analysis of the compositional forms of Trance and Drum and Bass. This paper will present transcriptions of Drum N Bass and Trance music works accompanied by a simple graphic analysis based on 'Reason' and 'Cubase' software arrangement windows.

Breaking Down The Breakdown: The Use Of Timbres In Contemporary Dance Music Sub-Genres

Introduction.

"As Western Pop Music Floods the world with its drum machines and giant bass speakers in Tow, the advantage is now with those who celebrate meter. Enthusiasts of phrase and form or old fashioned melody are to be found cowering with their fingers in theirs ears, their sole consolation in reflecting upon a tradition that has lasted centuries and survived greater assaults"

Robert Jourdain (1997:154)

This paper seeks to examine the specific role of timbres in contemporary electronic music. Within the genres of 'Trance' and 'Drum n Bass' music, timbres are used in a more primordial way to create a sonic texture that can effect people physically and get them moving on a Dance Floor. Within these genres, a composer does not need to have an understanding of traditional compositional principles, to create interesting music.

With a vast array of sonic possibilities now available, Electronic Dance Music (EDM) composers have begun to concentrate on creating new timbres and original sounds from electronic and digital sound generators. Within EDM, reproduction of timbres has become important in providing dynamic contrast within largely repetitive and minimally melodic music.

Authors Anecdote

The reason for my interest in this topic stems from my experience working as a bass player in a live Drum n Bass ensembleⁱ. In this ensemble I perform with a traditional acoustic musical instrument, an acoustic bass. When performing with this group, I have had many experiences where the on stage sound has been so loud that has been impossible to ascertain accurately what pitches I am sounding. The music is composed in such a way that it does not matter so much what I play in a pitch sense, just as long as it fits with the drum rhythm and is repetitive.

I have been constantly surprised when playing with this group at the reaction of the dancing audience when I stop playing for few bars then start playing again. Even though the pitch of the notes is inaccurate, if the sound system is reproducing a good bass sound, the effect of the bass timbre has a very positive response from the audience. It is as if the audience is reacting to the timbre of the bass tones rather than their pitch.

Timbral Manipulation as a Primary Focus

There have been many studies that show the way EDM focuses on timbral choice as a defining factorⁱⁱ. In the same way that late twentieth century minimalist and music concrete composersⁱⁱⁱ gave birth to the sound-scape or sonic collage, EDM has created the extended dance mix or ambient electronic work. Artists such as Timo Maas, Paul Van Dyke, Squarepusher, LTJ Bukem and Ronnie Size, have successfully created and popularized music produced on each successive technological generation of computer based sounds.

Constant updates of digital sound creation technology, combined with our cultural obsession with the latest device or techno gizmo, has helped to spawn an obsession with timbre. Sound devices such as the Roland 303 rhythm machine and the Yamaha DX7 synthesizer, have come into and dropped out of fashion purely because of the way they sound. Successful EDM producers have been able to ride the wave of each new technology and become rich on timbral rather than melodic choice.

EDM has produced a new type of performer the 'DJ' who 'performs' music by playing back fragments of various recordings into a seamless continuous musical performance. This DJ is not specifically trained as a musician but uses experience and knowledge gained by listening to music to practice his/her craft.

Within EDM, live musicians have had little to do with the actual performances of this music. Musicians are reduced to just another musical texture on offer to the producer. Musicians, if they are involved, are usually recorded by the producer and do not perform live. The iconic visual performance imagery of Jimmy Hendrix slashing away at his guitar or the Beatles singing their hits on stage has been replaced by a suave clique of Dee Jays spinning the discs.

Melodic development (or a focus on Pitch manipulation within a western scale) in this music is not important. At EDM events (usually Dance Parties or Dance Clubs), each music work or recording is performed in conjunction with other works in a somewhat spontaneous manner by the DJ who selects and discards each work according to the reaction of the dancing crowd. For the music producer, there is no point trying to develop an extended melodic theme within a musical work when sometimes only a small portion of the composition is played. Constant reinterpretation or remixing of each composition by the particular DJ playing the track, drives a new compositional focus on shortened melodic fragments and specific sounds that give each composition a recognizable identity^{iv}.

Compositional focus is being influenced by other performance factors. EDM events feature aural visual and psychoacoustic manipulations that heighten the human sensory experience in the extreme. Audiences at these events are consumers of types of recreational hallucinogenic drugs such as ACID, MDMA and ECSTASY that distort auditory signals in the brain and artificially increase physical endurance allowing dancers to "go all night long". Reitveld (1998) Reynolds (1999) are two good socio-cultural histories of EDM that highlight the use of drugs within these subcultures and the way that these drugs effect the perception of sound and the retention of short term memory. In altered psychological states, timbral qualities of the music become foregrounded, as listeners and dancers, in a state of perceptual confusion and sensorial delight, are unable to comprehend the milieu of imagery surrounding them. In this environment, an original or quirky sound is just as likely to grab the attention of the listener as a good melody.

Innovations in sound creation technology, the emergence of the DJ, the chemically enhanced dance party and the remix track have all contributed to the emergence of a new method of computer-based music composition; foregrounding timbral variation and potentially, posing a challenge to traditional ideas about melody and harmony that have their origins western classical music.

A Musicological Methodology

For the purpose of providing concrete examples of this phenomenon, the remainder of this paper will focus on the musicological and timbrel features of Trance and Drum n Bass music^v. These musics emerged in a period (early 1990s) when musical genres within EDM were still quite homogenous and disparate. They both evolved

from distinct sets of musical influences that have been instrumental in the creation of contemporary styles. For analytical purposes, Trance and Drum n Bass are useful genres to discuss, as neither tends to incorporate the stylistic monikers of the other.

Since the emergence of Drum n Bass and Trance, the various musical styles within EDM have become more homogenised. It is important to note that these genre definitions are somewhat confusingly used both as academic definitions for certain types of musics, and marketing tools for artists and record labels wanting to promote their own music product. Because of this, it has remained unclear as to what are the defining musical elements of Trance and Drum n Bass^{vi}.

There has been substantial discussion as to the socio-cultural features of EDM and the various subgenres within it. Defining the exact sonic differences between the genres remains notoriously difficult and may well be an impossible task. Never the less, when one listens to Trance or Drum n Bass music, differences are apparent. This paper is an attempt to highlight these in a somewhat narrow and musicological sense. Without wanting to discount the vital importance of socio-cultural approaches to these musics, I will focus on defining the musical traits of these musics from the perspective of a performer/producer who seeks to reproduce the sounds of these genres.

I will first discuss musical aspects apparent in each of the two subgenres^{vii}. Subsequently I will present of transcriptions of two musical examples. I have used the arrangement windows of music composition software such as Cubase and Reason as the template for a graphical representation of the compositional structures of each genre.

This paper does not represent a definitive musicological study of the genres in Question. Hopefully it will present a different approach to the analysis of EDM that is useful in conveying to students and musical composers how sounds and compositional forms can be used in a way that recreates the distinct style or sonic effect of these musics.

Historical Development

Trance and Drum n Bass represent extreme polarities in the constantly changing genres of EDM. Both emerged in the last decade of the twentieth century and paralleled the development of sophisticated computer sequencers and

digital sound production technology that is used to compose this music.

Trance evolved in Europe in an era when the youth 'rave' culture had become part of mainstream youth culture. Trance DJs and producers created the 'breakdown', which has become the defining feature of Trance music. Where the bass and drum parts drop out to be replaced by a simple melody or 'anthem'.

Toynbee (2000) and Shapiro (1999) document how Drum n Bass evolved from a combination of techno and speeded up reggae and funk grooves. This style showcases the way that sound can be altered; using computer software to distort sampled sounds in a variety of ways. Drum n Bass DJs and producers eschewed the monotonous four on the four Rhythm of House and Trance and used complex fragments of sampled real drums to create fast Syncopated funk rhythms. ix

Bass lines in Drum n Bass are placed in the foreground of this music and take on a role of a 'melodic' or feature Timbre; reversing the traditional role that Bass has played in western music as a foundation layer of harmony. Drum n Bass borrows elements of a music collage technique similar to Music Concrete and freely mixes sounds and samples from all Musical styles.

Within both styles specific works (tracks) can be identified can by the way the bass line is programmed and arranged. Signature sounds or timbres that are used by specific composers are also important identifiers. The listener on the dance floor may recognize a fragment of a favourite track by a recognisable or quirky timbre that is the first auditory signal that that track is about to be heard. This in itself creates a feeling of anticipation in the listener

Compositional and Timbral Features of Trance Music

Trance is very ordered and repetitive. The music borrows the four /four rhythm from Acid House music and includes simple almost 'nursery rhyme' style melodies that are played using anthemic analog synthesiser timbres. Trance music has a very simple tonal structure where a simple melody is reinforced by many layers of timbres that usually reinforce one specific pitch. It is this layering that many Trance music lovers recognise as the important element behind a good trance track

"Most people who are used to listening to hip hop or pop or whatever

think that trance is boring because they only listen to the bass line. Most Trance has a very simple bass line...its what above the bass line all the things that happen in the treble and midbass areas that makes trance so amazing to listen to" DJ Jade Nashville M

A defining feature of Trance is the 'breakdown', where bass frequencies and rhythmic elements of the music are removed for a certain period of time and then are reintroduced with the rhythm. This represents the state of most musical tension or dominant state. In Trance this could be

called 'Rhythmic Dissonance'. The removal of all bass Timbres creates a quiet frequency range that was moments before the sonic force for the dancers on the dance floor.

Trance tracks invariably start with one timbrel layer and build til all the layers have been introduce, indicating the climax of the track. The breakdown then removes the groove and the bass

Traditi onal Western Music Compositi onal De vice

Trance Music Compositi onal De vice

Un stable R hythm (Breakdown) *Tension*to

↓

Stable Rhythm (Groove) *Release*

Fig 1 Comparison of Traditional Western and Trance Music Compositional Devices

augmented sonic qualities. These could include increased volume, new sounds that double the melodies of other sounds or the introduction of digital effects that manipulate the timbres of the original melodies.

"Without the bass line the breakdown is nothing, breakdowns simply add anticipation, all you want to hear is that bass line kick back in." Insectman Birmingham UK^{xii}

timbres and leave the higher frequency sounds to create a period of uncertainty- the audience is not sure when the drums and bass will sound again.

This form creates a timbral/rhythmic 'cadence' that replaces the traditional harmonic cadence found in western art music. I use the word "cadence" in an original and somewhat more linguistic rather than a traditional music theory sense to indicate the presence of a cyclical structure in the Trance compositional form. Tension

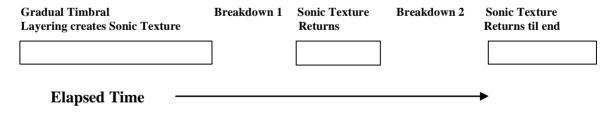


Fig 2 Simple Diagram of Trance Rhythmic Structure Showing Breakdown Sections

In the same way that a subdominant chord is followed by a dominant chord in traditional harmony, and introduces dissonance to the music, the buildup acts as a 'subdominant' point in the track followed by the complete breakdown of

in this instance is created not by the movement of chord progressions from harmonic dissonance to consonance, but by a construction of a stable repetitive rhythmic motif that is layered upon the drums and bass line. When these are removed from the music, the motif becomes like a house without its foundations, leaving listeners/dancers in a state of confusion and uncertainty as to what will come next. When the rhythm returns it is a satisfying and comforting for the dancer who can resume the mode of listening that they were accustomed to prior to the breakdown.

"The breakdown is the best part of every song on the dance floor when the breakdown come u just go crazy and you have a certain feeling of anxiety for that kick and melody to come" Sanya Philadelphia USA^{XIII}

This is akin to a "Pavlov's dog" effect. The breakdown is accompanied by sounds such as a drum roll that alert the dancer to its imminent arrival and then prepare the dancer for the onset of the rhythm.

As the music is based around syncopated 16th patterns the bass timbre must be of a staccato nature to be able to be discerned as the basic rhythmic motif. In Trance, the bass line usually accentuates the offbeat. Beats two and four of each measure in trance are usually accompanied by an electronic drum sound such as a hi hat or sampled cymbal or sound that displays similar timbrel characteristics. This gives the rhythm a simple duple feel to underpin other rhythmic structures of the music. Both Reitveld (1997) and Toynbee (2000) point to the way this repetitive rhythmic figure has a somewhat hypnotic effect on the listener and can after some time induce a rapturous feeling. Toynbee describes dance music producers as

> "distancing the menace of dissolution to produce a liminal state of the material sublime... The incessant beat

of such music works on the physical body with sonic force that allows the dancers to move unconsciously to the music no longer aware of its form or melody". xiv

The layering of Timbres to create a most satisfying rhythm and then affecting a breakdown is the important identifying musicological trait of

Trance music. Composer/ producers of this music have been able to create interesting rhythmic structures that DJs have found to be successful in propelling dancers on the dance floor to an ecstatic state.

Trance Transcription Transa, 1999 "Carla's Theme" Hook recordings)

Fig 5 is a graphical representation of the arrangement of Carla's Theme by Transa^{xv}. This track is a good example of Trance music described in the previous discussion. Fig 5 has been set out to resemble the way the music would look once assembled in Reason Cubase Protools or any other of the many software packages that are used to create this music.

Carla's theme is primarily made up of five interlocking synth melodies a simple bass line and drum parts that feature a four beat bass drum, a 16 beat off beat high hat that accentuates the off beat and a snare drum handclap accents on the two and four of each bar. The five syncopated synth melodies reinforce the tonal centre of F sharp Minor. The bass line simply pedals this tone.

At the commencement of the track, only the bass drums and basic high hat are heard. Every 16 bars one of the five synth melodies are introduced. Incidental sound FX and drum rolls are used to accompany the start of each layer. A

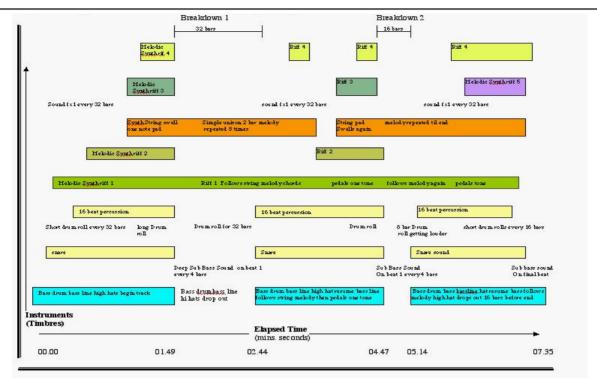


Fig 3 Graphic Depiction of "Carla's Theme" Arrangement Structure

Drum roll precedes each breakdown and then signals the onset of the rhythm once more.

The breakdown sections (at 1.49 and 4.47) introduce a simple diatonic melody or anthem that reinforces the traditional minor key sound of this piece of music. The melody moves through a simple pattern of three notes that move from harmonic tension (A to G# to F# and back again) to stability. While the melody is solemn and memorable it is not the mechanism that creates interest in the piece.

The centre of interest is the breakdown itself. The interlocking rhythmic structure that is used around the simple three note melody along with the timbres that are used to make them that are the crucial parts of this track.

The synth melodies are seamless blended by the use of short delays and similar reverbs. They are all digital timbres rich in harmonic overtones and have a certain stacatto "string section" like quality.

Features of Drum N Bass

Drum n Bass is in many ways opposite to Trance. There is no consistent arrangement pattern or structure. It is a genre that is much harder to define stylistically then Trance and there is a great degree in variation of timbre in different kinds of tracks within the genre. ^{xvi} But it is possible to identify certain types of musical similarities.

The first is the most obvious- a very irregular rhythmic structure that is highly syncopated fast and disjointed. The sounds used to create the rhythm are most likely to be sampled funk and reggae beats that have been speeded up. Secondly, in this style, found sounds and samples are used to create sonic collages that are disparate fragmented or both and are layered on top of the rhythm at seemingly random intervals. Lastly, the bass timbre is a major focus of interest; either as an atonal sound that provides subsonic force for the track (Nitin Sawhney "Nadia" 2000) or as an unaccompanied melodic line in itself (Ronnie Size "Brown Paper Bag" 1997). Even though Bass timbres have been traditionally used to provide subsonic force in traditional western Classical music, the method in which they are used in Drum n Bass and Jungle represents a new phenomenon that is directly related to augmenting the rhythm rather then the melody.

It is the quality of the timbres used in this music that is most important. Drum n Bass has been a pioneer amongst Techno derivative styles that utilises sounds from all different sources. Crucial to the development of the style was an ethos amongst aficionados of recycling. Placing old sampled records in a new context and endlessly trying combinations til one was found that was appealing-

"I just went out there throwing new school samples against old skool stuff and then pulled other things in. I was using four or fifth generation samples but they had a grittiness which identified them with the street". (Goldie In Toynbee ibid:142) xvii

This Ethic of combining disparate elements and Timbres is a primary feature of Drum n Bass. Timbrel variation and the element of surprise in each sound provide the backdrop to a repetitive bass line and a fragmentary drum groove. Toynbee notes in his discussion of twentieth century popular music that Jungle and Drum n Bass represent an "extraordinary leap forward in popular music form and sonority". **XVIIII**

Timbres physically stimulate the listener to move. Synthesis technology has allowed for the construction of pure sine waves that have few overtones and do not interfere with other higher frequency timbres. Dynamic Contrast is achieved in Drum N Bass by dramatic uses of timbrel and aesthetic differences between the sounds used to create each track. While more recent 'chilled' tracks feature diatonic harmony and predominantly sampled chord progressions, Drum n Bass does not apply western harmonic principles in the compositional structure of this music^{xix}. Even if a melody or chord is present, the Bass line maybe in a different key or out of tune with the rest of the sounds in the composition.

Drum N Bass Transcription Dj Krust, 1997 "Kloakin Device" Full Cycle Recordings.

Fig 8 is a graphical representation of the arrangement of Kloakin Device, a track from the mid 1990s. This track is an example of the way Drum n Bass foregrounds a bass line and accompanies it with a fast drum groove. Two synth sounds provide the main musical accompaniment and these are augmented by a sound effect (a TV show vocal sample) that uses a call and response structure. In contrast to the Trance track Carla's Theme, there is no gradual layering of parts with sounds dropping in and out individually. There is only one breakdown point in the track where the bass and the drums stop together. There is a drum roll that signals a change in the rhythm but this change is not always the same- the "Pavlov's Dog" effect in Trance is not achieved here.

The track contains less layers then Carla's theme and each layer is more fragmented. The atonal bass line is the central melodic focus. It has no harmonic relationship to the other sounds in the track and is out of tune with the synth pad that has a repetitive chord structure but does not relate harmonically to any of the other parts. Dynamic contrast is achieved by the arrival and departure of each timbre and by the combination of extremely odd and disparate sounds. The vocal sampled

Lyric 'use your cloaking device" is a fragment of a phrase that does not make sense and evokes comic book superhero themes that give the music an extremely humorous clown-like character.

Discussion

These two transcriptions are a very brief but clear example of the way traditional western harmonic devices have been subverted in electronic dance music. This music is not for sitting down and listening. This music is designed to make people dance. As each DJ will replay each track differently, there is no point in trying to develop themes, melodies and long harmonic structures. The focus is on creating interesting timbres and short melodic fragments that are appealing to the listener.

The Parts of the music that become the focus of the composer are the bass line and the short melodic structures that surround it. In Trance music, those melodic structures combine as interlocking polyrhythmic layers that produce layers of sound to create the overall rhythm and effect. While western harmony is still evident by the fact that each part can be transcribed and placed on a traditional music stave, each part functions more as a percussive timbre of the overall rhythm. Timbres of the sounds used in Trance are somewhat more homogenous across examples of this genre and are functions of the technology used to create them. As technology of sound synthesis improved the Timbres have changed from the simple monophonic 303 synthesisers to the lush pads created by contemporary analog modelling units.

In Drum n Bass, composers work to come up with original and unusual combinations of Timbres that ornament a bass line accompanied by a driving relentless chaotic rhythm. The two transcriptions show how Trance music is far more ordered and layered than Drum n Bass. It is more difficult to represent this music graphically using western notation, as it is quite atonal in character. The timbres used are the main compositional units rather than the patterns of notes or sequences selected.

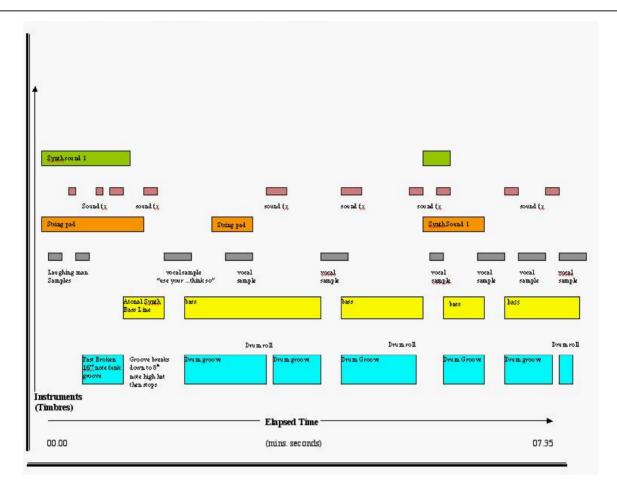


Fig 4 Example Arrangement of Kloakin Device By DJKrust 1997(Full Cycle recording)

Conclusion

"Its got to do with the speed of the beats its hypnotic tribal and primordial...its there in ecstatic trance music where people shake and spin until they reach a state of hyperventilation and psychedelic alpha wave experience. You are going back to the roots of why music was invented; to reach ecstatic visionary states in a communal tribal celebration."

Orridge G in Reitveld (1998:190)^{xx}

This discussion has attempted to present a somewhat musicological analysis of Trance and Drum N Bass Music. Within the realm of popular music EDM represents a new type of music that is rapidly evolving. The musical structures of this music are worthy of analysis as they represent a break with traditional western musical forms and apossible emergence of a new type of independent composer known as "the producer" whose primary focus is no longer melody and harmony.

Comparative musicological analysis is limited in its scope but can help identify the way in which EDM is produced and has progressed. EDM has created compositional devices that replace traditional western cadential movements but reproduce in the listener a similar psychoacoustic resolution through the manipulation of Timbres and sonic textures.

It remains to be seen as to whether Classical music structures and our love of a fine melody will be eventually be subsumed under the noise and sonic chaos of contemporary electronic music culture.

Footnotes.

i "The bird" www.thebirdweb.com

ii Reitveld(1997), Koyobashi(2000) Reynolds(1999) Prendergast(2000) Ford(1997) Brewster et al(1999) Horning(2000) are some of the seminal text on the growth of EDM.

iii Such as Glass Eno and Stockhausen.

iv Certain EDM producers such as Timo Maas John Digweed Red Snapper and Sqaurepusher have developed a signature sound or production value that can identify their work.

v Jungle Drum n Bass and breakbeat are often used interchangeably. Some such as Shapiro (1999) see Jungle as an older parent genre to Drum N Bass but others such as Prendergast refer to the whole genre as Drum N Bass. For the purposes of this discussion I will use the single title Drum N Bass to describe Jungle and Drum N Bass Styles.

vi Definition from

http://www.wikipedia.org/w/wiki.phtml?title=Drum_and_B ass"accessed 9 May 2003.

vii See discography notes for a list of specific tracks selected for analysis

viii Prendergast (2000) p 461

ix Toynbee (2000) p137

x Prendergast (2000) p 461

xi This quote is one of a series of responses to a question I posted on www.tranceaddict.com a website xdedicated to trance music. The full thread of responses and the original question can be viewed at

 $\underline{www.tranceaddict.com/forums/showthread.php?threadid=11}\\ \underline{7021\&goto=newpost}$

xii See xiii

xiii See xiii

xiv P149 ibid

xv This representation style is based on the arrangement window of popular sequencing programs such as Reason and Cue base. This window is the basic compositional tool of the EDM composer and is extremely useful in presenting visually the different compositional ideas of Trance and Drum N Bass music

xvi For example the cool well-produced ambient sounds of LTJ Bukem's Earth Compilation (2000) do not relate in many ways to the crazed chaotic rhythms of Squarepushers Hard Normal Daddy (1997).

xvii In Toynbee 142.

xviii P 140 ibid

xix The tracks produced by the Good Lookin Label from London are a good example of this particular style of this style. Looking Back 4 (2002) a compilation CD. Jay Laze Is an Artist who creates this music.

xx In Rietveld ibid p 190

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Discography.

Notes regarding discography.

Excerpts of following recordings appear in the Power Point Presentation that accompanies this Paper. The recordings represent a very small cross-section of Drum N Bass and Trance Music from the period 1990 to 2000. These tracks were selected on the advice of Melbourne Dj and Dance Programmer for the SBS Alchemy Radio Program Brendan

Palmer Melbourne Trance DJ DJ Kim, Byron Bay Music Producers Pete Noodles, Tone, AB, Dave Brammah and Dave Dog (Resin Dogs) Sydney Electronic Musicians Ben Walsh and Simon Durrington (The Bird). There are thousands of Tracks in both these styles that have been commercially released over the last ten years.

Adam F 1996 "Metropolis' Metalheads recordings

Bones, Pete 2001 "The Reflex" Red Ant Recordings.

LTJ Bukem, 2001"Earth" Good Looking Records.

Chakra1997 "I am" WEA records.

DJ Krust 1997'Kloakin Device' Through the Eyes presented by Ronnie Size Full Circle Recordings

Logic Bomb 2000 "Tune" Earth Orbit Mix Earth Recordings.

Lost Tribe 1999"Game Master" signum mix Hooj Tunes.

Maas, Timo 1997 "Poseidon" Hope Recordings Super Transom

Maas Timo 1999 "Der Sheiber" Hope recordings

Solar Quest 1991" Acid Air raid vault mix" Chocis Chewns.

Square Pusher 1997'Windscale 2' Feed Me Weird Things Rephlex recordings

Sawhney Nitin 2000 "Nadia" from "Beyond Skin" Outcaste recordings

Ronnie Size 1997"Brown Paper Bag" from New Forms Talkin Loud Records

Van Dyke, Paul 1993 "Love Stimulation "orig mix MFS Recordings.

Transa 1999"Carla's Theme" from *React Test Eleven* React Records cd Hook Recordings.