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SOUNDS OF FUTURE PAST:FROM NEU! TO NUMAN

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In late 1970s and early 80s European rock and pop music a predominantly Deutsch-Englisch creative network of musicians forged a *sonic futurscape*[1], an imagined world of trans-local musical activity, constituted through the exploration of new electronic synthesised sounds and the radical re-invention of guitar based Anglo-American rock music. At the heart of this *futurscape* was music embodying the notion that manipulating sound through recording technology, the mixing desk, sound processors and tape editing was fundamental to the creative musical process. Traditional criteria of musicality seemed peripheral in efforts to reinvent the *sonicality* of rock music. Creative connections and collaborations were inadvertently and formally constructed across the futurscape when artists deployed new synthesizer and sequencer technologies within ›progressive‹ electronic music.[2] This music crossed over and brought into question the heavily policed ›iron curtain‹ between legitimate

[1] After Anderson (1983), and Appadurai (1993) who argued contemporary global conditions are characterised by chaotic dynamic cultural flows across ›scapes‹ (ethnoscapes, technoscapes, finanscapes, mediascapes and ideoscapes) that vary in velocity, extent and effect – the *sonic futurscape* is a nodal imaginary cultural space through which a Deutsch-Englisch ›imaginary‹ musical network consciously or inadvertently exchanged overlapping musical and thematic ideas and strategies.

[2] Weinstein defines ›progressive rock‹ as »rather less than a genre and a lot more than one, too […] its defining feature is not a set of concrete sonic elements, such as particular rhythms or instrumentation. Instead, progressive rock is distinguished by a conceptual trope: the appropriation of nonpopular musical forms […] the sources are ›classical music‹, jazz and avant-garde music« (Weinstein 2002: 91). It is the argument of this paper that ›progressive‹ can be applied to future-oriented electronic musics that attempted to question and critique mainstream Anglo-American rock by the adoption of new sounds, strategies, instrumentation, sonic textures and in some cases, musical modes. For example, in Gary Numan's »Are ›Friends‹ Electric?« »the pitch material does not have a pentatonic basis, setting it apart from styles of rock that consciously owe their origins to rhythm'n'blues« (Moore 2001: 153).

marginal rock and illegitimate mainstream pop and disco, though arguably it was only after the international success of Kraftwerk's *Autobahn* in 1975 that a broad awareness of the possibilities of electronic music permeated the consciousness of musicians at large. However, this music actually emerged a decade before from 1960s counter-cultural electronic and musical experimentation in West Germany (e.g. Tangerine Dream) and England (e.g. Pink Floyd), as well as from more ›commercial‹ contexts (e.g. Jean Jacques Perrey and Gershon Kingsley).

In particular, German musicians in the late 1960s and early 1970s created a new ›indigenous‹ musical, or more precisely, *sonic* vocabulary that **was ostensibly no longer in** awe of Anglo-American rock music. They embraced cyber-mysticism, ›freakout‹ improvisations, space-age electronic sound collages, ethnic and makeshift instruments, and fresh compositional and recording methods – often splicing together tracks from long-form home studio jams. In doing so they **helped shape** the (still) future trajectory of popular music across the Western world, from 70s and 80s synthesizer rock to ambient music[3] to black musics in the American context such as Electro, Hip-Hop and Techno. Eshun depicted this process of influence by suggesting Kraftwerk epitomised

»the white soul of the synthesiser, *die Seele der Synthesizer*, the ultra whiteness of an automatic sequenced future. To Model 500, [Kraftwerk] sounded straight up like they were living in a computer […] Bambaataa steals the synthetic soul from Düsseldorf [and] bastardizes it into *Planet Rock*. Kraftwerk happily called their sound *Industriell Volk Musik* […] For Techno, Düsseldorf is the Mississippi Delta« **(Eshun 1998: 100)**

By deconstructing rock and roll ›traditions‹ (whether established instrument combinations, generic conventions, compositional techniques, temporal, tonal or dynamic sonic parameters) and the overt retro-classicism found elsewhere in post-60s progressive popular music, a number of German musicians attempted to idiosyncratically reflect on the contemporary West German experience. There were regional ›clusters‹ of artists: Munich (jazz, psychedelia and ethnic elements) – Guru Guru, Popol Vuh, Amon Düül II; Berlin (free electronic or Kosmische Musik) – Klaus Schulze, Ash Ra Tempel, Tangerine Dream, Mythos; Cologne (counter-cultural political rock composed from eclectic sources and pieced together on the cutting table) – Can; Düsseldorf (minimalistic, disciplined, repetitive electronic music) Neu!, Kraftwerk, Cluster and La Düsseldorf. Faust believed that musicians should create their own means of expression (usually from metal, sledgehammers and bricks and other detritus of industrial production). Based at Wümme near Bremen they defined the approach of German musicians stating:

[3] Eno's adoption of the term ambient music referred generally to »music that surrounded the listener with a sense of spaciousness and depth, encompassing one on all sides rather than coming *at* the listener. It blended with the sounds of the environment, and seemed to invite one to listen musically to the environment itself« (Tamm 1995: 131-132). It could be argued that all of the music addressed in this study is ›ambient‹ in one way or another, whether referring to a contemporary technological or virtually constructed future sound environment. There is no ambient noise in outer space, but Kosmische musicians and Eno (most directly on *Apollo: Atmospheres And Soundtracks)* created an anaphonic ambience that drew from the perceived sensation of weightlessness in an anaerobic environment.

»Unlike rock musicians in other countries, this new breed of German musicians is not interested in imitating what's gone before them. They're looking for *new sounds* and *new forms of expression* [my emphasis]. Their music is no hand-me-down Beatles or Stones or the white man's idea of R&B. It's their own, building as much on the immense tradition of German music as on the Anglo-Saxon-dominated traditions of current pop" (Faust press release quoted in DeRogatis 1996: 125).

These scenes as a whole opened doorways into sonic territory that have never been closed. This German critique of rock reversed the usual flows of the Anglo-American musical hegemony to the extent that a new Deutsch-Englisch alliance formed in late 1970s music making which went on to shape the future trajectories of Western popular music.

In parallel with Kraftwerk's success, artists who had already been involved with electronics at an earlier stage made an increasingly conscious effort to deal with the new musical, textural and sonic possibilities of synthesizers that were becoming increasingly accessible throughout the 1970s. Brian Eno and David Bowie both individually and in partnership led such experimentation in the mainstream currents of Anglo-American popular music, but both were enthralled and informed by the work of German ›Krautrockers‹ – a British label of dubious heritage (Prendergast 2000: 278-279). Most specifically they admired the musicians who constituted the network of musical activity working since the early 1970s under the names Kraftwerk, Neu!, Kluster, Cluster, Harmonia and La Düsseldorf. These bands were connected backwards to Ash Ra Tempel, Schulze et al (most specifically through Hans Joachim Roedelius of Cluster) but were also distinctively linked to British electronic music as it developed in the late 1970s. Eno's interest in the work of these bands resulted in collaborations with Cluster and Harmonia on three albums in the late 1970s (*Cluster & Eno, After The Heat* and *Harmonia '76*). Bowie's unsuccessful efforts to encourage Kraftwerk and Neu! to work with him did not prevent his ›Berlin period‹ albums *Low, Heroes* and *Lodger*, and his collaborations with Iggy Pop, from owing a great deal to these reluctant fellow musical travellers (Neu!'s »Hero« inspiring Bowie's »Heroes« and Pop's »Fun Time«; »V2 Schneider« and »Mass Production« were homages to Kraftwerk). However, Eno's work on Bowie's albums constructed an indirect but distinct creative connection with artists operating in the German context.

Throughout the 1970s and into the 1980s a key figure at the hub of experimental musical practice in the German and later British contexts was Conny Plank. He operated as a producer, musician, engineer and facilitator with Cluster, Kraftwerk, Neu!, La Düsseldorf, DAF, Devo and (as well as Eno) Ultravox. Through this web of connectivity, with Plank and Eno acting as conduits as much as instigators, a relatively diverse set of musicians shared common technical, musical and aesthetic resources that blended and fused into a European sonic futurscape. This *futurscape* operated spatially and (con)temporally and connected the previously mentioned with other electronic artists in the British context. For example, The Human League credited ›Krautrock‹ as an influence on the sleeve of their »Being Boiled« single. Throbbing Gristle, Cabaret Voltaire, PiL and Joy Division / New Order created a more pessimistic, dystopian and self-conscious art-industrial aesthetic that drew from Can and other German bands. Orchestral Manoeuvres in the Dark (OMD) recorded a track »4-Neu« in 1983 which was a clear homage to Neu!'s »Leb Wohl«. At the end of the 1970s, Gary Numan,

heavily influenced by Ultravox's *Systems of Romance* and Neu!, transported the European sonic futurscape into the mainstream pop market with »Are ›Friends‹ Electric?« and »Cars«.

From Neu! to Numan we can map a diverse but connected European sonic network negotiated and forged by artists attempting to construct a progressive sonic vocabulary. However, too often in popular music analysis, internal hierarchies of perceived cultural value obstruct the understanding of the connectedness of music making practice. Partly due to the later overt commercial success of OMD, John Foxx, Numan, the Human League and Ultravox priority is often given in studies such as this to artists perceived as culturally marginal, and who have operated then and since within a prescribed field of avant-garde anti-mainstream practice. In the late 1970s and early 1980s, it was hard to differentiate the avant-garde from the mainstream in electronic music and as such, influential electronic artists such as Jean Michel Jarre (France) and Giorgio Moroder should not remain unacknowledged. The German based disco producer Moroder is specifically important to the European futurscape.

Though Moroder was an Italian, he operated in the 1960s and 1970s almost entirely in Germany, based in Musicland Studios in Munich. Moroder produced an experimental electronic album *Einzelgänger* in 1975 and in 1977 he worked in collaboration with the English Peter Bellotte on the Donna Summer hit »I Feel Love« and the album *From Here to Eternity* that introduced Moog ›machinic‹ sequencing and the thudding drum machine 4/4-patterns to European and American pop and disco. Eno and Bowie (a later collaborator) and music journalists were entranced by the electronic futurscape that Moroder was consciously constructing, and he was widely popular both in Europe and the United States. Later electronic artists such as New Order were influenced as much by Moroder as Kraftwerk, and it has been argued that Kraftwerk's *Man Machine* owes more to Moroder than is usually acknowledged (Mackinnon 1978: 5). Mackinnon suggests rock and music commentators in the 1970s discussed how Moroder dehumanised disco by formulating »a sono-track for much more than just another auto-style age« and »even introduced an entirely novel ›post-Euro-industrial‹ sensibility into modern dancing methods« (ibid.: 1). However, like Bowie, Eno and Kraftwerk, Moroder was as interested in American disco, funk and soul as electronic music (in particular the Motown and Philadelphia sound – it should also be observed that Kraftwerk's *Man-Machine* was mixed in the USA by Motown-connected producer Leanard Jackson). It is important to note that in the late 1970s Bowie, Eno, Kraftwerk and Moroder were viewed as creating not only the future of rock, but also the future of dance music (ibid.). This demonstrates that even within the Europeanism of artists in the sonic futurscape, the cultural flow of black American music into this space is clear, and perhaps partly explains the later ›re-appropriation‹ of this music by artists such as Afrika Bambaataa and Cybotron. Eno in particular was interested in the futurism of Parliament and Funkadelic, and in cultural hybridity, and in 1978 considered the possibilities saying:

»I think it would make a saleable combination if Kraftwerk employed Parliament, or the other way around. It would be interesting if you had the Parliament group playing bass, and Kraftwerk playing the drums. There would be a cross-cultural hybrid, especially if everybody stuck to their guns« (Eno quoted in Tamm 1995: 19).

It is my contention that the artists included in this study (admittedly from different cultural positions and perspectives) consciously attempted to construct future-oriented soundscapes from common cultural resources in a historical period where technology of any sort was as likely to be viewed as an answer as much as a threat to humanity. As will be discussed below, in one way or another, these artists ›performed‹ the utopian and dystopian preoccupations of science fiction with technology in their records – the sonic futurscape constructed by Neu!, Numan, Bowie, Eno, Kraftwerk, Cabaret Voltaire, and the Human League specifically draws from the speculative futures of Dick, Ballard, Burroughs, Toffler, McLuhan and others.[4] However the dystopian bleakness of lyrical content is often contradicted by the utopian, celebratory relationship to technology and its potential. This is represented in the exuberant use of the synthesizer **to carry a foregrounded and exultant melody line** (Ultravox's »Slow Motion«, Numan's »Cars«) which counteracts ambiguous lyrical pessimism, and in Neu!'s »Hero«, where we can imagine the ecstatic road-punk Klaus Dinger driving at breakneck velocity around the streets of Düsseldorf to his Marinetti-like Futurist delight, both vulnerable and intoxicated by speed.

Sonic Futurscape

How can we characterise the trans-geographical/trans-national creative space within which these musicians operated? Toynbee's (2000) reconfiguration of Bourdieu's (1984) concepts of *habitus, strategy* and *field* in his »radius of creativity« helps us understand the individual experience of musicians operating in the cultural field of the sonic futurscape and the creative interchange between musicians. He argues that making popular music is not an intuitive act of self-expression – musicians are active creative agents but their modes of expression are heavily prescribed. Toynbee suggests a musician's habitus (personal cultural dispositions) pre-dispose a musician to a set of approaches to playing, writing and performing – Bourdieu calls these strategies. These strategies are deployed on a cultural field – a prescribed space of music production and practices. Augmenting Bourdieu, Toynbee suggests it is the space of possibles that is key to understanding musical creativity. Possibles arise in the relationship between the habitus, the musical works and the likelihood of selection from the field of cultural production. This forms the basis of the radius of creativity - a figurative space demonstrating the likely creative possibles of an individual agent, and the relative likelihood of the creator selecting from these possibles. From the radius the creator constructs an individual voice. This voice speaks through musical ›languages‹ that are »already populated with the social intentions of others **[but the creator]** compels [them] to serve [their] own new intentions« (Bakhtin quoted in Toynbee 2000: 46).

The individual radius of creativity is not only a given objective space ›out there‹. Through negotiation and discrimination musicians create an ›in here‹ experience. Their

[4] For example, Numan (who changed his assumed name, found in a phone book, from Neumann to Numan to avoid being associated with Bowie's Berlin fixation and adoption of German influences) was inspired by Philip K. Dick, Orwell, Ballard, Asimov, Saberhagen, and William Burroughs (Numan 1998: 36). Cabaret Voltaire acknowledged the same sources (Juno & Vale 1983: 47).

idiomatic choices enable them to construct a *bank of works* from which they draw creative sustenance. This bank is sometimes tangible (a record collection/artist's recorded works/performances attended) or made so through the creative process (a predilection for certain sonic strategies and techniques), and is the basis of what is commonly called ›musical influences‹.

Musicians involved in the sonic futurscape of late 1970s Deutsch-Englisch rock through collaborating, referencing and acknowledging each others work, created a shared repository of sonic techniques and resources which operated across the intersecting radii of individual musicians. Michael Rother of Harmonia and Neu! implicitly acknowledges saying:

»Everybody in Harmonia was really fond of the first [Eno] Roxy Music albums, but we didn't want to draw from those for our own music […] Brian's later albums (*Another Green World, Before & After Science* etc.) I liked a lot. But I always had the rule that my own work shouldn't possibly be influenced … But of course an exertion of influence never can be ruled out, even if it is not desire […] Fact of the matter is that nobody lives by himself on an island and creates his music out of a vacuum. And this applies to all of us« (Rother quoted in Hargus 1998).

The sonic futurscape of the 1970s was therefore constructed both consciously and unconsciously by artists working in the shadow and light of each others works. The shared repository of texts, references and touchstones became trans-locational foundations upon which social and individual authorship rested.

But why sonic *futurscape* when it is clear that these musicians were the product of creative and cultural currents specific to the historical 1970s? The answer is twofold. Firstly, these artists opened up and explored sonic territory that only could have been purposefully produced and controlled by the new synthesizer and sequencer technologies of the 1970s. This was extended into the manipulation of traditional rock instruments which were exploited in new ways through the processing of their sounds – for example, Robert Fripp's guitar **processed** through Eno's EMS VCS 3 on Bowie's »Heroes« in the performance, recording and mixing process (Dalton and Hughes 2001: 60). Since the late 1980s artists have returned time and again to the creative and sonic resources of the 1970s in electronica, drum and bass, hip hop and techno as well as in ›progressive‹ areas of contemporary rock (e.g. Radiohead). Due to this chronological inversion, to listen today to this late 1970s music is to listen to the past, present and future. This music of the sonic futurscape seems prescient as rock and dance musicians from the late 1980s onwards returned continually to this moment, and to the sonic characteristics and continuities of this music. It also seems surprising, not least because »never before (or since) has so much experimental, avant-garde, even just plain weird, music connected with the general public on such a grand scale« (Lester 2000). It is ironic that this nostalgia for »future past« is met by a nostalgia for »the future to come« (Prendergast 2000: 299) in Eno, and in Kraftwerk's retro-futurist *Radio-Activity* and *Trans Europe Express*. Bowie suggests that his ›Berlin‹ albums »really captured unlike anything else in that time, a sense of yearning for a future that we all knew would never come to pass« (Bowie quoted in Dalton and Hughes 2001: 66).

Secondly, a broader point needs to be made about the role of machine and electronic sound in the media and music culture, and material spaces of the twentieth century. Schafer argues that machines polluted what he called the twentieth century *soundscape* such that machine noise became ubiquitous. He characterises this stating:

»God was a first rate acoustical engineer. We have been more inept in the design of our machines. For noise represents escaped energy. The perfect machine would be a silent machine: all energy used efficiently. The human anatomy […] is the best machine we know and it ought to be our model in terms of engineering perfection« (Schafer 1994: 207).

He suggests twentieth-century silence was always infiltrated by electronic noise and drones, and noted »Electrical equipment will often produce resonant harmonics and in a quiet city at night a whole series of steady pitches may be heard from street lighting, signs or generators« (ibid.: 99). Schafer demonstrated how the acoustic environment influences our fundamental perception of sound, with studies demonstrating how European students reproduced the »resonant electrical frequency of 60 cycles […] G-Sharp [heard in all electrical devices from lights and amplifiers to generators] […] when asked to hum the tone of ›prime unity‹ [the central sound against which all other vibrations may be measured]« (ibid.).

Since the beginning of the twentieth century, ›accidental‹ electronic noise had also been observed emanating from the wiring of electronic communication technologies. Radio from an early period received other-worldly noises that inventors assumed were space communications, and telephone circuits would transmit ›snaps, bird chirps and ghostly grinding noises‹ – Kraftwerk's *Radio-Activity* and OMD's *Dazzleships* both contain hymns to this phenomenon. Thomas Watson, listening to these noises in the early twentieth century in the Bell Laboratory stated:

»My theory at the time was that the currents causing these sounds came from explosions from the sun or that they were signals from another planet. They were mystic enough to suggest the latter explanation but I never detected any regularity in them that would indicate they were intelligent signals« (Watson quoted in Davis 1999: **18**).

These sounds were hidden in the wiring of twentieth century technology until the Theremin, Ondes Martenot and later electronic instruments were developed and utilised in music and film soundtracks (the Theremin used in *The Lost Weekend* (1945) and the Ondes Martenot used in the *Star Trek* TV series theme, and later by Radiohead on *Kid A* and *Amnesiac*). The film *Forbidden Planet* (1956) has an all electronic soundtrack by Louis and Bebe Barron which Brophy (1997: **32**) suggests »signposts the clumsy audio visual fusion of ›electronics‹ with ›sci-fi‹ which persists today. In the 90s, outer space still sounds downright weird and outwardly electronic«. Brophy points out the illogical nature of ›space music‹; there is no sound in space, and certainly no cavernous reverb as utilised in *Forbidden Planet*. He further argues that:

»The post-war space race introduced an array of […] illogical, crazed and charming sono-musical icons: the arrhythmic, echo-laden twang of rockabilly singers yodelling about atomic power […] the joy of twiddling the dial on portable short-wave radios; the cosmic and orgasmic symphonies of Theremins, oscillators and vibraphones on record and in the cinema« (ibid.: 32).

As such twentieth century culture was suffused with machine and electronic sound, but it is not until the 1970s that this sound could easily be generated and accessibly shaped, controlled and deployed within popular music. The Futurist Russolo and his noise machines, Varese, Stockhausen, Cage and others had employed electronic sound in modernist electronic music throughout the twentieth century, but the equipment used had been out of

the reach of popular musicians. This new accessibility was made possible through the availability and relative cheapness of synthesizers (e.g. EMS VCS 3, A.R.P. Pro Soloist, MiniMoog, Korg MS 10 and Roland SH1000), integral or external sequencers and rhythm programming machines. It was also made possible through the ›DIY‹ ethic (a pre and post-punk pursuit in electronic music) embraced by Kraftwerk, OMD and Bernard Sumner of Joy Division / New Order who adapted or built their own electronic synthesizers and instruments. Arguably, it was because of the audience's previous exposure to electronic sounds in film, media, expos and exhibitions[5], radio jingles and advertising that there existed a broad acceptance of electronic sound as ›musical‹. Artists were therefore able to incorporate these sonic materials and textures into popular music making with audiences already receptive to these new sounds. It was both their cultural familiarity as space music or sci-fi soundtrack, and innovative qualities (new textures and timbres in the sonic arsenal of musicians) that enabled popular music in the 1970s to embrace electronic sound.

It was paradoxically within the ›non-representational‹ uses of this equipment in Kosmische and other German music and British synthesizer rock where the greatest sense of sonic innovation was found. When synthesizers were freed from endeavouring to simulate analogue instruments they came into their own as tools to exploit a broad and diverse field of new electronic sound timbres and textures. When they were freed from the virtuoso Romantic performances of the more elaborate progressive musicians (e.g. Rick Wakeman and Keith Emerson), synthesizers became tools to create new modes of sonic expression. Particularly in the synthesised sequencer patterns of Tangerine Dream, Giorgio Moroder and Kraftwerk the ability to use machines as tools to push music into new sonic ›in-human‹ dimensions was implicitly celebrated. Ralf Hütter of Kraftwerk in 1975 stated that when he listened to Rick Wakeman »He is something else […] distraction. It's not electronic music, its circus tricks on the synthesizer. I think it is paranoid. I don't want to put anybody down, but I cannot listen to it. I get nervous. It is traditional« (Bangs **1996**: **159**).

Sonic Continuities

In approaching the theoretical dimension of the sonic futurscape of 1970s popular music, it is important to consider the chief aural theoretician, Brian Eno, who as precursor, collaborator and facilitator created a progressive intellectuality that spoke for and through many other Anglo-German electronic and progressive artists. As Tamm suggests, the key innovation of Eno then, and since in his work with U2 and others, has been to sideline musical notation as a criterion for aesthetic or compositional judgement. Instead he concentrated on »aspects of musical style which are extremely important in popular music, but which are difficult or impossible to notate, such as overall ›sound‹ (or what are known as ›production values‹), timbre, vocal quality and nuance, and ornamentation« (Tamm 1995: 9). Eno was responsible for overtly highlighting the importance and potential of concentrating on timbre (tone colour »what makes the same note played on a violin, a trumpet, or a xylophone sound different«, ibid.: 3) and sonic texture. It was through

[5] For example, Varese's *Poeme Electronique* at the Brussels World Fair in 1958.

emphasising these para-musical aspects of sonic creativity that Eno was able, alongside others in the futurscape, to develop a new arena for popular/art music experimentation. Crucially, Eno often identified himself as a non-musician to emphasise his lack of interest in musicality per se and to affirm his interest in sonicality. It has been suggested his key contribution to late 1970s rock in the receptive punk and post-punk period was to stimulate »countless young artists to liberate themselves from the musical conventions in which they had been raised, and to follow no dogma – including Kraftwerk's techno-rock gospel – blindly« (Doerschuk quoted in Tamm 1995: 170). Therefore, his collaborative contribution to the sonic re-invention of rock music is wide-ranging and profound.

Particularly in the post-1975 period, and as a response to the affirmation of minimalism, simplicity and directness found in punk and new wave, Eno was able to work across a range of musics and creatively inf(l)ected (and was inf(l)ected by) the work of Bowie, Cluster, Ultravox, Robert Fripp, Devo, David Byrne and others. Gary Numan (on *Telekon* and *Dance*) and OMD were also both consciously referencing Eno and those who had worked with him in the sonic futurscape. This does not necessarily mean that Numan deployed Eno's, or anybody else's, intellectual innovations around musical systems and ›oblique strategies‹ (aids to compositional improvisation). Numan heard in Eno's music the outcome of his intellectual play and on *Dance* employed in practice some of the textures and timbres; Eno's »Sky Saw« from *Another Green World* is a direct ancestor (fretless bass, heavily synthesizer-processed guitar, vocal delivery) of Numan's »She's Got Claws« and »A Subway Called ›You‹«; Eno's »Over Fire Island« a precursor of Numan's »Slowcar To China«.

Equally, Neu!'s yearning high guitar lines and the soporific rhythm of »Seeland« resonate in Numan / Tubeway Army's »Replicas«, and the sweet synthesizer lines of Neu!'s »Isi« are echoed in »When the Machine's Rock«. Cluster's rhythm machines and slowly evolving arpeggiated patterns in *Sowiesoso* and *Zuckerzeit* are acknowledged in Numan's »Cry, the Clock Said«.

Obviously Numan was not alone in engaging with these works. In the British context, London clubs such as Blitz and Heroes purveyed what was termed ›Electro-Disco‹ to their audience – a mixture of aspiring and successful musicians, style journalists and club-goers. In 1981, Rusty Egan (who alongside Steve Strange was the Heroes club promoter and member of Visage) spoke of the key influence of German electronic artists in Britain (though his interviewer was obviously not familiar enough with the artists to spell their names correctly!):

»›Electro-disco‹ is the label that's been slapped on it. Among the most requested items are such unusual fare as ›Self Portrait‹ by Rodelius, ›News‹ by Mobius and Conny Planck as well as sundry other tracks by La Düsseldorf and, the founding fathers of the whole style, Kraftwerk« (Stand 1981: 38).

This is just one indication of the connected nature of progressive electronic musics in the Deutsch-Englisch futurscape, but demonstrates the wider connective relations between artists and consumers operating at this time across this inter-cultural space. Conny Plank is also crucial in understanding the relations between artists across this space.

It is evident that Plank was a prolific instigator and collaborator who nurtured and worked with many German and British bands across the sonic futurscape. In his case,

however, the joy was seemingly in the doing of music rather than in the intellectual strategies often favoured by Eno. He had a great deal of success as a producer but refused to expand ›Conny's Studio‹ as he preferred its private and intimate atmosphere (Bussy 2001: 66). His contribution as a whole, working with Eno, La Düsseldorf, Neu!, DAF, Holger Czukay and Ultravox among others, was no less important than Eno's and his legacy can be found in the work of these artists. He acted as a point of reference and creative inspiration in the network of artists creating electronic music.

In the investigation of the work of the artists outlined above, an analytical framework is necessary through which to organise the discussion of timbre and texture in revealing *sonic continuities* – that is, the sonic elements that connect these music.[6] It is important to note that most of these artists combined electronic instruments with other electric and acoustic instruments (e.g. Ultravox and Numan used, alongside synthesizers, piano, electric bass guitars, acoustic drums, violas and violins), but the universal emphasis on the sonic dimensions of the music resulted in old and new combining in progressive and innovative works. For the purpose of this study, two organising categories are suggested to aid the mapping of the sonic futurscape these works constructed and operated within.[7]

1) Machine Rock: the Sounds of Industry and Travel

Kraftwerk's album *Man Machine* (1978) concretised in visual and sonic iconography the futurist strands that constitute ›machine rock‹. The relationship of humanity and machines had been previously explored (e.g. in Klaus Schulze's instrumental album *Cyber*), but Kraftwerk created a distinct sonic environment of robots, space labs and neon lights in a retro-futurist ›Metropolis‹ with a Russian constructivist visual setting. Others followed Kraftwerk's lead in the British context, with Gary Numan using the term ›machine rock‹ in describing the music he was attempting to forge after discovering the synthesizer. How can we specify the sonic elements that constitute machine rock?

Machine rock, in sonic, rhythmic and textural terms can be identified by the associative terms of reference of sound events – whether synthesised or other electronic sounds – that signify for the listener rapid machine motion and noise, human movement, displacement

[6] Tagg and Collins (2001) mapped in a study of 1980s and 1990s Industrial music the key oppositions in the connotations of the genre's soundscape, mapping the sonic aesthetics of bands such as Front Line Assembly and Front 242. These oppositions (Dirty v. Clean, Chaos v. Simplicity, Low-tech v. High tech sounds, Low Pitch v. High Pitch, Heavy v. Light, Male v. Female, Monotone, percussive noise v. melody, song) represent the later elaboration of the sonic aesthetics that were at a developmental, ›becoming‹ stage at the turn of the 1980s in electronic and proto-industrial music of the sonic futurscape.

[7] This suffices as a point of departure in analysing these musics, but as in any attempt to illuminate a subject of study through mapping unambiguous distinctions, it quickly becomes clear that the subject is not neatly reducible to a binary model. This taxonomy of sound is not meant to suggest that late 1970s electronic popular music can be understood as fitting conveniently into either of these categories. There are some general characteristics which mean that these categories are useful analytical tools, but they are not mutually exclusive or fixed. The examples given for each exhibit a certain commonality and evince a way into understanding this music – a longer study would further develop this mapping.

and relocation (e.g. as a passenger, rider, driver or pilot). This is proto-industrial music with its sonic dimension homologous with the electronic and industrial soundscape of the twentieth century. Tagg (1999) proposes the term ›anaphone‹ (meaning the imitation of existing events, actions, emotions and experiences through the formation of musical sounds) as a way into understanding how this music represents the sound of hyper-techno-modernity in a sonic futurscape inhabited by the sounds of future past. Biba Kopf exemplified how this is represented in the music of Neu! Suggesting:

»Neu! music is not so much a matter of musical composition – it's a competition of velocities. Powered by a rhythmic tic clawing the asphalt – the basis of all motorik disco to follow – yearning, yawning guitar noises race against each other, some accelerating ahead, others receding in the distance. And every now and then a menacing bass rumble hurtles past in the outside lane« (Kopf 1999: 50).

Drawing from Tagg (1999: 25) we can describe Neu!'s music as suffused with *kinetic* anaphones – the sounds of human and machine movement through time and space. The machine-human interface is emphasised, and in the case of Moroder and Kraftwerk, music becomes a machine to move in. Neu!'s motori**c** rhythm becomes the repetitive beat of disco-trance. Ralf Hütter of Kraftwerk explained »the dynamism of the machines, the ›soul‹ of the machines, has always been a part of our music« and that »the machines produce an absolutely perfect trance« (Bussy 2001: 99). Kraftwerk's interest in James Brown and Parliament, and 1970s performances in the USA where a large part of their audience »was dancing, the black audience, Hispanic, hispano-American« (ibid.: 115) demonstrates their simultaneous operation outside the white rock context. From the mid-1970s machine rock was perceived by black and white audiences in Europe and the USA, as ›machine disco‹ or ›disko‹ – rather than de-humanising, machines re-humanised the individual through the ›industry‹ of dancing. The integral kineticism of these works produced a desire to move to the music – the ›head‹ intellectualism of Kraftwerk and ›body‹ pragmatism of Moroder resulted in the same outcome – dance.

The following are some examples of kineticism in machine rock:

- The **clearest** examples of the kinetic anaphones of machine rock can be found in Kraftwerk's synthesised representation of train travel in »Trans-Europe Express« and the portamento, ›Doppler effect‹ synthesizer sweeps in this song and »Autobahn«.
- Bowie's »Speed Of Life« has a synthesizer texture throughout that sounds like machine deceleration (a downward change to a ›Low‹ gear). –
- It is in the ›motori**c**‹ drumming of Neu! and rhythm programming of Kraftwerk, OMD, Cluster, New Order and others that the machine-like nature of machine rock can be most easily identified. Motori**c** rhythm is not about pure speed but about machine-like consistency and discipline. Neu!'s Klaus Dinger drummed in imitation of a drum machine with repetitive beats embellished by occasional fills. Asymmetrical or polyrhythmic beats can be found employed by Cluster in »Hollywood« and »Rote Riki« from *Zuckerzeit* but they are still motor-rhythmic as they are produced by rhythm programmers or sequencers. They suggest a subtle competition between machines rather than the mono-rhythmic drive of Neu!.

- The sequencer programming of Moroder on »I Feel Love« and »From Here To Eternity« self-referentially employs machines to imitate machines and produces a template for long form trance to come.
- The portamento glissando slide effect where pitch change between notes is more or less gradual is also used as a kinetic anaphone representing machines starting, sirens calling or bombers diving as in Numan's single »Bombers«.
- Phasing used on synthesizer lines also references our experience of machine noise – aircraft flying overhead – Bowie's »Moss Garden« – and spatial movement over time, and in some cases this is interspersed with recorded machine noise as in La Düsseldorf's »Düsseldorf« with airport ambience and the sound of a plane taking off.
- High pitched synthesizer sounds suggest exuberance and flight and low drones are ominous, threatening and signify machine monotony. Gary Numan's »Cars« employs a sonic duality, beginning with a low drone (an idling car engine) and finishing with competing high synthesizer lines representing machines or cars in motion.
- Kinetic music signifies restlessness, escape from the static, from stillness to progressive movement, forever onwards (Neu! - »Für Immer«).
- The sounds of future technologies – usually random synthesizer textures, bleeps and whirrs used to denote computers and electronic technology in operation (»I Dream Of Wires« Numan and throughout Kraftwerk's *Man Machine* and *Computer World*) – a technique referencing science fiction film and TV soundscapes / soundtracks (e.g. *Star Trek*), but not necessarily reflecting the actual sounds of the workings or operation of computers (though computers do contribute to the electronic soundscape in operation at the level of hums, whirrs and drones at a less consciously perceived level).[8]

It has to be noted that though this study focuses on the sonic futurscape of Deutsch-Englisch music, it is essential to acknowledge the thematic continuities that these musics share. Lyrical content, particularly in British electronic rock after Kraftwerk, often focuses obsessively on machines and technology (sometimes underpinned by machine-like delivery – with a spoken, deadened timbre – Kraftwerk, Numan, and John Foxx). Often these are technologies of travel, but also reference the broad sweep of twentieth century technology. At different times the tracks are critical, ambiguous and/or celebratory – sometimes neo-Futurist other times dystopian. Kraftwerk alongside the previously mentioned technologies in the 1980s dealt with computers and bicycles (techno-nostalgic and futurist). Song titles also provide evidence of the sonic and textual homologies evident in this music; in Ultravox's »I Want To Be A Machine«, »Maximum Acceleration« and through to John Foxx's solo

[8] Other examples that can be broadly described as machine rock include:
Neu!: »Hallogallo«, »Lila Engel (Lilac Angel)«, »After Eight«; Harmonia: »Dino«, »Veterano«;
Tubeway Army: »Are ›Friends‹ Electric?«; Bowie: »Always Crashing in the Same Car«, »Beauty & the Beast«, »Joe the Lion«, »Heroes«, »Blackout«, »Red Sails«, »Look Back in Anger«; Eno: »Third Uncle«, »Kings Lead Hat«; Joy Division / New Order: »Isolation«, »Everything's Gone Green«, »Your Silent Face«.

»Underpass«, »Metal Beat« and in his recent album *The Pleasures of Electricity*[9]; Numan's »Airlane«, »Cars«, »Metal«, »Engineers«, »I Dream of Wires«; OMD particularly took the lead of Kraftwerk in dealing with technological themes with »Electricity«, »The Messerschmitt Twins«, »Enola Gay«, »Sealand«, »ABC Auto-Industry«, »Telegraph«, and »The Romance Of The Telescope«; Simple Minds also followed these thematic trends with »Factory«, »Thirty Frames A Second«, »Theme for Great Cities« and »20th Century Promised Land«.

Alongside this thematic content, bands also wore their techno-electronic hearts on their sleeves in espousing ›futurist‹ manifestos. La Düsseldorf began *Viva* with the phrase »The Future is calling«; Kraftwerk spoke of home computers beaming operators ›into the future‹; The Human League in early publicity material stated: »Interested in combining the best of all possible worlds, the Human League would like to positively affect the future by close attention to the present, allying technology with humanity and humour«[10]; OMD were »Pretending to See the Future« but often with an amount of ambivalence as to the potential for human progress, and the ethical problems of new technologies (›Genetic Engineering‹).

2) Oceanic Rock: the Sounds of Stasis

Whether found in Eno and his ambient works, Neu!, Cluster with or without Eno, Tangerine Dream's *Phaedra* and *Rubycon,* or Bowie's instrumentals, ›oceanic rock‹ is contemplative, resting but sonically and texturally still searching for the new. The oceans of oceanic rock are not to be confused with ›nature‹ as opposed to ›artificial‹ machine rock. The oceans evoked within this music are as likely to be the lunar Sea of Tranquillity or the space oceans between terrestrial objects. This is music about immersive space accessed through, for example, imaginary inter-stellar travel as much as terrestrial trans-local movement across the earth's oceans.

The term most synonymous with Eno since the late 1970s has been *ambient*. His ›oceanic‹ *Music For Airports* was a contemplative soundscape emphasising the aesthetics of stasis – gentleness and quietness, non-developmental, cyclic, sparse, layered and balanced with pulses rather than rhythms (Tamm 1995: 132).

However, oceanic rock music is not synonymous with serenity – it can also be disquieting rather than consoling and calming. *Cluster II* contains synthesised electronic drones which are non-developmental and cyclic, but in terms of sonic texture the anaphonic associations suggested are darkness, tension and malevolent machinery. Harmonia's »Ohr Wurm« is as equally unsettling. Bowie/Eno's »Warszawa«, »Subterraneans«, »Sense Of Doubt« and »Neukölln« also contain elements of sonic dissonance that make for uneasy listening. Joy Divisions »The Eternal« and New Order's »Doubts Even Here« share a similar bleak beauty with OMD's »Statues«. As such, oceanic rock may contain what is described as ambient music, but contrary to the later conflation of ambient and ›chill out‹ does not necessarily

[9] John Foxx in collaboration with Louis Gordon has recently returned to his early 1980s electronic style and themes with a clearly pro-technological, progressive and future-nostalgist set of songs (»Cities of Light«, »Automobile«, »Camera« and »Travel«).

[10] From the sleevenotes of The Golden Hour of the Future: Recordings by The Future and The Human League. London: Black Melody 2002.

signify peace and tranquillity. David Toop proposed the term ›oceanic‹ to describe music that does not assault and demand avid attention but intellectually or spiritually enfolds the listener suggesting:

»As the world has moved towards becoming an information ocean, so music has become immersive. Listeners float in that ocean; musicians have become virtual travellers, creators of sonic theatre, transmitters of all the signals received across the aether« (Toop 1995: iii).

This is apparently true if we survey the evidence of the twentieth century explosion of popular and other musics due to travel, mass communication, recorded sound and computer networks. But the ›signals‹ transmitted across the aether, or in this case sonic futurscape, are not necessarily benevolent. Oceanic rock can enfold the listener both in a comforting and discomforting manner. This sensual enfoldment can be described as attributable to the »tactile anaphones« (Tagg 1999: 25) employed in this music. For example, Tagg emphasises that the long, sustained, slowly developing and decaying sounds created by synthesizer pads (string like sounds that ›fill the holes‹ in the soundscape) and the use of extended delay and reverb creates a thick, rich and viscous sonic texture suggesting smoothness and comfort. However, in oceanic rock, the sonic texture can also signify discomfort, claustrophobia, tension and instead of buoyancy, drowning. Numan's »Asylum« (b-side of »Cars«) represents the latter – his »I Nearly Married A Human« and version of Satie's *Trois Gymnopédies* the former.

Oceanic rock is on the whole, but not always, avocal and anti-narrative. The human voice is used as an instrument – nonsense lyrics with words used for their *soundshapes* (Eno), paralinguistic techniques of emphasis (impenetrable sighs, moans, mumbles, howls as in Neu!'s »Leb Wohl«), and invented languages (Bowie's »Subterraneans«) create polysemic ambivalence. The voice is used for its sonic texture not for narrative – the music emphasises anti-narrative but communicates space, feelings and emotions through sonic anaphones. If the 1960s gave licence to rock musicians to protest through words, the 1970s gave musicians the right to say nothing – that is mean nothing or create impressionistic voice tracks. Though Kraftwerk specifically criticised British synth bands for their ›silly lyrics …« (Bussy 2001: 104), Kraftwerk themselves used spare and minimalist language (and wit) in the often absurd, surreal or ›silly‹ celebration of the inanimate world (»Showroom Dummies«). In oceanic rock, the voice therefore was no longer primary as music became equivocal, layered, textured and the voice receded from audibility – the voice was no longer the primary vehicle for the musics ›message‹.

The ›space rock‹ of early German Kosmische Musik and British artists such as Hawkwind and Pink Floyd, shaped early developments in the trans-European *futurscape* before the later ›space‹ or ambient rock propagated by Eno and others. Outer space became synonymous with immersive soundscapes (though as has been pointed out previously, there is no soundscape in space – in space nobody can hear you modulate!) in the ›space‹ music of the early 1970s, whether created by German or British ›Astronauten‹. This music was about escape from the terrestrial and from grounded consciousness or lived experience (and was therefore psychedelic). In 1974, Harmonia possibly mischievously acknowledged this sonic (head) space exploration through the track »Sehr Kosmisch« [Very Cosmic].

In some ways Eno ›returned to Earth‹ in investigating terrestrial ambient spaces and opening them to sonic exploration. This investigation attempted to create space music from actual environmental soundscapes rather than through a fictional exploration of ›outer space‹, using the conventional electronic signifiers of space travel. Eno later looked to outer space with *Apollo: Atmospheres And Soundtracks* and eloquently depicted the US space missions through sound. In oceanic rock it is through the sonic dimension of the music, and not through the rock voice, that this exploration is enunciated and documented. Therefore, oceanic rock, like machine rock, deals with travel and movement (whether intellectual or imaginary) while seeming to stand still.

What is paradoxical in oceanic rock is the emphasis on music as travelogue – that is, oceanic rock may not be about travel, but it can be about the moments before departure and after arrival in suggesting the experiences of negotiating a location. Eno's *Ambient 1 / Music For Airports* is absolutely about this experience, and where the locational subject matter of tracks is suggested in a title (Ultravox's »Vienna«, Bowie's »Warszawa« and »Neukölln«, OMD's »Stanlow«), songs become aural snapshots. Eno's travels in the 1970s across Europe and the USA in his burgeoning collaborations further develop this sense of momentary reflection on locational experience, but Bowie's Berlin period[11] is a more grounded example of the sonic tourism of musicians working at the time.

Sonic Tourism

The sonic tourism of key figures such as Bowie, Eno and Plank across the sonic futurscape and physical geography of Europe and beyond is an important aspect of music in the late 1970s and early 1980s. Bowie's music in the Berlin period most specifically has an anthropological and touristic dimension. Bowie was drawn to the possibilities of enacting the sonic landscape of Berlin. In the twentieth century Berlin had a reputation as hedonistic and decadent, and as suffused with political conflict and with a wild, vibrant night life. In the 1970s Bowie and Iggy Pop were drawn to Berlin and its geographical isolation as a cold war no-mans land. Hansa studios were adjacent to the Berlin Wall, and this theatrical backdrop provided the *mise-en-scene* to Bowie's and Pop's works. In a sense, Bowie performed the urban and political landscape of Berlin, most specifically in »Heroes« and »Neukölln«. Artists such as U2, Nick Cave and Depeche Mode among others have since been drawn to Hansa as it

»not only provided the physical infrastructure necessary for recording significant albums […] but also represented a location, with a political and cultural style, that somehow combined pre-war hedonism with post-war geopolitical tensions« (Connell and Gibson 2003: 105).

However, Bowie's Berlin albums are snapshots and souvenirs of a brief dalliance with new West German music, and represent the impressions of an outsider. They were a conduit through which travelled a soundscape that artists in the British context were fascinated by. In opposition to Bowie, most West German artists were undertaking an internal re-invention

[11] Bowie's Berlin period albums were actually recorded in France and Switzerland as well as Hansa Studios in Berlin.

of German music partly to bypass and crush this Anglo-American touristic nostalgia. They looked beyond the divisions in 1970s Germany both spatially (looking to sources beyond the very real Anglo-American hegemony – after all, Germany was still militarily occupied) and temporally (looking to the future rather than dwelling on a troubled past). For example, Plank's sonic tourism took place both geographically and sonically – through the pursuit of alien and exotic sounds, forged from new sound technologies and a rootless creative imagination. Alongside other West German artists, this exploration attempted to discover new sonic textures, possibilities and hybrid forms in trying to create German music anew. British artists found this music unfamiliar, ›foreign‹ and exciting, and voraciously incorporated aspects of it into their own work. The resultant sonic futurscape remains today a source of creative renewal.

Radiohead - Back to the Future

From around 1980 onwards a new generation of Düsseldorf bands, including DAF, Der Plan, Propaganda and Die Krupps drew together strands from pre and post-punk electronic progressive music in formulating a more intense version of machine rock. This transmuted into the Industrial genre that thrived in the 1980s in Germany, Britain, Belgium and the Netherlands, with Front 242, Einstürzende Neubauten and Test Dept. among others. They were followed over the ensuing years by bands that drew together strands from machine and oceanic rock of the 1970s. These included Laika, Tortoise, Stereolab, and the German Kreidler, To Rococo Rot and Pluramon among others who traversed similar terrain to that now defined as post-rock.

Alongside these developments in what can broadly be called the rock context, dance music followed the lead of artists in the sonic futurscape with Electro, HipHop (Bambaataa) and Techno (Cybotron, Model 500 and later Berlin Techno) specifically drawing from music of this period. Through the later development of electronic House in all its forms, and versions of ambient music, the futurscape of the 1970s has become the soundtrack to our present and future. It is in these fields that contemporary sonic experimentation is most extreme and progressive. In the recent Electroclash scene, artists such as Fischerspooner, Felix Da Housecat and more specifically Ladytron have produced electronic music that is dance, rock and electro-pop and returns the synthetic aesthetics of early synth-pop to a rock context. However there are still rock artists who are more at home in soundtracking the future than dwelling on rock's past (while paradoxically looking to the past for inspiration).

In this context, Radiohead's *Kid A* and *Amnesiac* explored similar sonic and musical space to that negotiated by the musicians of the Deutsch-Englisch alliance in the late 1970s and early 80s, and the post-rock bands of the 1990s. They moved into sonic experimentation as a strategy to creatively relocate themselves after exhausting their potentialities as a major-league rock band. Their approach on *Kid A* and *Amnesiac* was remarkably similar to that followed by progressive Kosmsiche and other electronic German bands of the 1960s and 1970s. As such the music they produced was intellectually progressive, in future-oriented

escapist terms, as well as sharing in the sonic heritage of Cluster, Neu!, Eno, Bowie and Kraftwerk.

For example, on these albums, Thom Yorke wilfully ›destroyed‹ his vocals in an attempt to obfuscate his lyrics and refused to allow them to be published so that listeners would focus on the sound of his voice. Reynolds suggests that every member of Radiohead took on the role of Brian Eno in Roxy Music, each being »a non-musician producer/catalyst, abandoning their designated instrumental function and grappling with unfamiliar sound generation devices as if they were toys« (Reynolds 2001: 28). The band followed Holger Czukay's ›jam/slice/splice‹ production technique and abandoned the performance of songs, creating tracks using the mixing desk as an instrument. They worked in their own studio on several fragmented song ideas at once and tried various strategies to reinvent and deconstruct the expectations of what constituted ›Radiohead‹. Thematically and sonically, the albums are much less utopian than the positively future-oriented nature of the earlier sonic futurscape. Reynolds suggests when Yorke's lyrics are momentarily glimpsed they contain »oblique images of running out of future, Darwinian dog eat dog struggle, cannibalism and [an] emotional ›Ice Age coming‹« (ibid.: 30). However, they share with this earlier work a desire to escape and reinvent rock music – in Radiohead's case because they felt trapped by their success. John Lennon's suggestion that rock music required the artist and listener to *be here now* has shifted to a desire to *be there then*. The sounds of future past and present sonically transport us to unfamiliar and alien territory. In Radiohead, and the many bands that have followed the lead of Krautrock, post-punk and electronic futurism, there is a sense that there is still much to be ›said‹ that has not already been heard.

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