

STAVE HILL ECOLOGICAL PARK, ROTHERHITHE

3-4 MAY 2014

SoundCamp is a listening event over the first weekend in May.

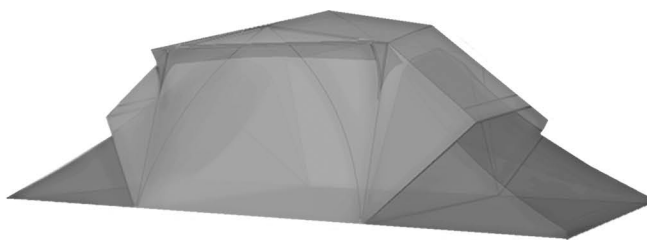
It coincides with International Dawn Chorus Day, when many people around the world go outside in the early morning to listen to birdsong.

From the soundCamp we are transmitting REVEIL: the first 24 hour radio broadcast of the sounds of daybreak around the world.

REVEIL picks up live audio from webcams, deep ocean hydrophones, Very Low Frequency radio and independent channels, together with permanent streams on the Locus Sonus open microphone network and new feeds provided for this occasion. From 5AM on SAT to 6AM on SUN REVEIL will travel West from one open audio source to the next, tracking the rising sun, in a loop lasting one earth day.

The SHED, TV's new reclaimed timber building at Stave Hill, is turned into a temporary radio station for the event: there will be a low power FM narrowcast to the soundCamp, while the transmission is broadcast in whole by Wave Farm WGXC 90.7 FM in the Upper Hudson, NY and in whole or in part by Resonance Radio and other participating stations.

s o u n d C a m p



PROGRAMME

SAT

Explore the Ecology Park

Listen in the sound tents to REVEIL: a live 24 hour broadcast of the sounds of daybreak, relayed by a network of audio streamers around the world - from SAT 5 AM to SUN 6AM - see the [Playlist](#) for details

Campers arrive and set up

Early evening: food and drinks

SUN International Dawn Chorus Day

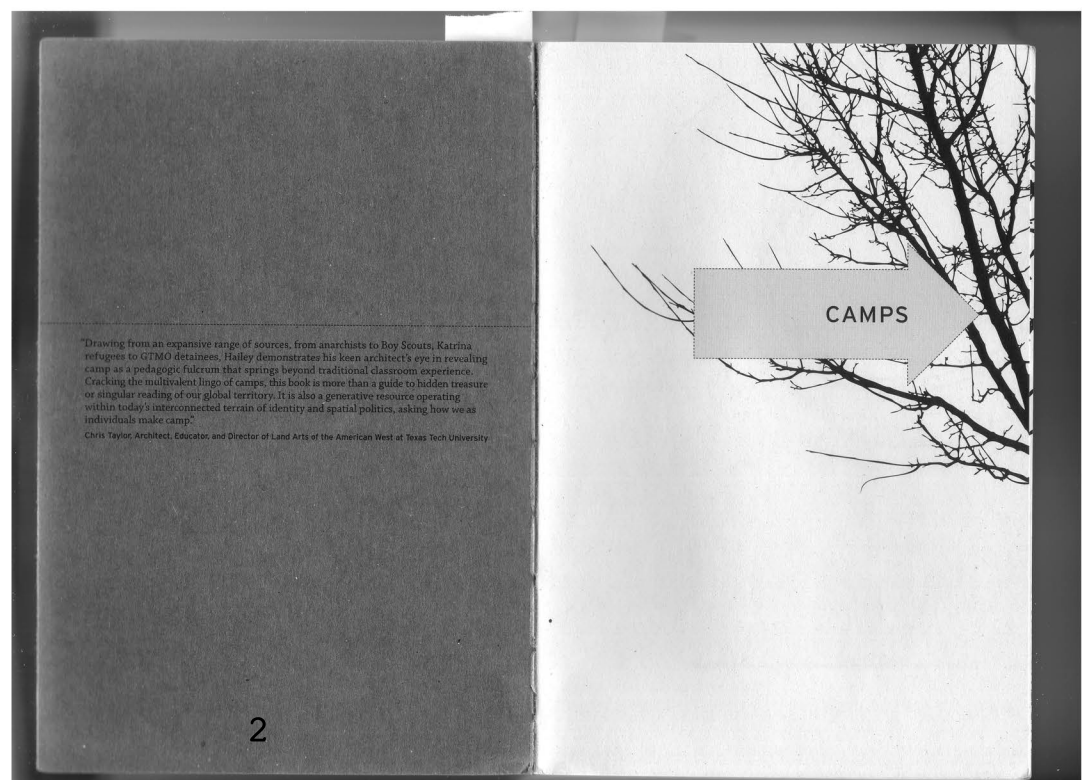
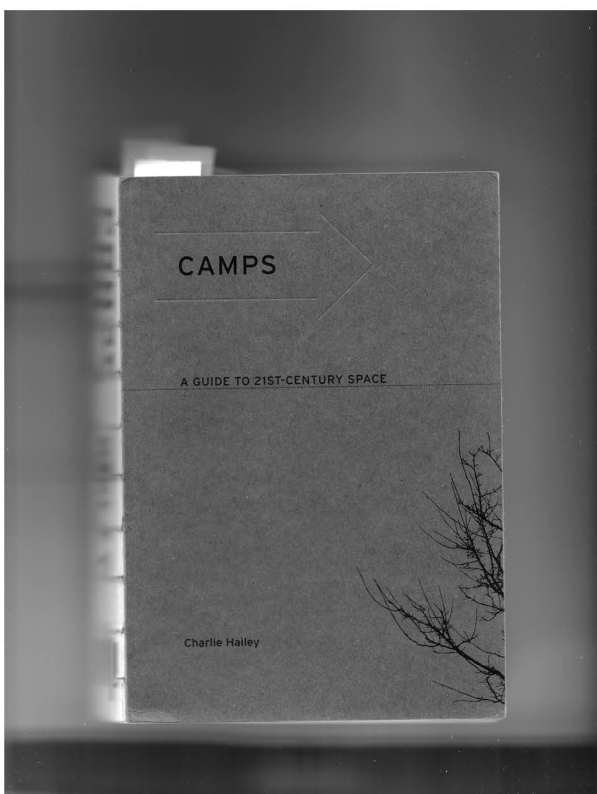
04.30 Dawn chorus walk with Richard Beard

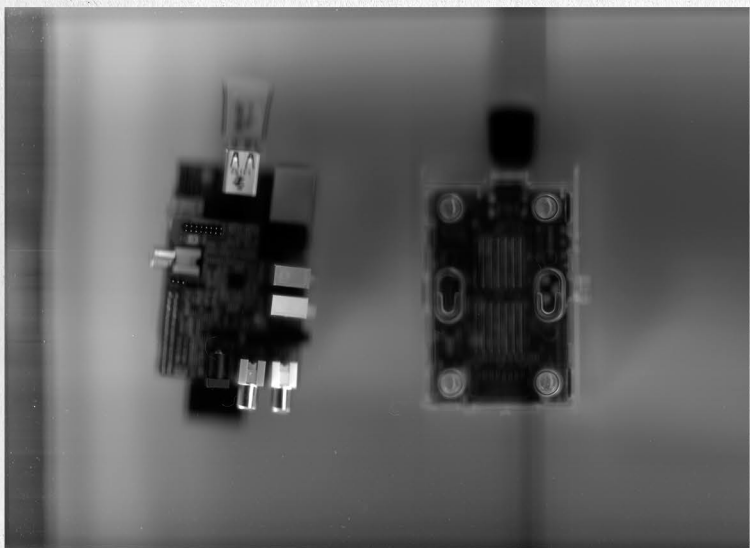
Followed by Breakfast

10.00 Presentation by Richard Beard and Ian Rawes (the London Sound Survey): wildlife field recording in London, bird song recordings from The Hackney Year

11.00 Panel discussion with Peter Sinclair (Locus Sonus) et al: Live streaming, the Locus Sonus open microphone network, REVEIL

12.00 Practical workshop: building a streambox with a Raspberry Pi





AUTONOMY



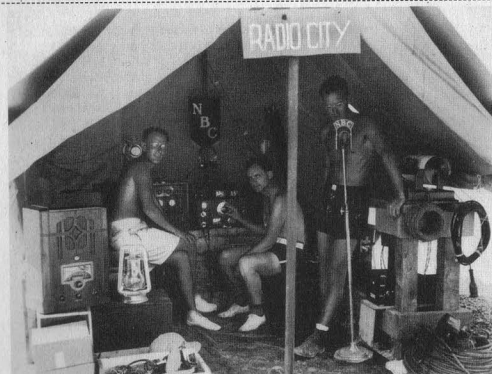
1.23
Chaos Communication
Camp, August 1999.
(Courtesy of Ostkreuz and
Maurice Weiss)

1.24
Datenklo network hub,
Chaos Communication
Camp, 2007. (John Borland)



AUTONOMY

Although observing eclipses has become easier with lighter, smaller, and more powerful equipment, eclipse camps remain expensive and logistically demanding because of the often-remote paths of totality. The tourism of science and its attendant mythology of place and phenomenon now illuminates a new century of campers calling themselves eclipse chasers, umbraphiles, ecliptomanics, and eclipsophiles. Alex Soojung-Kim Pang, author of *Empire and the Sun*, notes with a degree of reserve that he uses eclipse events to plan his holidays. Paralleling the equipment of funded scientists, eclipse chasers' gear typically includes laptop, GPS receiver, compact telescope, and detailed charts of the moon's valleys and mountains. The tourist-scientist feels particularly at home in the eclipse camp. Two hundred tourists camping in Chisamba, Zambia, noted the dramatic temperature change during the 2001 eclipse's totality, and campers in the Sahara Desert marveled at the phenomenon of shadow bands during the 2006 eclipse. In this latter event, campers wore eclipse badges issued by the Libyan government and passed through multiple checkpoints before reaching their barbed-wire enclosed grounds. The eclipse camp is no longer the colonizing agent of its Victorian past, but the space of the camp is a protected enclave in a foreign land and can itself be appropriated by tour companies and government agencies as a lucrative construct. "Eclipse City," run by the tour group of the same name, provided an area of fruit stalls, coffee shops and restaurants, daily entertainment that included belly dancers, and electric power poles at each tent.⁷¹ Eclipse camps mark the intersection of tourism and field research—finding the best location along the thousands of miles of a typical path of totality is a function of preference for particular places, pragmatics of accessibility, and climatic and human-made phenomena. Camps mark the event. To describe Eddington's return from camp, Alfred North Whitehead noted "a great expedition in thought had come ashore."⁷² Perhaps Newton should have gone camping.



1.37
Inserting photographic
plates into the fourteen-
foot aluminum camera
named "Big Bertha." The
warnings on the camera's
packing case are in English,
German, and Russian.
(National Geographic
Society, 1939)

1.38
Canton Island "Radio City,"
National Broadcasting
Company staff. (from left to
right) field engineer Marvyn
Adams, engineer Walter
Brown, and announcer
George Hicks. (National
Geographic Society, 1939)

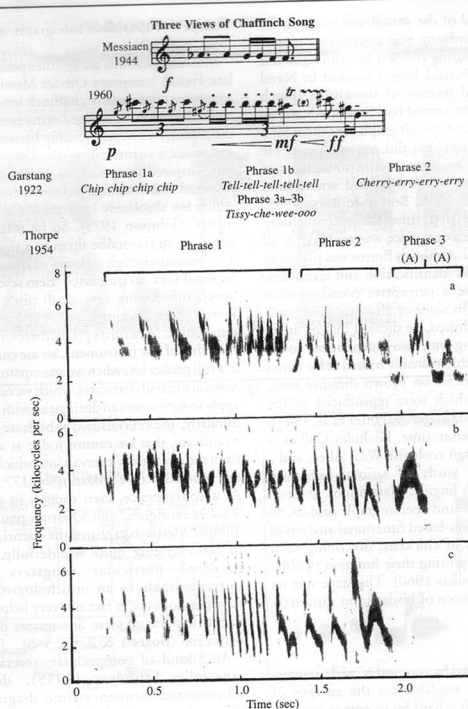


Figure 1.2 Three renditions of chaffinch song, from Garstang (1922), Messiaen (Johnson 1975) and Thorpe (1954). The musical transcriptions are from Messiaen's 'Vingt Regards sur l'Enfant-Jésus' (1944) and 'Chronochromie' (1960). Thorpe's chaffinches are three different birds.

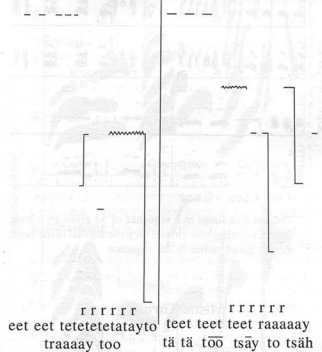
chaffinch songs, learning much about their behavior and ecology in the process.

Looking back, my conclusions about the mosaic structure of chaffinch song dialects were not far off target. But with my primitive methods no

one else could tell whether my results were believable or not, including the person who mattered most, destined to be my new boss, W.H. Thorpe at Cambridge University. Thorpe had invited me to join him in 1951 as a research

Song Sparrow: Two Songs

Musical whistle with occasional notes buzz-like



Swamp Sparrow: Three Songs

Rather sweet whistle

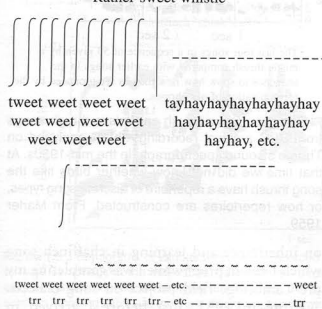


Figure 1.3 Transcriptions by Saunders (1935) of song and swamp sparrow songs.

assistant. I already had a PhD in plant ecology, so in one sense I went to Cambridge as a

postdoctoral fellow. But I was a neophyte as far as animal behavior was concerned, so I became a graduate student again, this time in zoology, with Thorpe as my major professor.

SONG STUDIES IN MID-CENTURY

Thorpe's laboratory was on the top floor of the zoology department, next door to the legendary insect physiologist, Victor Wigglesworth; this was an appropriate location for Thorpe as an expert on insect behavior, and a wartime innovator in developing new biological methods for pest control. But now his mind was filled with questions about birdsong and the role of learning in its development. The breadth of his erudition was an inspiration to me, as was that of Robert Hinde, the new director of the just-founded Madingley Ornithological Field Station: both were sources of endless revelations. Above all, Thorpe had just acquired in 1950 a sound spectrograph, only the second to be imported into Great Britain; the first went to the Admiralty Research Laboratory at Teddington, presumably for use by the Royal Navy. With free access to this new machine, and the library of long playing records of bird sounds donated from the archives of the British Broadcasting Corporation (BBC), I was in heaven. We were set for the great leap forward, and never looked back.

At that time, Thorpe, like everyone else, had to make sound recordings by cutting wax discs, calling for much care and cumbersome equipment; tape recorders, including some that were at least semi-portable, arrived somewhat later. The mysteries of wow and flutter loomed large, and fluctuations in tape speed were a major problem. Among the more imaginative solutions was the heavy cast iron flywheel you screwed on to the tape transport of the famous Magnemite portable tape recorder, before lugging it off into the field. It was a while before truly portable tape recorders came on the market, driven in part by the burgeoning needs of filmmakers, a market force without which the magnificent Swiss-made Nagra recorders would never have seen the light of day.

Micro-dialects in Chipping Sparrow Song

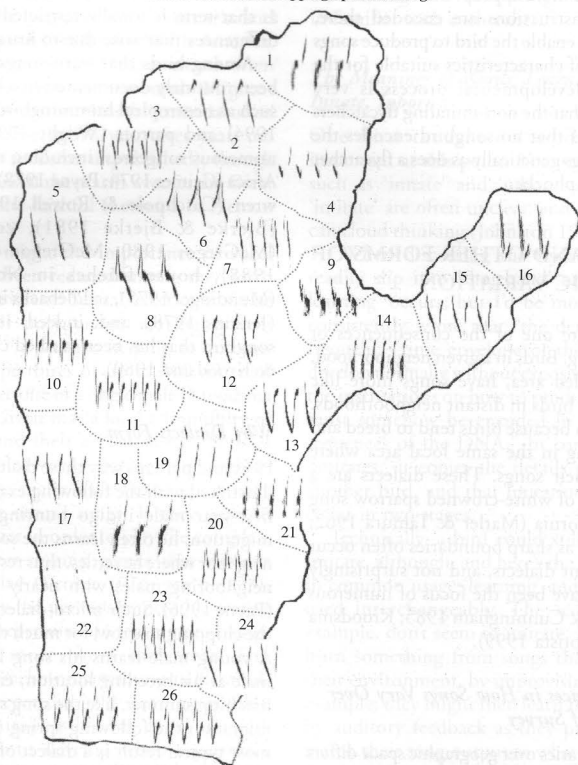


Figure 4.6 Micro-song-dialects in the chipping sparrow. Amid the great diversity of song by chipping sparrows, micro-dialects are created when a young male, after dispersal, rejects what he learned from his father and learns the song of one particular male at his future breeding location. Here are partial sonograms of the songs of 26 males on their 1997 breeding territories at Cemetery in western Massachusetts. Male 16 was the father of male 13, who learned his song from male 12. Male 8 was the father of male 25, who learned his song from male 26. Both male 12 and 26 were present in 1996, the previous year, so the juvenile could have learned his song during either year or the following spring. These micro-dialects are disrupted when adults disperse to other subsequent years, e.g. males 17 and 24 were neighbors in 1996. From Liu 2001. (Reprinted with permission from *Handbook of Birds of the World*, Vol. 6, p. 23.)

al. 2000), though the more migratory eastern populations typically share fewer songs with neighbors, perhaps as a result of improvising

more songs (Searcy & Nowicki 1999). Turn may be a consequence of being less or more migratory.

Responses of Birds to Changing Tone Patterns

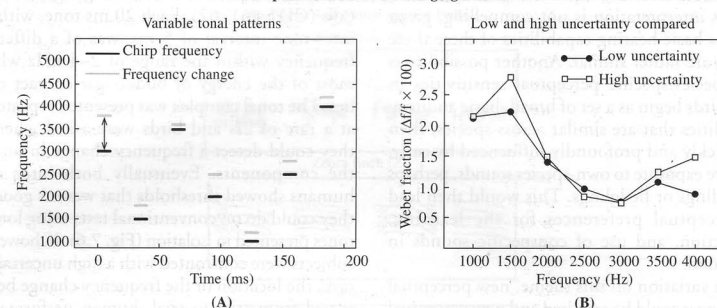


Figure 7.6 (A) Schematic diagram of a variable frequency tonal pattern (CD1 #61-62). During a low-uncertainty test session, frequency changes on each occurred at only one position, as shown by the arrow. During a high-uncertainty test session, the change can occur at any position from trial to trial, by any amount. (B) Average frequency-difference-limens (FDLs) for the variable frequency tonal patterns are plotted as Weber fractions for two birds. The budgerigars were run on three different variable frequency tonal patterns under both the low uncertainty (closed circles) and high uncertainty conditions (open squares). From Dent et al 2000.

changes in temporal fine structure. Figure 7.7 shows a schematic sonogram of a female zebra finch contact call, the corresponding spectrum, and the thresholds (in Hertz) that zebra finches, budgerigars, and humans showed for discriminating the mistuning of several harmonics. Zebra finches, whose repertoire is characterized by complex harmonic sounds, are exceedingly sensitive to changes in these harmonics – more so than budgerigars, and much more sensitive than humans. Zebra finches are ten times more sensitive to harmonic mistuning than they are to a frequency change in a pure tone presented in isolation. So there is a strong indication that the birds are actually responding to changes in temporal fine structure rather than frequency.

To explore this idea, birds and humans were tested on specially synthesized sets of sounds called Schroeder complexes (CD1 #64). These are harmonic complexes in which the phases of the individual components have been adjusted so as to produce waveforms with a flat envelope and identical long-term spectra. The term 'envelope' refers to changes in the level of a sound over time and 'spectra' refer to the distribution

of energy over frequency. These waveforms are special in that they have similar envelopes and spectra and differ only in temporal fine structure. If birds can discriminate among these, they can only do so on the basis of temporal fine structure.

In Figure 7.8A there are two Schroeder harmonic complexes with a fundamental frequency of 200 Hz – the positive Schroeder complex being just the reverse of the negative Schroeder complex, as if played backwards. The overall spectrum and the envelope are the same for these two waveforms, but they differ in the temporal fine structure within each period, which is 5 ms for a harmonic complex with a 200 Hz fundamental. Birds and humans were tested on the ability to discriminate between positive and negative Schroeder complexes as a function of fundamental frequency. Humans lose the ability to discriminate between a positive and a negative Schroeder complex when the fundamental frequency is higher than about 300 Hz (Fig. 7.8B). Birds, especially zebra finches, can still discriminate these waveforms even when fundamental frequencies reach 1000, Hz which corresponds to a time interval of only 1 ms

I was eventually able to see all of these birds, but I rarely saw them making the sounds attributed to them. For most birds it's sooner or later possible to observe them vocalising, but crakes present an altogether greater challenge, a challenge that raises some important questions about sounds and naming, or more specifically that process of naming called 'identification'.

So how do I identify a sound as being a particular crake? How does one know that a sound is made by a certain kind of bird if one has never seen the bird making that sound? In one sense I know that I'm hearing crakes in the same way that I 'know' the Earth is spherical. Like most people I've never seen the Earth as a sphere (although I've seen plenty of two-dimensional images of this of course), but I go along with the conventional understanding of its roundness even though this isn't something I've experienced directly. Perhaps if I had training in astrophysics I would be able to perceive the effects of the Earth's spherical shape all the time but, as it is, I've never seen the Earth as a whole and nor have I seen a corncrake making that rasping sound.

Identification might provisionally be understood as a process of naming that links direct perception with a conventionalised classificatory system. In knowing that the sound I'm hearing is being made by a species of bird named corncrake, I'm fitting a particular sense experience into a pre-existing matrix of taxonomic differences that is based on knowledge accumulated through the work of many others. My skill at naming the sound as 'a corncrake' is still reliant on a wider external knowledge of how that sound connects with certain birds and how those birds are differentiated from others. One can thus conceive of identification as involving attempts to relate the subjective with the objective and the particular with the general. Following this understanding of identification, learning to identify birds and their sounds is as much about learning the system as it is about learning how to 'listen carefully'.

But why all the fuss about seeing? 'Seeing is believing' is the saying, but why is this? One of the cornerstones of our ontology is the idea that the world is filled with objects and that sounds have their source in the actions of these objects. Applying this to the case in question, 'crex crex' is a sound made by an object we call a corncrake. The sound is not the bird, rather it is made by the bird. And conventionally the bird is only apprehended as an object through our seeing it. These ontological assumptions help to explain why birders, like me, are so keen to see birds. It's only through seeing, we assume, that we perceive 'the bird'. Hearing a bird, in this way of thinking, is

no different to seeing its nest or its tracks. They are made by the bird, but they are not the bird itself.

But is this the only way to think about sounds, or indeed our experience of the world more generally? What if we were to think of the sound as being the bird, just as much as the assemblage of feathers and bone that we conventionally think makes the sound? Such a way of thinking is not so uncommon amongst other peoples, and I suspect it was once more conventional amongst our ancestors, as is reflected in the prominence of onomatopoeic vernacular names. The way we name birds can reflect on how we think about and perceive them. It's much easier to think of a sound as the bird if it has an onomatopoeic name. In fact the name 'crake' is onomatopoeic of the corncrake (which even has an onomatopoeic scientific name: *Crex crex*), although when applied to the South American crakes it's less helpful. To give a more familiar example, when one 'hears the cuckoo', one is directly perceiving the bird. 'Seeing the cuckoo' makes a bit less sense, until it becomes conventionalised as the name of a family of birds (see Ingold, 2000). I saw several kinds of cuckoo in Brazil, but never heard a single 'cuckoo'.

Onomatopoeic names have never found great favour with the taxonomists who work to standardise English bird names, perhaps because names that resemble the sounds of birds are not easy to render hierarchically. For example, the English names of South American birds are almost always structured in the same binomial fashion as scientific names and rarely refer to their sounds. This is despite the majority of species being forest dwellers that are more easily noticed and recognised by their vocalising than through visual encounters. The preference for hierarchical names requires us to primarily understand birds according to their relation to the classificatory system composed of families; one's perceptions in the field become relegated to this structure. But a preference for onomatopoeic names might help to draw the sound and the bird together in such a way that de-emphasises the hierarchical narrative of biological taxonomy. Indeed, I would suggest we might go further even than 'cuckoo' or 'crake'. In those cases the sounds are still nouns that lead us to think of an object, either in sound or substance. What if the names were verbs that reflect activity rather than objectivity (Ingold, 2005: 163)? Of course some bird names reflect their activities—woodpecker, warbler, and so on—but these are rendered as agent nouns, as if the bird is fulfilling a job description. What if we had 'cuckooing' or 'craking'? In this sense the name would be what the bird does; the bird would not be an object that makes sounds but a

as well, this must happen on the interior of a separate but related object. The usual mistake lies in obeying the Taxonomic Fallacy—the assumption that this asymmetry results from the intersection between two different *kinds* of entities. Under this assumption, "mind" will always be the real object while "body" is doomed to appear as a phantom before the mind, never able to perceive in its own right. But in fact, physical bodies do encounter other entities, and they cannot drain those entities to the dregs any more than a human mind can. Hence, the true duality is not between minds and bodies, but between real and sensual objects. Real stones and trees must encounter sensual incarnations of other entities in some primitive fashion. But this inevitably leads to worries over the dangers of panpsychism.

C. On Panpsychism

Normally there seems to be an unbridgeable gulf between human beings and inanimate objects such as rocks or flames. Humans are not just physically located in the world, and do not just inflict and receive blows. Instead, we also have some explicit awareness of our predicament in the world. This seems to give humans a special ontological status as a tear in the fabric of the world, a flaw in the cosmic jewel. Somehow, through some sort of tragedy or magic spell, human thought rises above the mere exchange of physical blows in such a way that other entities become present to it. This is perhaps the key point of consensus in philosophy since Kant. In the wake of his so-called Copernican Revolution, philosophers may disagree about whether there is a reality lying beyond us, but most are agreed that the human-world relation is the basis for all others, or at least for knowing about the others. The collision of hailstones and ocean, assuming that no humans are there to observe it, is not granted the same ontological status as that between humans and ocean. This standpoint generally dodges the question of animals, whose mental life is left stranded somewhere between

blind mechanism and full human transcendence. There have been various attempts to explain the nature of animal mentality as a privation of human cognition, such as claiming that "language" or the "as-structure" is what makes us different. But it is safe to say that these attempts shed little light on the problem: Heidegger's famous 1929/30 lectures,⁵⁷ for instance, say nothing useful about the "world-poverty" of the animal that they proudly proclaim.

By contrast, object-oriented ontology holds that the human-world relation has no privilege at all. Thanks to Whitehead, who posited the single category of "prehension" as a primitive form of relation from which all others are built, Kant's human-world duopoly is faced with a serious rival. The usual rejoinders to this emerging rival teach us little. They generally amount to sarcastic remarks such as: "I happen to think that human perception of this table is different from what happens to a rock when lying on top of it," or: "Let me know when you teach a parrot to ask why there is something rather than nothing." Snide objections of this sort miss the point for a simple reason: no one is claiming that inanimate entities possess the full human toolbox of mental abilities, including such talents as language, emotion, cognition, foresight, or dreams. There is no evidence that trees and houses write poetry, suffer nervous breakdowns, or learn from their mistakes. The question is whether this obvious difference between humans and non-humans deserves to be made into a *basic ontological rift*. For we are merely biased if we assume that humans are a decisive rupture in the world. The difference between people and minerals is vast indeed, but so is that between stars and black holes, or hunter-gatherers and string theorists. The point is to avoid the Taxonomic Fallacy of assuming that basic ontological divides can be identified with specific *kinds* of entities.

Instead, the basic rift in the cosmos lies between objects and relations in general: between their autonomous reality outside

was walking in the Row, at an hour when it was full of fashionable people, and the rook, winging his way homewards from the gardens, spied her, and circling down, alighted on her shoulders, to the amazement of all who witnessed the incident. "What an astonishing thing!" exclaimed some person in the crowd that gathered round her. "Oh, not at all," answered the lady, caressing the bird with her hand, while he rubbed his beak against her cheek; "if you were as fond of the birds as I am, and treated them as well, they would be glad to come down on to your shoulders, too."

This happened when the now-vanished rooks had their populous rookery in Kensington Gardens, where they were to be seen all day flying to and from the old nesting-trees, and stalking over the green turf in search of grubs on the open portions of Hyde Park. And we should have had them there now if they had not been driven out.

The two largest London rookeries were those at Greenwich Park and Kensington Gardens. In the first-named the trees were all topped over twenty years ago, with the result that the birds left; and although the locality has much to attract them, and numbers of rooks constantly visit the park, they have never attempted to build nests since the trees were mutilated. This rookery I never saw; that of Kensington Gardens I knew very well.

Over twenty years ago, on arriving in London, I put up at a City hotel, and on the following day

went out to explore, and walked at random, never inquiring my way of any person, and not knowing whether I was going east or west. After rambling about for some three or four hours, I came to a vast wooded place where few persons were about. It was a wet, cold morning in early May, after a night of incessant rain; but when I reached this unknown place the sun shone out and made the air warm and fragrant and the grass and trees sparkle with innumerable raindrops. Never grass and trees in their early spring foliage looked so vividly green, while above the sky was clear and blue as if I had left London leagues behind. As I advanced farther into this wooded space the dull sounds of traffic became fainter, while ahead the continuous noise of many cawing rooks grew louder and louder. I was soon under the rookery listening to and watching the birds as they wrangled with one another, and passed in and out among the trees or soared above their tops. How intensely black they looked amidst the fresh brilliant green of the sunlit foliage! What wonderfully tall trees were these where the rookery was placed! It was like a wood where the trees were self-planted, and grew close together in charming disorder, reaching a height of about one hundred feet or more. Of the fine sights of London so far known to me, including the turbid, rushing Thames, spanned by its vast stone bridges, the cathedral with its sombre cloud-like dome, and the endless hurrying procession of Cheapside, this impressed me the most. The existence of so noble a transcript of wild

nature as this tall wood with its noisy black people, so near the heart of the metropolis, surrounded on all sides by miles of brick and mortar and innumerable smoking chimneys, filled me with astonishment; and I may say that I have seldom looked on a scene that stamped itself on my memory in more vivid and lasting colours. Recalling the sensations of delight I experienced then, I can now feel nothing but horror at the thought of the unspeakable barbarity the park authorities were guilty of in destroying this noble grove. *Why* was it destroyed? It was surely worth more to us than many of our possessions—many painted canvases, statues, and monuments, which have cost millions of the public money! Of brick and stone buildings, plain and ornamental, we have enough to afford shelter to our bodies, and for all other purposes, but trees of one or two centuries' growth, the great trees that give shelter and refreshment to the soul, are not many in London. There must, then, have been some urgent reason and necessity for the removal of this temple not builded by man. It could not surely have been for the sake of the paltry sum which the wood was worth—paltry, that is to say, if we compare the amount the timber-merchant would pay for seven hundred elm-trees with the sum of seventy-five thousand pounds the Government gave, a little later, for half a dozen dreary canvases from Blenheim—dust and ashes for the hungry and thirsty! Those who witnessed the felling of these seven hundred trees, the tallest in London, could but believe that the

authorities had good cause for what they did, that they had been advised by experts in forestry; and it was vaguely thought that the trees, which looked outwardly in so flourishing a condition, were inwardly eaten up with canker, and would eventually (and very soon perhaps) have to come down. If the trees had in very truth been dying, the authorities would not have been justified in their action. In the condition in which trees are placed in London it is well-nigh impossible that they should have perfect health; but trees take long to die, and during decay are still beautiful. Not far from London is a tree which Aubrey described as very old in his day, and which has been dying since the early years of this century, but it is not dead yet, and it may live to be admired by thousands of pilgrims down to the end of the twentieth century. In any case, trees are too precious in London to be removed because they are unsound. But the truth was, those in Kensington Gardens were not dying and not decayed. The very fact that they were chosen year after year by the rooks to build upon afforded the strongest evidence that they were the healthiest trees in the gardens. When they were felled a majority of them were found to be perfectly sound. I examined many of the finest boles, seventy and eighty feet long, and could detect no rotten spot in them, nor at the roots.

The only reasons I have been able to discover as having been given for the destruction were that grass could not be made to grow so as to form a

through broadcast and contracting back in technological maneuvers, creating an aural network of environmental information.

Sound Island, from 1994, is exemplary of Fontana's work. Presented in Paris, the work is based on technologically relaying the sounds found at locations along the Normandy coast to forty-eight speakers mounted across the façade of the Arc de Triomphe in the center of the city. Through real-time broadcast developed by using wireless communication systems, sites around the coast were captured and transposed onto the Arc, delivered to listeners who, while peering across the skyline of the city, heard an altogether different soundtrack, that of waves splashing against the beaches. What stands out in Fontana's installation is the continuation of the transposition of realities indicative of soundscape composition, while adding to this the mixing of visual experience with acoustic phenomena in real time. Fontana broadcasts the sonority of environments so as to contradict or supplement what one sees locally, in this case, the city around the Arc de Triomphe. The sounds of beaches of the Normandy coastline replaced the sounds of car traffic that steadily circled the Arc, "creating the illusion that the cars were silent" for the "sound of the sea . . . has the psychological ability to mask other sounds, not by virtue of being louder, but because of the sheer harmonic complexity of the sea sound."²

The work harnesses the disjunctive procedures of broadcast media in general, that of the disembodied and faceless transmission. With radio, the "body is prone to disappearance . . . for the body will not, cannot, travel with its signifier, the voice."³ In *Sound Island*, sound is divorced from its corporeal referent, extracted from its visual context, made strange by dislocating its inherent features and repositioning them within a radically different context—transmission as phenomenal slippage, broadcast as geographic noise, "a language of disjunction."⁴ Underscoring the discrepancy or difference that exists between sound and its visual coordinate, *Sound Island* may, in turn, reveal aspects of the Normandy coast through repositioning it outside its indigenous environment. By isolating its sonorous conditions, we may hear it with a sense of curiosity, tuning into its sonorous undulations and recognizing an aural life highlighted through its divorce from geographic particulars. Sea sound and car traffic form an uncanny collision, each interrupting the other's spatio-temporal reality.

The mixing of certain sounds with certain locations occurs as a sensorial

Translated by
Keiko Torigoe

Office of
Global
Atmospheric
Protection

Planning
Division

Air Quality
Bureau

50 Japanese Soundscapes

Drift ice in the Sea of Okhotsk

The bell of Haristos Greek Orthodox Church, Hakodate

Black-tailed gulls in Kabushima, Hachinohe Port

The Oirase river stream, Towadako-cho

Nebula (Neputa) Festival, Aomori and Hirosaki

Kaminari-iwa (thunder rock), Goishi Kaigan shore, O-funato

Nambu Furin (wind bells) at Mizusawa Station

Homoeogryllus japonicus ("bell-ring" insects) in Miyagino, Sendai

Ditch in reed field at the mouth of Kitakamigawa River

Pine woods in the wind, Noshiro

Cicadas in a mountain temple, Yamagata

Swans at the mouth of Mogamigawa River, Sakata

Weaving of ramie (China Grass) fabric, Showamura

Suikinkutsu in Suikintei Garden, Yoshi-i-machi

The time bell at Kawagoe

The time bell on the Ueno Craito-ku, Tokyo

The Keyaki (zelkova) tree boulevard towards Seikei Gakuen campus, Musashino, Tokyo

Ship whistles celebrating the New Year at Yokohama Port

The approach to Taishi Shrine, Kawasaki

Wood carving in Inami

Cicada chorus droning in Honda-no-Mori Forest, Kanazawa

The Tokimizu fountain in Minowaki

Cormorant fishing in Nagaragawa River, Gifu and Seki

Wave sounds at Koijigahama beach, Cape Irago

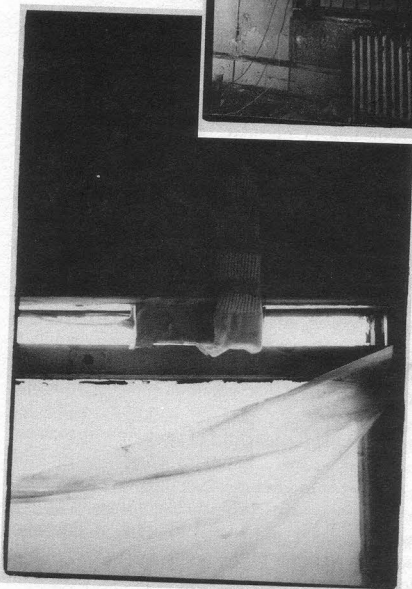
Isobue whistling of the female abalone divers of the Ise-Shima area

The bamboo forest in Kami-Katsura, Kyoto

094

PUBLIC SUPPLY

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Maryanne Amacher, *City Links* series. A five-year Telelink installation, transmitting the live Boston Harbor sound environment received by a microphone overlooking the ocean at Pier 6 to Amacher's studio at the Center for Advanced Visual Studies, Massachusetts Institute of Technology, Cambridge, Mass. (Nov 1973–May 1976); and the Artificial Intelligence Laboratory, MIT (May 1976–Nov 1978).

I was probably young and naïve enough to think "I'm just training here". I was so enthusiastic just to be there that I was willing to do anything really. But the main focus of my job was to research for Murray Schafer as he was writing his book *The Tuning of the World*. Even so, I remember there were moments when I had to make clear that I wasn't there just to Xerox or type.

When you were listening to all those recordings what was it in them that particularly engaged you and made you want to make your own?

I discovered a love for that type of listening as opposed to what I experienced as a very constrained and anxious listening in my music studies where I had to identify things and was expected to be 'good' or 'talented'. When I first heard Schafer speak, it felt like an absolute liberation from the classical music stream. The fact that we could sit in silence in the studio for hours listening to a recording of, just to give one example of many, birds waking up at dawn was so magical. Plus I learnt about the dawn chorus, the birds, that particular place, the microphone and how it was stationed, also about sounds that interfered—it was a constant learning process. Each recording was a new learning experience. As a relatively new immigrant I learnt about Vancouver through the ear and suddenly realised that I had been hearing these sounds but not noticing them or understanding how they connected me to the place. It intensified my listening towards the environment intensely. We would listen in the studio and afterwards when I would notice those same sounds in the environment I would hear them in a new way, slightly differently because they were never quite the same as on the recordings and of course I heard them from a different perspective, in a different context. I realised then that I had always been a listener. I felt at home in an atmosphere where everyone was always noticing sounds, always pointing out acoustic phenomena, commenting on the field recordings and their quality, and so on. In such a working context with inspiring colleagues you can't help but develop a greater affection for a place because you know it on a perceptual, sensual level. You are now inside the sound. When you are around people who relate to the world through the ear, your own ear becomes more aware.

So after all that listening, were there things that you specifically wanted to record? Did you want to do it differently in some way?

My Soundwalking programme was very different to what we had done in the WSP. I wanted to record the experience of moving through a space for the radio, and that's why I decided to use my voice. I felt if I



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three quarters of an inch long as they sit, seven eighths if stretched; thigh five sixteenths, leg same; tarsus and toes one half; four-fingered and five-toed with *small* tubercles on the ends of them. Some difference in their color; one is like a pale oak leaf at this season, streaked with brown; two others more ashy. Two have crosses like this on back,  of dark brown. On the head thus,  with transverse bands on the legs. I keep them in a tumbler. Peep at times. One that got out in the evening on to the carpet was found soon after by his peeping *on the piano*. They easily ascend the glass of the window; jump eighteen inches and more. When they peep, the loose wrinkled skin of the throat is swelled up into a globular bubble, very large and transparent and quite round, except on the throat side, behind which their little heads are lost, mere protuberances on the side of this sphere; and the peeping wholly absorbs them; their mouths shut, or apparently so. Will sit half a day on the side of a smooth tumbler. Made that trilling note in the house. Remain many hours at the bottom of the water in the tumbler, or sit as long on the leaves above. A pulse in the throat always, except in one for an hour or two apparently asleep. They change their color to a darker or lighter shade, chameleon-like.

May 2. 6 A.M.—Is not the chipping sparrow the commonest heard in the village streets in the mornings now, sitting on an elm or apple tree? Was it the black and white warbler that I saw this morning? It did not stop to creep round the trunks; was very shy. Or was it the myrtle-bird? Might it have been the log-cock woodpecker that I saw yesterday morning? Reptiles must not be omitted, especially frogs; their croaking is the most earthy sound now, a rustling of the scarf of the earth, not to be overlooked in the awakening of the year. It is such an earth-sound.

May 3. 5 A.M.—To Cliffs.

Hear the first brown thrasher,—two of them. Minott says he heard one yesterday, but does he know it from a catbird? They

drown all the rest. He says *cherruuit, cherruuit; go ahead, go ahead; give it to him, give it to him; etc., etc., etc.* Plenty of birds in the woods this morning.

P.M.—Cinquefoil or five-finger (*Potentilla Canadensis*). Also the golden saxifrage (what a name!) (*Chrysosplenium Americanum*), in the meadow at Brister's Hill, in the water, in moss-like beds. It may have been in bloom some time; an obscure flower.

Going through the Depot Field, I hear the dream frog at a distance. The little peeping frogs make a background of sound in the horizon, which you do not hear unless you attend. The former is a trembling note, some higher, some lower, along the edge of the earth, an all-pervading sound. Nearer, it is a blubbling or rather bubbling sound, such as children, who stand nearer to nature, can and do often make,—this and many others, *remembering the frog state*. There is no dew (I have observed none yet). The dream of the frog sounds best at a distance,—most dreamy. The little peeper prefers a pool on the edge of a wood, which mostly dries up at midsummer, whose shore is covered with leaves and where twigs lie in the water, as where choppers have worked.

Summer is coming apace. Within three or four days the birds have come so fast I can hardly keep the run of them,—much faster than the flowers. I did not watch for the *very earliest*, however.

May 4. R. W. E. tells me he does not like Haynes as well as I do. I tell him that he makes better manure than most men.

May 5. Heard the first cricket singing, on a lower level than any bird, observing a lower tone—the sane, wise one—than all the singers. He came not from the south, but from the depths. He has felt the heats at last,—that migrates downward. The smallest of birds. The myrtle-bird again, rather tame. In the small ponds I hear a slight bullfroggy note. The andromeda is now a brownish-green; very little of the redness left. Seen from the sun side, now the sun is getting low, it looks like a large bed of greenish-gray moss, reflecting the light. What has become of its red leaves? Does it shed them, and the present fresher ones not till next spring?

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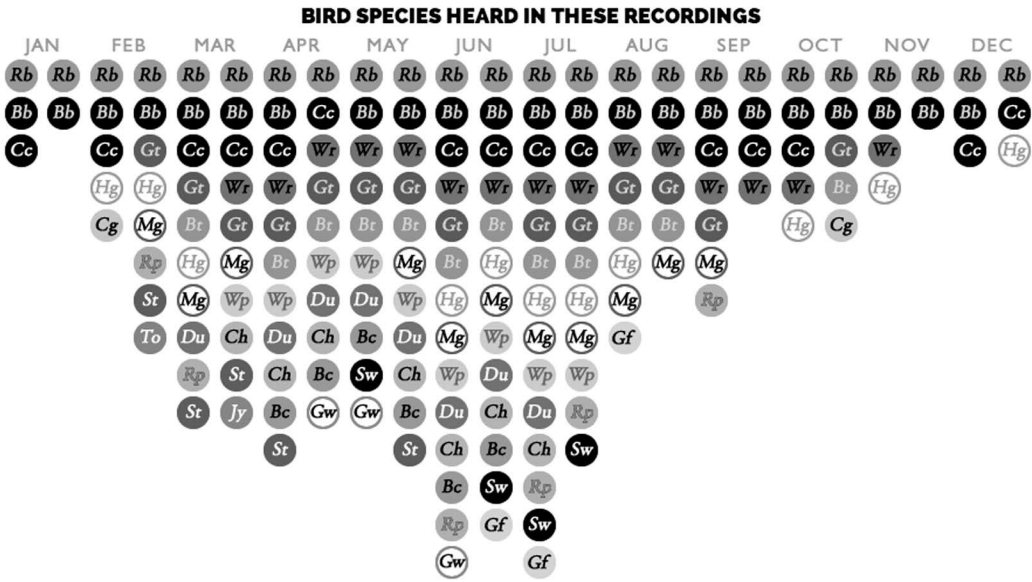
Fig. 60

the "other world." I am here practically post-mortem, I am practically flying, while here we are again accounting, re-accounting, the strict regimentation of everything that was taking place. Although, who knows, it must mean that such things exist here too.

I was full of pleasant sensations. I repeat, the experience of a mystery occurred, took place.

The lady who had lain in the ditch was already approaching, and someone else was lying in her place. In general, this sequence of events, this sequence of intervals was extremely pleasant. It was like suddenly seeing it in a dream, a constant, unavoidable stream, through this ditch over here, towards us, onto this forest's edge.

Here Erik suggested that, while everyone was crossing over from that side to this one, we take a stroll in the autumn forest. And so we went, the



KEY AND RECORDIST'S NOTES

Bb: Blackbird (*Turdus merula*). **Bc:** Blackcap (*Sylvia atricapilla*). **Bt:** Blue Tit (*Cyanistes caeruleus*). **Cc:** Carrion Crow (*Corvus corone*). **Cg:** Canada Goose (*Branta canadensis*). **Ch:** Chaffinch (*Fringilla coelebs*). **Du:** Dunnock (*Prunella modularis*). **Gf:** Goldfinch (*Carduelis carduelis*). **Gt:** Great Tit (*Parus major*). **Gw:** Great Spotted Woodpecker (*Dendrocopos major*). **Hg:** Herring Gull (*Larus argentatus*). **Jy:** Jay (*Garrulus glandarius*). **Mg:** Magpie (*Pica pica*). **Rb:** Robin (*Erithacus rubecula*). **Rp:** Ring-necked Parakeet (*Psittacula krameri*). **St:** Starling (*Sturnus vulgaris*). **Sw:** Swift (*Apus apus*). **To:** Tawny Owl (*Strix aluco*). **Wp:** Woodpigeon (*Columba palumbus*). **Wr:** Wren (*Troglodytes troglodytes*).

All tracks recorded in Stoke Newington, Hackney, London N16; duration 3'10". Where timings are shown this represents the first identifiable entry of a species. I have not included birds that are too distant, or are masked by others so that identification is inconclusive. Weather shown in Beaufort scale & direction, e.g. 2s means wind strength 2, direction south. Recorded in mid-side stereo with Sennheiser MKH 30 and MKH 50 mics. *Richard Beard*



SPECIES CHECKLIST

STAVE HILL ECOLOGICAL PARK 4 MAY 2014

- △ Robin
- △ Blackbird
- △ Wren
- △ Great Tit
- △ Woodpigeon
- △ Dunnock
- △ Blackcap
- △ Swift
- △ Great Spotted Woodpecker
- △ Magpie
- △ Chaffinch
- △ Starling
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THE FIELD REPORTER

REVIEWS ON THE FIELD OF LISTENING / RECORDING BASED SOUND ART AND ACOUSTIC COMPOSITION

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January 31, 2014 // 0



Interview with Grant Smith

by Maria Papadomanolaki

Maria Papadomanolaki interviews artist Grant Smith about a new project entitled Reveil/soundCamp. Grant Smith has a long-standing engagement with the study of place, nature and the experiential through the use of text, sound and image. His work also merges philosophical enquiries about art, ecology, politics and the use of technology. As part of the locus sonus live open microphone network, and with reference to a history of camping as environmental action, reveil/soundCamp imagines how the network can participate in celebrating and amplifying the dawn chorus as a unique and in many ways endangered phenomenon. Linked to International Dawn Chorus Day, the streams will be gathered and mediated locally to interested listeners in London through soundCamp, a london-based organisation who will set-up a camping site and a series of listening activities in a specific location from the 3rd to the 4th of May 2014.

Q. (MP) What is Reveil/Soundcamp?

A. (GS) Reveil will be a radio broadcast of sounds of daybreak. It will last for 24 hours, transmitting sounds from live audio feeds supplied by people at different points around the globe. As the sunrise travels West, we will hop from one feed to the next, finally looping back to our starting point near the Greenwich Meridian. The event runs from the 3rd to the 4th of MAY 2014, which is International Dawn Chorus Day. We will set up a soundCamp in London over that weekend, where people can come listen to the dawn chorus locally, along with remote sounds from other places.

Q. When did the idea occur?

A. So I started talking about this project in 2011. But as an idea, it existed well before that : Don Kroodsma wrote an article titled 'Surfing the dawn' in 2001, which imagined riding the wave of sound produced as the sun rises [1]. In 1990 Gordon Hempton created a sequence of dawn recordings from wild soundscapes arranged to evoke the progress of dawn [2]. And Bernie Krause over a long period has assembled dawn recordings from fragile wild places which together comprise a kind of treasure map of sounds which, in fact, are often now lost [3]. There seems to be something compelling about this paradox: wherever you are listening to it, the dawn chorus feels like a unique and transient event, which of course it is. But you are also aware that the wave of sound sweeps on over you and continues some place else, just as it has arrived – And of course these experiences are closely linked to our sense of something that is under theat.

I later discovered that Ragnar Olafsson had already made the installation daybreak, forever in Reykjavic in 2010, using live feeds from the Locus Sonus open microphone network, which I was just finding out about [4].

Q. Who is involved in the organisation of the project?

A. The project aspires to be a fully global collaboration. At the moment we are well short of that, for practical and random reasons. The center of gravity for the project is the global open microphone network pioneered by Locus Sonus, in Southern and Central France [5]. Locus sonus are engaged at all levels, from hosting the network to developing streaming hardware and promoting research. In London, we are working with the Centre for Sound Arts Practice (CRISAP) at LCC / UAL, and in Belfast with the Sound Arts Research Centre (SARC) [6]. Reveil is catalysed and coordinated by soundCamp, who are based in London [7]. We are very interested now to make links further afield, especially beyond the global North.

Q. How will the project be set up?

A. There are 4 parts:

1. STREAMING

As the broadcast date approaches, people are invited to set up streams. You can set up a live stereo stream on mixlr in around 3 minutes [8]. You can stream from a computer or a phone. Even better, you can set up a permanent stream at Locus Sonus. The free dedicated streaming app Liveshout is in beta for ios7 at SARC [9]. The release is scheduled for early FEB. The app will integrate with the locus sonus global streammap to pick up mobile streams as they come online and make them available on the interactive map. See notes on participation below. There are close to 100 streams on the Locus Sonus network already, although not all of them are up at any one time. We know of just a dozen or so streams beyond those. There may well be many more we have not yet discovered, which we would be very happy to hear about. The more streams there are, from different kinds of places in each time zone, the more varied the broadcast can be.

2. BROADCAST

The full 24hr+ broadcast will be available for any broadcaster to take, for an extended transmission or to dip in and out of in the course of the 24hours. Radio stations can 'stick a microphone out the window' at dawn on 4 MAY and broadcast their local sounds. See below for other ways to be involved.

3. LISTEN / CAMP

Reveil will be broadcast from the London soundCamp, which offers a place to pitch a tent, listen to the dawn chorus on Sunday morning, tune in to remote sound streams from around the world, and related workshops and activities. The soundCamp will host discussions around evolving the open microphone network as a resource for researchers, artists, activists, and others [10].

4. PLATFORM

We are building an updated platform, based on a live streaming map, that will allow listeners to interact with the different streams in different ways, including an automated earth loop that follows daybreak, as Ragnar Olafsson said: 'forever'. Again, this is work that locus sonus has led; we would like for it to be opened to a wider audience, with better audio quality and a more flexible interface.

Q. What different sounds will someone experience throughout the duration of the event?

Very many people already stream live content to internet radio stations around the world. REVEIL is different in one main way. 99% of live radio content is music or talk. And most of that 99% isn't, really, live: it's pre-recorded. (I have no idea what the real figures would be.) But for Reveil, every sound is propagating live in real time somewhere in the world. Most [not all] of what you hear isn't music; and most [not all] of the time there's not much talking.

By cutting back on talk and organized human sounds, reveil / soundCamp opens a space for hearing and listening to other things. What those things are is at least partly to be discovered. But a few things can be anticipated:

// Birds. Reveil is interested in the dawn chorus as an extraordinary sound event in which the vocalizations of birds and other non-humans come to the fore, at a moment of the night / day when people are relatively quiet. It is no accident that the dawn chorus continues to engage listeners and still has a kind of mythical status for birders, acoustic ecologists, and a wider community of field recordists and drop-in listeners.

// Wild soundscapes. Reveil is interested in the implications of listening attentively and especially listening live to fragile soundscapes. There is an intersection with the concerns of bioacoustics on land and under water, as these involve monitoring, habitat conservation / reconstruction, and environmental advocacy / activism.

// Machines. As living organisms are regulated by circadian clocks, many machines also wake and begin to function in the period around dawn: boilers, computers, transport systems and timers themselves spring to life..

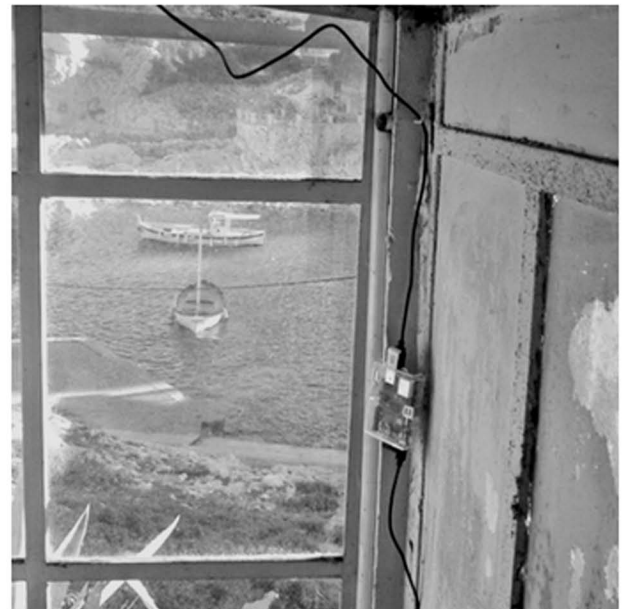
// Human beings. Ambiguously biological, harbouring hormonal tides analagous to those that trigger the daybreak vocalizations of other animals, some of us are waking up while, in the same place, some of us are already at work or returning from nocturnal shifts. Reveil is attentive to our everyday sounds – often, paradoxically, unheard [11].

Specifically: you can check out the AWI / PALAOA feed from under the Antarctic ice at

http://www.awi.de/en/news/background/%5Dpalaoa_what_does_the_southern_ocean_sound_like/livestream/

(For more on that, see below). Or more mundane: my own backyard in London: airplanes, chickens, my neighbour practicing drums in his shed.

These and an evolving list of streams are available at <http://soundcamp.self-noise.net/>

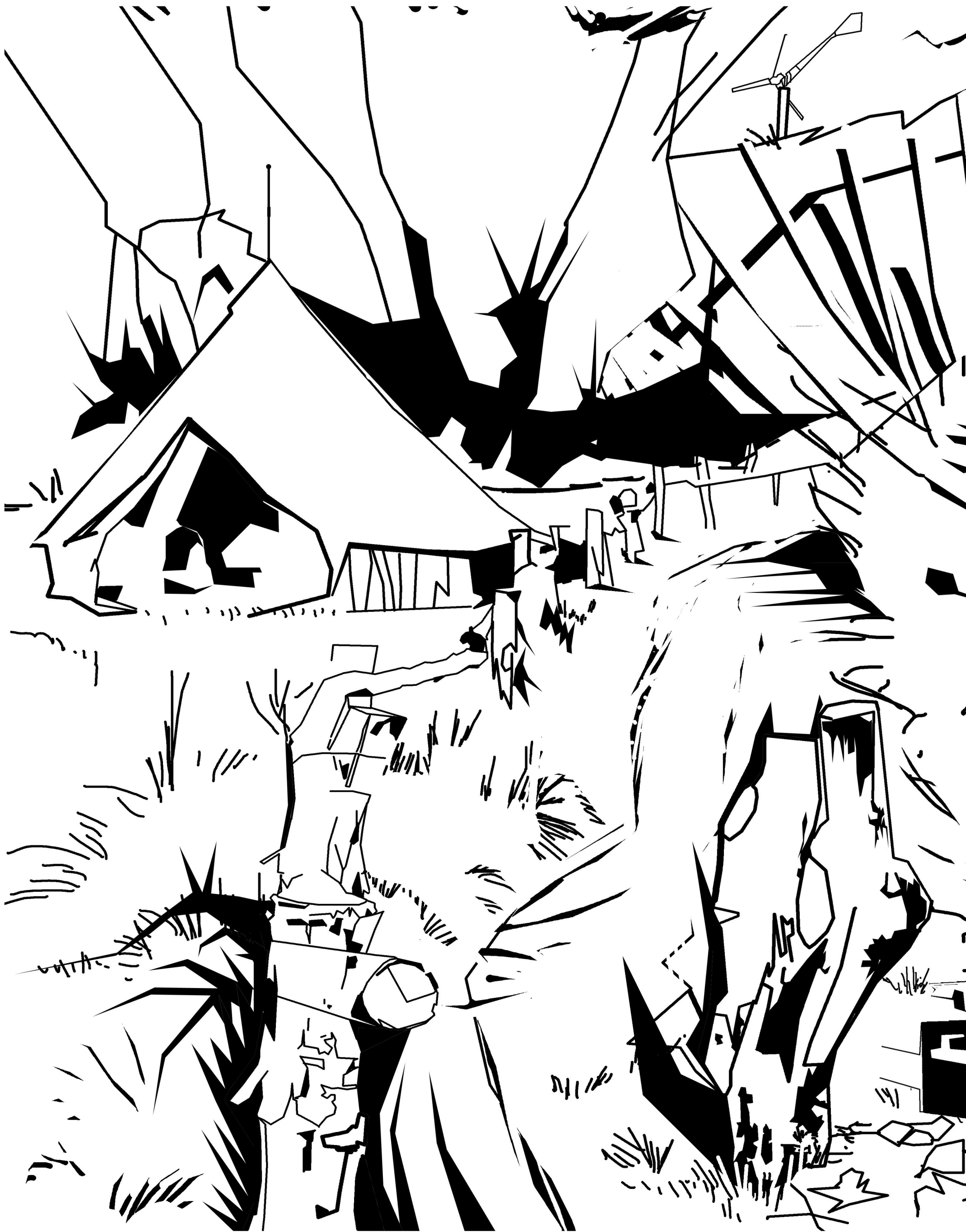


[Image Courtesy of Peter Sinclair Locus Sonus]

Q. Can the audience participate in the stream of sounds? If so in what ways?

A. Absolutely! The REVEIL logo shows a nightingale with headphones. For us, soundmaps demonstrate that the experience of listening to a sound locally gains a dimension when placed in the context of other sounds and listeners elsewhere – whether from the street outside the auditorium, or 'the other side of the world'.

Stream: we invite and encourage people to set up streams – temporary or permanent – during the reveil event on 3-4 MAY 2014. Go to <http://soundcamp.self-noise.net/> for details of simple streaming solutions for computers, phones and diy streamboxes (see below).





Broadcast: Any radio station can pick up the broadcast in whole or in part. Radio stations can also provide a stream and/or promote the project, as a number have already. Check the link or contact us for more information.

Take part in a Dawn Chorus event: These already happen annually around International Dawn Chorus Day, first held in 1984 at Moseley Bog in Birmingham [12]. Check IDCD, especially nearer the time, for details of events near you or advice on setting one up yourself. Download Liveshout or mixlr and stream live from your event using your phone.

Artists, recordists, activists : live streaming can add a dimension to our existing practice. Think about adding a stream to the map from a residency or listening event, or as a permanent listening point. Setup is simple and you can contact us for advice and support. We are also very interested to hear about existing streams which we aren't aware of.

Build a Pi box:

Raspberry Pi mini-computers were recently the subject of a week of workshops at the Ecole Supérieure d'Art d'Aix en Provence. Based on experiences building Pi streamboxes there, we are now finalizing affordable recipes for setting up Pi Streamers, including versions which require little or no technical expertise. See <http://soundcamp.self-noise.net/> for more information, or contact grant_smith@mac.com directly. Raspberry Pi's are widely available, and SD Cards pre-configured and loaded with the streaming software are available from soundCamp and Locus Sonus. This is as near as possible to a plug and play setup. Check for details on attending or running a Pi workshop.

Set up a soundCamp.

Q. Are there any plans as to where the event will take place?

The soundCamp will happen in London at a venue to be announced. The first event will be on 3-4 MAY 2014, with a further one planned for MAY 2015.

We imagine people elsewhere might set up their own soundCamps and stream daybreak sounds from there, which will in turn be available to hear in the reveil live broadcast.

Check the links for updates.

Q. How do you imagine Reveil/Soundcamp in the future?

We think reveil / soundCamp has the potential for further instances in future and elsewhere. SoundCamp exists as an organization to deliver the first event in 2014, and beyond. And we welcome inquiries and proposals for related activities.

We think of reveil as an evolution of field recording, with the addition of the live to our experiences of remote locations. Bernie Krause has said that most of the locations where he has captured sounds since 1968 are now severely degraded if not actually 'without voice' [13]. We are more and more aware that the large archives we have accumulated in a relatively short space of time are in very many cases archives of lost soundscapes. We imagine a live microphone network bringing a particular immediacy to ways we experience and respond to these situations.

Q. Where can someone find more information about the project and its progress?

The best place to look is on the soundCamp site at

<http://soundcamp.self-noise.net/>

Or contact us directly grant_smith@mac.com

Q. Is there something else you would like to add?

Sure: I think there is something to be said about why these sounds and this approach might be interesting. When I talk about REVEIL, people sometimes ask if it matters that it's live. I always say it does matter – if anything the live part is the main thing. So why?

Well we can take the PALAOA hydrophone as an example.

The Alfred Wegener Institute operate a hydrophone which relays live sounds from under the Antarctic ice [14]. When I first stumbled on this stream on radioaporee I went around telling everybody about it [15]. A little group was formed, who began to spend hours listening to sounds under the Antarctic ice, when they should maybe have been doing other things. This is what I imagined. I emailed the AWI and got an automatic reply saying that Lars Kindermann, the person responsible for the hydrophone, was on an extended expedition. Sometimes on the feed you can hear what seem to be engines or motors; and I imagined this was Lars Kindermann himself – conducting research on the Antarctic ice.

In fact this is an extraordinary thing. Not only is it a remarkable technical achievement, to maintain this hydrophone under the ice, including through many months of total darkness, but the sounds themselves are quite captivating, including shrimps, cetaceans, moving ice, various electronics and equipment. Also, there is something exhilarating about listening to it – something related partly to the tenuous and barely credible link with this very remote location – something maybe like early experiences with telephony, as a child or a telecoms pioneer [16] – a sense amplified, in this case, by the fact that for many months of the year this hydrophone is transmitting from total darkness, above and below the ice, in what we take to be a frozen wilderness, entirely uninhabited by people. There is an analogy to deep space or the zone of beetles recorded under bark by David Dunn – openings onto worlds decisively closed to sight [17].

In some ways it comes as no surprise that here, under the Antarctic ice, all kinds of creatures are routinely calling and carrying on. If the Antarctic is out of sight, maybe it is our constant, unfocused preoccupation. But live remote listening does seem to give a quite distinctive sense of location. Listeners commonly report that, as they are listening to what is going on under the ice, they often become much more closely aware of local sounds as well. The juxtaposition of two live audio fields seems to be brought into relief, curiously, by the more or less conscious effects of latency, which creates a disjuncture of a few seconds if you listen to the same sound locally and via the network [18].

There is something quite immediate and probably quite specific about the quality of attention and especially the sense of time associated with these live open links. I am reminded of the old days of telephony where sometimes there would be glitches when somebody put the phone down without hanging up and you could find yourself listening in to some room somewhere – an unsettling and strangely intimate experience..

So maybe you can think of the reveil / locus sonus project as an elaborate arrangement to leave the phone off the hook in a bunch of interesting places – and not say anything



[Image Courtesy of Grégoire Lauvin]

* Upper image: Portrait of Grant Smith by Sam Baraitser

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- [7] <http://soundCamp.self-noise.net/>
- [8] mixlr.com
- [9] <http://www.somasa.qub.ac.uk/~liveshout/>
- [10] Opening a channel to seemingly remote zones and organisms can raise our awareness or mobilize our concern. Just as planning debates are swayed by footage of slow-worms on proposed development sites, David Rothenberg argues that the voices of cetaceans have literally been eloquent in their own defense. (Rothenberg, D: "Playing Along with Whales" in Carlyle, A and C Lane (2013) On Listening. An expanded open microphone network has the potential to be a resource for research, advocacy and activism around fragile ecosystems – even, in Bruno Latour's terms, to 'bring non-humans [and their voices] into the collective' [Latour, B: Politics of Nature, cited <http://self-noise.net/chameleon/chameleon%20as%20end3.html>]. In this it intersects with projects such as those by Arbimon, which are using re-purposed ipods for remote acoustic monitoring of amphibians in Costa Rica <http://arbimon.com/arbimon/index.php/home-acoustics>
- [11] A philosophical point of reference is the account of 'everyday tactics' as developed by Michel de Certeau eg in The Practice of Everyday Life (trans Stephen Rendall, University of California Press, 1984
- [12] <http://www.idcd.info>
- [13] Bernie Krause: Personal communication.
- [14] http://www.awi.de/en/news/background/palaoa_what_does_the_southern_ocean_sound_like/livestream/
- [15] radioaporee.org is a global soundmap project by Udo Noll
- [16] Eg Maryanne Amacher: City Links, in which from 1964 on she brought live sounds of the Boston Harbour into her studio / lab at MIT
- [17] David Dunn talks about bark beetles <http://content.lib.utah.edu/cdm/ref/collection/wss/id/1005>
- [18] .. something like watching and hearing a woodcutter in the distance. Except that here both channels are audio. So the disjuncture works something like a conceptual stereophonic effect.

Related

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Gianni Pavan

Listening Underwater

Listening to the submarine world is a fascinating experience. However, our ears are not well suited for underwater hearing and thus we must rely on specific instruments—hydrophones—to discover underwater sounds. Hydrophones receive the acoustic waves in a wide range of frequencies, from few Hertz (Hz) to many hundred Kilo-hertz (KHz), much more than the human ear can perceive. The first investigations into underwater sound were conducted by military navies in an effort to detect and locate enemy ships and submarines by listening to the noise of their engines and propellers. The equipment developed for military needs allowed unexpected biological sounds to be heard; these puzzled the experts for many years and opened up new scientific research branches: acoustical oceanography and marine bioacoustics.

In the aquatic environment, acoustic communication among animals has a very important role because the high propagation speed (about 1500 m/sec—almost five times greater than in air) and the scarce attenuation with distance allow an efficient transmission of the sounds. Many species use sounds not only to communicate but also to explore the environment around them. Sight, that is limited to a few metres in water and that can't be used in the dark oceanic depths, is thus replaced by the use of sound.

Many aquatic organisms produce sounds. Invertebrates (crustaceans, aquatic insects), fishes, frogs, reptiles, marine mammals (cetaceans and pinnipeds) produce sounds with frequencies ranging from infrasounds to ultrasounds. Sound production in crustaceans and fishes is common but remains little studied. In Teleost fishes more than 50 families include species that use sounds to communicate, normally with frequencies below a few kHz and low sound intensity that limits the communication range to short distances. On the contrary, cetaceans use sound extensively, with sound levels that allow communication over long ranges, and ultrasonic acoustic pulses that allow accurate echo-location over ranges of many hundred of metres.

Marine bioacoustics is the study of the sounds produced by marine animals, to understand their behaviour and their relationships with

the marine environment. Beyond studying individual features of each species for their biological and ecological significance, marine bioacoustics is also concerned with the development of practical applications for the management and preservation of the environment.

Marine Mammals

The zoological group of marine mammals includes animals who live underwater as well as terrestrial animals who spend only part of their time in water, for feeding, for example. Sirenians (manatees and dugongs), Pinnipeds (seals, sea-lions and walruses), otters and Cetaceans spend all or most of their life in water and use sound extensively.

Cetaceans are divided into two sub-orders, the Odontocete, or toothed whales, and the Mysticete, or baleen whales, each one with peculiar behaviours and acoustic features. Auditory mechanisms and sound producing organs are highly evolved and diversified with the acquisition of the ability to echo-locate (biosonar or biological sonar), which is peculiar to the Odontocete and among other animals has only reached an equivalent level of sophistication in bats (Chiroptera).

The underwater environment has its own acoustic peculiarities and cetaceans are extraordinarily well adapted to them. In these mammals, acoustic communication has acquired a privileged role compared to other channels of communication. Their extraordinary sensory and cognitive skills have allowed them to successfully exploit the marine environment and to evolve as top predators by using acoustics.

Their signals range spectrally from the very low frequencies of the large baleen whales to the ultrasonic clicks of the echo-locating dolphins. Dolphins produce ultrashort biosonar signals (30 to 300 μ sec) that reach peak source levels of 230 dB re 1 μ Pa/1m and range from 70 kHz to more than 150 kHz, while social communication usually happens at lower frequencies but still impressive intensities. Other than echo-location clicks, most Odontocetes produce tonal whistles for communication at frequencies lower than those used for echo-location.

The Mysticetes are filter feeders feeding on plankton and small fish and are primarily the larger whales, ranging in size from 8 up to 28 metres. Because they do not need to chase their prey they have not developed echo-location. Their sounds are mainly low frequency tonals for inter-individual communication although there is evidence

that some whales can transmit an FM sweep that can be potentially used to capture a large scale 'acoustic image' of the surrounding environment. As low frequencies propagate well into water, baleen whale sounds may propagate for hundreds of kilometres.

The distance of detection of cetacean sounds varies widely, depending on signal characteristics and environmental constraints, including background noise, most of which is caused by increasing everyday human activities (such as ship traffic, naval sonar, geophysical surveys, oceanographic instruments, offshore platforms and offshore wind farms).

Underwater sound and its analysis

Hydrophones are the transducers that transform sounds propagating underwater into electrical signals that can be recorded and then analyzed. They are usually omni-directional and may cover a wide range of frequencies, from a few Hz to more than 100 kHz. More complex hydrophone systems consisting of multiple transducers are also used, typically to locate acoustic sources. In marine bioacoustics, the hydrophones used are mostly stationary, for the monitoring of a given area, or towed for continuous monitoring during navigation. For some applications, they may be packaged with a recorder and batteries to operate autonomously for periods of time extending from a few hours to months. These devices can be deployed on the sea bottom, or, if small enough, attached to an animal. Cetacean sounds detected by hydrophones may be visualised and analysed in real time, and/or recorded for later processing.

In marine bioacoustics, the most advanced research investigates the neurophysiology and behaviour of marine mammals to understand how these animals have developed their acoustic capabilities, how they interpret the signals they receive from the environment and if, and how, they are impacted by the noise generated by human activity. These research activities are driven by conservation needs and by an increasing concern about the impact of anthropogenic noise at both individual and population levels. Current research aims to develop continuous monitoring of the underwater acoustic environment to measure noise levels and marine biodiversity by recognizing the acoustic features of each marine mammal species.

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PAVAN 69

pour réduire les sons de la machine elle-même, considérés en général comme déplaisants. La venue de la voiture électrique couronne cette insonorisation. Donc, ce que nous écoutons sur l'autoradio est devenu, par défaut, le son ambiant de la voiture. Et nous en sommes venus à accepter que dans ce contexte, la relation entre le son, le champs visuel, et nos sensations physiques soit une construction mentale de nature particulière.

RoadMusic est équipé de trois détecteurs de mouvement qui fournissent des informations sur le mouvement XYZ de la voiture – correspondant à l'accélération et au freinage, aux bosses et aux virages. La camera analyse la scène visuelle et distingue les objets en mouvement – il mesure aussi la couleur dominante.

Il serait possible de câbler les données entrantes en provenance des capteurs directement à un paramètre du son, cela donnerait alors quelque chose comme le son du compteur Geiger. Mais mon but avec ce projet est que le système fasse de la musique que l'on écoute avec plaisir, comme une alternative à la musique enregistrée ou la radio en voiture et au quotidien.

Cet objectif m'a amené à des questions plus théoriques concernant la nature du temps immédiat, la manière dont nous le percevons, les particularités de l'audition musicale, et sur la manière dont ces questions s'articulent avec le travail de composition musicale.

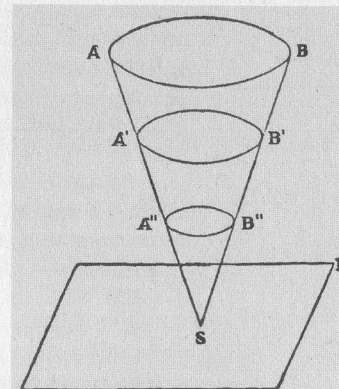
Perception du temps et anticipation

Le philosophe Henri Bergson fut peut-être le premier à utiliser l'expression « temps réel », mais sa définition est assez différente de celle que j'ai donné plus haut lorsque j'ai parlé de sonification. Bergson considère qu'il y a une erreur fondamentale dans le fait de considérer le temps comme étant de la même nature que l'espace, et propose plutôt qu'il existe une autre dimension, d'une nature différente, qui est le temps immédiat – qu'il appelle durée. Pour Bergson, nous savons intuitive-

ment que ce temps immédiat existe, mais il ne peut pas être mesuré ou symbolisé en aucune façon car dès que nous prenons une mesure du temps, nous l'évalons comme une variété d'espace.

Bergson voit notre relation au temps immédiat comme une tête de lecture infiniment petite, en déplacement permanent, mais qui s'élargit immédiatement et sans cesse à partir du point de contact en forme de cône. Car l'immédiat se combine avec le passé et se projette dans le futur, dans une multiplicité d'échelles d'interprétations simultanées. Si ce processus, qu'il nomme élan vital, est pour Bergson, intrinsèquement humain, des penseurs qui l'ont suivi, tel que le cybernéticien Norbert Weiner (Weiner 1948/1961), ont souligné qu'il fonctionne également dans un système mécaniste. Et je propose qu'il soit possible d'utiliser un processus de ce type comme base pour créer un art en temps réel.

Plus récemment, le cognitiviste et philosophe Daniel Dennett a entrepris la lourde tâche de tenter d'expliquer le fonctionnement de la conscience (Dennett 1991). Dennett part de la production de notre flux de conscience, qu'il appelle la « Narration Joycienne » en référence au monologue intérieur des personnages dans les romans de l'auteur irlandais d'Ulysse. Il propose ensuite une théorie où de multiples ébauches, en continuelle révision, viendraient alimenter ce récit, ou cette Narration Joycienne. Sa méthode est donc à l'inverse de celle de Bergson : il part du haut, c'est-à-dire de ce dont témoignent les individus de leurs flux de conscience (ce qu'il appelle aussi hétéro-phénoménologie), pour descendre vers le bas, c'est-à-dire pour chercher quels sont les mécanismes mentaux qui produisent cette narration.



Steven Connor

Topologies: Michel Serres and the Shapes of Thought//2002

[...] One of the most important of Michel Serres' applications of topological thought is to thinking about history. In place of the line of history, Serres proposes a series of different figurings of time, based on dynamic volumes, or topologies. Time is seen as a river, forking, branching, slewing, slowing, rolling back on itself. It can be a flame, leaping out and resiling. It can even be a crumpled handkerchief, in which apparently widely separated points may be drawn together into adjacency.¹ All of these structures involve apprehending time as what David Bohm called an 'implicate order', as a complex volume that folds over on itself, and in the process does not merely transform in time, but itself gathers up and releases time, as though time were like the intricately folded structure of a protein.²

'Physics and history are founded in the same time', writes Serres in his *Rome*, a book in which Serres confronts and attempts to outflank imperial, foundational and progressive time.³ This leads him to a remarkable, extended reflection on a further metaphor for time and history, the kneading of dough. Kneading is seen as a woman's art, conflating it with the complex imbrications of the developing foetus – indeed, embryology should be thought of as a kind of topology, Serres observes in *Atlas*.⁴ Serres is not the only contemporary philosopher to have been concerned with the action and implication of the fold. In one of his rare acknowledgements of the work of a contemporary, Serres approves Deleuze's generalization of the metaphor of the fold in his study of Leibniz (1993): 'This is what the classical or baroque age discovered, along with Leibniz and his calculus: the infinitesimal germ of form, the topological atom of the fold, beside the algebraic or ensemblist atom of the element; from this moment and this philosophy on, everything is folding, as Gilles Deleuze has rightly said of it.'⁵ Perhaps both Serres and Deleuze have behind them, as well as Leibniz, a memory of the remarkable evocation of kneading in Bachelard's *La Terre et les rêves de la volonté* (1948). In his chapter on the soft matter of the earth, Bachelard sees the workings of oils, creams and doughs as derivatives from what he calls an ideal of primary 'paste', 'the perfect synthesis of stiffness and softness, a marvellous equilibrium of yielding and resisting forces'.⁶ Bachelard's discussion of this primary paste occurs as the first in a series of discussions of dreams of terrene matter, as these are played out between the alternatives of the hard (rock, crystal, diamond, iron) and the soft (clay, putty, oil). It is the ideal of such a paste which allows Bachelard to posit the existence of a new kind of *cogito*, or sense of self. In between the neutral *cogito* of mere self-knowing and the more active kind of

self-recognition which arises in the 'phenomenology of the against', the sense of straining or striving against things (and perhaps before both of these allotropes of the *cogito*), there is 'a cogito of kneading' (*un cogito pétrisseur*).⁷ The action of kneading is a process that turns slack mud, mire or waste into a dough or paste that is taut with potential, whether as nutriment or cement. Mixing in is vital to this process, in particular the addition of oil, butter or other fatty substances to powder or flour. The aim of kneading is to blend together the joined and the disjoined, breadth and depth, the virtue of oil's smooth spread and the density of pulverized substance. In kneading, one repeatedly folds the outer skin of the substance inwards, until it is as if it were crammed with surface tension, full of its outside. The result, for Bachelard, is no mere mixture, but a tonic mass, full of tensile potential: the strudel dough that can be drawn out almost indefinitely. The action of kneading makes the material alive because it invests it with energy. One seems literally to put work into the substance one kneads, inducing kinetic potential into the previously dead substance. When one kneads dough or clay, it is as if one were winding a spring. A lump of worked dough is a negentropic niche in things. Time has been folded into it along with work and air, and so, having undergone a transition from an in-itself to a for-itself, it has a future. Dough is quickened mass: not amorphous, but incipient of shape, not slack but charged. Erotic life may begin with the caress, but without the action of kneading, moulding your partner into new life, eros cannot be long protracted. The body is quickened as the soil is quickened, by turning it over, by folding it into itself, with the addition of air. When air is folded into pastry, time is folded in too: the time of growth, of the swelling of the soufflé, the breathed-in dish. In one sense, the skin is the antagonist of a kneaded world, for the skin is what holds individual lives separate and aloof; it is integument which guarantees the integrity of shape and signifies the suspension of decomposition that is all life. But skin, which Serres always represents topologically, also holds the dream of the kneaded body, the dough-body, the *cogito pétrisseur*.

Although Serres uses the automorphic self-touching of the skin as a way of reflecting on what Deleuze calls the 'inclusion of the soul'⁸ he is interested in much more than the curvature of the *cogito*.⁹ The discussion of baker's dough in *Rome* is an image of the complex overlaying of time in history, an image not of time moving on and dissipating, but of endlessly regathering itself: 'The system grows old without letting time escape; it garners age – the new emblems are caught up and subsumed by old ones; the baker moulds memory ... Time enters into the dough, a prisoner of its folds, a shadow of its folding over.'¹⁰ Serres imagines trying to map or model the involutions of the dough as it is moulded, perhaps by making a mark and plotting its changes of position in three or more dimensions through successive stretchings and foldings. To those who can think

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20 MORE SONGS OF WILD BIRDS

recording. My friends very kindly placed motor-cars at my disposal for early morning reconnaissances, but I found that the rapid speed of a car, and the restlessness which it involves, affect the driver, who prefers to stop about every five hundred yards and listen a minute through the open window of the saloon, then go on farther. In this way naturally one can never achieve much. Also, the fact that the continual noise of the engine, at least in my own case, so affects the ear that I need to compose myself before I can pick out the finer points of bird-song, made me choose the much more difficult but also more enjoyable and more useful method of exploring on foot. But then, too, it is constantly necessary to reckon with surprises, as the bird often shifts its position, and changes in the weather are even more disturbing.

I have already described in *Songs of Wild Birds* how the sensitive microphone takes up all noises, often within several miles' radius, and exaggerates them. In the first part of this chapter I have specially pointed out the difficulties which the continual high winds made for us. Once when we tried to record a rookery the rustling of the wind in

PLATE IX



O. G. Pike

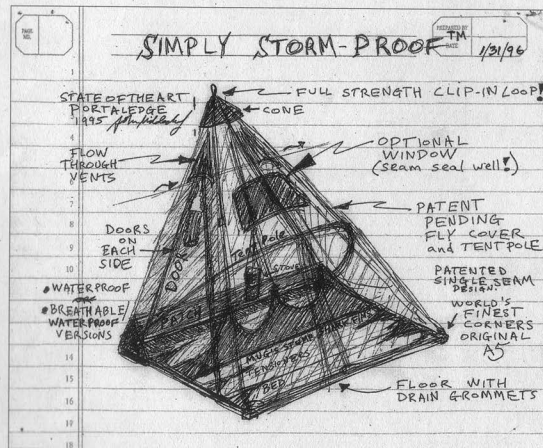
CARRION CROW CALLING

Philosophers' Camp

The first installment of Deleuze Camp convened in the late summer of 2007. But it is likely that this collision of terms was latent in our minds for many years previous. When postgraduate students met at Cardiff University's Centre for Critical and Cultural Theory for "a hectic combination of lectures, seminars, and workshops," they did not camp outdoors or engage in the rusticism typically associated with the iconic summer camp. But their conference confirms one of many philosophical, and semantic, trajectories that can be traced along its own camping plateau, particularly the events of August 5, 1858.

When Ralph Waldo Emerson, Louis Agassiz, James Lowell, and other members of the Saturday Club left on their camping trip with their guide William James Stillman, they departed not only the urban distractions of Boston but also a world still slowed by paper telegraphy. But before hearing the news of successful tests of a transatlantic cable—an irony itself given the presumed inaccessibility of the camp—Emerson would write elegiacally about their experience: "Follansbee's Pond. It should be called Stillman's henceforward, from the good camp which this gallant artist has built, and the good party he has led and planted here for the present at the bottom of the little bay which lies near the head of the lake."⁶² Urbanite-turned-woodsman Stillman documented the experience at what he named Camp Maple in *The Philosophers' Camp*, in which Louis Agassiz can be seen dissecting a trout on a tree stump while James Lowell's group, with Stillman himself, fires rifles at a target in the valley. In the center of the painting, among the eponymous and highly symbolic maples, the transcendent figure of Emerson anchors both groups and, acting as a transcamp figure, links the two "camps": science and the arts.⁶³

For a week in early summer 1998, a wall camp's hanging tents—more than a half-mile above the frozen Arctic Ocean—provided respite from the vertiginous context of Baffin Island's Great Sail Peak. North of the Arctic Circle, climbers had continuous daylight during the ten days to pitch the camp and the seven days to occupy the wall camp, a staging point for reaching the peak's 5,305-foot summit. Combining hammock and hanging tent, portaledges provided the camp's three shelters—intricate cocoons of vapor barriers, insulation layers, and carabiner connections, tethered to a "bomber" hold—a tie-down, actually a "tie-up," in which the experienced climber has the greatest confidence. Here, camping becomes a sleeping and clothing system that must be tailored to exposure, weather, the available "pitches" and holds, and the duration of the climb. Tree camping and cliff camping reorient the grounding of camp's spaces, to harness, poetically and technically, the tensile nature of tent camping.⁶¹



1.34
Design sketch for portaledge, 1996. (Courtesy of John Middendorf)

Still camping, the group reacted with some degree of agitation at the news of the transatlantic experiment, which though marginally successful revolutionized the speed of communication and telegraphic connectivity. The camp, it seems, was uprooted from this "good camp"—an organic construct, its rhizomatic influences apparent through Emerson's subsequent poetic essay "The Adirondacks" about the transcendence of the camp and through William James's radical empiricism that can be said to have paralleled his own camping experiences. James begins his famous essay "What Pragmatism Means" with his return to camp, where he finds his fellow campers in a heated debate about a squirrel and a tree. Reflecting his philosophy of pragmatism and his practice of empirical psychology, James's resolution of the conflict entirely fits with the camp's setting, one in which the rationalized methods and rigorous sequence of camping (from sitting to breaking camp) are tempered, and at the same time radicalized, by the "real" experiences in nature. Though one of James's favorite camping destinations, Putnam Camp was not wholly primitive and was in fact semipermanent, with rustic cabins and some amenities. The distance from the city and the connection with the remaining wilderness was such that other campers like Sigmund Freud might chop wood and "rough it" in relative seclusion.

First the transcendentalists and then the pragmatists went camping in the rapidly contracting American wilderness. If the camp is a transcendental field, its spaces might be understood through events of a transcendental empiricism. Perhaps this is the "pure immanence" that Freud expressed with his exhilaration from the camping experience: "Of everything I have experienced in America this here is probably the strangest: a camp, you must imagine, in a wilderness in the woods, situated like a mountain meadow. . . . Stones, moss, groups of trees, uneven ground which on three sides merges into densely wooded hills."⁶⁴ Or, the camp may simply be a spatial parallel to what Deleuze called the minor American

literature—marginal sites for experimentation. Today's philosophers' camp is virtual, a function of what the August 1858 transatlantic connectivity has brought with it. Camping, we set up home pages, blogs, and wikis—the latter conceived as a campsite from the outset—a place where the nomadic thinker is asked to set up temporary residency, to pitch a tent and to converse across the campfire, now flickering with a refresh rate (see "BarCamp"). These open camps of the Internet are indeed a kind of place-making apparatus, when place is defined as a site (campsite) for debating, telling stories, and asking questions—even if remaining as sites for an idealism or aspirations of utopia (see "Camp").

1.35
William James Stillman,
*The Philosophers' Camp in
the Adirondacks*, 1858.
(Courtesy of Concord Free
Public Library)





Reverie and Radio

Gaston Bachelard

It would be a good idea, perhaps, on the threshold of a fresh article, to create a new term. Without a new term we would have no grounds for an article.

Radio is an absolutely cosmic problem: the whole world is talking about it. But we must define a concept.

It is this: the Bergsonians have spoken of a biosphere, that is to say a living stratum containing forests, animals, and man himself. The idealists have spoken of a *noosphere*, a sphere of thought. Others have spoken of a stratosphere, ionosphere; radio, fortunately, profits from an ionized layer. What term could be better suited to this domain of world speech than *logosphere*? We all speak in the logosphere. We are citizens of the logosphere.

Radio really does represent the total, daily realization of the human psyche. The problem here is not simply and solely one of communication, nor is it merely one of information; the problem is that radio, day after day and in accordance with the requirements not only of information but also of human values, is entrusted with the task of presenting the human psyche.

The human psyche naturally contains clear values. The twentieth century is in the process of establishing a kind of universal speech; every language has its say without getting mixed up with any other; this is no Tower of Babel. On the contrary, what we have is a deeply social classification of and restriction on all wavelengths so that everyone can talk without interfering with anyone else. Before the end of the eighteenth century, people used to have café conversations. They were a jumbled, confused affair; a person talking in one corner of a café could not be heard in the other corner. But in the universal world effected by radio, everyone can hear everyone else and we can all listen in peace.

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Reverie and Radio

some response in the mind of the individual. We can ask him to dream of a home, an interior. We can recall him to his memories of childhood. But it is not a question of regressing, of returning to buried and forgotten joys. It is a question of showing the listener little by little the essence of inward reverie. This is why the theme of the home—the seat of privacy and inwardness—lends itself so perfectly to the purpose.

One has only to experience it to realize that there exists throughout the whole world, among people of the most diverse cultures, an archetypal home.

This notion of the archetype is an extremely important one in psychoanalytical philosophy. It has rather a bad name, though, with some psychoanalysts—probably because it is a Hobbesian theory and Hobbes was an idealist!

So then—talk to all and sundry about home. Talk calmly, over the radio, at a time when the individual cannot be seen and can himself see no one. For this lack of a face to go with the voice is no impediment; rather it is an asset, because it is precisely this which opens up the axis of intimacy, the inward perspective.

One listener may live in the North, another in the South, another in the East, another in the West. All of them, however, possess an archetype of the "house where they were born." Well, there is something deeper than the natal home—what is referred to in a book as the oneiric home, the house of our dreams.

If we want to teach reverie, transmit reverie, and reach our listeners, we have only to put those listeners in a house, in a corner of a house, in some nook, perhaps in the attic, perhaps in the cellar, perhaps in a passage—somewhere very modest, at any rate, for there is a principle of reverie and that is the principle of the unpretentious refuge.

In his book *Le Vieux Serviteur*, Henri Bachelin recalls his childhood in the little house of which his father—a day laborer—was not the owner. There are toads in the cellar, rats in the attic. Evening falls, one of those winter evenings from which the principle of intimacy is derived, and the author tells of the magic of the roaring stove. Then come these tremendous lines: "I felt as if I was in a coalman's hut. I was in a well-built house in which after all I had everything I needed for security, happiness, and shelter." No, he was in the coalman's hut, and he says: "I loved to dream." He lived in a little town where there were no wolves but he loved to dream of the wolf that "came and scratched the granite doorstep of the house with his claws."

There really is a principle of inwardness. One must find something utterly modest, something poor. Seneca talked about a pauper's room; he could not philosophize in Nero's palace but had to be in a little room where he slept on a pile of straws, and so it was he learned Stoicism.

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Gaston Bachelard

Total realization of the human psyche—consequently we must make for the foundations, for the principles of the unconscious. We must discover in the unconscious the foundation of human originality.

Radio is a function of originality. It cannot repeat itself. Each day it must create something new. It is not merely a function transmitting truths or news. It must have an autonomous life of its own in this logosphere, this universe of speech, this cosmic conversation which is a new reality for man. It must seek principles of originality in the depths of human nature.

The process becomes a paradoxical one. For if radio must find original topics, it must eschew the fantastic. The time for fantasy is a special time; it is a purely adventitious value. There is time for it: the world must have its fun and parents and children have their moment of relaxation. But fantasy is not everything. When, for example, Kierkegaard says that the world begins with the fantastic, he lays himself open to exposure. Yet man must each day find this power of the fantastic. Where is he to do so?

He will find it in the depths of his unconscious. Radio must consequently find a way of bringing "unconscious" into communication. It is through them that it will find a certain universality, and that is the reason for the paradox: the unconscious is something we know little about.

The central problem, then, is this: Is it possible to set aside radio time and develop subjects for radio aimed at the unconscious, which can then find the principle of reverie on every wavelength?

It would be a good thing if we had working alongside the radio engineer—and here again the term must be created to fit the concept—a *psychic engineer*.

Some call signs are a pain and torment to the ear; they grind their way into the unconscious and give rise to nightmares.

These would have to be changed, made more gentle: "Gentleness is our watchword" might be given out at the beginning of a program.

It is through the unconscious, then, that this solidarity among the citizens of the logosphere sharing the same values, the same will to gentleness, and the same will to dream, can find its realization. If radio could provide a few hours' rest, a few hours' peace, this broadcast reverie would be a salutary thing. "All right," it will be objected, "but that will be dreamers' hour; active people will never listen!" But there has to be total realization of the human psyche; it must find the times and the means of making all psychisms communicate in a philosophy of rest.

To illustrate this thought we have only to take an example: the theme of the home. It is an archetype: the theme is thoroughly rooted in the psychism of every individual. To develop it is to show that there is no more picturesque, that the picturesque is precisely fantasy, entertainment, that it must arouse

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Reverie and Radio

Even more to the point, Charles Baudoin tells us that cows kept in barns that are too brightly lit become neurasthenic. They want a nice barn with a few cobwebs left hanging over the windows. Otherwise they do not produce good milk. Cows, too, have their principle of inwardness. They want their home, that deep yet unpretentious setting where dwells the unconscious.

Here in this unpretentious setting, in Seneca's pauper's room, the listener must be made to dream. This is the kind of dream he must be given. Gradually he hears but listens no more. The speaker's voice nudges him in the back and says, "Go on, get to the bottom of yourself. I'm going my way, but it's not quite like that. My village was sunny but I looked for dark corners. We're entering night: this is the very path of dream we're on now."

Radio gives the listener the feeling of absolute, deep-rooted rest. Man is a plant that can be transplanted, but he must always take root. He has taken root in the image offered him by the speaker. He will bring to bloom a human flower. He will discover exactly this—that he possesses an unconscious. Obvious things have just been conveyed to him in an obscure form. It is important to seek out the obscure somewhat. In a line like this—"and in seeking my mother it is you, o my home, I find"—there is a sense of inner warmth retained. We are in the presence of an archetype.

Is it a problem for radio to put across archetypes? Would not a book be more suited to the task? Probably not—a book is something one opens and closes; it does not come seek one out or impose solitude upon one. Radio, on the other hand, is certain to impose such solitude. Not always, of course. It would be no use listening to this kind of program in a dance hall or someone's drawing room. It must be listened to not necessarily in a coalman's hut, though that would be ideal, but in one's own room, in the evening, when one is alone, at the time when it is one's right and duty to instill in oneself calm and repose. Radio has everything required for speaking in solitude. It needs no face.

The listener, then, is there before his set, in a solitude that is not yet established. It is radio that establishes it around an image that is not just his property alone but everybody's, a human image, one that exists in every human psychism. Nothing picturesque, no entertainment. It comes in the wake of sound, in the wake of well-formed sound.

It could be a way of tackling the problem of insomnia: *Hey! Quiet now! Stop talking about your neighbor or your wife or your bosses or your underlings. Come back to yourself, nurture the poetry of your archetypes, return to your roots. You are about to go to sleep. You are just at the level of the beginning of dreams and you will soon be at the level of deep dreams, dreams that will not be nightmares if you have really accorded the archetypes the beauty befitting them.*

There they are, then, the archetypes, in this kind of draft for a radio of the unconscious. For myself I have clouds, fire, the river, the swamp—swamps are

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Reverie and Radio

important—the forest: finding shelter in the forest, about not being afraid of the forest where usually one gets lost. The motherly forest can give a person welcome, at least for a night; there are no wolves in the forest.

Radio really does hold the key to tremendous daydreams. "But whom will all this help?" someone will perhaps object. Why, those who need it, of course. "What time would you transmit it? For me it would have to be half past eight because I go to bed at nine o'clock." It could be transmitted a little later for night people, although night people are still too much alive and active to be susceptible to the excellent philosophy of rest. So it would have to be at a different time each day: half past eight on Mondays, nine on Tuesdays, and around half past 10 on weekends. With this system everyone would at least have the chance of getting one good night's sleep a week.

And if our psychic radio engineers are poets concerned for the welfare of mankind, tenderness of heart, the joy of loving, and love's voluptuous trust, then they will lay on splendid nights for their listeners.

Radio's evening message to every heavy heart, every tormented soul, should be this: "It's a matter of no longer sleeping on earth but entering the nocturnal world of your own choice."

where locality, plurality and creativity outgunned the model of global mainstream radio stations.

3. Rediscovering the environment

Radio asserts a sense of intimacy with its listeners. It assumes the role of mesmerizing the soul and leading a listener into a state of somnambulance and disembodiment. Or at least that was the idea many people had about radio until the beginning of the 20th century

when the Weimar Era Radio and the futurist radio manifesto “La Radia” emerged. Marinetti’s and Masnatta’s “La Radia” (1933) proclaimed a new fashion of radio-making that is aware of its surrounding environment and matter; it absorbs the commodities of everyday life and transforms them to a study through sound. The sounds of the city, the forest, the sea, the body, the sound of cooking and the inaudible noises of food digestion are brought forward. “La Radia” sought to exclude the dramatic clichés of the past and challenges the audience’s sensations with a radical change in content.

The radio of the Golden Weimar period in Germany (1923-1930) arguably followed a similar pattern. Hans Flesch, director of the Berlin Radio Hour, plotted a new genre of radio work based on the sounds of the environment, the city and everyday life. Acoustical Films (audio recordings made on the soundstrip of the film) were the first phonographic sound collages to be broadcast on the German airwaves. Film director Walter Ruttmann was commissioned to construct “Weekend” (1930) based on the sounds of the city of Berlin. Flesch’s rendition of radio art channeled the sound of life inside the broadcast studio just to recast it back out again.

Flesch suggested a system of mirroring the outside that recalls Radio Alice’s mission and is aligned to a more contemporary set of artists who dealt with the same issues. During the mid-seventies Hildegard Westerkamp’s Soundwalking radio shows reappraised the “Fleschian” model and suggested to the audience of Vancouver Cooperative Radio different ways of experiencing and re-evaluating their surrounding soundscape. Using the microphone as a lens, Westerkamp amplified the familiar yet ignored sounds and

commented on their impact to the perception and the sound-ecology of a place. Sometimes combined with book excerpts read on-air, the soundwalks formed an act of creative criticism and deep reflection on the issues of sound and the environment.

Bill Fontana’s “Landscape Soundings” was a large-scale sound and radio installation for the Vienna Festival in 1990. Fontana used various types of transmitters to cast the sounds of nature and the river near Stopfenreuther Au (Danube) back in Vienna, mixed them with local sounds, and fed them to an array of speakers strategically placed to bridge the sound space between the Museum of Art History and the Museum of Natural History in Vienna. The transforming power of sound refreshed the listener’s memories of the places they have visited or they lived in, by triggering their aural sensibility. The soundscapes were also broadcast on conventional radio and soon gained great popularity. Similarly to Westerkamp, Fontana raised issues of acoustic ecology and perception by sculpturally intervening to the obtrusive city sounds surrounding the two museums.

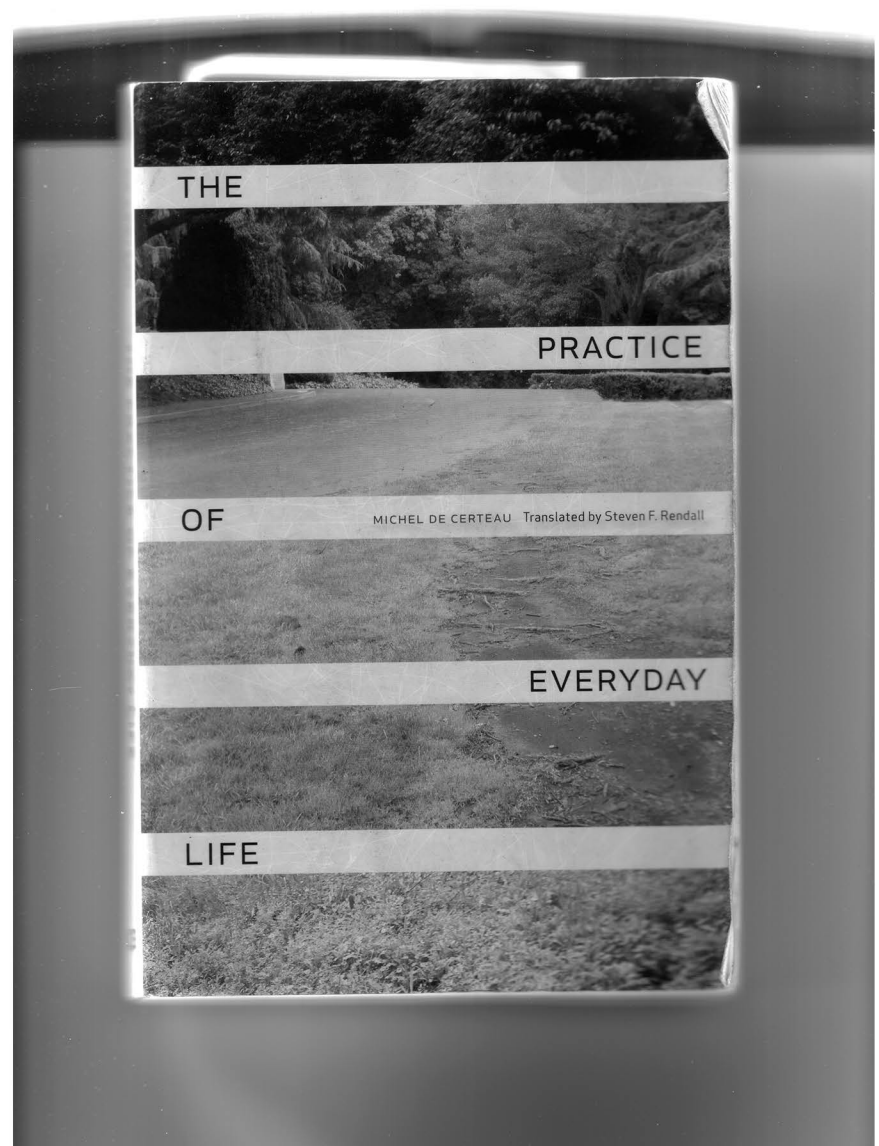
New York-based transmission art duo neuroTransmitter (Angel Nevarez and Valerie Tevere) offer another example of radio-architectural intervention to a set environment with their project “Branching to Broadcast” (in collaboration with Daniela Fabricius). Installed in Colonels Row (Governors Island, New York), “Branching to Broadcast” consisted of a small house built on a tree that hosted a microradio station. The radio assimilated the local soundscape and fed it back to a set of receivers placed in a variety of spots around the island. On a first level of interpretation the “microradio tree-house” makes up an unusual type of architectural intervention. Additionally, “Branching to

Broadcast” appoints the value of locality and low-powered transmission and the importance of mediating the hidden sounds of the airwaves as well as the activities of the surrounding environment to its native listeners.

Similarly, UK based, artist Simon Elvins explores the inaudible environments that surround us with his series of site-specific radio installations entitled “Public Radio”. Exhibited at 'Deptford Design Market Challenge', Royal Festival Hall, London, “Public Radio” used AM transmitters made out of discarded and everyday objects. With their earth connection attached literally to the ground and their aerial clamped on top of trees, poles and other objects high enough to access the airwaves, the transmitters were powered solely by the energy of radio waves. In “Public Radio”, Elvins’ background in communication design coalesces with his firm interest in sound and its primary role in shaping our understanding of everyday environments. More specifically, “Public radio” offers to its listeners a microscopic aural awareness of the radio waves that surround them.

4. Performing the airwaves

In all the aforementioned cases, radio transmission becomes an extension of the environment and assists in its magnification, re-interpretation and re-evaluation. In this section we examine artists that put radio in the context of performance. By performance we allude to projects that either require radio as an “instrument” or apply innovative methods in the process of radio making.



with will and power (a business, an army, a city, a scientific institution) can be isolated. It postulates a *place* that can be delimited as its *own* and serve as the base from which relations with an *exteriority* composed of targets or threats (customers or competitors, enemies, the country surrounding the city, objectives and objects of research, etc.) can be managed. As in management, every "strategic" rationalization seeks first of all to distinguish its "own" place, that is, the place of its own power and will, from an "environment." A Cartesian attitude, if you wish: it is an effort to delimit one's own place in a world bewitched by the invisible powers of the Other. It is also the typical attitude of modern science, politics, and military strategy.

The establishment of a break between a place appropriated as one's own and its other is accompanied by important effects, some of which we must immediately note:

(1) The "proper" is a *triumph of place over time*. It allows one to capitalize acquired advantages, to prepare future expansions, and thus to give oneself a certain independence with respect to the variability of circumstances. It is a mastery of time through the foundation of an autonomous place.

(2) It is also a mastery of places through sight. The division of space makes possible a *panoptic practice* proceeding from a place whence the eye can transform foreign forces into objects that can be observed and measured, and thus control and "include" them within its scope of vision.¹³ To be able to see (far into the distance) is also to be able to predict, to run ahead of time by reading a space.

(3) It would be legitimate to define the *power of knowledge* by this ability to transform the uncertainties of history into readable spaces. But it would be more correct to recognize in these "strategies" a specific type of knowledge, one sustained and determined by the power to provide oneself with one's own place. Thus military or scientific strategies have always been inaugurated through the constitution of their "own" areas (autonomous cities, "neutral" or "independent" institutions, laboratories pursuing "disinterested" research, etc.). In other words, *a certain power is the precondition of this knowledge* and not merely its effect or its attribute. It makes this knowledge possible and at the same time determines its characteristics. It produces itself in and through this knowledge.

By contrast with a strategy (whose successive shapes introduce a certain play into this formal schema and whose link with a particular historical configuration of rationality should also be clarified), a *tactic* is

a calculated action determined by the absence of a proper locus. No delimitation of an exteriority, then, provides it with the condition necessary for autonomy. The space of a tactic is the space of the other. Thus it must play on and with a terrain imposed on it and organized by the law of a foreign power. It does not have the means to *keep to itself*, at a distance, in a position of withdrawal, foresight, and self-collection: it is a maneuver "within the enemy's field of vision," as von Bülow put it,¹⁴ and within enemy territory. It does not, therefore, have the options of planning general strategy and viewing the adversary as a whole within a district, visible, and objectifiable space. It operates in isolated actions, blow by blow. It takes advantage of "opportunities" and depends on them, being without any base where it could stockpile its winnings, build up its own position, and plan raids. What it wins it cannot keep. This nowhere gives a tactic mobility, to be sure, but a mobility that must accept the chance offerings of the moment, and seize on the wing the possibilities that offer themselves at any given moment. It must vigilantly make use of the cracks that particular conjunctions open in the surveillance of the proprietary powers. It poaches in them. It creates surprises in them. It can be where it is least expected. It is a guileful ruse.

In short, a tactic is an art of the weak. Clausewitz noted this fact in discussing deception in his treatise *On War*. The more a power grows, the less it can allow itself to mobilize part of its means in the service of deception: it is dangerous to deploy large forces for the sake of appearances; this sort of "demonstration" is generally useless and "the gravity of bitter necessity makes direct action so urgent that it leaves no room for this sort of game." One deploys his forces, one does not take chances with feints. Power is bound by its very visibility. In contrast, trickery is possible for the weak, and often it is his only possibility, as a "last resort": "The weaker the forces at the disposition of the strategist, the more the strategist will be able to use deception."¹⁵ I translate: the more the strategy is transformed into tactics.

Clausewitz also compares trickery to wit: "Just as wit involves a certain legerdemain relative to ideas and concepts, trickery is a sort of legerdemain relative to acts."¹⁶ This indicates the mode in which a tactic, which is indeed a form of legerdemain, takes an order by surprise. The art of "pulling tricks" involves a sense of the opportunities afforded by a particular occasion. Through procedures that Freud makes explicit with reference to wit,¹⁷ a tactic boldly juxtaposes diverse elements in order suddenly to produce a flash shedding a different light on the language of

another time, from a time that is alien, arises a "god" who has the characteristics of memory, that silent encyclopedia of singular acts, and who, in religious stories, represents with such fidelity the "popular" memory of those who have no place but who have time—"Patience!" With variations, each repeats the recourse to a different world from which can, *must*, come the blow that will change the established order. But all these variants could very well be no more than the shadows—enlarged into symbolic and narrative projections—thrown by the journalistic practice that consists in seizing the opportunity and making memory the means of transforming places.

A final point remains to be determined, the most important one: how does time articulate itself on an organized space? How does it effect its "breakthrough" in the occasional mode? In short, what constitutes the *implantation of memory in a place* that already forms an ensemble? That implantation is the moment which calls for a tightrope-walker's talent and a sense of tactics; it is the instant of art. Now it is clear that this implantation is neither localized nor determined by memory-knowledge. The occasion is taken advantage of, not created. It is furnished by the conjuncture, that is, by *external* circumstances in which a sharp eye can see the new and favorable ensemble they will constitute *given one more detail*. A supplementary stroke, and it will be "right." In order for there to be a practical "harmony," there is lacking only a little something, a scrap which becomes precious in these particular circumstances and which the invisible treasury of the memory will provide. But the fragment to be drawn from this fund can be inserted only into a disposition imposed from the outside, in order to transform it into an unstable, makeshift harmony. In its practical form, memory has no ready-made organization that it could settle there. It is mobilized relative to what happens—something unexpected that it is clever enough to transform into an opportunity. It inserts itself into something encountered by chance, on the other's ground.

Like those birds that lay their eggs only in other species' nests, memory produces in a place that does not belong to it. It receives its form and its implantation from external circumstances, even if it furnishes the content (the missing detail). Its mobilization is inseparable from an *alteration*. More than that, memory derives its interventionary force from its very capacity to be altered—unmoored, mobile, lacking any fixed position. Its permanent mark is that it is formed (and forms its "capital") by *arising from the other* (a circumstance) and by *losing it* (it is no more

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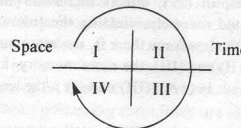
Standing in the face of manipulation, always being from this alteration, not a power (the name of *authentic* individual memory, order or place, practice or of "ties" in every is outside of it, to what it is, a few of its organizing the alteration, the mately only a

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of elements, it distorts their relationships. Its presence causes *distortions* generated in the situation considered by the bringing together of *qualitatively heterogeneous dimensions* which are not merely contraries or contradictories. The index of this guileful process is the set of inversely proportional relationships noted above: they are comparable to the proportions and distortions that, through mirror effects (inversions, incurvations, reductions or enlargements) or perspectives (the farther it is, the smaller it is, etc.), permit the juxtaposition of *different* spaces in a single picture. But in the sequence into which the occasion is inserted, the juxtaposition of heteronomous dimensions concerns time and space, or state and action, etc. It is marked by inversely proportional ratios analogous to those which, in Pascal's work, articulate different "orders" and are of the type: *all the more present because less visible*; all the *fewer* because *more* favored by grace; etc.⁹ Qualitatively, there are *passages into something else* through "twisted" relations, through successive reversals.

Among the qualitative differences linked by these inverse relationships, I shall point out at least two kinds whose insertion into a series requires two distinct sorts of reading:

1) A difference between *space* and *time* yields the paradigmatic sequence: in the composition of the initial place (I), the world of the memory (II) intervenes at the "right moment" (III) and produces modifications of the space (IV). According to this kind of difference, the series has a spatial organization as its beginning and its end; time is the intermediary, an oddity proceeding from the outside and producing the transition from one state of the places to the next. In short, between two "equilibria" comes a temporal irruption:



2) A second difference between *being* established (a state) and operating (a production and a transformation) is combined with the first. It plays moreover on an opposition between the visible and the invisible, without exactly corresponding to it. Along this axis, one finds the following paradigmatic sequence: given a visible establishment of forces (I)

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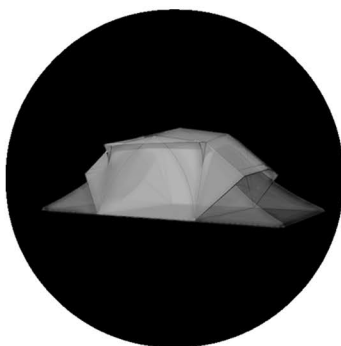
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