

## Concrete tales and touching times

Here is a small collection of related and unrelated fragments: some brief stories about technology and sound, some small sounds as aesthetic objectives, and several short walks around the Philips Pavilion.

The early history of technology and sound is a mass of interesting presences, discrepancies and confusions. There were dreams of money, and there was the crackle of creative interference in the air. Reading back through the evidence, it sometimes seems as if the late 19<sup>th</sup> and early 20<sup>th</sup> centuries bred a bunch of particularly irascible and avaricious pioneers, who fought it out over prestige and cash in equal proportions.<sup>1</sup> Those early years of invention and growth were a mass of small, aggressive ventures, rising in a constant buzz of connected and disconnected possibilities. As invention after invention was demonstrated (and patent after patent was filed) one thing often lead, by tangents, to another. The end result was sometimes a surprise; for instance, technology developed with the deaf in mind evolved into the telephone. Suddenly the world was becoming a place where it might be possible to stay in touch with everything at once, and pick up the phone, hear the film, play the record, tune in the radio.

There's less money in the small world of experimental music, but the early history of electronic music in the 1950s and 60s was certainly pioneering in putting technology to diverse creative ends, and this glorious appropriation has continued into software and instrument design.<sup>2</sup> There are several excellent books that collate the evidence of the early practitioners, and of course several of these are still around to tell, and continue telling, the tale.<sup>3</sup> And an electronic music is developing in which not only sonic but aesthetic objectives are driven through the 'aid of electronic instruments'<sup>4</sup>, to quote the prescient voice of John Cage. Not all of these objectives were foreseen in exactly the form they are coming to take, and not all come down to the useful appropriation of different bits of equipment. Cage was careful to avoid the words 'electrical *musical* instruments', and indeed distanced his credo from a concern with inventing new interfaces for playing old music. He was entranced by the possibility of a different 'music' that would be imbued with what technology can or might express in composing with organised sound. As a precision tool, technology can be instrumental in expressing the presence and depth of structures inside sound, and also inside listening - as a creative engagement with touch, memory, and experience. Yet in some respects much electronic music composition is conservative, and essentially continues to mine an existing seam of abstract music expressionism, but with shiny new tools that can orchestrate a wider palette and really get 'inside' those sounds.

As an extension of human ability and presence, it is certainly true that technology enables the minutiae of sound to become present to our ears. Perhaps this has contributed by reversal to another approach - a small left-shift to a position where sound becomes an expression of equivocal encounters with technology's pervasive presence and control. And if technology is aiding the coalescence of several small aesthetic shifts, it might be of instrumental assistance in creating 'a music' that is new rather than merely producing new kind of instruments for the music that we have. Some have called this a post-digital music. But why are we always following one thing with another? All our histories are filtered through the cultural practice and knowledge - the 'technology' - of the time. Sometimes a straightforward relation of

what happened reveals less than the gaps between what was envisaged, what actually came to pass, and how and why accounts differ. It's worth listening between.

Here are various small accounts that jolt back and forth, and land up against each other in various configurations. I hope that they might coalesce over time to make a kind of sense to you. So there are chronicles of some small but telling moments in the early histories of sound technology; there are journals on some small objects and touching presences in electronic music, and on some music where the enormity of small spaces and times is laid bare by a telling click. Between all these tales are reports surrounding a very small piece of music that – unlike the space it occupied - remains as a mass of influential embers. To finish up, there are a few touching anecdotes.

In what follows, most is concrete, much is remembered, and some has just a touch of make believe. You can read it either way, since this history goes back and forth.

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## SOME SMALL PRESENCES

### **Chronicle:**

#### **1857 – A trace of smoke**

*Imagine - The rustle of silk dresses settling down, and a few murmurs of anticipation. They crowd around him, straining their necks to see. There is a smell of cigars. A log spits in the grate. Silence falls.*

*Then he bends over the machine, turns the handle, and speaks into the cone. The displaced air reaches a stretched membrane, which vibrates in response. The fluctuating movement of this membrane drives in turn the travel of a small stub of bristle; it scrapes back and forth across the rotating cylinder of smoke-blackened paper. And, as it moves, the bristle's erratic journey rubs a wavering path through the clouded surface. At present, it is a kind of magic.*

In 1857 Léon Scott de Martinville invented the phonautograph, an early mechanical means of preserving a visual record of a sound. Sadly, this delicate analogy could not be reversed to recreate the sound itself. The only thing audible after the fact would be gratifying gasps of admiration from your dinner-party guests.

So the first recordings of sound were small histories of absence, scratched through smoke. And

– at the same time – they were a reminder that someone had been there. It would be only a matter of time before the telephone started ringing.

Hello? Can you hear me?  
Hello? Is there anybody there?  
Hello? What does it sound like at your end?

In a rather gory development, the Ear Phonautograph of 1874, Alexander Graham Bell and Clarence Blake took the human-technology interface a step further; their detailed explanation of exactly how to dissect and attach a human ear to the apparatus makes rather gruesome reading. And yet it also draws attention to the fact that the phonautograph's invention was motivated by a desire to understand more about human perception; by modelling the mechanics of human physiology and observing the results we would know ourselves more clearly. In mimicking the ear the emphasis was on hearing, not on the production of sound. No matter that there was nothing left to hear, there was – once – and the silent evidence remained. A visual record of what was heard offered at least some reasonably objective data from which to pursue a common ground between individual subjectivities. It's for this reason perhaps that Bell and others envisaged the phonautograph as having exciting potential for enabling the deaf to speak. And he couldn't resist writing home:

*If we can find the definite shape due to each sound - what an assistance in teaching the deaf & dumb!!  
(Alexander Graham Bell)<sup>5</sup>*

There were hopes for visual vocabularies for sound, aids for the deaf, libraries shelved with faded images that would speak silently to those for whom sound was an inaudible mystery. But nothing really came of it; the crossing between aural and visual image was an irreversible gulf. Then, the possibility of re-hearing a recorded sound could only be envisaged. Now, a visual rendition of a sound on screen is a mere mnemonic for what's coming through the headphones.

**REPORT: CROWDS ATTEND SPECTACLE**

## Concret PH, by Iannis Xenakis

### CD[1] (excerpt)

*Deux minutes d'intervalle, et huit minutes de spectacle. Première décision: le contenant sera une sorte d'estomac, avec une entrée et une sortie différentes pour cinq cents personnes. Deuxième décision: le public étant debout et regardant devant lui, disposer de deux parois concaves presque verticales, qui permettent aux spectateurs de voir au-dessus de la tête des voisins.*  
(Le Corbusier, 1958, p. 24)

[A two-minute interval, and eight minutes for the show. First decision: that it would be contained in a sort of 'stomach' with a different exit and entrance, for five hundred people. Second decision: the public would be standing and looking ahead, arranged between two concave partitions, allowing the spectators to see over the heads of their neighbours.]

This is what the architect Le Corbusier had in mind for the Philips Pavilion, in which Varèse's monumental - some might say slightly ponderous - *Poème Electronique* was first performed at the Brussels World Fair in 1958, as part of an elaborate audio-visual spectacle that was repeated several times a day for the duration of the event. The pavilion was commissioned by the Philips Company, specifically L.C.Kalff, the artistic director for the project and an executive at the Eindhoven branch of Philips. Varèse was offered the services of Philips' studio in Eindhoven to make his work. Le Corbusier put together the visual component, which involved complex lighting and slides of strange and marvellous images, and of ordinary images made larger than life; some of these were reproduced in a commemorative book overseen by Le Corbusier, which was also entitled *Poème Electronique*, along with essays, documentary photographs and reflections by those involved. These images are diverse: children, babies, reproductions of paintings, a Madonna, a bull's head and bullfighter, exotic tribal masks, a group of miners in helmets, surgeons at work, an array of toy tanks, clouds, birds... everything you could think of, crowded together in a fragmented reminiscence of all that life holds (but just out of touch of most, with an emphasis on the exotic). And, in the same book there are photographs of the spectators who passed through this secular pantheon; a crowd of assorted people in 1950s overcoats and haircuts, packed together shoulder to shoulder. Naturally, the visual and aural spectacle that filled the empty space of the pavilion emanated from Philips light bulbs, sound equipment and other bits and pieces, although these were largely hidden from view. Technology became invisible and amazing. People stood in the darkness, open-mouthed.<sup>6</sup>

The Philips Company executives were none too keen on Le Corbusier's choice of composer. They had originally been considering Benjamin Britten, a rising young composer with more general appeal. At one point they almost gave up on Varèse completely and commissioned a French composer, Tommasi, to write a piece of conventional *son et lumière*. Le Corbusier fulminated until Varèse was reinstated. In the end, the pavilion was a huge success, with over two million people passing through to stand and stare, and listen. The partnership of Varèse and Le Corbusier would go down in history as a defining moment in the collaboration of architecture and sound

*You ask me why my name is not mentioned.*

*1. Because Philips approached Le Corbusier, architect of world-renown, and not me.*

*2. Because I am an employee of Le Corbusier and have no firm: 'Xenakis - Architect'*

*3. Because Le Corbusier is a miser, an egotist, an opportunist who is capable of trampling upon the corpses of his own friends.*

(Letter from Xenakis to Scherchen, 25 June 1957. In Matossian, 1990, pp. 119-120)

Initially it seems that Le Corbusier took all public credit for the Philips Pavilion, despite the fact that his assistant, Xenakis, had been involved significantly in the design work. Xenakis protested vociferously in public and - so it appears - maliciously in private, claiming that he had taken the major part in bringing the building to fruition. History in the making was reluctantly revised to include his involvement: in the book *Poème Electronique*, Xenakis's name appears beside Le Corbusier as designer. Even so, the final list of credits is very small indeed, and there's no reason to turn the page unless you're looking for the information.

*Le Poème Electronique. Le Corbusier: Pavillon Philips pour l'exposition universelle de Bruxelles 1958. Création du Poème Electronique. : Le Corbusier. Architecture: Le Corbusier et Jean Xenakis. Scénario et images: Le Corbusier et Jean Petit. Cinéaste: Philippe Agostini: Composition sonore: Edgard Varèse. Interlude sonore: Jean Xenakis. Animateur et organisateur: L.C.Kalff. Expert acoustique: W. Tak. Calcul (etc. ...)*  
(unnumbered 'credits' page, Le Corbusier, 1958)

Since the Philips Pavilion was part concert hall, part exhibition space, it was a practical necessity that the public should stay in it for only a limited time. The throughput required encouraged an event that was less an installation than a performance to a captive audience, subsequently regurgitated back into the air, blinking, en route for another attraction. Time became a rather mundane quality, and people became a space-occupying mass. Le Corbusier's original idea for a 'stomach' seems strangely apposite.

I think quite positively I remember that we entered the Philips/Corbusier/[Xenakis] building (Xenakis's name appeared nowhere, that I remember) with a group and that we waited inside for the beginning of the performance - I have images of bare concrete, suddenly disappearing in the flood of coloured light. ...I do believe therefore that the visit indeed was conceived as a performance, beginning, say, every 30 minutes. Another reason to think so is that the Fair proved successful far beyond expectation and that several pavilions had to organize timed visits, lest they be overcrowded.  
(Professor Nicolas Meeüs, email correspondence)

## **JOURNAL ENTRY: AUGUST 18<sup>th</sup> 2002**

### **CD[2] *Petit jardin*, by Magali Babin (excerpt)**

#### **Hello? Can you hear me?**

Magali Babin's brief piece *Petit jardin* is a sonic exploration of largely metallic objects, itself neither an improvisation, nor a recording of one. She's no longer there because this piece exists only on CD. I press play and the sounds of small metallic objects fill my ears. We don't communicate directly but, yes, I immediately recognize the kinds of things that might have produced those sounds. I feel that I know them. Nearly all the sounds imply actions. Someone or something 'did' these things.

And I am listening - to music, since my definition is a broad one, and this is evidently organised sound. The sounds are placed together in a manner that makes for an interesting abstract tapestry. This placing took place at different times - there was an improvisation, and then a mix in the studio. (There is nothing extraordinary about this approach, although perhaps there are fewer pieces of experimental

electronic music that overtly reference a recording of a performance.) There are easily distinguishable layers: the slowly reiterated striking of a low gong-like object; a higher-pitched and less regular clunking – perhaps made by hitting a smaller vessel, maybe a bowl; a spattering of small objects, metallic (I think), that is formed from much faster iterations, with some sense of a pulse. I'm a little less sure of how that last one was done.

So all this is all going on as I work backwards from the sound that's in front of my ears right now. Perhaps it's so obvious that it almost doesn't warrant discussion, although it may well be different for you – listening is imprecise unless it matters. I don't bother to envisage exactly what actually happened to make those sounds back then, when they were 'now'. But it's enough to know that the sounds I'm hearing are somehow of 'human' proportions; they are not amplified or enlarged beyond realism.

### **Hello? Is there anybody there?**

Later on, things become much more clear-cut and the spotlight shifts from substance to presence, but now it is less a case of 'the striking of' a gong as 'there's somebody doing that'. Performance is an issue. Yes, there is somebody there; I can hear the trickling sounds of pebbles or shards of metal falling through her fingers onto a surface and in particular, towards the end of the piece, there's the sound of her slowly swirling a hand about in a container full of densely-packed grains – or perhaps rice, or tiny pebbles, or even sand. At least, that's how I heard it, the last time I listened. And I'm finding that 'swirling hand' sound especially satisfying and immediate; it's probably because it reminds me of that pleasurable sensation of plunging a hand deep into a sack of grain, or whatever, and scrunching around for the pure enjoyment of the physical sensation. I'm not sure I have any specific memory of a precise instance of doing that, but I certainly seem to remember how it feels. I'm muddling my tenses, back and forth.

*Petit jardin's* mix of past performance and present sound involves, and convolves, times. There are already two recorded present tenses – the time of improvisation and the time of putting these sounds together as composition in the studio. And at the time of mixing, making and re-constructing, other 'performers' apply another layer. They are duly credited in realising the final composition – sound recordist, mixing engineer, the studio itself. And that's all before listening to the work on CD, at the time when it fills my sitting room with small metallic sounds. Despite all these temporal backs and forths this piece continues to come across as a direct and personal exploration, where a single, performing human being's touch reaches out towards objects in search of sounds.

At some level in my listening I imagine what kind of movements she is making to produce those sounds. (There's nothing unusual in that; we've all played varieties of air guitar). Then again, she's doing more than moving. I can hear her *listening*, because I can hear thinking behind the scenes, in the pace of events – the striking of the gong is a slow iteration, by somebody who waits (or has waited, once, at that time?) for the sound to die down before they hit again. If this piece were to be mimed by a performer employing fast, angular movements, I'd be unconvinced by the sync. And if someone had merely come on stage and clicked on 'compile and play' to produce those sounds, as sometimes happens, I'd be disappointed by this visual discrepancy. Imagining physical movement is part and parcel of listening to a record of 'a performance'. But there's nothing to see now, and I can't reconstruct exactly

what might have happened, so I have to make a fiction of it. The onus is on me, and perhaps that changes my listening.

In summarising their research into data gleaned from the body movement or 'sway' of a pianist, Eric Clarke and Jane Davidson come to the sensitive conclusion that 'In any musical tradition in which improvisation plays a significant role it is far more obvious that the dynamics of movement may strongly influence (even at times determine) the sonic outcome.' (Clarke and Davidson, 1988, p. 89) And surely it works both ways; in an exploratory improvisation the 'dynamics of sound' might strongly influence the performer's subsequent decisions (or subconscious responses) of *movement* too. Performance becomes a dance between listening and touching. Imagine the recorded sounds as the only trace of a visual performance that is now absent. Humour me: here is a blank trail where the sound traces a bodily presence that is no longer here. And aid for the blind, perhaps.

As 'she' performs, there seems to be something in the way, that wasn't part of her performance but is happening now: a spatter of small sounds places a kind of veil between presence and absence. She is in the mix behind these metallic sounds that don't themselves sound, quite, part of her time. They are slightly 'exotic' because they were very small, ordinary sounds, that are newly processed and mixed to become a foreground screen of significant objects. There are many tracks where the singer's voice is intentionally placed 'inside' rather than apart from the mix. Bjork's album *Homogenic* for instance, has a tendency for dense mixes that frequently foreground technological presence. Her voice is processed just enough to dislocate a vocal performance. 'Hunter', track 1 of *Homogenic*, has a continual foreground layering of fast, incisive reiterations that have some similarity with *Petit jardin*'s high-pitched metallic sounds: neither are background patterning, and both provide a shield in front of a central performer. But a voice tends to transmit a stronger human presence – and probably a visual image of Bjork or at least a mouth moving to produce those sounds - whereas *Petit jardin* doesn't have a voice, and the 'her' is an invisibly moving body that dissolves, disappears and occasionally reappears behind a gentle rain of tiny, half-familiar objects.

### **Hello? What does it sound like at your end?**

Which reminds me, there's a tactile quality to these sounds. Listening even becomes a proxy for touching. When I listen to Babin's 'metallic sounds' my mind is re-inhabited with sensory images of quite specific kinds, and these are memories derived from touch. Somewhere along the line between hearing and listening I stuck out a hand. Any baby would understand that this is a significant intuitive grasp; I am inwardly 'confirming' what I hear, through recollections of haptic investigation. Perhaps these recollections come from a long, long time ago, but these tactile imprints step up and 'capture' aural perception as if the imagined surface was there at my fingertips, right now.

This personal, empirical analysis of listening reaches much too far to come to conclusions, and these matters fluctuate back and forth according to each subject's individual experience. But, in general, it is safe to say that sounds release information that – trailing through our back catalogue of experiences – we use to make educated guesses; we trace a digit over our discoveries. Barry Truax's granulated soundscapes, Horacio Vaggione's pointillistic fabrics of instrumental samples, Kim Cascone's use of computer-generated 'dust' – the sonic clicks and pops of digital detritus; these are

just a few composers whose differing approaches encourage tactile associations, in works where flurries of fragmented sound become metaphors for touch. But *Petit jardin* is an example of a performance of a specifically improvisatory kind, where there is an essential connection between listening and performance as related explorations. The piece is about the activity of feeling, touching and reaching towards the sonic presence of an object, and it transmits the experience of listening and interacting with the sounds that result from this activity. Though there is no human voice to be heard amongst these sounds, there are questions in the way the sounds are made - Is there anybody there? Can you hear me? What does it sound like at your end? The trail works both ways: the sounds are present as the result of her investigations, and the trace of her touch is present in these sounds. She remains invisible.

### ***Anecdotal evidence - THUMB***

There is a small piece of prehistoric Cypriot pottery in the Metropolitan Museum, New York, labelled 'man or monkey eating fruit'. The seated figure has no facial features other than a crude nose and mouth (but, I grant you, definitely no breasts) and is three inches high at most. And he is definitely eating - holding something unidentifiable to his mouth, with both hands.

While he enjoys his delicious hunk of fruit, he has crossed his legs at the ankle, looping one foot over the other in a childlike, awkward manner. Absorbed in his pleasurable activity, he is so wrapped in the taste that he isn't aware of this little touch of bodily involvement. I guess that at this moment he isn't even aware of being human (or not).

This small pottery anecdote must have been made in a very hurried moment of wonder because there's a life-sized thumbprint in the clay; and it's this touch that provides a concrete reminder of a past that was someone else's presence.

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## **SOME SMALL DISCREPANCIES**

### **Chronicle: The space betweentimes**

You know how it is with memory, it tends to forget the facts. So if you want to ensure the smallest gap between how it is and how it will be recollected, it's probably best to write it down at the time.

## France – 30<sup>th</sup> April 1877

‘...Dans tous les cas, le tracé en hélice sur un cylindre est très-préférable, et je m’occupe actuellement d’en trouver la réalisation pratique.’  
(Charles Cros)<sup>7</sup>

(...In any case, the spiral trace on a cylinder is much preferable, and I am currently occupied with finding a practical realisation of this.)

*Imagine - he adds his signature, blots the ink and carefully reads through, repeating a few phrases out loud and nodding to himself in confirmation. His handwriting leaves a fluent trace across the page - rather untidy, the writing of someone whose ideas get ahead of him, out of his control. The letters and poems, and the short plays and dramatic interludes he pens for Parisian soirées have the same enthusiastic slant. He folds the paper, slides it into an envelope and seals it.*

*The other papers he has worked on recently had dwelt on that new luminous art, photography. But there is something in this alternative path away from visual things – it pleases his musical ear. He knows it would work, and just knowing that is almost enough, but not quite. His chair scrapes suddenly on the floor as he rises quickly, looking at the clock... ..there is no time to lose.*

On April 30<sup>th</sup> 1877 the inventor, poet and writer Charles Cros deposited a sealed envelope containing his paper on ‘A procedure for recording and reproducing phenomenon perceived by the ear’ at the Académie of Sciences in Paris. He did not have the wherewithal to realise his idea, but he was convinced it would work. Although he took the precaution of filing this confidential document, it seems likely that he also enthused about his ideas with various professional colleagues and likely benefactors. In November 1877 an article based on his idea appeared in *La Semaine du Clergé*.

Charles Cros, was aware of Edison’s interest in the area and was anxious to make his own ideas made public. On December 3<sup>rd</sup> 1877 Cros asked that the papers he had lodged at the Académie be opened and published. This was done the very same day.

## America – 12<sup>th</sup> August 1877

American inventor Thomas Edison and his well-funded team of researchers carried out the first practical experiment in recording and reproducing sound on August 12<sup>th</sup> 1877, though there is some dispute as to the actual date since Edison didn't file the patent until December 12<sup>th</sup>. Edison's method was an almost perfect realisation of the method Cros had described in detail. Who knows...

It was just in the air  
Perhaps, the same idea

Certainly Charles Cros spent much of his life trying to prove that he got there first. But for him, recorded sound remained a silent certainty. For Edison, it was a rather different history.

*'Le brevet de M.Edison, pour tout ce qui y est dit du phonographe, est nul'*<sup>8</sup>

Whether Edison first invented sound recording or not, he was still stuck for amplification, and had to resort to banks of phonographs or one-person cinemas to make sound heard (Perhaps understandably the kinetophone - a one-person sound cinema, complete with peephole and earpieces - was a short-lived solution.)

Technology moves on in fits and starts. One person may record the inaudible on paper, and another might subsequently write the same ideas in sound; but these events may or may not be connected. Perhaps there is no useful narrative, and it is as informative to make a patchwork indeterminacy from isolated stories, diaries and other short reports. (This has been done before, and will continue to be done).

## **REPORT: A LARGE NUMBER OF SPEAKERS**

Over time, memories can soften and opinions change:

*It was the first time I had ever met a man with such spiritual force, such a constant questioning of things normally taken for granted ... .. [He] opened my eyes to a new kind of architecture I had never thought of. This was a most important revelation, because quite suddenly, instead of boring myself with more calculations, I discovered points of common interest with music*  
(Xenakis on Le Corbusier, in Bois, 1967, p.5)

It is quite usual for architectural practices to operate under the name of one famous, founding father (mothers are less usual) who

imbues the projects undertaken with his particular ethos or artistic 'stamp'. So it could be said, looking at it from a different angle, that the hyperparabolic curves of the Philips Pavilion were a Le Corbusier creation. Yet Xenakis was exploring the same shapes and preoccupations in recent musical works, in particular in the visual parabolas that indicate string glissandi in *Metastaseis*, completed in 1954. Accounts vary, one person influences another - and vice versa - and the sliding truth will always hang somewhere in the air between them. Books on architecture tend to sideline Xenakis's part in the Philips Pavilion, whereas books on music tend to focus on his essential role. Perhaps authorship is a relatively small thing.

The sound projection for *Poème Electronique* was an architectural feat in itself. Even in the simplest installation - the playing of sound and visual projections in an empty space - time needs to be choreographed a little, and the placing of loudspeakers becomes akin to directing the *corps de ballet*. Within the electronic work it's often essential to hear things at the 'right' time and place. With a perambulatory audience time and space are constantly shifting dimensions, and the history of a sound can change on a moment-to-moment basis. The innovative design that Xenakis created involved the placing of some 350-425 speakers (apparently - though documented evidence conflicts) within the swooping, contoured construction that perhaps only a composer-architect collaboration could have realised successfully.

*'Les cent cinquante haut-parleurs du pavillon étaient répartis en "groupes" et en "routes". Les groupes étaient disposés au-dessus de l'entrée et de la sortie et dans les trois faîtes, tandis que les haut parleurs pour les routes étaient disposés le long des arêtes. On avait en outre monté une route horizontale, et, derrière la barrière, tout en bas, se trouvaient vingt-cinq grands haut-parleurs pour la reproduction de la gamme des notes graves et de sons spéciaux. Tous ces haut-parleurs devant être mis en circuit à un moment précis par la signalisation, et leur montage ayant dû s'effectuer avant que la composition ne fût achevée, les câbles de chacun d'eux furent conduits individuellement vers la cabine de commande du pavillon; un tableau de contacts permettait alors d'effectuer les choix nécessaires. Les routes et les groupes de haut-parleurs avaient été répartis sur dix amplificateurs de 120 W...'*

(no author given, but presumably Xenakis, in Le Corbusier, 1958, p. 203)

[The hundred and fifty loudspeakers of the pavilion were divided up into 'groups' and 'routes'. The groups were arranged above the entrance and exit, and in the three pinnacles, while the loudspeakers for the routes were arranged along the 'ribs'. There was also a horizontal route, and, behind the barrier, down below, there were 25 large loudspeakers for boosting the range, low notes and special sounds. All these loudspeakers had to be put into action at a precise moment by signals, and they had to be put up before the composition could be achieved, the cables had to be individually run to the pavilion's control room where contact board let one effect the necessary changes. The routes and the groups of loudspeakers had been divided between ten amplifiers of 120 W...]

However many loudspeakers eventually got hauled into place, there was quite a crowd of them, and their disposition was precise. The tracking of the sounds, and the simultaneous presentation of the images, were carefully planned. In particular, the images were 'themed' to give the spectacle distinct sections, which were mirrored in terms of lights and sound. The effect of this multilayered control was, paradoxically, intended to provide a sense of random activity, where the position of sounds and images would be unpredictable in both time and space. Yet, underneath this apparent chaos, everything was in order. There was only a small gap between the appearance and sound of disorder and carefully orchestrated space.

Xenakis in interview, going through a folder of old scores and exercises:

*This is a rhythmic exercise based on the golden section.*

*I used to have a bad tape-recorder which left a little noise on the tape when you pressed the button. When I noticed that, I exploited it: I measured the length of the tape and marked it at certain points in pencil. I pressed the button of the machine at every mark, and when I played it the noises followed one another according to the golden section. In other words, I received an exact aural picture of that proportion.*

*I had taken the idea from architecture.*  
(Xenakis, in Varga, 1996, p.30)

‘The whole Fair was very much oriented toward technology: to give you an idea, it is there that for the first time I saw a TV set; also, visitors were offered the possibility to phone the United States, something that apparently was unaccessible to the layman until then. The American pavilion presented cinemascope on a 360° screen, etc. All this is what I went to see with brothers and friends.’  
(Professor Nicolas Meeùs, email correspondence)

## **JOURNAL ENTRY: August 21st 2002**

**It was just in the air.**

### **Ryoji Ikeda, *zero degrees***

Click

Noise

Click

Noise

Click

*Individual grains with a duration of less than about 2ms ...*

Noise

Click

(actually, there's also a silent gap)

Noise

Click

Noise

(between the noise and the click, each time)

Click

Noise

Click

...*sound like clicks.*  
(*Roads, 2001, p.88*)

Noise

Click

Noise

*Zero degrees* commences with a series of eight ‘click-noise’ pairs. The noise alternates between left and right speakers, the click is in the middle each time. There’s a gap between the noise and the click. The click can be most obviously interpreted as a 16<sup>th</sup> note upbeat, with the noise as a one-beat downbeat followed by three-and-a-bit beats of silence. Subsequent events confirm this. It’s simple. In fact, the inbuilt ‘speaker test’ on my laptop produces remarkably similar bursts of left-right white noise (but without the click, thank goodness). Perhaps that’s where he got it.

There, I’ve made something of it. It’s very clear, and after a couple of repetitions seems easy to anticipate. My listening runs enthusiastically ahead of itself, looping back and forth in time like bad handwriting; I’ve already made an educated guess at how the future will be. After that initial 8-measure preamble there will be more activity but, already, my mind has confidently grouped up the sonic troops and is determined to stay with a four on the floor. Yes, this is easy to understand (I’m tapping in time to one heck of an assumption).

But the click makes and breaks it. Or rather the relationship between the click, the noise and the space between them, makes a riddle from the most minimal of ingredients. There’s no time at all to waste. This click is too short a sound to have human connotations: it’s too short a time to have thought about banging a gong. Unlike Babin’s *Petit jardin* there is no human presence concealed inside Ryoji Ikeda’s *zero degrees*. He is absent now. Nobody performs, hits a gong, or trails a hand through implicitly substantial sounds. Instead the sound is apparently laid bare and has no aural secrets.

As Curtis Roads describes it, a click is too short to hold onto as a pitch. A single, lonely click has nothing going on for it as a rhythm, either. And a click is over before there’s time for listening to pick up much usable information on timbre. Because our listening gives no time to it, we have no time for it’s presence: a click is generally an interruption before we return to what we were trying to listen to. It is not part of the experience: it is too short to leave a mark on listening, so it takes up no space in memory. There needs to be something else to make sense of it: as in Ikeda’s piece, where the click becomes a miniscule upbeat to another sound. My listening effects that grouping, and then later on events confirm it. But all these unconnected

attempts at definition collect together after the fact, whereas at the time ‘a click’ is just there - horrendously present, and horribly alone. I use these adjectives advisedly: a click is an awful thing because it seems it doesn’t exist enough. Identifying with a click is to become brutally irradiated by sound. No time at all. Quick, get rid of it in favour of records of human presence! (And just now my husband puts his head round the door to ask if my laptop has ‘some terrible hard disk error’.) Perhaps it is comforting to articulate associations for sounds because then there are images – and then there can be words, and then we’re talking to one another. But if I say that this sound reminds me of a plastic bottle’s ‘crack!’ as it snaps back into shape, *you* might think that this is because the sound is loud, very short and not of my doing. But really I’m trying to describe the sudden presentness of time that this sound illuminated, and that fact this realisation made me flinch in response to the mundane but obliterating instant that had sliced across my time ‘going on’. See? But these words are too much pretension: but listen, sometimes concrete associations for sounds are inventions that prove to be limiting without amplification. Think about the sound and you have set yourself going on a chain of imagined possibilities that might lead you away from my particular fiction. No matter, we may still end up together at the double barline.

### **Perhaps, the same idea**

A digital connection breeds discontinuities: one instantaneous state replaces another, and in that metaphor there’s no smooth transition between these two points, however much we attend to the gap that’s inbetween.

*‘... I am warm or cold, I am merry or sad... ...I look at what is around me or I think of something else.*

*...we are obliged, when the change has become so considerable as to force itself on our attention, to speak as if a new state were placed alongside the previous one. Of this new state we assume that it remains unvarying in its turn, and so on endlessly.*  
(Bergson, 1910, p. 3)

In Bergson’s thinking, we carry within us not just our memories, but the whole of our past experience in our unconscious. He offers ‘duration’ as the ‘*past which gnaws into the future and which swells as it advances*’ (p. 4 *ibid*). To his mind, this difficult weight lies beyond consciousness, and we are only aware of irruptions into our present when the past re-becomes present as recollection. On this premise we are our past, and the specious present is always in the process of becoming past. As fast as the stub of bristles trails a record of what happened, the smoke pushes back in again to cover up the path. And when we envisage this very instant, setting it in relation to the past or future, we do this because we are ‘obliged to’ by our limitations. The click-noise pairs in *zero degrees* might be seen as a metaphor for such a pragmatic discontinuity. And yet there is a short, silent gap between these two sounds, and- at this instant - it is *this* that has re-occupied my mind. For it seems to me that the discontinuity may not be between two things - a click, then a noise - but between small ways of articulating duration. *Here* is a click, and with the ‘aid’ of electrical instruments, digital signals and all that these can metaphorically represent it is a ‘now’ – present, here, instant; *there* is a silent gap that has been measured out (with the aid of noise) as ‘three and a bit beats’ of duration. My toes count the beats out as a way

of keeping track, since I am obliged to try and find a way to explain duration to myself.

Bergson's poetic grappling with time, space and 'duration' is replete with references to real-world metaphors and associations. He calls upon sound regularly, noting how the way we count the strokes of a bell, or the mentally collect together pitches as melody, are examples of removing events from durational time into space. The sounds of a tolling bell fade one after another in duration, but the conceptual space their enumerated traces inhabit remains, different.

*If the sounds are separated, they must leave empty intervals between them. If we count them, the intervals must remain though the sounds disappear : how could these intervals remain, if they were pure duration and not space ? It is in space, therefore, that the operation takes place...*  
(ibid., p. 73)

Essentially he is trying to make sense of perception, and as Bertrand Russell muttered dismissively, what Bergson essentially provides is 'an account of the difference between perception and recollection – both present facts' (Russell, 1946, p. 767). Bergson spends much time and space building poetic images to articulate how memory is our process of becoming, and it is hard not to keep on quoting him indefinitely since these images provide a particularly familiar, and helpful resonance for thinking about listening and sound. I'm sure he would have turned an ear to those 8 'click-noise' pairs (that's just an image I gave you to hang on to). We think words are strong, when really they are poor attempts at giving voice to our limitations. And yet these imperfect images can be gloriously evocative personal belongings. In the face of Bergson's notion of the ever-growing past, for example, my mind casts up images of sleeping whales, piling up in dormitories on the seabed of my experience. What does this say about me? What do you envisage? What does this say about you? Perhaps we shall continue to share images indefinitely in a vague hope that we will make enough sense to one another across an existential plane; and some times such romantic gestures are images in sound. A click, then a vast amount of space, and then a noise that continues. Zero degrees - where nothing moves except time.

### **Anecdotal evidence: FINGERS**

In the grounds of a university where I recently spent some time there is a large bronze sculpture by Henry Moore called 'Oval with Points'. It is indeed a huge upright oval, which encompasses two outstretched points that reach across towards each other but don't – quite - touch.

I passed by this sculpture every day, and it would always lift my heart.

Though it's green with oxidization now, I also knew it 10 years previously when it was merely dulled and slightly tarnished (and I was more green). But across the divide it has remained constant in one respect: the bottom of the oval is rubbed shiny by the bottoms of the numerous human beings who have been in touch over the years; lovers chatting seated astride it, toddlers who are passed through giggling and smiling, groups who have clustered around it for their photo opportunity. And it also seems that many people have continued to attempt to bring those two bronze points together – they gleam from touching efforts to heal the gap, over time.

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## SOME SMALL CONFUSIONS

### **Chronicle:**

#### **December 1923 – crossed lines and a failure of mass communication.**

It was not an auspicious beginning.

The history of early radio is rowdy with battles and arguments, lawsuits, claims and counterclaims, continuing well into the early 20<sup>th</sup> century. Sound communication became a battle of egos and economical truths.

#### **Crossed lines: April 14<sup>th</sup> 1912**

*On a bad day he felt like a circus freak, sitting in the window, twiddling the knobs back and forth to induce a crackle of static and occasional voice from the air. Office clerks passing through on their lunchhour or children with dirty knees would peer over his shoulder inquisitively.*

*But this was a good day. Suddenly he was the most important man on earth.*

The young David Sarnoff was sitting in the window of Wanamaker's department store, where he had been hired to show off the new technology, when he inadvertently picked up the Titanic's SOS broadcast. He was the only radio operator to stay on line after all others had been ordered to stand down by the President himself. He remained at his post for three whole days and nights without rest, holding the fort.

On the other hand: in 1912, radio contact with the sinking Titanic was severely hampered by the cacophony of amateur radio activity which cluttered up the airwaves and prevented communication. This chaos contributed to the formulation of radio licensing regulations which would prevent such a disaster happening again. And it is very unlikely that Sarnoff's story was any more than a self-aggrandising fabrication. However, he went on to become head of the Radio Corporation of America.

### **Failed communication: December 1923**

In 1923 Edwin Armstrong married David Sarnoff's secretary, and gave his bride a rather cumbersome wedding present.

*Imagine - the radio was a ridiculous thing to bring with them, and of course she knew that it wasn't really for her at all. She was proud of his invention, but really! Edwin had dragged it down onto the beach and dusted it down with far more reverence than he'd paid to her. And now here they were, squinting into the sun while the photographer set up his apparatus and Edwin dictated technical information to a bemused reporter, spelling out 'superheterodyne receiver' in somewhat pompous tones. Her only reminder of their honeymoon would be a photo of the two of them, sitting awkwardly on the sand with that damned apparatus interposed between them and the sea crashing endlessly behind.<sup>9</sup>*

Edwin Armstrong's story is not a happy one. In 1954, near bankruptcy through court cases, and anguished at his failure to retain the rights for his inventions, he jumped from a window and died of his injuries.<sup>10</sup> His wife – who had left him earlier – went on to fight and win all the legal battles on his behalf.

*The radio was an ever-present reminder of their lack of communication.*

Today, Edwin Armstrong is universally recognised as the inventor of FM radio.

### **REPORT: SUBSTANTIAL SOUNDS**

*How did it come about that you wrote Concret PH as a kind of introduction to Varèse's Poème Electronique ?*

*I composed it at the request of Le Corbusier.*

*It lasts only a few minutes*

*Yes, it has a duration of two and a half minutes. It was an introduction to the spectacle designed by Le Corbusier, which lasted six minutes. Or, more precisely, it played the role of prelude or interlude between spectacles.*

*(Xenakis, in Varga, 1996, p. 30)*

*... two minutes for entering and leaving. These two minutes of music I have entrusted to Xenakis (so that he should have a part in all this)*

and so that he can let loose the din of St. Polycarpus on all the devils.'

(Le Corbusier, in a letter to Varèse, quoted in Matossian, 1990, p. 111.)

So the audience would have filtered through *Concret PH* as they arrived and departed in this strange place, and its effervescent sonic clouds would have fluttered around their ears in a random scintillation - ephemeral, sparkling and soon to be erased from memory by the weighty headline act. It may have happened like that, I have found no record of exactly how it went. *Concret PH* is indeed under 3 minutes in length, possibly as a result of Le Corbusier's original intentions for it.

In music history books mention is often made of the 'PH' in *Concret PH*, and its reference to the Hyperbolic Paraboloids of the Philips Pavilion. It's satisfying to point out this not so subtle hint at Xenakis' involvement in the construction of the Philips Pavilion. But the association with concrete things is also worth digging into a little, as perhaps it reveals a closer connection between sound and architecture. The pavilion was indeed constructed from concrete; a challenging task, since the curved shape of the walls necessitated curved materials. Xenakis oversaw the construction of pre-cast concrete slabs, which were made from pouring concrete into appropriately shaped sand moulds, much as you might cast bronze for a sculpture. The slabs were numbered, shipped to the site and were then suspended from steel cables attached to the structural backbone of the building. In this way the mass of concrete slabs coalesced to form a 'skin' that was only 5 centimeters thick. At the time, this was deemed extraordinary and there were doubts as to whether such an elaborate process would make the transition from idea to reality. Although the French noun generally used for the substance, *béton*, differs, it seems likely that Xenakis might have made a concrete connection. *Concret PH's* flurry of transposed and filtered sounds filled a building that was itself light and lifted up by technology; and both were made concrete by the coming together of many smaller components.

*... if there is a crowd, I can no longer distinguish the individuals, because they are too numerous. On the contrary, what I can see are the aspects, the characteristics of the crowd.*

(Xenakis, 1985, p 33)

Another slab of 'concret' is the overt association with '*musique concrète*', the expression coined by Pierre Schaeffer and thereafter gleefully solidified in the annals of music theory. Outwardly referring to the substantial nature of the material - recorded rather than synthetic sounds - Schaeffer's expression and the surrounding thought that led him to employ it, has implications that reach far beneath the surface of the sound:

*En réalité, la musique concrète, sitôt découverte, se trouve débordée non seulement par la pullulation du matériau mais par l'éclatement des formes.*

Pierre Schaeffer, *l'Expérience Concrète en Musique* (in Schaeffer, 1952, p.125)

[In reality, *musique concrète*, as soon as it was discovered, was found to be bubbling over not only with the proliferation of material but in the breaking open of forms.]

Xenakis had been associated with the GRM studio, where Schaeffer was based, since 1954, and *Concret PH* was the second piece he made there. The piece is constructed from a 1-second recording of crackling charcoal embers. Although it was composed quite intuitively, using relatively limited equipment, it has the same shifting complexities that characterize much of Xenakis' instrumental music built by the more rigorous application of stochastic principles.

The Philips Pavilion, though made of concrete, was a temporary construction; it was ripped down on January 30<sup>th</sup>, 1959, shortly after

the World Fair ended. But through the wonders of technology, and the archival diligence of GRM and the Electronic Music Foundation, *Concret PH* is now re-available on CD. *Poème Electronique* - the title of the visual-aural collaboration between those two aging giants, Le Corbusier and Varèse - makes a weighty allusion to a symbiosis of technology and art. Perhaps *Concret PH* is a more snappy realisation of the sparks that touch between substance and idea, made concrete through technology. Reports differ.

The Philips pavilion was an empty concrete structure, with the audience standing in the middle (or walking around). Lights and sounds came from invisible sources spread all over the place, moving around in an unpredictable way. We must have spent much of the time looking in the corners (if I may say so, no surface was flat), unsuccessfully trying to discover how it worked.

... ..

Unfortunately, I am afraid these recollections can hardly be accepted as decisive evidence for your research... I hope that they can be of some help, though.

(Professor Nicolas Meeùs, email correspondence)

## **JOURNAL ENTRY: August 25th 2002**

Even if it was played in the central interior of the Philips Pavilion, *Concret PH* was performed as an interlude. It was designed as something to come between events - a temporary edifice in sound. Perhaps its mass of pinprick sounds barely disguised the sounds of equipment being reset for the *Poème*, or the irreverent whispers of the technicians, or the muted chatter of the public who were either entering in excitement, or leaving feeling slightly disorientated, bemused or entranced. I'm trying to imagine how it must have felt to hear these crackling embers rise that first time out of the more ponderous timbres of *Poème Electronique*.

Performed in a more conventional concert hall, the rapidly changing densities still have an attractive allure, and through headphones the physical sensation of hearing a multitude of short, high-frequency sounds is positively ticklish. Despite its brevity *Concret PH* has no clear beginning or end and refuses to take on the usual 'concert work' bargain with performed time. There are no metrical signposts. It just begins, happens for a while, and then no longer happens. Perhaps this was because it was designed to fill a bounded space rather than articulate a duration in which things 'went on'. I think the piece evades both world and work time quite successfully because it has no sense of time at all: the events that do occur promise no particular continuation. While listening to it, I feel that it will never end. Instead there is a scintillation of fragmented sounds that perform fluctuating and unpredictable dances in the air. These sound masses shift constantly in terms of density, frequency, timbral content, and spatial direction but do so in a manner that is apparently random - at least to my human ears. All my perceptual surfaces are bent out of shape by this purposeless sonic architecture, and I can hear no clues to a logic that might have been involved in deciding what went where.

*When I need a great number of possibilities, I must manage to use characteristics of large numbers; which are, for example, density traits, traits of order or disorder,*

*special distribution, sound-space distribution (such as pitch, time, order, disorder, etc. dimensions), and there we find potential tools to make certain choices. I am not saying that this applies to all choices...*  
(Xenakis, 1985, p. 33)

The sound of spitting, popping charcoal embers is the sound of a process of decay. There's no going back to touch the source of that sound, because the source itself is insubstantial. The source is fire, and this is not a concrete substance but a voracious and random phenomenon, with a great many possibilities. There are allusions to heat, fire, burning and the symbology of creative, or destructive, fire; there is fire as illumination and as lightness, without tangible form. In a darkened concrete building where nothing could burn, these sounds might bring all kinds of associations to mind. The 'concrete' part of *musique concrète* refers to the substantial nature of the real, physical objects that produced the sounds. But these sounds are out of time. Like the crackle of the radio, or the scratching of a bristle they are irreversible traces of a vanished past; even more than usual, since the cracking of embers leads back to an activity that is about disappearance and decay. Yet *Concret PH's* clouds of fizzing sound are made from pre-cast components: the original sounds are filtered and transposed and – paradoxically – have acquired more substance, because the transpositions change the timbre, and the filtering accentuates certain resonances and creates implications of size and substance. The lower pitched sounds become longer, and 'bigger' in this context. They are hard and brittle, with a tactile appeal.<sup>11</sup> Whereas they were once the incidental sonic residue of fire, now they are also small, substantial objects in their own right – a crisp spatter of sparkling moments that fly back and forth to light a fantastic space.

### ***Anecdotal evidence: TOES***

Here is my touching John Cage anecdote (sometimes it seems that every listener has one): I once went to hear Cage read his *Lecture on Anarchy* in a converted Synagogue in London. As I remember it, he sat on a rickety chair at a little desk and read random newspaper cuttings and quotations for over an hour. After about 20 minutes Cage's voice began to be accompanied by a strange sound, which emanated from upstairs in the balcony. At first this enigmatic noise was composed of just a few intermittent squeaks and creaks, but gradually it built up into a continuous spatter of little creaks and cracking sounds, with the occasional muted thud. At times Cage was almost drowned out by all this sonic activity, which was actually made by people attempting to sneak out of the building unobserved – and certainly nobody downstairs could see them. Since they weren't in the habit of listening, in a Cagean sense, the departing audience members hadn't noticed the sonic effect as their politely tiptoeing feet touched the unforgiving floorboards. Because they couldn't be seen, they had thought that nobody would hear them; but it doesn't necessarily work both ways, of course. So as they left the audience stamped small aural imprints all over the performance. But John Cage didn't seem to mind one iota: he just continued reading out loud, smiling with his customary joy while his vanishing listeners danced a mass communication of unintended

sounds. (I would like to say that this moment was transcendent but, personally, I was rather annoyed.)

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Concrete: a mass, formed when particles coalesce  
(it takes time).

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<sup>1</sup> The historical examples in this chapter are researched from a variety of sources. Rather than cite them individually here in the text, I here give a list of materials consulted:

Information on Cros, Sarnoff, Armstrong and the early days of radio includes research from various internet sources (all active as of December 2002):

<http://memory.loc.gov/ammem/edhtml/edcyldr.html> - History of Edison and phonograph.

<http://history.acusd.edu/gen/recording/cros.html> excerpts from Charles Cros paper (in translation).

<http://web.mit.edu/invent/www/inventorsA-H/deforest.html> – page on Lee De Forest

<http://world.std.com/~jlr/doom/armstrng.htm> - Edwin Armstrong (includes reproduction of photograph of Armstrong and his wife with radio).

<http://www.150.si.edu/chap9/9horn.htm> and <http://www2.nlc-bnc.ca/gramophone/src/phonauto.htm> – a photograph of a phonograph.

<http://www.pitt.edu/~jsterne/earphon.html> – the ear phonograph.

<http://www.localhistory.scit.wlv.ac.uk/Museum/Engineering/Electronics/history/earlytxrx.htm> – history of early Radio.

In addition texts were consulted by Gelatt, Godfrey & Leigh, Koenigsberg, Marco, Mary, Millard, Read and Secor, as well as the works of Charles Cros. (see Bibliography for full details).

<sup>2</sup> For instance the first graphical sound analysis program I ever used, in the late 1980s, was a legal hack by James Pritchett, Cage scholar and programmer extraordinaire. To make ‘EdSnd’, Pritchett took a sample sound program provided with the NeXT computer and enhanced it to make it more ‘composer-friendly’. FFT spectral analysis was added by a medical researcher, who had come across the software at this stage and needed additional features. Pritchett then merged these changes with his efforts. The practical end result of this back and forth between science and art made a lot of grateful composers very happy.

<sup>3</sup> I recommend Joel Chadabe’s *Electric Sound. The Past and Promise of Electronic Music*, USA, NJ: Prentice Hall (1997), as an interesting (albeit rather USA-centred) fusion of documentary, reminiscence and oral history by those involved in the early days of electronic music.

<sup>4</sup> ‘I believe that the use of noise to make music will continue and increase until we reach a music produced through the aid of electrical instruments.’

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(Cage, Silence, p. 3 - The Future of Music: Credo)

First delivered as a talk by John Cage, 1937, Seattle.

<sup>5</sup> Letter from Alexander Graham Bell to Alexander Melville Bell, Eliza Symonds Bell, Carrie Bell, Charles J. Bell, May 6, 1874 (Alexander Graham Bell papers at the Library of Congress. Online version at <http://memory.loc.gov/ammem/bellhtml/bellhome.html>) (URL visited January 2003).

<sup>6</sup> The material concerning the Philips Pavilion is gleaned from a variety of historical sources, I also include, separately, personal reminiscences from Professor Nicolas Meeùs, to whom I am extremely grateful. See bibliography for full details of sources.

<sup>7</sup> The final sentence of Cros' paper, *Procédé D'enregistrement et de reproduction des phénomènes perçus par l'ouïe*. Published in Cros, *Oeuvres Complètes*, see bibliography for full details.

<sup>8</sup> This and historical material taken largely from chapter 6, *Charles Cross Inédits et Documents*, Pierre E. Richard. See bibliography for full details.

<sup>9</sup> See <http://world.std.com/~jlr/doom/armstrng.htm> for a photo of Armstrong and his new bride, and a rather cumbersome gift (URL visited January 2003)..

<sup>10</sup> Information on Armstrong is from web research and Godfrey, Donald G. and Leigh, Frederic A. . *Historical dictionary of American radio*, USA, CT: Greenwood Press. See bibliography for full details.

<sup>11</sup> Hildegard Westerkamp's *Kits Beach Soundwalk* incorporates her personal response to this same work, during which her words lead the listener through dreams, reflections and commentary relating to the sound of that piece, and what it means to her. In fact I first came across *Concret PH* through listening to her work.