
**Paintings
in
Sound**

Paintings in Sound

**Vertical Time in the
Ambient Music of
Brian Eno**

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**A thesis submitted in partial fulfilment
of the requirements for the honours degree of
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Compact Disc Track Listing

1. Discreet Music (1975) (extract).....	10:08
2. Music for Airports 1/1 (1978).....	16:39
3. Music for Airports 2/1 (1978).....	8:25
4. On Land: The Lost Day (1978-82).....	9:13
5. On Land: Shadow (1978-82).....	3:00
6. Thursday Afternoon (1985) (extract).....	10:00
7. Neroli (1993) (extract).....	10:00

The CD is contained in the pocket inside the back cover.

Foreword

“One man's nirvana is another man's nap” - from the New York Times 1979 review of Music for Airports.

“Very repetitive, but if you wanted to relax or fall asleep it would be perfect” - C.S.

“It's lullingly beautiful, both intimate and distant, like music heard at night from a distant shore, and it has a calming, meditative effect...soon every molecule in the room has been reduced to balletic drowsiness.” - from Creem 1976 review of Discreet Music.

“I must admit, I really don't think I could listen to this for too long” - B.H.

“CDs of this music make useful coasters” - N.G.

I doubt whether many of the readers of this thesis will have heard of Brian Eno, let alone know anything about his ambient music. Some people know him as a record producer—he has produced many important albums including releases by David Bowie, Talking Heads and U2 to name but three. Of his own work, his ambient music is perhaps the least well known and the most misunderstood.

Eno's ambient music is quiet and repetitive—its aim is not to grab the listener's attention, but to play gently in the background and yet be interesting enough to bear close attention. I have included a CD of recorded examples with this thesis for the simple reason that description of the music in notation and words does not do it justice.

I am indebted to Professor John Casken for his willingness to take a leap into the unknown and supervise this work and to Yvonne Eddy for her patient proof-reading skills.

Barney Stevenson
April 1997

1. Brian Eno: his background and the musical and aesthetic origins of the Ambient style

1.1 EDUCATION

Brian Peter George St John le Baptiste de la Salle Eno was born on 15th May 1948 in Woodbridge, Suffolk and was educated as a child by the nuns and brothers of the De la Salle order, Ipswich. At the age of sixteen he began a two year pre-diploma course at Ipswich Art School and continued his art education as a diploma student at Winchester Art School, at a time when art schools were particularly liberal institutions at some remove from the academic mainstream. The radical, unorthodox and interdisciplinary atmosphere at Ipswich first fomented Eno's ideas about music. Eno recalled the culture shock of art school in a lecture in 1974:

“I guess that we were all united by one idea—that art school was the place where you would be able to express yourself, where the passionate and intuitive nature that you felt raged inside you would be set free and turned into art. As it happened, we couldn't have been more wrong. The first term at Ipswich was devoted to getting rid of those silly ideas about the nobility of the artist by a process of complete and relentless disorientation. We were set projects that we could not understand, criticised on bases that we did not even recognise as relevant.”¹

¹ Eno. Trent Polytechnic Lecture. 1974. Quoted in Eno, Brian, Russell Mills and Rick Poynor. More Dark than Shark. London, 1986, p.40

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The teaching approach at Ipswich was interdisciplinary and embraced the new field of cybernetics, the science of organisation and control as well as more conventional art theory. Eno was encouraged to explore the nature of creative behaviour, to react to new situations with a broader, less predictable range of responses and to learn to discover art in unfamiliar places. His work began to move more in the direction of musical composition, starting with sound sculptures and progressing to the use of tape recorders. By the age of twenty, Eno owned thirty tape recorders in various states of disrepair, each of which had its own idiosyncratic sonic character and only a couple of the machines functioned correctly.

Eno described his reasons for moving to music as follows:

“In the mid-1960s, music was definitely the happening art. Painting seemed extremely cumbersome, bunged up with old ideas and incapable as a medium of responding to a new feeling that was moving through the arts. This new feeling was expressed by the motto ‘process not product’. The movement represented a sense many people felt, that the orientation towards producing objects was no longer exciting, and, instead, processes were becoming the point of focus. Most of the country’s art teachers found this orientation difficult to stomach, because they had been educated in a climate that talked in terms of ‘balance’, ‘harmony’, ‘spatial relationships’ and ‘colour values’—all of which are formal qualities of the object. And they were faced with a group of students who were effectively saying, ‘I don’t care what the painting looks like; it’s simply a residue of this procedure that I’m interested in.’ But music seemed to avoid this dilemma completely—music was process, and any attempt to define a single performance of a piece as its *raison d’être* seemed automatically doomed. A music score is by definition a map of a set of behavioural patterns which will produce a result—but on another day that result might be entirely different.”²

² Ibid., p.41

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While the above definition of a musical score does to some extent apply to ‘traditional’ musical notation, Eno was referring to the scores of Experimental Music, which are left deliberately open and often consist of a set of verbal instructions.

1.2 EXPERIMENTAL MUSIC, SILENCE AND NOISE

Eno was first drawn to Experimental Music through John Cage’s epochal book Silence, which he read and re-read during his time as an art student. Eno’s desire to move away from object orientated works of art is reflected in Michael Nyman’s description of the importance of *process* to Experimental Composers:

“Experimental composers are by and large not concerned with prescribing a defined *time-object* whose materials, structuring and relationships are calculated and arranged in advance, but are more excited by the prospect of outlining a *situation* in which sounds may occur, a *process* of generating action (sounding or otherwise), a *field* delineated by certain compositional ‘rules’.”³

Nyman goes on to describe five processes that may be used:

- *Chance determination processes*: first used by Cage and involving techniques such as using the *I Ching* book of changes, observing imperfections in paper on which music is written and generating random numbers by computer.
- *People Processes*: processes which allow the performers to move through the music at their own speed.

³ Nyman, Michael. Experimental Music: Cage and Beyond. London, 1974, p.3

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- *Contextual Processes*: processes arising from the context of a performance, such as selecting pitches from those heard nearby, as in Cornelius Cardew's The Great Learning, Paragraph 7.
- *Repetition Processes*: the sole use of extended repetition to generate movement.
- *Electronic Processes*: processes which arise as the result of the action of electronic equipment on the sound.⁴

In Silence, Cage's words have much resonance with Eno's approach to music and music making. In 1937, Cage proposed widening the field of musical sounds to include that which had previously been disregarded as noise. His ideas were galvanised by new technologies which permitted the recording and precise manipulation of sound and the possibility of using electronics to make musical noises. He proposed a new classification for this new practice: "If this word 'music' is to be reserved for eighteenth- and nineteenth-century instruments, we can substitute a more meaningful term: organisation of sound".⁵ He also drew attention to the inadequacy of musical notation which, since it segments pitch into discrete steps, will not serve the composer who "will be faced with the entire field of sound"⁶. Further, he proposed a much greater control of rhythm, made possible at that time by the technique of film recording⁷. He wrote that "the 'frame', or fraction of a second, following established film technique, will probably be the basic unit

⁴ Ibid. p.5-8

⁵ Cage, John. Silence—Lectures and writings by John Cage. London, 1968, p.3

⁶ Ibid. p.4

⁷ Before the advent of magnetic tape, composers made use of technology developed for the cinema, which allowed sound to be encoded optically onto projector film, enabling a synchronous soundtrack to be carried. By simply altering the patterns printed on the film, it was possible to alter the amplitude and frequency of the sound.

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in the measurement of time”⁸. This remark was uncannily prophetic of the use of SMPTE time code⁹ as the standard synchronisation method in recording studios at present.

However, Cage was not the first person to propose composition with noise. Over two decades earlier, the Futurist Luigi Russolo had written a series of polemical essays under the general title of The Art of Noises. In the essays he wrote in particular detail about the noises of war, war being one of the favoured concerns of Futurism. Russolo, along with the painter Ugo Piatti, also invented a series of instruments called the intonarumori. These noise machines had fantastic names such as the Howler, the Hummer, the Crackler, the Burster, the Whistler and the Gurgler. It is perhaps not surprising that these instruments met with some resistance in a performance at the London Coliseum in 1914. Another important figure preceding Cage was Edgard Varèse, whose Ionisation (1929-31) was scored for thirteen percussion instruments, including sirens, and was nearer to conventional ideas of noise than music.

1.3 ENO AND EXPERIMENTAL ART AND MUSIC

By stressing the primacy of process over product and of behaviour over results, Cage created many possibilities of dialogue between the various branches of the arts. Ideas that were held in common could overcome differences of medium and realisation. Concept was all. As Eno’s interest in Experimental Music grew, he became interested in

⁸ Ibid. p.5

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the possibilities of applying similar principles to painting and sculpture. One of the principal areas of interest for experimental composers was the differences that would arise between successive performances of a particular work. (Eno was later to write a paper for the journal Studio International¹⁰ which, amongst other things, investigated factors which influence the variation in different performances of experimental works, in particular Paragraph 7 of Cardew's The Great Learning). In 1967, while he was a diploma student at Winchester Art School, Eno produced two scores for the 'performance' of paintings. These scores, like many of their counterparts in Experimental Music by composers such as LaMonte Young, Christian Wolff, George Brecht and Cardew, consisted of written instructions. In the first work, two or more performers follow a set of geometrical instructions and British Standard Colour codes and attempt to paint the same picture. The completed paintings are exhibited side by side. In the second work, an attempt is made to reconstruct an unseen painting by means of examining brushes and rags used and paint splashes made during the creation of the hidden painting and by questioning eye witnesses. Again, both canvases are to be exhibited together.

Eno was involved in the performance of Experimental Music from the time he was at Winchester Art School until he joined the rock group Roxy Music in 1971. Whilst a student, he formed an avant-garde performance group, Merchant Taylor's Simultaneous

⁹ Developed in the 1950s for the synchronisation of sound and pictures in film and video, SMPTE (Society of Motion Picture and Television Engineers) time code identifies the position on the film, video or audio tape in hours, minutes, seconds and *frames* from a starting point.

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Cabinet. They performed various experimental works by Eno, Christian Wolff and George Brecht. Amongst the pieces performed were two versions of Brecht's piece Drip Music (Drip Event) (1959-62) (example 1). The second of these performances was conceived on a large scale, in keeping with the theatrical and visual nature of many of Brecht's 'event' pieces and consisted of an enormous cube, ten feet high, through which rainwater passed by various routes. Later, Eno performed LaMonte Young's X for Henry Flynt (1960). This very repetitive piece was to have considerable influence on Eno's later work (see **1.6 Vexations, X for Henry Flynt and Repetition**). As a member of the Scratch Orchestra founded by Cornelius Cardew, Michael Parsons and Howard Skempton, Eno participated in several performances and a recording of Cardew's work The Great Learning (1968-71). He also joined the Portsmouth Sinfonia, a group founded by Gavin Bryars and drawn from members of Portsmouth Polytechnic. The Sinfonia was dedicated to performing imperfect readings of popular classics. The connection with Experimental Music here would come under the heading 'people processes' (see **1.2 Experimental Music, Silence and Noise**), as there was considerable discrepancy between the performers, most of whom were non-musicians.

After Eno joined Roxy Music and stepped into the entirely different world of commercial music, he continued his involvement with Experimental Music. He convinced Island Records (Roxy Music's record label) that it would be commercially astute to fund a research and development programme, analogous to those found in industry. This took

¹⁰ Eno, Brian. 'Generating and Organising Variety in the Arts.' Studio International cmlxxxiv (1976) p.

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the form of the label Obscure Records. Eno's aim was to concentrate on the area where the peripheries of Experimental Music and popular music mingle. He was interested in the possibility of music outside the mainstream having the potential of being absorbed into, modifying and enriching the mainstream—in short he saw the commercial potential of certain Experimental Music, which he felt would appeal to a wider audience. The ten records released by Obscure between 1975 and 1978 all fell under a similar category of being unobtrusive and 'ambient' in style. Composers featured include Gavin Bryars, Christopher Hobbs, David Toop, John Cage and Michael Nyman. The label closed when Eno moved from Island to Polydor, but in its three years it served its purpose, by bringing Experimental Music to a wider audience.

1.4 AMBIENCE AND ENVIRONMENTAL MUSIC

In Silence, while discussing Experimental Music, Cage wrote:

“In this new music nothing takes place but sounds: those that are notated and those that are not. Those that are not notated appear in the written music as silences, opening the doors of the music to the sounds that happen to be in the environment.”¹¹ “It is evidently a question of bringing one's intended actions into relation with the ambient unintended ones... A sound has four characteristics: frequency, amplitude, timbre and duration. Silence (ambient noise) has only duration... A time that's just time will let sounds be just sounds and if they are folk tunes, unresolved ninth chords or knives and forks, just folk tunes, unresolved ninth chords or knives and forks.”¹²

279-83.

¹¹Cage Silence p.7-8

¹² Ibid. p.80-81

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Cage's aim was to allow music to develop according to the logic of *sound*, rather than by some imposed logic, borne of a manipulation of motives, melodies or twelve-tone rows. Music was no longer to be perceived as a language of rational discourse; if it was to be perceived as a language at all, it would be as a language of statement. This music that "opens its doors" to ambient sounds Cage likens to modern sculpture or architecture which takes into account and makes positive use of its environment. The logical extreme of this principle is embodied in Cage's most (in)famous work 4'33" (premiered in 1952). It is written to be performed on any instrument and consists of three movements all marked *tacet* and each given a time, the three times adding up to four minutes and thirty-three seconds. The piece amounts to one enormous 'door' opened to the ambient noises present in the performance area.

Related to Cage's approach to silence and ambient sounds but using predetermined compositional structures is a category of compositions which may be classified as 'Environmental Music'. Here, sounds, real and/or artificial, are combined to create a composition which is strongly suggestive of an environment. A perfect example of this is Luc Ferrari's Presque Rien no.1 (1970). The subtitle of this composition is Daybreak on the Beach and the work consists of several hours recorded around dawn of activities on a beach. The sounds have been edited down to about twenty minutes of music, without there being any loss of continuity. Another good example of this technique was employed by the rock group Pink Floyd on the track Echoes from their 1971 album Meddle. The track, which occupies the whole second side of the LP, has a central section of approximately five minutes in length in which sounds of wind, birds of prey and

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various other electronically produced sounds are looped and combined to produce a frightening sonic environment reminiscent of an exposed location on a cold misty moor.

1.5 THE ORIGINS OF ENO'S AMBIENT STYLE

Brian Eno credits an accident in which he was hit by a taxi for the creation of Ambient Music. He was bed-ridden for several days and unable to move a great deal. A visiting friend brought him a record of eighteenth-century harp music, which, with some considerable difficulty, he put on to play after his visitor had left.:

“Having laid down, I realised that the amplifier was set at an extremely low level and that one channel of the stereo had failed completely. Since I hadn't the energy to get up and improve matters, the record played on almost inaudibly. This presented what was for me a new way of hearing music - as part of the ambience of the environment just as the colour of the light and the sound of the rain were parts of that ambience.”¹³

Three years later he was waiting for a plane at Cologne airport and imagined this style of music there:

“I started to think what kind of music would work. It was clear that the music would need to be able to withstand interruption...and it would have to be something that didn't need to be loud... I realised that I'd have to work in frequency ranges that didn't conflict with conversation... The idea was to try and make music that fitted into the container of the functioning airport. The idea was to try to suggest that there were new places to put music, new kinds of niches where music could belong.”¹⁴

¹³ Liner notes to Eno, Brian. *Discreet Music*. Virgin EEGCD23. 1975

¹⁴ From an interview with Korner, Anthony. 'Aurora Musicalis.' *Artforum* xxiv: x (1986) p.77.

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1.6 MUSIQUE D'AMEUBLEMENT

Silence includes an imaginary interview between Cage and Erik Satie. Satie lived from 1866 to 1925 and his influence stretches from French composers at the beginning of the twentieth century such as Debussy and Ravel, to Cage and other experimental composers in the latter half of the century. Satie proposed a music that would blend into its surroundings and not demand attention:

“We must bring about a music which is like furniture—a music, that is, which will be part of the noises of the environment, will take them into consideration. I think of it as melodious, softening the noises of the knives and forks, not dominating them, not imposing itself. It would fill up those heavy silences that sometimes fall between friends dining together. It would spare them the trouble of paying attention to their own banal remarks. And at the same time it would neutralise the street noises which so indiscreetly enter into the play of the conversation. To make such a music would be to respond to a need.”¹⁵

In collaboration with Darius Milhaud, Satie arranged some Furniture Music (‘Musique D’Ameublement’) for an interval of a Max Jacob play at the Galerie Barbazanges in the Falbourg Saint-Honoré. The music consisted of fragments taken from other composers’ works, continually repeated by musicians in various parts of the room. Ironically, however, Satie’s intention that the music should not impose itself was not to be realised, since he had to rush around the room, asking the audience to ignore what they were hearing.

¹⁵ Ibid. p76

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1.7 VEXATIONS, X FOR HENRY FLYNT AND REPETITION

In 1893, Satie composed Vexations, a brief passage for solo piano (example 2). It was accompanied by an instruction: “In order to play this piece 840 times, the performer should prepare beforehand in deep silence and serious immobility.”¹⁶ Cage found the piece in Paris in 1949 and premièred it in 1963 in a performance using eleven pianists playing in shifts and lasting nearly nineteen hours. The piece has a simple structure with four repeats of a thirteen bar melody. The second and fourth repeat are accompanied by non-diatonic harmonies which are the same on both occasions, but shifted in register. The first hearing of the un-harmonised melody might suggest tonal movement on a small scale, although very rapidly modulating to unrelated keys, but this is rapidly countered by the harmony which, with one exception, is a series of parallel tritones. The listener’s ears are drawn to different aspects of the various sonorities on repeated listening. The music cannot be said to develop; there is no perceptible logic determining its progression. One is only aware of the four sections of the form and, after some time, the only distinction is between monody and harmony.¹⁷

Vexations can be seen as a precursor of the repetitive music composed in reaction to the indeterminacy of Cage and his followers. The music written by composers such as LaMonte Young, Steve Reich and Terry Riley became known as ‘minimalist’ music.

¹⁶ Quoted in: Toop, David. Ocean of Sound—Aether Talk. Ambient Sound and Imaginary Worlds. London, 1995, p.199

¹⁷ This last observation was made after listening to (or rather *hearing*) Vexations for a period of one hour whilst otherwise engaged, in the true spirit of Musique D’Ameublement.

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Eno's interest in Experimental Music had led him to perform Young's X for Henry Flynt (1960) as a student. The piece calls for the performer to 'play' a single unspecified sound or cluster of sounds, without variation, an arbitrary number of times, symbolised by the letter X. Eno chose to perform X for Henry Flynt on piano, by linking his forearms together and smashing them down on the keyboard once a second for the period of an hour (in this case $X = 3600$, the number of seconds in an hour). Although he aimed to hit the same cluster each time Eno found that:

“one began to notice the most minute variations from one crash to the next. The subtraction of one note by the right elbow missing its top key was immediately and dramatically obvious. The slight variations of timing became major compositional changes, and the constant changes within the odd beat frequencies being formed by all the discords began to develop into melodic lines. This was, for me a new use of the error principle and led me to codify a little law that has since informed much of my work—‘Repetition is a form of change’.”¹⁸

By this, Eno was alluding to the impossibility of true repetition by a human performer. This concept was of great interest to Eno, not least because of the mind's ability to filter out information common to the repetitions and focus on the new information that is left.

For Eno, the music of the 'minimalists' was of great importance, because it presented not only an interesting concept in composition, but also a new way of listening. Reich developed a technique, which he called phasing, where two short tape loops of the same recording gradually slip out of synchronisation with each other. The two best

¹⁸ Eno. Lecture to Trent Polytechnic, quoted in Eno et al. More Dark Than Shark p.43.

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known works employing this technique are Come Out (1966) and It's Gonna Rain (1969). Eno described the process of listening to a phasing piece:

“One of the interesting things about the ears is that they work in the same way as a frog’s eye works... A frog’s eyes don’t work like ours. Ours are always moving: we blink. We scan. We move our heads. But a frog fixes its eyes on a scene and leaves them there. It stops seeing all the static parts of the environment, which become invisible, but as soon as one element moves, which could be what it wants to eat—the fly—it is seen in very high contrast...and the tongue comes out and takes it. [When listening to a phasing piece] our ears behave like a frog’s eyes. Since the material is common to both tapes, what you begin to notice are not the repeating parts but the sort of ephemeral interference pattern between them. Your ear telescopes into more and more fine detail until you’re hearing what to me seems like atoms of sound. It’s Gonna Rain absolutely thrilled me because I realised then that I understood what minimalism was about. The creative operation is listening. It isn’t just a question of a presentation feeding into a passive audience.”¹⁹

This was ‘Repetition is a form of change’ in action *par excellence*.

The ‘frog’s eye’ view of music opened a new world to Eno:

“These musical qualities are fairly new to Western music—we have tended to stress a teleological concept of progress within a piece of music, where climaxes are achieved by fulfilling or disappointing expectations generated by the previous progress of the music. An interesting thing happens to one’s perception of music if this concept of pace and direction is removed, for example by repetition.”²⁰

The above quote embodies the aesthetic that Eno developed and applied to what he called his Ambient Music. Eno’s aims for his own music and the principle of non-teleological ‘vertical music’ are the subject of the next chapter.

¹⁹ Korner. ‘Aurora Musicalis’. p. 79.

²⁰ Eno, from a review of Here Come the Warm Jets, requested by Spare Rib, 1973. Quoted in Eno et al. More Dark Than Shark p.43-44

2. Paintings in Sound: Vertical Time in Music

2.1 ENO'S AESTHETIC AIMS

Eno has expounded at considerable length his aesthetic intentions for his music. Most frequently, he uses metaphors of painting and colour to describe his compositions. These descriptions are significant as, to Eno, they convey much information about his compositional approach and offer clues as to how one should approach the music as a listener. In 1975, at the time of the release of his first ambient record Discreet Music,²¹ Eno wrote:

I believe that we are moving towards a position of using music and recorded sound with the variety of options that we presently use colour—we might simply use it to ‘tint’ the environment, we might use it ‘diagrammatically’, we might use it to modify our moods in almost subliminal ways. I predict that the concept of ‘muzak’²², once it sheds its connotations of aural garbage, might enjoy a new (and very fruitful) lease of life. Muzak, you see has one great asset: you don’t have to pay attention to it. This strikes me as a generous humility with which to imbue a piece of music, though it is nice to ensure that music can offer rewards to those who do give it their attention.”²³

²¹ Strictly, as Discreet Music was released three years before Eno coined the description ‘ambient’, it should not be described as such. However, retrospectively, the music is entirely commensurate with the ambient style.

²² Since the 1950s, the Seattle firm Muzak Inc. has produced endless recordings of familiar music arranged in a lightweight and derivative style.

²³ Eno. ‘Shedding Light on Obscure Records’, Street Life 15-28 November 1975. Quoted in Eno et al. More Dark Than Shark, p.44

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The assertion that music (particularly music that aims not to attract the listener's attention) could be 'used' for anything, raises familiar questions about semiology and meaning in music. However, the above description alludes to a music that is unobtrusive and yet detailed and that blends easily with the environment.

As a non-musician,²⁴ Eno has a painter's approach to composition and this is borne out by his description of the tape recorder as "a musical collage device"²⁵:

"I realised that [with magnetic tape] you could mess with time—storing it and then distorting it in any way you wanted—and this turned music into a plastic art."²⁶ "When you work on tape as I do, it means that music has become physical material: a substance which is malleable, mutable, cuttable and reversible. Tape puts music in a spatial dimension. I can have a direct, empirical relationship with sound itself. I relate to music the way a painter relates to a painting."²⁷

In working on the album On Land, he extended the painting metaphor still further by setting himself a working rule: anything he recorded onto tape had to appear in the final composition—transformed or reduced perhaps, but not destroyed. This process is analogous to a painting that starts out with broad gestures which are refined and added to in detail as the painting progresses. Eno was consciously attempting to retain a sense of

²⁴ Eno's own description. Eno is untrained in music theory and has only limited technical ability on a number of instruments, including keyboard. He has never felt any need to change this situation, feeling that "the craft of music is [not] relevant to the art of music" (quoted in Tamm, Eric. Brian Eno, electronic musician: progressive rock and the ambient sound, 1973-1986. Diss., University of California (Berkeley), 1988. p. 92).

²⁵ Interview by Geoff Brown 'Eno's Where it's At' Melody Maker xlvi (10 November 1973). Quoted in Tamm Brian Eno p.137

²⁶ Interview with Stephen Demorest. 'The Discreet charm of Eno: an English pop theorist seeks to redefine music.' Horizon xxi (June 1978). Quoted in Tamm. Brian Eno. p.52.

²⁷ Interview by Michael Zwerin, International Herald Tribune. 14 September 1983. Quoted in Eno et al. More Dark Than Shark p.96.

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the work's past history, in the same way as a painting can reveal traces of its history in the build-up of its brushstrokes.

Eno advocates a new approach to listening to music:

"I'd like people to have the expectations of music that they presently have of painting. If a painting is hanging on a wall where we live, we don't feel that we're missing something by not paying attention to it. It's just there—probably we'll look at it a little today, and probably tomorrow again. It's a sort of continuous part of the environment. These are the expectations we have of paintings. Yet with music, we still have the expectation of some kind of drama."²⁸

Eno's music is characterised by repetition and very slowly evolving textures so that, in his own words "it doesn't matter if you miss a bit"²⁹. He calls this 'holographic composition'. By this he is referring to the fact that in a shattered hologram, the whole image is still visible, although less clearly, in every fragment however small. Likewise, in his composition, Eno feels that something of the nature of the whole work may be gleaned from listening to a short section.

The principal of holographic composition may convincingly be evoked by what Eno believes to be the single most important innovation of popular music: the *sound* of the record:

"One of the interesting things about pop music is that you can often identify a record from...the briefest snatch of sound and know, "Oh, that's 'Good Vibrations'," or whatever. A fact of almost any successful pop record is that the

²⁸ Korner. 'Aurora Musicalis'. p.78.

²⁹ Loc. cit.

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sound is more of a characteristic than its melody or its chord structure or anything else. The sound is the thing that you recognise.”³⁰

Eno’s aim in his ambient music is to focus on the sound of the music by “[leaving] out the tunes, the chord patterns, the beats, and so on, in order to deal with the texture—the one innovation that really characterises this period of music.”³¹

In a further extension to the painting metaphor, Eno finds that at a certain stage of composing he finds that the music evokes a sense of place, in landscape terms. From this point, his perception of the geography, light and climate of the landscape directs the process of composition. Working with recorded sound allows him to design not only new instruments but also new locations for them. In a clear echo of Cage’s ideal of composers becoming ‘organisers of sound’, Eno likes to blur the distinction between ‘music’ and ‘noise’, by working with “all the complex sounds on the way out to the horizon, to pure noise.”³² The addition of reverberation, echo and other treatments is an intrinsic part of the composition, and not merely a cosmetic addition. Further to this landscape and painting sensibility, Eno feels that his moving away from writing ‘songs’ was equivalent to the removal of personality from the landscape. The addition of even a small human figure dramatically alters the balance of a landscape painting by automatically becoming a datum for the perception of scale and perspective.

³⁰ Ibid. p.76.

³¹ Ibid. p.77

³² Loc. cit.

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Clearly, analytical discussion of sound texture is hampered by a dearth of widely used and understood parameters with which to describe it amongst musicologists. My own research uncovered only one volume dealing specifically with this subject³³, which very rapidly descends into detailed discussion of subjects such as auditory physiology and psychoacoustics. It is unfortunately not possible to cover such subject matter in a study of this length (nor, I propose, would it be of interest or even understood by a majority of its readers!). I therefore intend to refer to sound texture in only the broadest of terms, with tacit admission of subjectivity, and to back up my observations with recorded examples.

2.2 TELEOLOGICAL MUSIC

The majority of Western Music is built of a complex hierarchy of expectations in the short, medium and long term. To use Leonard B. Meyer's term, the music is *teleological*³⁴, it is goal oriented and develops in time. Until its breakdown in the late nineteenth- and early twentieth-century, the language of tonality, with its fundamental dominant-tonic relationship, was the single most important hierarchical construct, governing structures at every level. Tonal music virtually always returns to the tonic—the point of greatest stability—as a universally accepted goal after the challenge by other keys. Of course, some of the most dramatic moments in music play on the build-up of

³³ Slawson, Wayne. Sound Color. Berkeley, 1985.

³⁴ Meyer, Leonard B. Music, the Arts and Ideas: Patterns and Predictions in Twentieth-Century Culture. Chicago, 1967. p. 71-73.

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expectations by fulfilling them at an unexpected time or in an unexpected way. As the tonal vocabulary increased in chromaticism towards the turn of the century, music remained goal orientated; in many senses its chromaticism was a means of heightening the articulation of points of arrival.

Chromatic harmony ultimately resulted in the sidelining of tonal root progressions and in the rise of an atonal language. Early atonal composers were faced with finding alternative means of articulating goals and with finding alternative hierarchies upon which to base the construction of their music. Devices such as rhythmic variation were used, for example slowing down towards a 'cadence', which itself might be highlighted by a following silence. Non-harmonic devices such as instrumental texture and register were appropriated as structural devices, replacing the tonal system's *a priori* goal orientation. In atonal music, the listener is often unaware of the goal towards which the music is directed until its arrival. Much atonal music is challenging to follow teleologically, because of the lack of recognisable structural articulations in the form of familiar tonal devices.

2.3 LINEARITY AND NONLINEARITY

In his highly detailed and well written volume on the subject of time in music,³⁵ Jonathan Kramer defines two principles by which all music may be described: *linearity* and *nonlinearity*. Virtually all music exhibits both linearity and nonlinearity. Kramer

³⁵ Kramer, Jonathan D. The Time of Music: New Meanings, New Temporalities, New Listening Strategies. New York, 1988. p.20-22.

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defines linearity as “the determination of some characteristic(s) of music in accordance with implications that arise from earlier events of the piece” and nonlinearity as “the determination of some characteristic(s) of music in accordance with implications that arise from principles or tendencies governing an entire piece or section”.³⁶ Thus it is clear that tonal music, with its highly developed hierarchies and tonic-goal orientation, is predominantly linear. Kramer goes on to elucidate cultural resonances with linearity.³⁷ The historical world view in the West is dominated by ideas of cause and effect, progress and goal orientation. The theories of Newton, Marx and Darwin are all based on linearity and the predominant religion, Christianity, is based on the goal of redemption of sins and eternal life. The primacy of capitalism is given currency by the perceived need for material betterment. It is therefore no great surprise that Western music is dominated by the tonal system and linearity.

The principle of nonlinearity is much less familiar in Western music. In the tonal repertoire, virtually none of the aspects of the music can be construed to be non-linear. Kramer gives the example of an unchanging surface figuration, whose repetition is congruous with the idea of “a principle or tendency governing an entire piece or section”, such as the C major Prelude in book one of Bach’s Das Wohltemperierte Klavier. Of course, in this instance, only the rhythmic surface of the piece is non-linear, whilst the harmonic progress is incontrovertibly goal-oriented and linear. Nonlinearity prevails to a much greater extent in the repertoire of the twentieth-century. This sudden increase was

³⁶ Loc. cit.

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nurtured by two significant factors: the influence of non-Western Music and the impact of sound recording technology.

The primarily non-linear music of many non-European civilisations reflects their non-linear cultures. For example, in Bali, calendars are not used to measure duration, but are marked by ten concurrent cycles from one to ten days in length. Time is characterised by the interlocking of these cycles and super-cycles (longer combinations of shorter cycles) and thus exhibits a circular quality. A Balinese person would not tell you what the time was, rather they would tell you what *sort* of time it was. Activities in Bali are not directed towards goals, but are understood and appreciated as satisfying in themselves. Likewise, Balinese music is made of interlocking rhythmic cycles and performances simply start and stop and do not have beginning gestures or final cadences. In Hindu-Buddhist religions, there is the concept of *samsara*, the cycle of lives, and this is reflected in the music of countries where Hindu-Buddhism is the dominant religion, such as India, China and Japan.

The impact of recording technology, especially the tape recorder has already been mentioned briefly in section **2.1 Eno's Aesthetic aims**. By the use of 'plastic' techniques of cutting and splicing, the linearity of a recording may be completely altered or even reversed. By joining a length of tape end to end, a fragment of sound may be left to repeat in a loop *ad infinitum*. The technique of multi-tracking may be employed to combine sounds which could never occur concurrently in reality, as, for example, in the

³⁷ Ibid. p.23-25.

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music of Stevie Wonder, who sings, and plays keyboards, harmonica, bass and drums on most of the tracks on his album Innervisions.³⁸ On a more everyday level, it is possible to play a recording many times and thus become extremely familiar with the recorded material, with all the implications that intimate knowledge of a work's progress may have on subsequent hearings. Also, we all become used, whether we like it or not, to entering and leaving a piece of music at times other than the beginning and end. Finally, we can listen to recorded music from all times and cultures and hear music, often subliminally, in many locations. In short, never before have Western ears been confronted by such a quantity of music of such diversity and ubiquity.

2.4 MOMENT TIME AND VERTICAL TIME

Central to his assertion that his ambient works are 'paintings in sound' is Eno's view on the progress of his music through time. If Eno's 'holographic' principle is to apply to a whole piece, clearly the music cannot 'develop' in time and any changes must not be perceived as moving towards a predictable goal. In Eno's own words:

"We are no longer concerned with making horizontal music, by which I mean music that starts at point A, develops through point B and ends at point C in some kind of logical or semi-logical progression. What's more interesting is constructing music that is a solid block of interactions. This then leaves your brain free to make some of those interactions more important than others and to find which particular

³⁸ Wonder, Stevie. Innervisions. Tamla Motown. 530 035-2. 1973.

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ones it wants to speak to. One thing about *vertical music* is that you can enter it at any point and leave it at any point. You don't have to be in at the beginning."³⁹

In music of the Western tradition, the concept of music not developing in time, of not setting out to fulfil recognisable goals is a comparatively recent phenomenon. In 1960, Karlheinz Stockhausen formulated a new concept of musical time, which he called "moment form"⁴⁰. In an article of the same name, he set out the features and aims of moment form.

- The music does not aim towards a climax, but is immediately intensive from the outset and remains so for its duration.
- Every present moment counts not only as a consequence of the previous one and as a prelude to the next, but also as independently being able to exist on its own.
- "This concentration on the present moment—on every present moment—can make a vertical cut, as it were, across horizontal time perception, extending out to a timelessness I call eternity."⁴¹

Interestingly, Stockhausen's conscious desire to flatten out climaxes was preceded in the first quarter of the twentieth-century by the fields of art and literature. In art, the Cubists abolished the idea of a pictorial climax by making the whole space of the picture of equal importance. In literature, works such as James Joyce's *Ulysses* were written as a

³⁹ Interview with Frank Rose. 'Eno: Scaramouche of the Synthesiser.' *Creem* vii (July 1975). Quoted in Tamm. *Brian Eno*. p.112. My italics.

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‘stream of consciousness’, and forsook the accepted norm of a dramatic curve with a beginning, middle and end. A moment form should give the impression of starting (as opposed to beginning) in the midst of music which is already in progress but was previously inaudible. When it stops (as opposed to ends), it will not seem complete, as if the music continues but in silence. The music should appear to be part of a continuum, an eternity.

Momente (1961-1972) is perhaps Stockhausen’s most elaborate work utilising moment form. Scored for soprano, four choirs and thirteen instruments, the sections of the work are not connected by temporal sequence, but by performer choice, according to certain rules set by the composer. Stockhausen’s desire not to write out Momente and to rely on performer choice gives rise to considerable complexity in the work. Each ‘moment’ is perceived as self contained and any connections between the moments are timbral.

While the individual moments achieve their verticality by, for example, maintaining a single harmony or a single process, continuity in the moment form as a whole is achieved by the seeming arbitrariness in the order in which the moments are presented. The moments themselves may differ from each other quite considerably. What of the possibility of vertical time, characterising a whole piece? Of course *true* stasis would only be represented by a piece such as LaMonte Young’s Composition 1960 #7

⁴⁰ Stockhausen, Karlheinz. ‘Momentform.’ Texte zur Elektronischen und Instrumentalen Musik Vol.1. Cologne, 1963. Quoted in Kramer. The Time of Music. p.201-204.

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(example 3), where an open fifth is sustained ‘for a long time’. The stasis that is of musical interest is stasis within the context of a particular piece, relative both to passages already heard and to following passages.

Vertical time may be evoked by a piece which is entirely temporally undifferentiated. Such a piece will lack hierarchy and goal direction and will probably also lack phrases, as phrase endings tend to articulate time. A piece in vertical time will tend to start and define the boundaries of its sound world fairly rapidly. It will continue in a steady state, without climax or tension and release and will not create expectations or fulfil expectations that might arise accidentally. It will not have a discernible ending, but will simply stop. It is unusual for a vertical piece to have no structure; whilst the temporal continuum is necessarily unstructured, structural formulations may be found between the layers of sound in a vertical composition. A composition such as Bohor I (1962), by Iannis Xenakis is an example of vertical time, with its largely unchanging sound-world and lack of internal differentiation through phrases. Another example is Stockhausen’s Stimmung (1968), where one chord is prolonged by timbral variation for seventy-five minutes. Of particular pertinence to this study is Steve Reich’s Come Out (1966), whose repetitive structure exhibits no phrase hierarchy. Although the piece is based on a process of constant gradual change, the change happens very slowly and one is unable to discern one’s whereabouts in the composition at any particular moment.

⁴¹ Loc. cit.

2.5 THE POSSIBILITY OF TIMELESSNESS AND A PARADOX

Clearly time does not actually stop when one is listening to vertical music; the passing of time may be perceived in relation to all manner of stimuli outside the music. The timelessness of vertical music is an extended present. The mind is focused on the present by the de-coupling of the past and the future; by not making or fulfilling expectations, the music appears to have come from nowhere and to be going nowhere. The timeless nature of vertical music does not mean that when we listen to it our consciousness is inactive. Far from it—our mind is free to roam within the music at its own pace, finding its own connections between layers and enjoying subtleties of timbre.

If one listens repeatedly to the same piece of vertical music, as is possible with a recording, the process of memory begins to create expectations in subsequent listenings. Brian Eno was referring to this when he commented that: “almost any arbitrary collision of events listened to enough times comes to seem very meaningful”.⁴² Thus, paradoxically, recording technology, with all its ability to create timelessness is perhaps the greatest threat to the appreciation of vertical time in music.

⁴² Eno, Brian. ‘Pro Session: the Studio as a Compositional Tool.’ *Down Beat*. 1 (July 1983). Quoted Tamm. *Brian Eno*. p.55.

3. Analytical Discussion of Eno's Ambient Music

3.1 DISCREET MUSIC (1975) [CD Track 1]

Discreet Music was released on Island's experimental label, Obscure. Eno's first foray into the realms of ambient music was the serendipitous product of another project. He was making a tape for the guitarist Robert Fripp to play over as a background which, as such, would need to be unobtrusive. The essence of the piece is a system of echo (or more strictly reverberation⁴³) and tape delay with feed-back, produced by the manipulation of the signal as shown in the diagram (example 4). Two short melodic fragments (example 5) were stored on a synthesiser with a digital recall system and played at random intervals (apparently Eno was repeatedly distracted during the recording of the piece by the telephone ringing). The timbre of the synthesiser's output was occasionally altered during the recording by means of a graphic equaliser. The tape delay line gave a short repeat of the melodic fragments which was fed back at a fairly high level into the recording tape machine. The resulting tape was played back at half speed.

⁴³ Both reverberation and echo are sound reflection phenomena. Reverberation involves quick reflection of the source sound (typically arriving within 50ms of the source sound) resulting in a prolonging of the sound. Echo is produced by slower reflections (a gap of more than 50ms after the source sound) and is perceived as a separate arrival of the sound.

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The result of this quite simple process is a rich counterpoint of very slowly decaying repeats with occasional appearances of the two melodic fragments. The repeat time of the delay line is approximately 5½seconds. The notes in the melodic fragments are arranged in clusters interspersed with long gaps of between 9 and 13 seconds. Thus each cluster is repeated at least once before the appearance of the next cluster. For most of the piece it is just possible to hear a residue of all of the clusters at once; thus Eno's first foray into the ambient style is entirely commensurate with the aesthetic of holographic composition.

3.2 MUSIC FOR AIRPORTS (1978)

By 1978, Eno had refined his ideas on the intellectual position of his music and described it with the newly coined the term 'ambient'. In the sleeve notes to Music for Airports he was careful to distance himself from the type of music known generically as Muzak. Whereas Muzak aims to neutralise the environment, Eno's ambient music was to enhance the acoustic and atmospheric idiosyncrasies of the environment.

“Whereas conventional background music is produced by stripping away all sense of doubt and uncertainty (and thus all genuine interest) from the music, Ambient Music retains these qualities. And whereas their intention is to ‘brighten’ the environment by adding stimulus to it (thus supposedly alleviating the tedium of routine tasks and levelling out the natural ups and downs of the body rhythms) Ambient Music is intended to induce calm and a space to think. Ambient Music

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must be able to accommodate many levels of listening attention without enforcing one in particular; it must be as ignorable (sic) as it is interesting.⁴⁴

Music for Airports contains four compositions by Eno, one of which (1/1) was co-composed with Robert Wyatt and Rhett Davies.

1/1 [CD Track 2]

1/1 consists of eleven repetitions of a four phrase melody on piano. The melody is accompanied by a bell-like bass tone (example 6). Apart from four notable exceptions, the piece is in the D mixolydian mode, with its characteristic flattened leading note, throughout. Accompanying these fixed constituents are other tones in the D mixolydian mode, some bell-like, some sustained, which highlight and mirror various sections of the melody. These do not appear to have a fixed repeating structure, although certain figures do recur more than once. The sound is reminiscent of a gentle Gamelan orchestra. At the end of the third, seventh, tenth and eleventh repetitions of the melody, there appears a quiet and sustained D major seventh chord, whose C# is a prominent departure from the static tonality of the piece. The first three instances have a feeling of rest or repose before the repeating process recommences and the fourth ends the piece.

2/1 [CD Track 3]

What at first seems like a complex structure in this piece is actually built from a very simple process. The sounds are human voices singing 'ah' and are electronically treated to give a gentle attack and decay and a breathy quality. Seven tape loops of

⁴⁴ Sleeve notes to Eno, Brian. Music for Airports. Virgin EEGCD 17. 1978.

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lengths ranging from 17 to 31 seconds, each recorded with a different five second pitch, are left to repeat and given separate positions in the stereophonic sound-field (example 7). The notes sometimes cluster together, leaving periods of silence, and sometimes arrange themselves in random melodic lines. In the eight minutes and twenty-five seconds of music appearing on the album there is no repetition. In fact, the pattern produced by the interlocking loops would take one year, one month, twenty-seven days, six hours and forty-five minutes to repeat⁴⁵!

1/2 and 2/2

Whilst the constructions of 1/1 and 2/1 are penetrable at least to some extent, the remaining compositions on the album are the products of much more complex processes. 1/2 is the product of twenty-two tape loops⁴⁶ and involves the voice sounds from 2/1 and melodic fragments recorded on piano (example 8). The textural interest is enhanced by each piano fragment having a different sonic treatment, giving the sound different spectral and spatial qualities. The sound quality ranges from close by and harp-like to bright, piano-like and in a large acoustic space. The various fragments / sound-types are given separately discernible stereo positions.

2/2 is again presumably a tape loop composition. The sounds originate from a synthesiser and the notes have a very gentle attack and release and are enhanced by long reverberation (pitch material shown in example 9). Taking 2/2 to be a tape loop

⁴⁵ I am indebted to Chris Hazell for this calculation.

⁴⁶ Tamm. Brian Eno. p. 288.

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composition, it is safe to aver that, unlike 2/1, there is more than one note recorded on each loop, as some melodic fragments do repeat verbatim. Also, it is likely that some of the material appears at more than one tape speed, as it is possible to discern one particular fragment at two octave positions, the lower fragment at half the speed of the higher. Again, multiple stereo positions are employed.

3.3 ON LAND (1978-82)

On Land is a collection of eight compositions which evoke a sense of place, of landscape or environment:

"On my record On Land, some of the pieces are very directly based on places that I know or knew as a child, and some of the sounds on the record are attempts at imitating precise sounds of those places. When I make this music, the first consideration is 'Where is this music?'. I say, 'What's the temperature in this piece?', because sound behaves differently in different temperatures. 'What's the humidity?', because sound behaves differently in different humidities. 'Is it an open place or does it have walls? Does it have a ceiling? Is the ceiling right on top or is it a long way away? Are the walls made of stone or wood, or are they some other material? Is the place stable or do I feel like I am not quite secure in it?' All of these things I can specify (in the studio) with reverberation."⁴⁷

The recording studio also allows artificial acoustic spaces which could never exist in the real world to be created. The concept of a sense of place had featured in Eno's earlier (non-ambient) work, but here it crystallised into the main idea informing the compositional process. This was a considerable move away from the process compositions of Discreet Music and Music for Airports.

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Sound material was gathered from a large number of sources ranging from musical instruments, both electronic and acoustic, through non-instruments such as pieces of chain, sticks and stones, to pre-recorded material of rooks, frogs and insects and material lifted from Eno's earlier work. One bemused instrumentalist commented on the unorthodox nature of the recording sessions:

“He spent three days twirling hoses. One day everyone was playing with gravel in little boxes, and he would say, ‘That’s a lovely sound.’ Another time he brought back a set of slides from the Museum of Natural History which he projected on a sheet as we were playing, so we’d really feel like part of the environment. Everyone would stand around in the dark watching a slide of a monkey.”⁴⁸

In the music, there is no sharp distinction between foreground and background; all of the sonic elements form part of the landscape. Pitched material is present in some form in these compositions, but plays only a minimal role. Often sustained sounds are used as atmospheric drones and the small appearances of melodic material are textural—they do not appear to be organised by any particular compositional process. In terms of pitch content, the compositions can be broadly divided into two types—those which explore one mode, and those that do not restrict themselves to a strict set of pitches. Both of these are equally successful means of avoiding a tonal centre and of minimising linearity and goal orientation. But to discuss the music in terms of pitch content alone is to miss out on much of the music's textural richness.

⁴⁷ Prendergast, Mark. ‘Brian Eno: “A fervent nostalgia for the future” - Thoughts, Words, Music and Art.’ *Sound on Sound* iv: iii (January 1989). No page reference.

⁴⁸ Article found on World Wide Web, incompletely referenced as being from *People*, sometime in 1983, by Arthur Lubow.

The Lost Day [CD Track 4]

The longest piece on the album centres around the sound of rigging wires tapping on boat masts in the wind, a sound Eno remembers from his childhood, heard by an East Suffolk river. The tapping sound rings at the pitch of C#, and forms an ostinato throughout the piece. Other pitched material is from the C# phrygian mode. The pervading atmosphere is one of insecurity, with deep rumbling wind noises and eerie bird calls permeating the texture.

Shadow [CD Track 5]

Of the pieces not restricting themselves to a mode, Shadow is the shortest. A texture falling somewhere between chirruping cicadas and machinery in need of lubrication is punctuated by whale-like calls on fretless bass guitar and a curious other-worldly sound which is probably a trumpet mouthpiece played very close to a microphone and electronically treated.

3.4 THURSDAY AFTERNOON (1985) [CD Track 6]

At sixty-one minutes long, Thursday Afternoon is Eno's longest published ambient work to date. It was released only on compact disc to make use of the medium's capability for carrying long uninterrupted stretches of music free from surface noise—in a typically Cagean response, when asked about this, Eno said “My music is very quiet;

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silence is very important...having no silence is like having no black or white in a painting.⁴⁹

Pitch material is restricted to the G mixolydian mode throughout with particular emphasis placed on the pitches of G, B, D and F, which form a drone backdrop for the music. The texture is made up of various constituents such as treated piano notes, bird and cricket chirrups, a water drop noise on pitch A and a sighing bass sound with downward portamento. These constituents move very slowly in and out of focus throughout, with no discernible logic. Eno defines the boundaries of the music's sound-world quite quickly, with most of the sonic material appearing within the first ten minutes of the piece. Eno has presumably used interlocking tape loops to produce much of the music, particularly the piano melodies.

3.5 NEROLI (1993)

Neroli is Eno's most recently released ambient work available on compact disc. Compared to the rich textures of On Land and Thursday Afternoon, this work is relatively austere and marks a return to the realm of process composition using distinct pitches. The pitch material is very restricted (example 10), with only one note, G, appearing at more than one octave position. The most prominent sounds are gong-like with long reverberation added, and are suggestive of the sound-world of Gamelan music.

⁴⁹ Jensen, Alan. 'The Sound of Silence: A Thursday Afternoon with Brian Eno'. Electronics and Music Maker. December 1985. p.23

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Also, barely discernible, there are sustained synthesiser tones which present a drone using the same pitch material. The compositional process is totally inscrutable, even with reference to the compact disc's inlay which includes a system diagram for the work (example 11). One can discern certain clusters of notes repeating (this would appear to be mirrored in the system diagram), but there is no readily apparent pattern to the time of the repetition. The music is reminiscent of medieval plainchant, particularly the use of the G phrygian mode and the way the phrases are augmented and diminished by a process somewhat like troping. Certainly the progress of the music is entirely unpredictable, in accordance with the ideal of vertical music.

4. Does Eno's Ambient Music achieve Verticality?

4.1 THE FROG'S EYE OR THE BORED EAR?

“Most of us tend to listen [to music] teleologically—horizontally—given the prevalence of tonal music in our culture. We listen for, and even project onto the music, implications and progressions. Thus even advance knowledge that a piece will be internally undifferentiated does not preclude our initial, habitual response of teleological hearing. The piece starts (not begins), and at first we try to impose linearity, storing potential implications out of which to make significant causal relations later in the piece. But as the music continues, implications accumulate with a minimum of consequences, because the composition contains no changes of structural import. We become overloaded with unfulfilled expectations, and we face a choice: either give up expectation and enter the vertical time of the work—where linear expectation, implication, cause, effect, antecedents and consequents do not exist—or become bored.”⁵⁰

The above quotation, from Jonathan Kramer's deeply insightful and thought-provoking book The Time of Music, pithily expresses the significant cultural barrier between composers of vertical music and the music's potential audience. Seen in the context of culture, it seems almost arrogant to dismiss a music because it does not fit in with the precedents of teleology and goal orientation in the West. One needs to be broad minded and overcome possible initial boredom to understand the music. Eno's metaphor of 'frog's eye' listening is useful in this respect—one needs to accept the music's stasis and concentrate on the small changes in texture.

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4.2 THE LIMITATIONS OF CONVENTIONAL NOTATION

Any mode of communication which uses discrete steps is bound to be limited in its powers of description. Conventional musical notation is capable of describing and communicating a very large amount, as the extraordinary quantity and diversity of music using it would indicate. But when a composer wants, for example, to compose in micro-tones, conventional notation is of no use. In the realm of timbre, apart from certain special effects specific to particular instruments, conventional notation is almost completely ineffective.

Conventional notation is most suited to conventional, pitched and generally acoustic musical instruments. The composer who decides to limit himself or herself to composition with conventional instruments is left with a relatively small selection of discrete 'off-the-shelf' sounds in his or her sonic palette. This situation not improved by the 'classical' mainstream's reluctance to accept unusual instruments.

Eno has drawn attention to the shortcomings of conventional notation on several occasions: "The reason conventional notation works is because classical music is so simple. The notes are discrete, and there's not much elision. You tend to go [he sings, like a choirboy] ah ah ah ah ah. You don't go neuurrureeurreurhh like they do in blues or in Arab music. That kind of thing is almost un-notatable."⁵¹ This is an over-

⁵⁰ Kramer. *The Time of Music*. p.56.

⁵¹ Lisle, Tim de. 'Sound and Vision'. *Independent on Sunday*. (2 August 1992). No page reference.

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simplification, as it would be equally valid to propose that 'classical'⁵² music is simple because of the limitations of conventional notation. However, one needs to look no further than, for example, the works of Brian Ferneyhough to see that 'classical' music has found means of achieving complexity within the bounds of conventional notation (and at the same time realise how cumbersome it is to notate complex musical information, such as intricate rhythms).

Perversely, this study is hindered by a lack of widely understood terms with which to discuss the music—what a paradox: a music that has freed itself from the bounds of notation altogether is less amenable to description and discussion than a style of music that has been composed with conventional notation. If there is a positive side to this unsatisfactory situation it is that the reader will be more aware of the possible subjectivity of observations made about the music. This contrasts with the sometimes spurious impression of objectivity given by analyses employing conventional notation.

4.3 PITCHED ASPECTS OF THE MUSIC

While pitched components of the music do not always play a primary role, they do however have an important bearing on the perceived verticality of the music. Most of the music discussed in this study has a limited pitch palette. Complex pitch structures are generally not suitable for systems or process music; complexity is produced by the

⁵² The term is used here broadly to describe Western art music from the Renaissance to the present day.

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process and arises from intricate interactions between the pitches, rather than from pre-composed complexity. Process music using complex combinations of pitches in its raw material would tend to be less satisfying to the listener simply by being too complex.

Eno's use of modal harmony has the twin advantages of a small pitch palette coupled with an inherent avoidance of cadential structures. For example the D mixolydian mode of the repeating piano phrase in Music for Airports 1/1 gives the music a feeling of being suspended in mid-air, of never reaching repose, because of the lack of a C# with which to fix the music in the key of D major. When a C# does appear, as described in chapter 3, it is perceived as being of structural import, as a moment of repose, a disruption in the continuum of the piece. Often the modality is ambiguous, such as in Discreet Music where the D dorian and G mixolydian modes have equal parts in the music. This mixed modality further removes the possibility of any particular pitch having a hierarchical precedence over another. Throughout his ambient music Eno never grants us the familiar tension and release which is the mainstay of the tonal idiom, thereby avoiding the build-up and fulfilment of expectation in the short or long term.

4.4 THE IMPORTANCE OF SOUND

At an early stage Eno became dissatisfied with the dictum 'process not product'.

"By the early '70s, I had made and experienced a great deal of systems music, as all this had come to be known. I wanted to make music that was not only systemically interesting, but also that I felt like hearing again. So, increasingly, my attention went into the sonic material that I was feeding into my 'repatting

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machines'. This became my area: I extended the composing act into the act of constructing sound itself."⁵³

Quite simply, Eno feels that if the product is not interesting, if the sound of the music is not appealing, he has failed as a composer no matter how ingenious the process.

In his review of Michael Nyman's book Experimental Music⁵⁴, Roger Smalley points out a divide amongst the experimental composers, between those who think *in* music and those who think *about* music:

"The concerns of Reich, Glass, LaMonte Young [and] Terry Riley are quintessentially musical. The [research of Cage on the other hand is] only tangentially related to music as a living and evolving body of sound; it is not by chance that Cage's writings offer a more coherent exposition of his ideas than his music... Being an excellent theoretician is not necessarily synonymous with being a good composer...the ultimate reality of music lies in its sound."⁵⁵

Smalley defines two rather useful terms in his article:

- *Style*: the non-verbal level of communication—the composer's use of musical language and structure.
- *Idea*: those ideas about, behind and emanating from music which can unambiguously be expressed only in words.

Smalley continues:

⁵³ Kelly, Kevin. 'Gossip is Philosophy'. Wired 3.05 <http://www.hotwired.com/wired/3.05/features/eno.html>

⁵⁴ Smalley, Roger. 'Experimental Music'. Musical Times. cxvi/i (January 1975). p. 23-26.

⁵⁵ *Ibid.* p. 24-25.

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“It does seem possible...that style (as I have defined it) is actually the single most important attribute of music, first because it is the only aspect of the music that the composer can be reasonably certain of communicating, second because the intensity of the musical structure provides a focus which concentrates the listener's attention, awakens and sharpens his powers of perception. The composer creates a network of relationships from which the listener is free to draw his own conclusions.”⁵⁶

The above quote applies particularly well to Eno's ambient music. The single most important factor linking all Eno's ambient music is the *sound* of the music itself. Whilst it may be possible to criticise Eno's use of process and system as being not wholly original, he is consistently original in the sound-world he creates. Of course, from the listener's point of view, it matters not *how* the music was composed—as Smalley points out, the composer has little chance of communicating the ideas behind the work through the music itself.

In Eno's music, the sound is paramount. The structure is the means of articulating the sound—the vertical listening mode that the music aims to evoke focuses the listener's attention on the sound itself. It does not distract the attention with other concerns such as linear relationships between different parts of the structure. It is only by entering ‘vertical time’ that one can fully appreciate the music.

4.5 PHRASE STRUCTURE

Perhaps the greatest threat to the continuity of Eno's ambient music is the use of melodic material played by live musicians. If this material is phrased, it is likely that it will

⁵⁶ Ibid. p.23-24.

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be perceived as being structurally articulated. A particular example of this is Music for Airports 1/1 whose piano melody is clearly phrased. This effect is heightened by the long pauses at the end of each phrase (see example 6). The repetition of the phrases throughout the piece also heightens their interpretation as structural articulations by the process of memory and subsequent expectation.

The use of system or process is an effective way of avoiding structural articulation, and is used to good effect in Music for Airports 2/1. The progress of the music is entirely unpredictable and non-repeating and breaks in the music are not interpreted as being of structural importance. However the use of system or process is not a guarantee of avoiding structural articulations. In Neroli, the process used (whatever that may be) produces fairly regular breaks in the music, often after the low G. Although these breaks are not as disruptive to the continuum of the music as phrasing of human origin, this 'systematic phrasing' can be interpreted as being of structural importance.

The furthest Eno's music departs from phrase structure is when he composes in sound alone and moves away from pitched material. For this reason the compositions from On Land and Thursday Afternoon are the least disrupted by phrase structure.

4.6 THE ELEVATOR MUSIC OF LATE CAPITALISM?

Many people are cynical of commercial success. All of Eno's ambient works are available in any high street record shop and have sold consistently since their initial release. While Eno's record sales are by no means in the league of many popular artists,

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they contrast starkly with the conspicuous lack of generally available electronic 'art' music. This fact rings alarm bells with some observers. In an article in The Guardian⁵⁷, Pat Kane accuses Eno of "using art-values to shroud his deeply commercial intent": "Every time I hear the drone of his synths, the predictably-unpredictable noises and disturbances, the sleek randomness of what he does, I just hear the elevator music of late capitalism."⁵⁸

My own experience of other peoples reactions to Eno's ambient music is broadly similar: "You must be stupid to buy CDs of this boring music". This would seem to indicate two things. First, that Eno's music is certainly not primarily commercial, for if he *is* aiming for popular appeal, then he is considerably wide of the mark. One certainly should not dismiss something simply because it happens to be commercially successful. Second, people's resistance to the music shows quite how difficult it is to present a music that requires a novel mode of listening to be appreciated—indeed, Pat Kane shows a basic misunderstanding of the music when he says "Ambient aims to make you passive, to surrender to your surroundings, envelops you in a womb of sound."⁵⁹ On the contrary, ambient aims *actively* to focus the listener's attention on the sound.

⁵⁷ Kane, Pat. 'Jingle the other one'. The Guardian. (20 October 1995) G2T p. 10.

⁵⁸ Loc. cit.

⁵⁹ Loc. cit.

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4.7 IS ENO'S MUSIC VERTICAL?

It is my contention that Eno's music is not *itself* vertical—it takes place in time. It is perhaps better to propose that the music strongly encourages vertical *listening*. It is clearly not possible for any composer to dictate *how* one should listen to a certain type of music. Similarly, it is not possible to assert that there are no moments in Eno's ambient music that might be interpreted by a certain listener as a point of repose or a goal. In the course of this study, I have drawn attention to several factors which are likely to disrupt the temporal continuum of the music.

For those prepared to cast aside prejudice and listen to music in an unfamiliar way by entering its vertical time, Brian Eno's ambient music offers a sound-world of great richness. I hope that this study is successful in opening some people's ears to a new musical listening experience.

Postscript: The Future of Music (by Brian Eno)

Eno's view of the future of music is linked to his dissatisfaction with the unvarying repetition inherent in the recorded medium. When asked what he thought music will be like in twenty years, he gave this reply:

“What people are going to be selling more of in the future is not pieces of music, but systems by which people can customise listening experiences for themselves. Change some of the parameters and see what you get. So, in that sense, musicians would be offering unfinished pieces of music—pieces of raw material, but highly evolved raw material, that has a strong flavour to it already. I can also feel something evolving on the cusp between ‘music’, ‘game’, and ‘demonstration’. Such an experience falls in a nice new place—between art and science and playing. This is where I expect artists to be working more and more in the future.”⁶⁰

Although this is a view of only one area of music in the future, it does present an interesting possibility: a piece of music which is different each time it is heard. While this is easily possible with live performers, it is hard to imagine this kind of variation happening in one's living room.

In fact, with the aid of computer technology, this is now possible. A program called Koan Pro, made by the software company SSEYO, has been written for the standard multimedia personal computer to enable the creation of what Eno calls Generative Music:

⁶⁰ Kelly, Kevin. ‘Gossip is Philosophy’.

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The Future of Music (by Brian Eno)

“Koan Pro works by addressing the sound card⁶¹ in the computer. The computer sends instructions to that sound card and tells it what noises to produce and in what patterns. Koan Pro is a sophisticated way of doing this, enabling a composer to control about 150 parameters that specify things like sound-timbre and envelope, scale, harmony, rhythm, tempo, vibrato, pitch range etc. Most of Koan Pro’s instructions are probabilistic—so that rather than saying ‘do precisely this’ (which is what a musical sequencer⁶² does) they say ‘choose what to do from within this range of possibilities’. The Koan Pro program allows that range to be more or less specific—you could, if you so chose, write absolutely precise pieces of music with it, though this would probably be its least interesting use.

“The works I’ve made with Koan Pro sound to me as good as anything I’ve done. They also symbolise to me the beginning of a new era in music. Until 100 years ago, every musical event was unique: music was ephemeral and unrepeatable and even classical scoring couldn’t guarantee precise duplication. Then came the gramophone record, which captured particular performances and made it possible to hear them identically over and over again.

“But Koan Pro and other recent experiments like it are the beginning of something new. From now on there are three alternatives: live music, recorded music and generative music. Generative music enjoys some of the benefits of both its ancestors. Like live music, it is always different. Like recorded music, it is free of time-and-place limitations—you can hear it when you want and where you want. And it confers one of the other great advantages of the recorded form: you can hear it as you work it out—it doesn’t suffer from the long feedback loop characteristic of scored-and-performed music.”⁶³

Eno has in fact released some compositions for the Koan Pro program. The possibilities of generative music are extremely wide and present a genuinely new area of musical composition. However, the program itself has, at present, only limited appeal to the general public and will probably only interest those who already use their personal

⁶¹ A sound card is a device which plays sound when fed MIDI data and is an integral part of a multimedia personal computer.

⁶² A sequencer is a device which records control information from an electronic instrument such as a synthesiser. The information, which is usually stored as MIDI data, can then be sent back to the synthesiser to reproduce the same notes. It is important to note that a sequencer records information *about* the sounds, as opposed to the sounds themselves.

⁶³ Eno, Brian. ‘The Future of Music’. The Independent. (Friday 1 March 1996). No page reference.

Postscript

The Future of Music (by Brian Eno)

computers for music applications such as sequencing. It is unlikely that discs of generative music will replace the compact disc in the foreseeable future.

Musical Examples

1. George Brecht Drip Music (Drip Event) (1959-62)⁶⁴

For a single or multiple performance.

A source of dripping water and an empty vessel are arranged so that the water falls into the vessel.

Second version: Dripping.

⁶⁴ Printed in Nyman, Michael. Experimental Music: Cage and Beyond. London, 1974 p. 64. Part of a set of rectangular cards of assorted sizes in a box entitled Water Yam

Musical Examples

2. Erik Satie Vexations (1893)⁶⁵

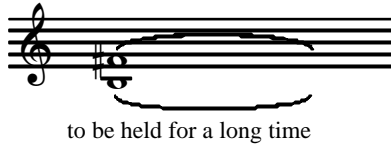
Repeat 840 times

The musical score for Erik Satie's *Vexations* is presented in four systems. Each system is a grand staff with a treble and bass clef. The first system shows a whole rest in the treble and a single eighth note in the bass. The second system shows a complex chordal texture in both staves. The third system is identical to the first. The fourth system shows a complex chordal texture in both staves. The piece is in 2/4 time and ends with a fermata.

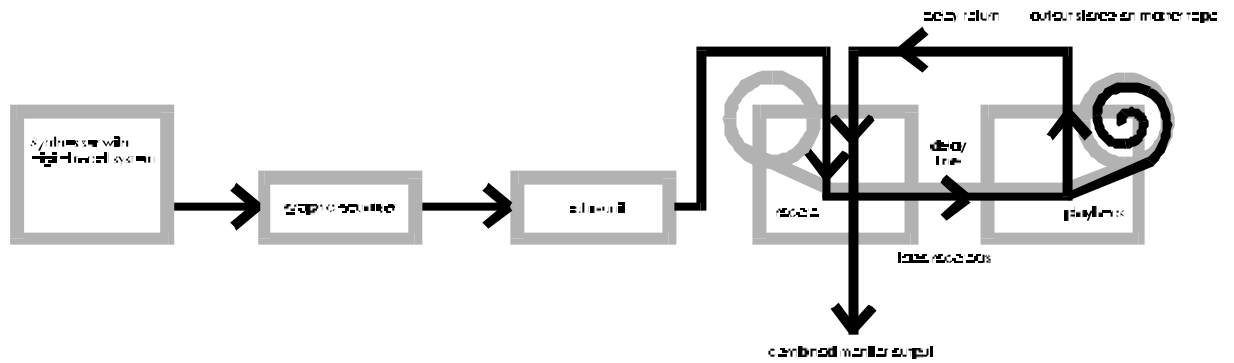
⁶⁵ Transcribed from a performance by Alan Marks on Ocean of Sound: A Collection of Music to Accompany David Toop's Book, Ocean of Sound. Virgin AMBT 10 7243 8 41367 2 7. 1996

Musical Examples

3. LaMonte Young Composition 1960 #7⁶⁶



4. Operational Diagram for Discreet Music (1975)⁶⁷



5. Melodic fragments from Discreet Music (1975)

Left Stereo Channel

Right Stereo Channel

⁶⁶ Printed in Nyman. Experimental Music. P.70.

Musical Examples

6. Music for Airports 1/1 (1978)

The musical score for "Music for Airports 1/1" (1978) by Brian Eno is presented in four systems of piano accompaniment. The key signature is G major (one sharp) and the time signature is 2/4. Each system is marked with a measure number and a repeat sign:

- System 1: Measure 10
- System 2: Measure 6
- System 3: Measure 2
- System 4: Measure 10

The score features a mix of eighth and sixteenth notes in the right hand, often with slurs, and a steady bass line in the left hand. The fourth system includes a change in time signature from 2/4 to 3/4 and back to 2/4.

⁶⁷ From liner notes to Eno, Brian. Discreet Music. Virgin EEGCD 23. 1975.

Musical Examples

7. Pitch Cycle Lengths in Music for Airports 2/1

A musical staff with a treble clef and a bass clef. The treble clef staff contains seven notes with the following durations written below them: 21", 17", 25", 18", 31", 20", and 22". The bass clef staff contains two notes, one in the middle and one at the end, corresponding to the 25" and 22" durations respectively.

8. Piano pitches in Music for Airports 1/2

A piano score for two staves, treble and bass clef, showing two chords. The first chord consists of a major triad in the treble clef (F4, A4, C5) and a major triad in the bass clef (F2, A2, C3). The second chord consists of a major triad in the treble clef (G4, B4, D5) and a major triad in the bass clef (G2, B2, D3).

9. Pitches in Music for Airports 2/2

A piano score for two staves, treble and bass clef, showing two chords. The first chord consists of a major triad in the treble clef (F4, A4, C5) and a major triad in the bass clef (F2, A2, C3). The second chord consists of a major triad in the treble clef (G4, B4, D5) and a major triad in the bass clef (G2, B2, D3).

10. Pitches in Neroli (1993)



11. (Overleaf) System Diagram for Neroli

Musical Examples

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