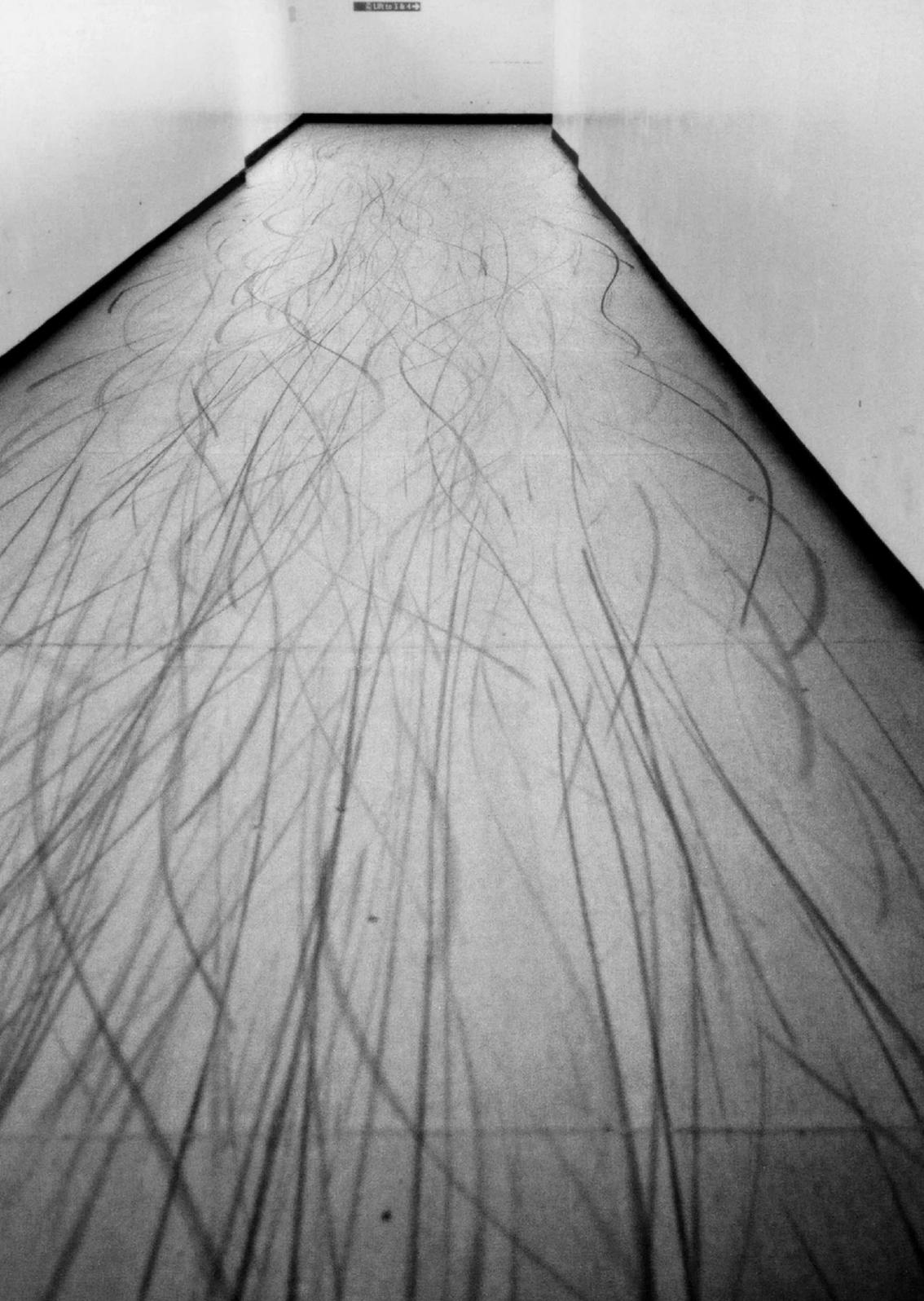
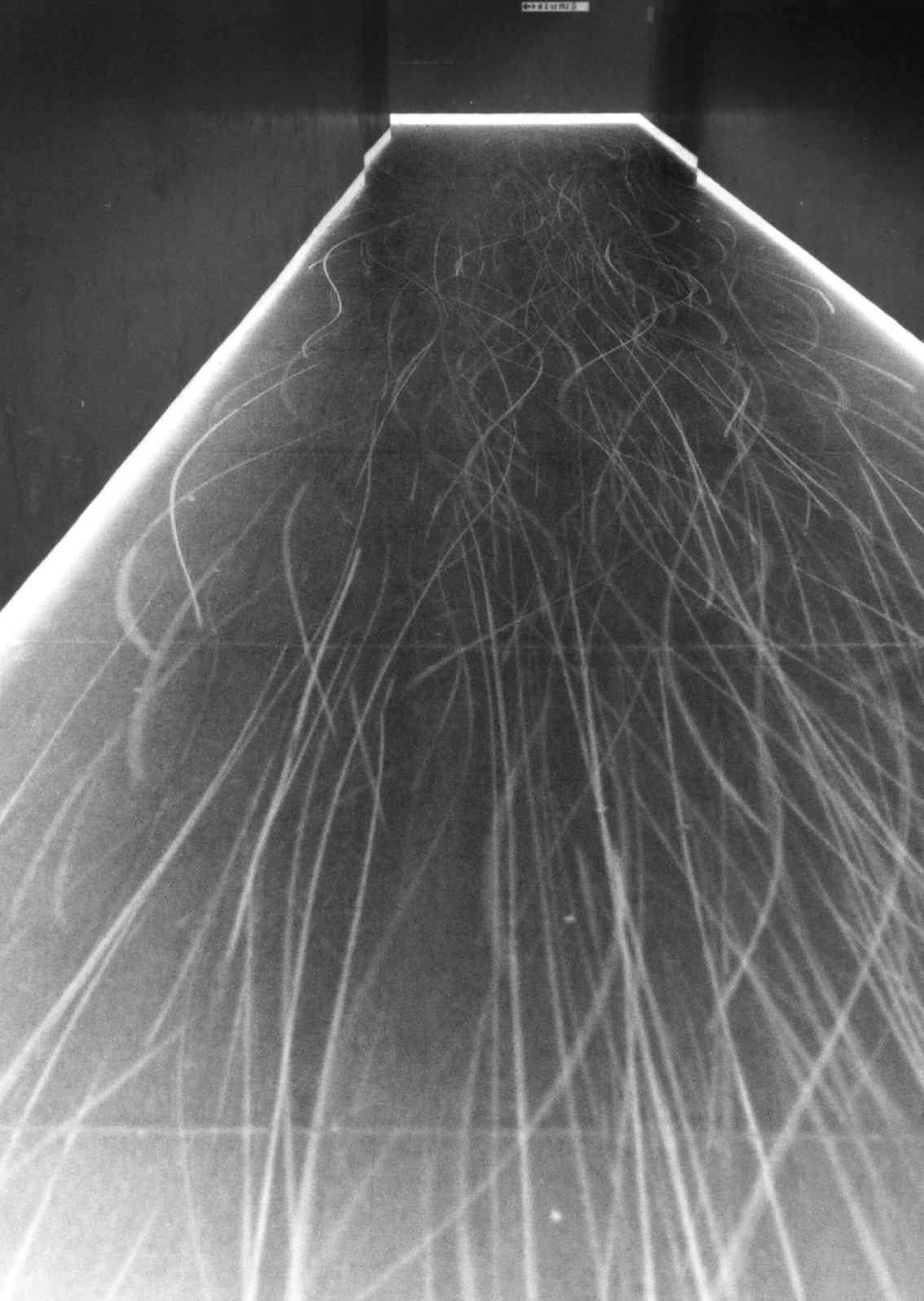


noise map

justin bennett





noise map

justin bennett

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Let there be noise.

The static between stations on the radio is the leftover echo of the big bang; the first noise - or at least the first one we can ever know about. This white noise is a signal containing, statistically, all frequencies - all possibilities.

In tantric Buddhism the world consists of a complex web of vibration and resonance that originate from a single point of sound. The universe is knit together by Shakti "making an indistinct sweet murmur ... like a swarm of black bees drunk on honey, whose resonances evolve the fifty letters and from them all poetry and all realised form...." ¹

According to information theory, noise is "any undesirable signal in the transmission of a message through a channel... all types of perturbation whether the message is sonic or visual."² Thus the "snow" on a tv screen is noise, an unfounded rumour is noise in a sociological message, and unwanted "pop up" advertising and spam is the noise of the internet. Noise is usually thought of as chaos, total randomness, but noise can just be a sign of complexity and it can have positive effects. Evolution happens partly due to random mutation and "shuffling" of genes, which is nothing else but noise disturbing the message of inheritance within the channel of life. Digital systems use noise in the form of random numbers to shape and smooth the rough edges, the artefacts of the digitising process and to make the resulting images or sounds appear more "natural" or analogue.

Ever since humans started to use tools, we have been augmenting the noise in our environment. Not only has this been a million-year-long *crescendo*, it has been an *accelerando* and a *glissando* as well. Increasing the input of energy into a system generally increases its frequency as well as its amplitude, although the frequency change does not always happen smoothly. The limitations of the human body determined the frequency, or the rhythm, of work with axes and hammers. With the invention of the wheel, and the use of animals or water wheels, this rhythm sped up. We still measure mechanical power in horsepower. The steam engine increased the tempo even more, but it was not until the internal combustion engine structured the power of explosion that a revolution in energy use and rhythm took place.

Rhythm sped up and became pitch, traffic noise - the ubiquitous ambience of all populated areas.

When revolutions per minute come to be measured in cycles per second, or hertz, we have already entered the computer era where the tempo of work is precisely tuned by an electronic clock. Quickly the frequency swoops up beyond the boundary of our hearing and into the Mega- and the Gigahertz. We can't hear this accelerated frequency of work any more but it continues to have a profound affect on our lives and our bodies. As Nam June Paik noted, video is the same as audio, it just vibrates faster.

Noise is the vibration of work, but also of play. Noise is the sand between your toes, the kink in the cable, the music that keeps you awake and the sea that lulls you to sleep. Noise is accident, chance and luck. Noise is the vibration of life itself.

We can only imagine the noise of prehistoric times, but we are still listening to the echo of the last hundred years of noise.....

Listen to the scratching of the phonograph needle.

Listen to Russolo's *intonarumori* intoning rumours that spread and echo throughout the last century and into this one.

Listen to the artillery of the great war, the air raids of the second and the radiant noise of the atomic bomb.

Listen to the ticking of the Geiger counter.

Listen to *musique concrète* capturing, fixing noise, hijacking it from its source.

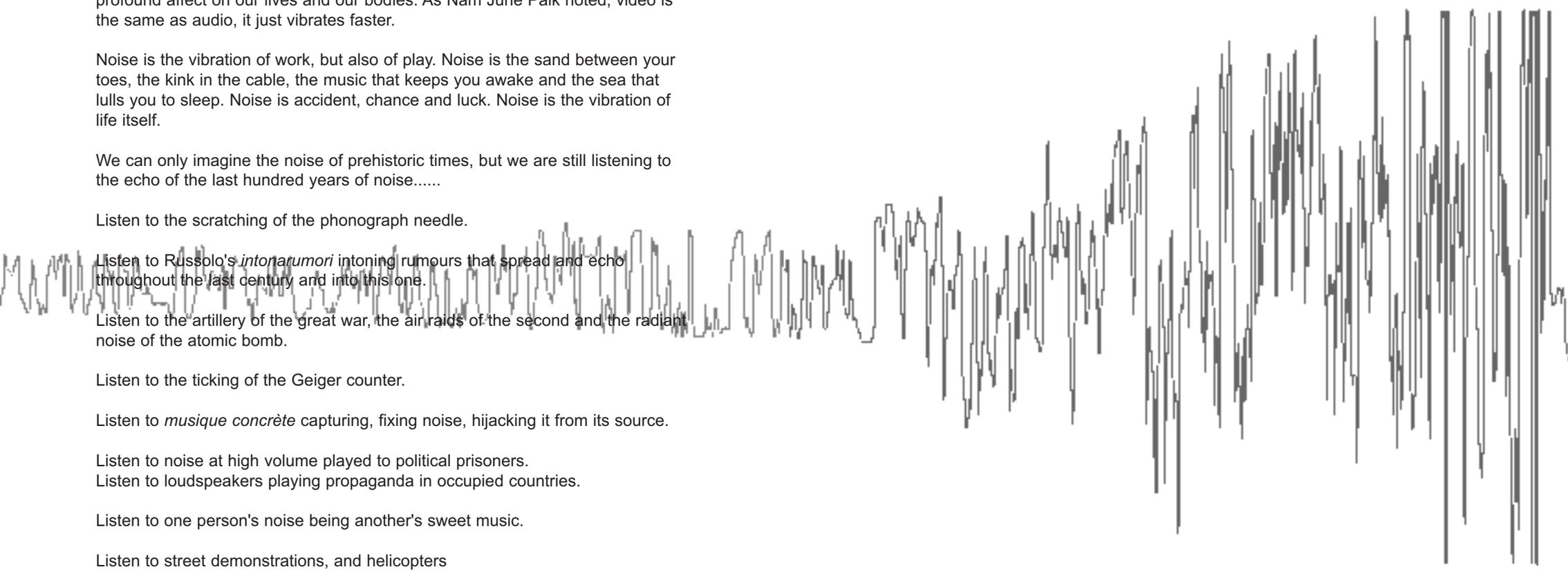
Listen to noise at high volume played to political prisoners.
Listen to loudspeakers playing propaganda in occupied countries.

Listen to one person's noise being another's sweet music.

Listen to street demonstrations, and helicopters
(the ears on the ground hear the eye in the sky).

Listen to the noise of guitar, bass, and drums.....

and then imagine the noises to come.....



On the line.

Drawing is cartography - the mapping of places, thoughts, energies, noise, space and time.

Drawings arise from an urge to make a line and then to follow it.

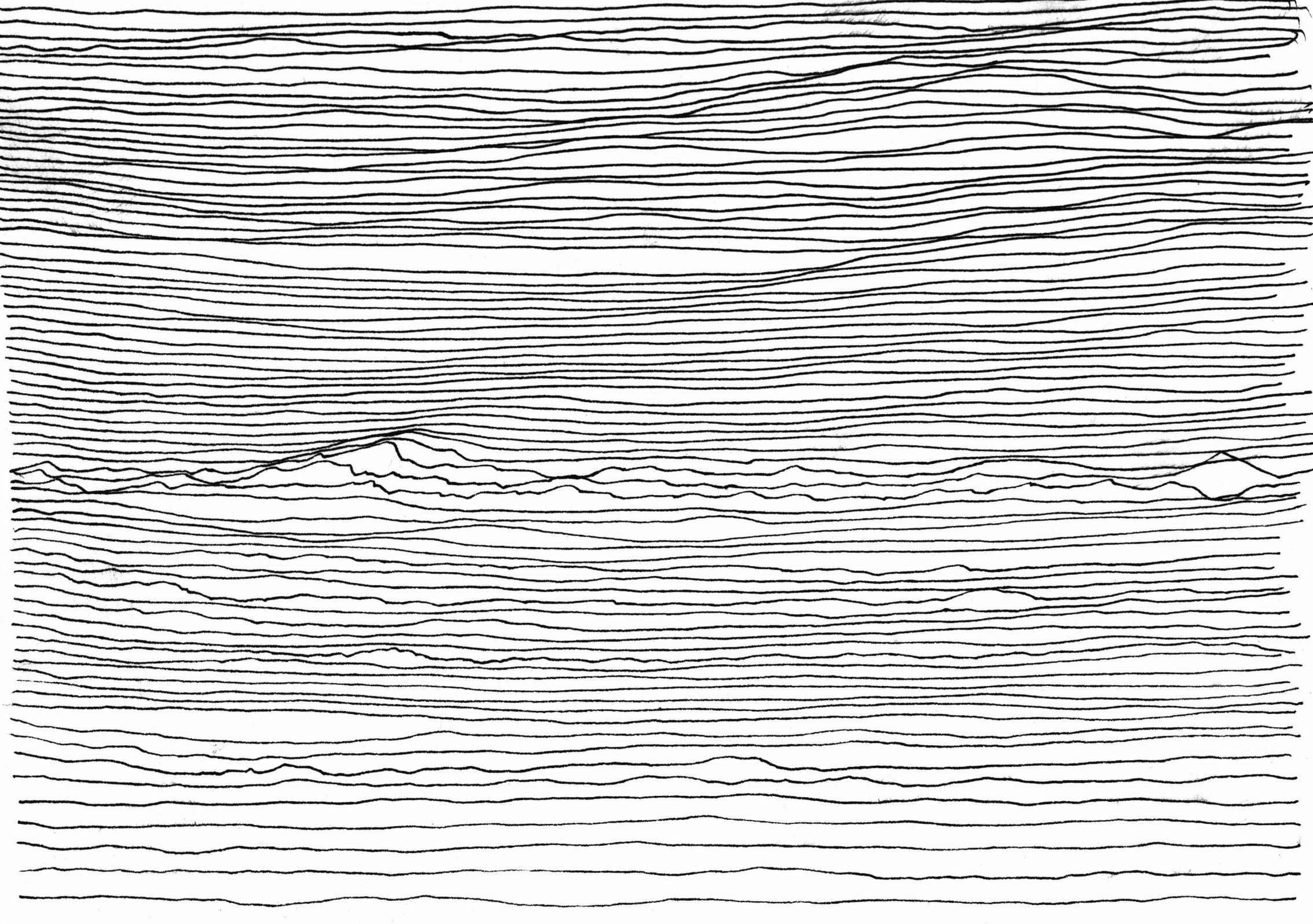
A line can be a trace, a landscape, a road, a border, a wave, a blade of grass, a trajectory, a word, a telegraph wire, an antenna.

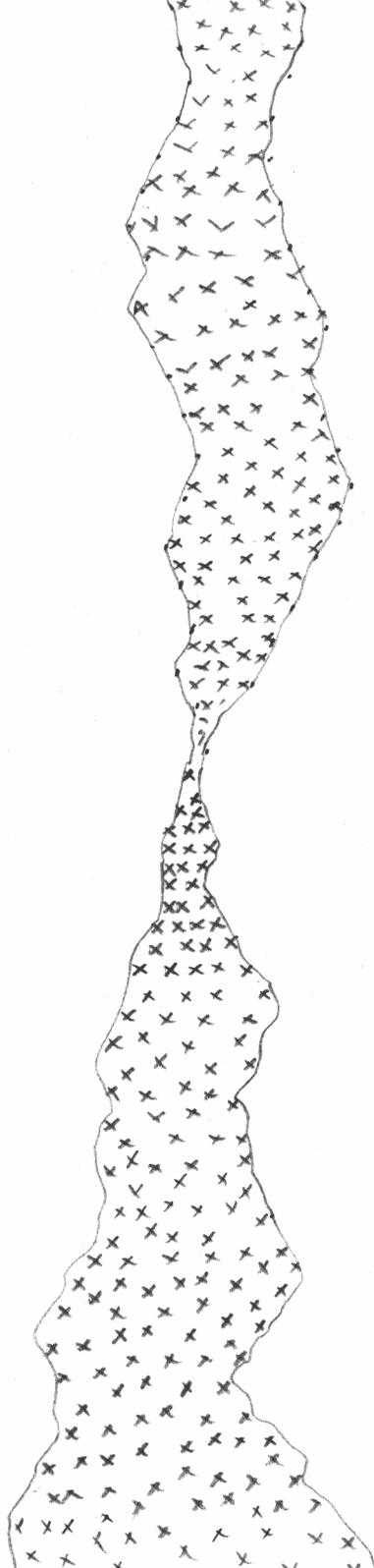
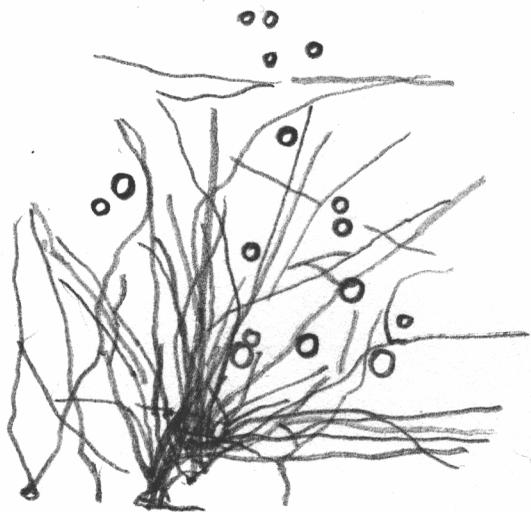
These lines cross, knot and tangle with each other.

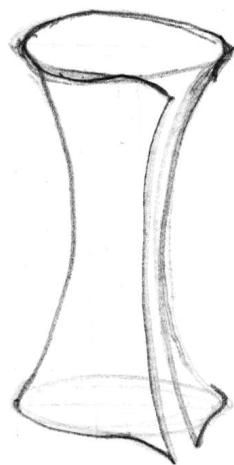
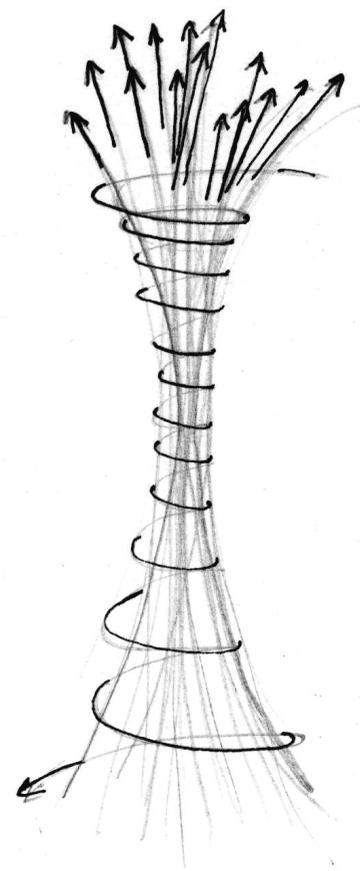
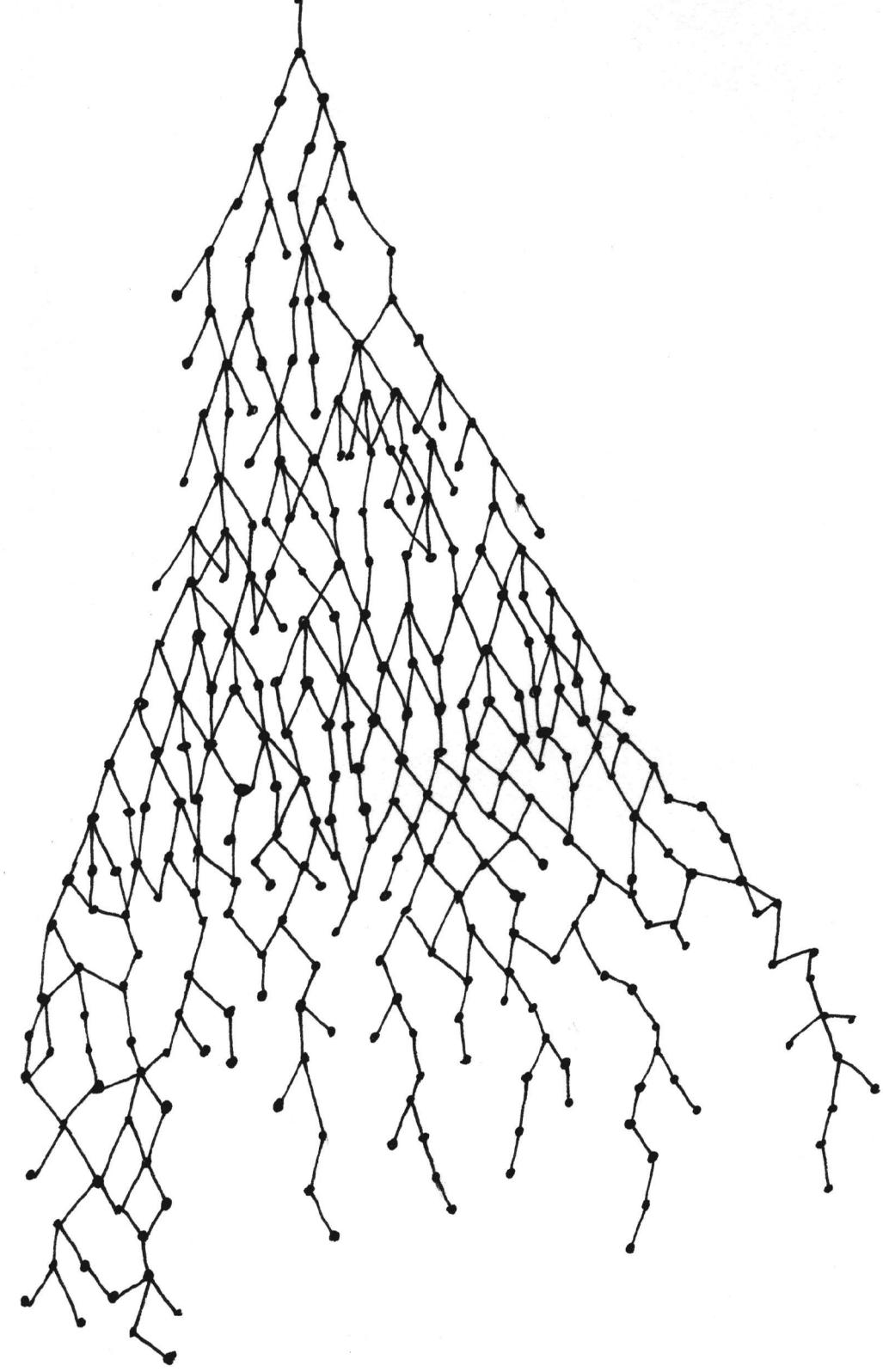
They form maps of imaginary cities, sketches for sculpture, computer diagrams, or musical scores.

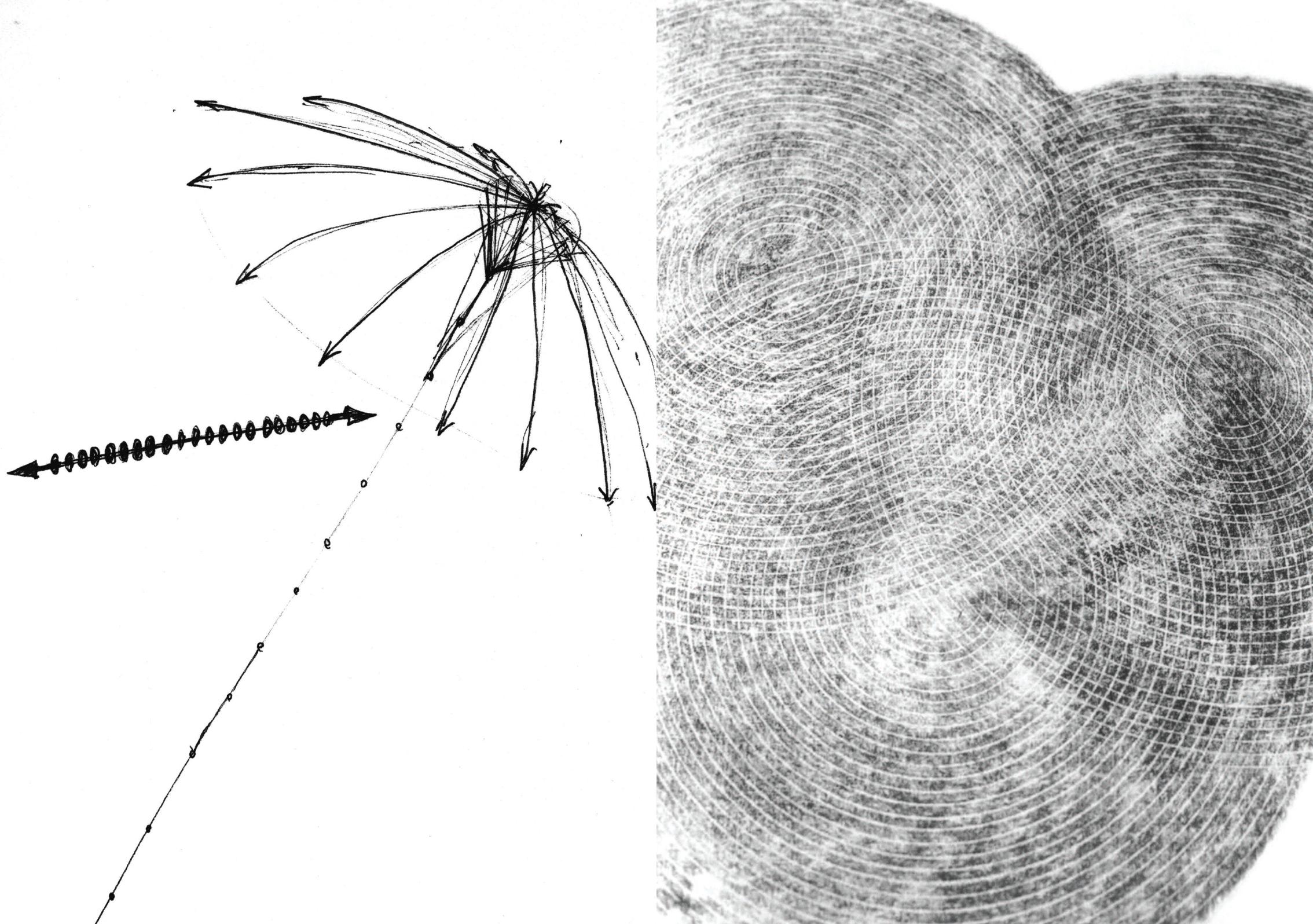
The material can be pencil or ink on paper, but can just as well be pieces of metal or loudspeaker cables on the floor.

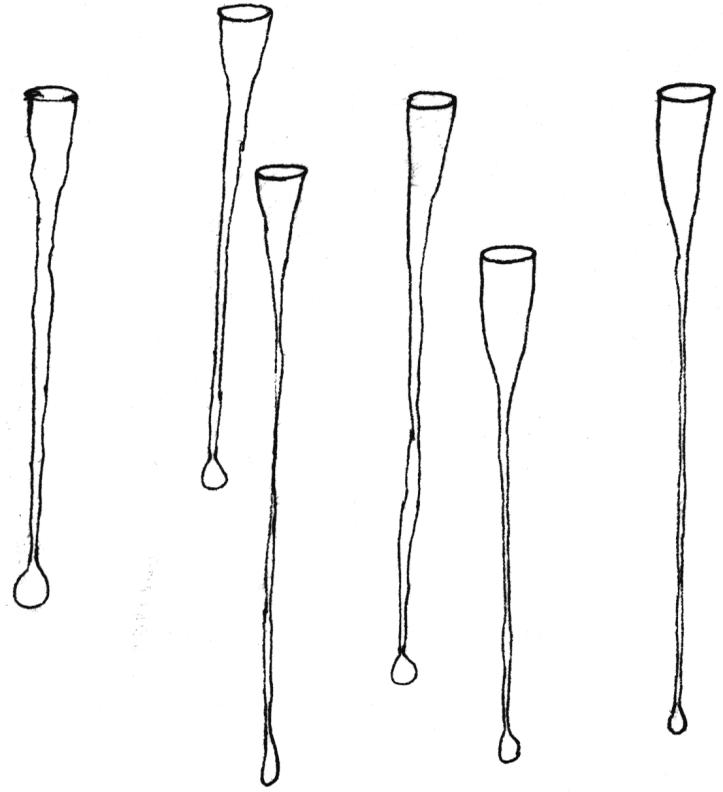
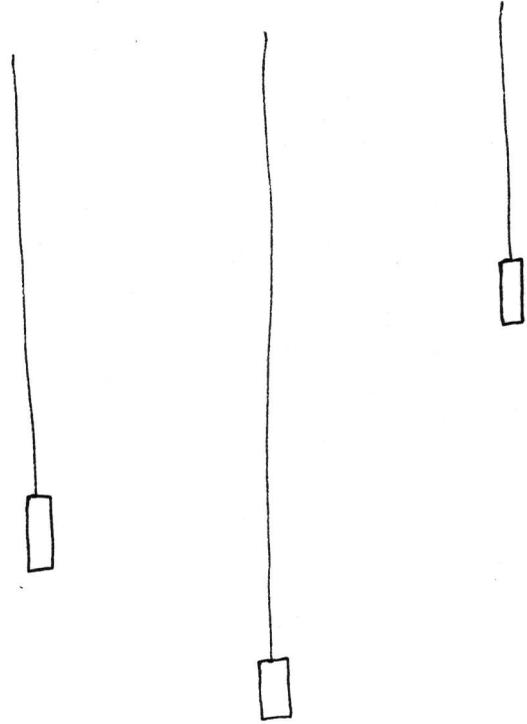
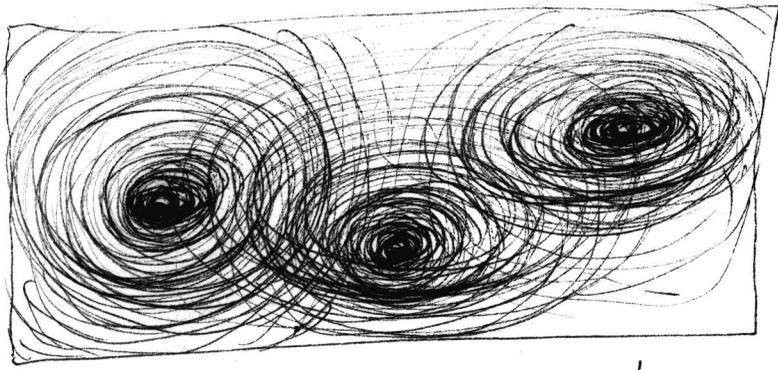


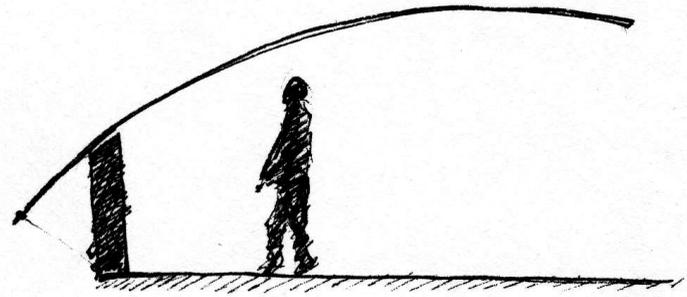
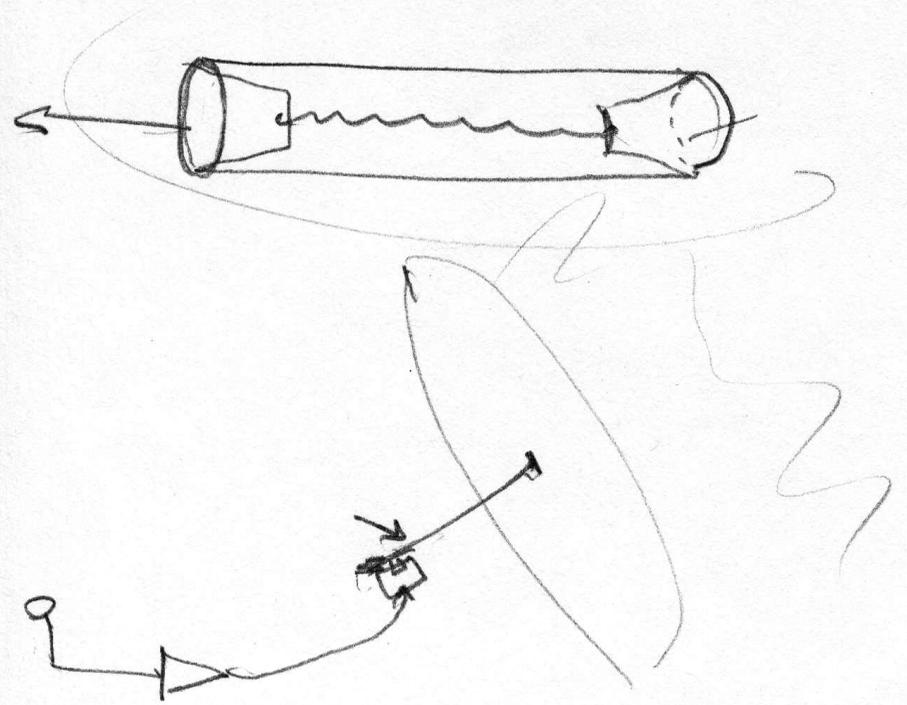


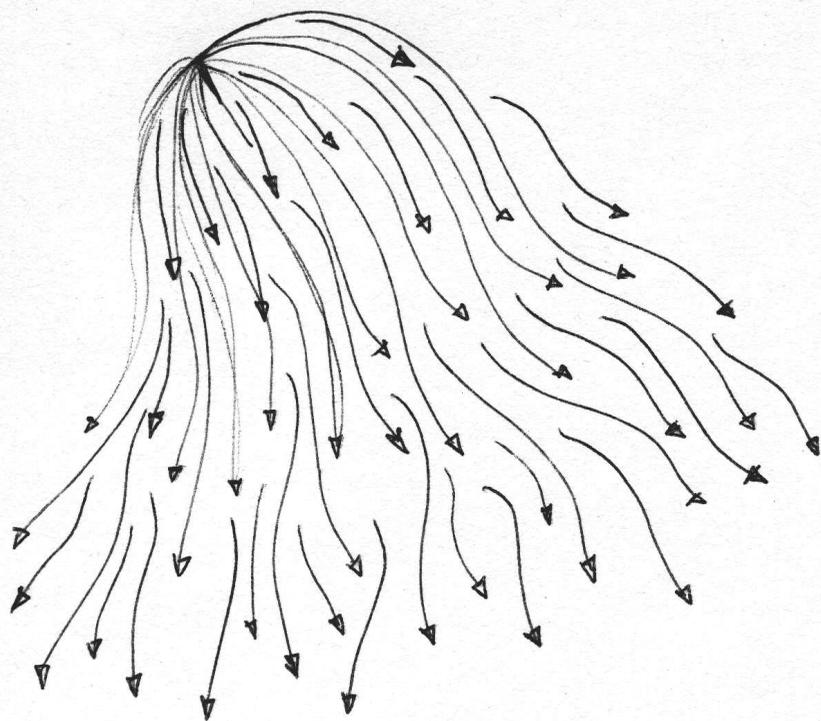
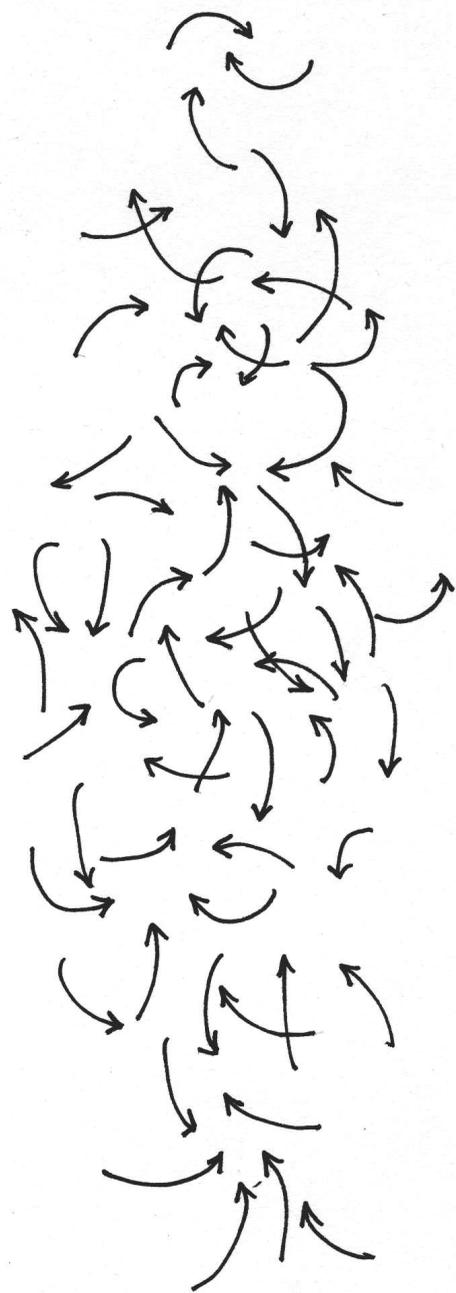








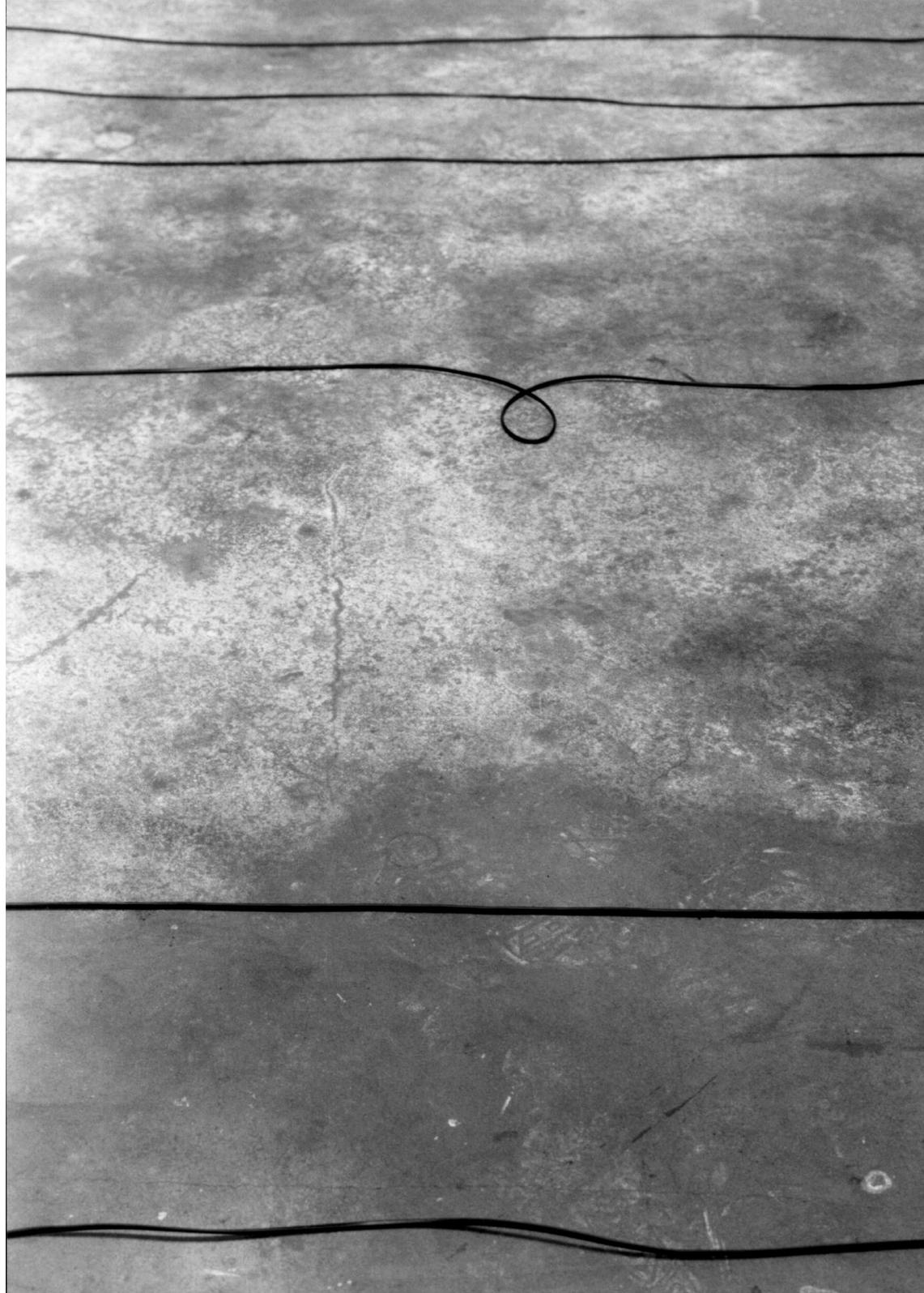












R-94 DAT 242. Alok
transmediale berlin 2003

DAT SOURCES MADRID 2-03
+BCN + VALENCIA

R-94 DAT SOURCES MARCH 03
VALENCIA BCN
MASCLETAS PROTEST

DAT SOURCES APRIL 03
BCN - AUSTRIA - BCN

DAT SOURCES NDSM 2

DAT WLF RECORDINGS
MAGNETIC FIELDS 2003

R-124 DAT GARDENS ROTTERDAM
SOURCES 3-2001

IIIXBUU SITE (Hasteland)

ANOS OPEN PICNIC LING
6-00 BARCELONA

DUGNDE PERF. 18/10/98

R-124 DAT + STUDIO . SMALL SOUNDS
XRX 99 + FPT

R-94 DAT SOURCES OKT 2002

R-124 DAT europa 2. stereo 05

DAT SOURCES MAY 2002
US . → AUG. UK

RAINSTEIN . SYNTHI + DIGITECH
SHOLA AMARIBOLX .

ENFLAND + SCOTLAND
APRIL 1997

DAT SOURCES BARCELONA / FRIBOURG
07-00 MALLORCA

ND WORK
ec June 99. ROTTERDAM OSTRO

R-124 DAT SOURCES 12.01 → 1.02
DH, PARIS, RENNES

PARK WDH
BMB con.

DAT AUDIOGIDS
TEXT SOURCES

DAT SOURCES SEPT. 2001
(BINARUALS)

DAT WALK DH BINARUAL
+ OTHERS

SOURCES NOV 99 - JAN 2000
BOROMAX / CROW

DAT HORTUS CONCLUSUS
WORK TAPE

STAD WORK & SOURCES

Archive.

scrolls: In the archive of noises the sound is rolled up on tape spools, cut in a line tracing an inward spiral into vinyl, pressed as an outward spiral into aluminium and plastic, or stored in a numbered indexed computer memory. The digitisation of sound tries to break down the line into particles, bits. Without the line, the spiral, the scroll, these bits are just dust.

memory: a collection of sound recordings can be thought of like a photo-album except that, obviously, they exist in time. They trace our engagement with the acoustic environments where they were made and defy or confirm our memories. Sounds bring back memories which can have nothing to do with the sound material, but are embedded in other senses and emotions. Certain sounds come to represent people, places, events, feelings. And the personal meaning of these fetish-sounds is impossible to ignore when constructing a piece. Like hidden signs in a painting they weave a secret web behind abstract structures and more obvious concrete or narrative ones. They are there, not to be decoded, but to act as a personal mnemonic device, like objects in the rooms of a memory palace.



Butano.

Returning to Barcelona after 3 years I have the plan to record the gas salesmen. Pushing heavy trolleys through the city, they advertise their ware by banging a spanner against the gas bottles. This hard percussive sound is very effective and changes with the territory, bouncing off the buildings like bat calls up to the highest floors from the narrow streets below. I want to follow one of these gas sellers on his route, listening to all the changes in reflections and resonance as he walks through the streets. Only..... since I've been away, some diligent noise abatement officer has been at work; no banging allowed. The streets seem strangely quiet. Only an occasional shout from below: *aaahhoooohhhh* with the *oooohhhh* going upwards in pitch. "*Butano...*" they call.



Listening at a distance - Materiality in concrete sound.

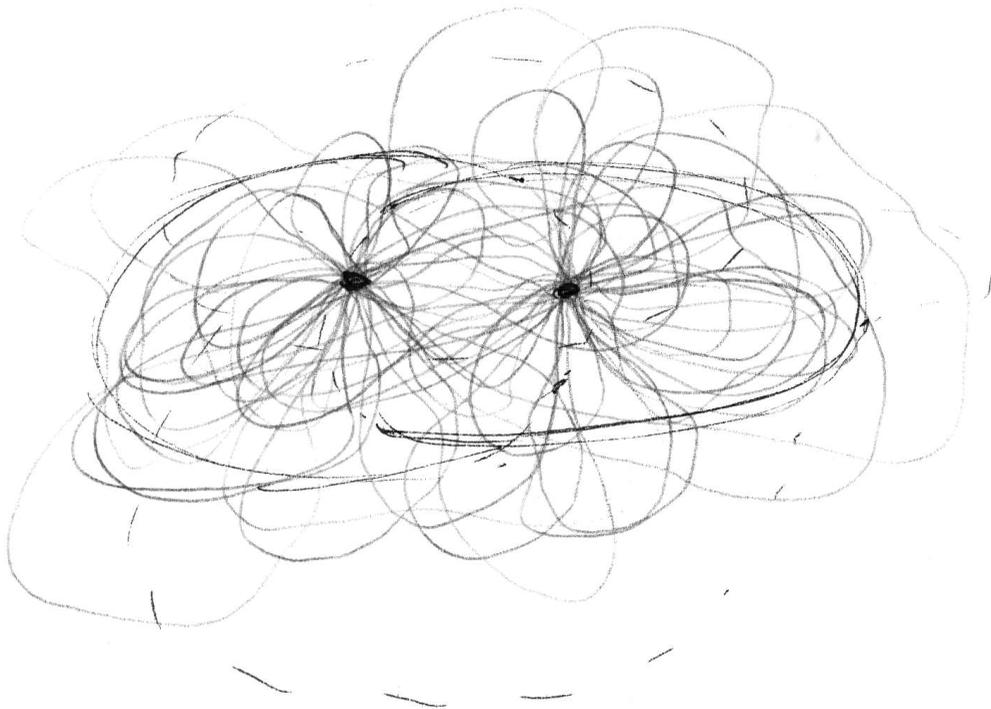
As listeners to sound art, we are often distanced from the sound's origin by the use of technology. The chain of production; recording, editing, mixing, broadcasting, etc, that stretches from the artist's concept to our ears is a long one. It is tempting though, to think of a sound as having a supernatural connection with its source. Like a charm, a fetish, or a type of hologram - a part containing the whole. A sound is the material and form of its source manifested in vibration, dependent of course on the energetic input necessary to cause its sounding, its sympathetic vibration or resonance.

Once it is recorded, one can work, sculpt with sound almost as if it were physical material, containing within it the essence of its origins somewhat like a homeopathic remedy. The sound of bees can become honey or one can fuse the sounds of fire and ice. Hearing these sounds further down the chain should infuse us with some of the source's original substance.

But what then of the sound's original context? On its way to our ears, or to a microphone, a sound travels through air, across rooms or through forests and in doing so it is changed by, and charged with aspects of its environment. "As soon as the call is in the air, it doesn't belong to the frog that produced it anymore."¹

And a sound is never alone. Making recordings of an environment is necessarily entering into a relationship with the space and the flows of things and people across it. One has to accept the possibility of noise of all kinds; sonic accidents, interaction, even violent reactions from the humans or animals that may be around. "Field recording necessarily opens oneself up to the field." writes Brandon LaBelle², situating sound recording within a socialised and politicised field.

The recorder / listener can never be a distanced observer. Listening is by definition inclusive, participatory - one shares a space with the sound source and one is implicated in the action. The old riddle; if a tree falls in the forest and there is no-one to hear it, does it make a sound? can be answered with: Yes, but it would sound *different* if there was someone around to hear it.



Sound is material, context, space and time all at once; action in a place. The placement of a sound in its environment is further complicated by its placement in memory, and by its objectification - its placement within a medium so that one can re-hear it.

The objectification of sound was a prerequisite of *Musique Concrète*³ which systematically introduced noise from the real world into music. Many of the compositional techniques involved playing a recorded sound backwards or changing its speed. As Dick Raaijmakers points out⁴, it is impossible to reverse a sound while it is connected to its source. It is first necessary to fix it to a physical carrier - a disc or tape. The *carrier* can then be moved backwards or at different speeds - not the sound. The sound itself always radiates outwards from its source at a constant speed.

Pierre Schaeffer asked of his listeners to forget the source. They should practice blind or "reduced" listening like the Acousmatics of the Pythagorean brotherhood, forced to listen to lectures delivered from behind a curtain.⁵

The removal of visual stimuli allows the listener to concentrate on the meaning of the words or the music and, in *musique concrète*, on the formal *spectromorphological* qualities of the sounds themselves.

Listening now to Schaeffer's *Etude aux Chemins de Fer*, made in 1948, I hear trains. It sounds raw and noisy, full of crackles and pops - the noise of the medium itself. Still, I can hear trains. Whistles edited into melodic fragments, train wheels looped into rhythms; it is like watching a scratched black and white film of old steam engines. This is of course listening with hindsight - the novelty of the fact of reproduction has worn off after so much radio, television, recorded music, and the repetition and sampling that has become ubiquitous in popular music. I find it hard to appreciate the piece "acousmatically", to listen "blind", hard not to imagine some scene taking place through the window of the loudspeakers. Blind people themselves are used to orienting themselves with sound and couple their hearing to spatiality and physicality in a very real, everyday sense. It must be even more difficult for the born-blind to listen to such music.

Acousmatic sound, listening without seeing, could free the listener to make many narrative or visual associations. It also allows immersion in, penetration of, or identification with the sound. But Schaeffer promoted a cool, analytical mode of listening, refusing the dramatic, the literary, the social, the physical possibilities of acousmatic sound in favour of the (sometimes banal) musical.

Schaeffer's dogmatism was not inherited by later *concrète* practitioners such as Luc Ferrari and Daniel Teruggi who realised the multi-disciplinary potentials of sound composition. "When you listen to music in which sounds may be unknown or used in unusual contexts, your imagination builds explanations, contexts, histories for all your listening."⁶

One of the main uses of recorded sound today, that of film soundtrack recording, is full of context. Even if many sound effects in cinema are faked or asynchronous, their main effect is that of grounding the image in the world. Tiny sonic details like footsteps, breaths, the "grain in the voice", a pin dropping, all help us suspend our disbelief in the constructed space of cinema. These are what Michel Chion calls⁶ "materialising sound indices", moments of physicality in an otherwise synthetic world.

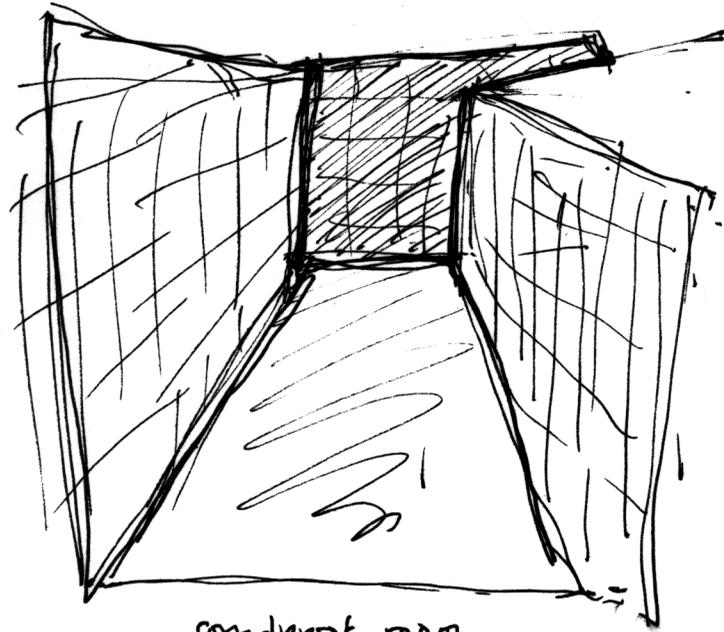
Artists working with recorded sound can choose between many different types of source; environmental, social, literary or musical material. They can choose to record the material using different techniques, creating varying "points of hearing" like the use of the point-of-view in cinema. Then they can organise this material by drawing on the many possibilities for structuring sound in time and space. They can separate microphonic details and use them to build new textures or landscapes. Resonances in the source sound can be exaggerated to heighten the sense of spaciousness. Sounds can become objects positioned in space, or a field through which we journey. Sounds can be used as musical elements- as signs, threaded together as a narrative or simply played as unedited recordings of everyday life. Artists can foreground the technology when it is necessary to reveal the relationship between the material and the tools, or hide it for moments of realism.

In the end though, however realistic the recordings are, however political their content and however purist or engaged the artist is, when listening to electronically reproduced sound we are always listening to machine music. Here loudspeakers are the true sources - and assuming we can see them, we have a non-acousmatic relationship with them.

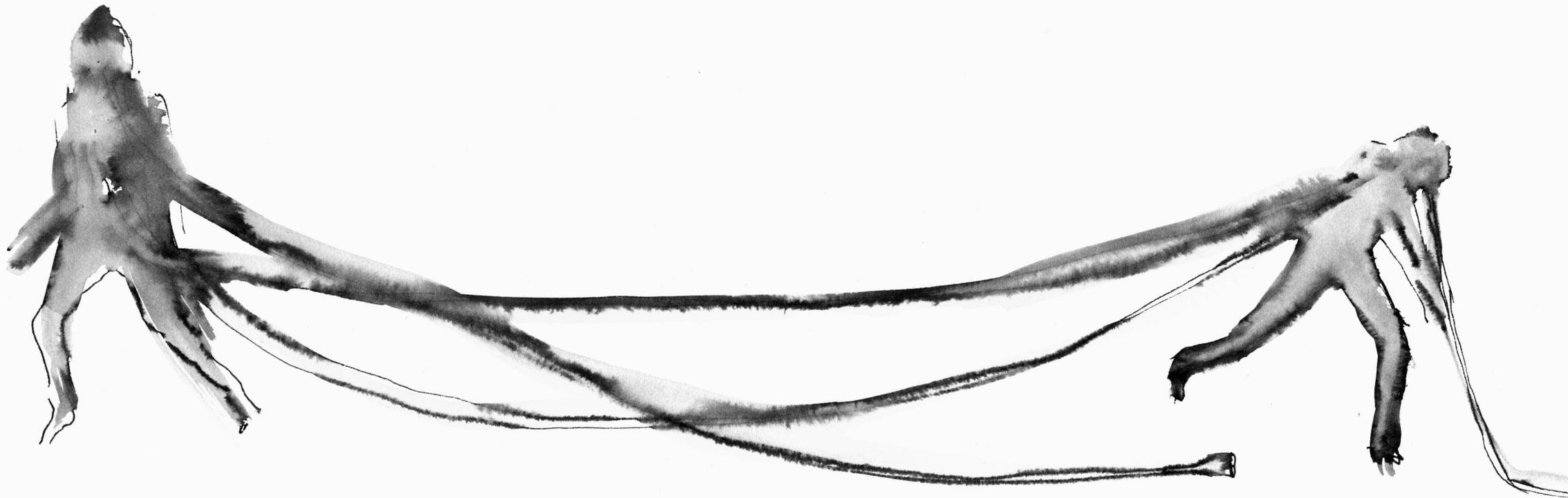
How much of the original source or the original place reaches our ears at this point? How much has been lost or filtered out, and to what extent can we deduce the intention of the artist in the sound that remains?

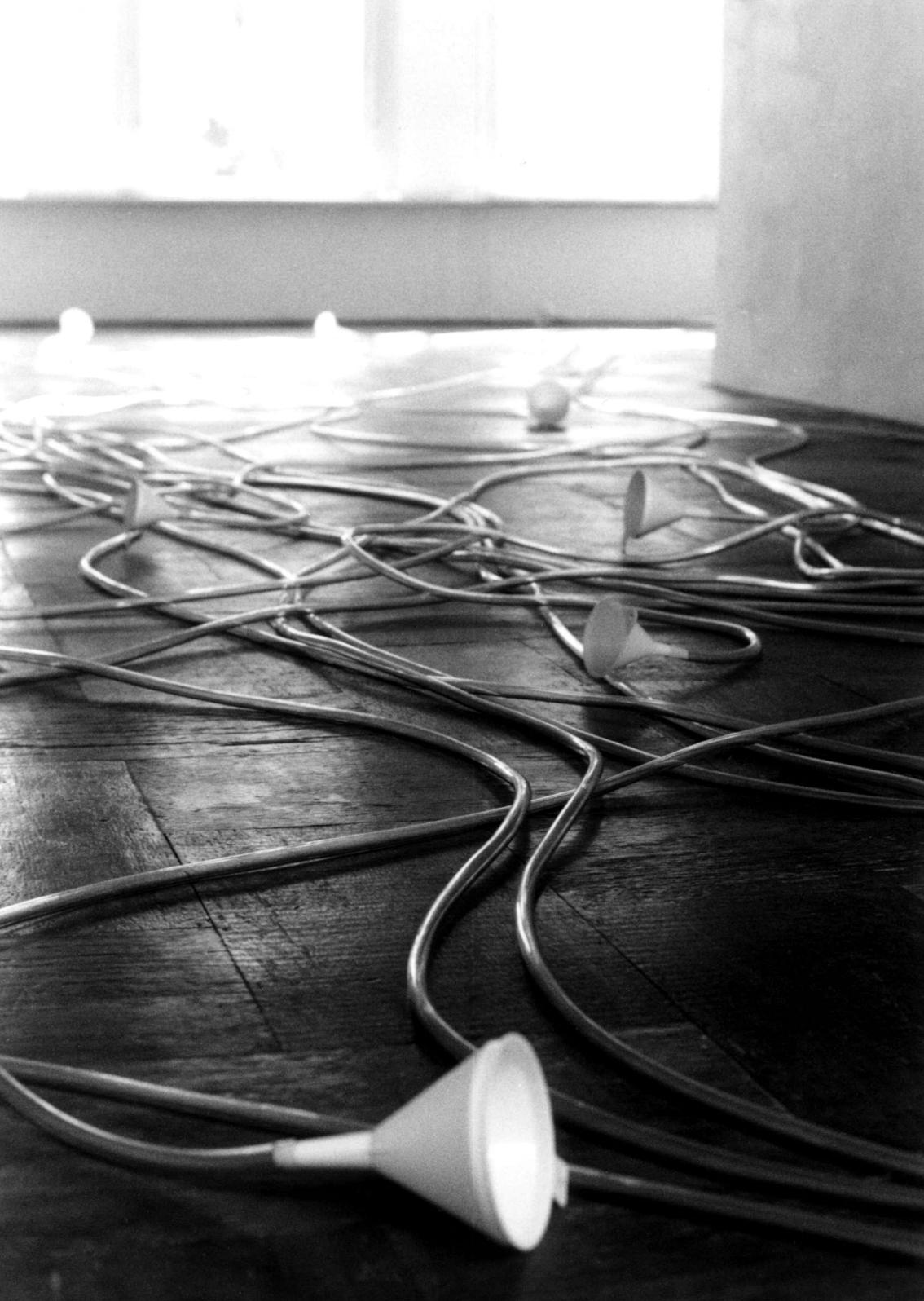
In order to listen we take our place in a machine that transports us to the place of the sound. It is our engagement here with the sound, our active listening that implicates us in the production of meaning. We become part of the technological apparatus, and by conjuring up our own sources, contexts and places we complete the chain.

without a voice



soundproof room.





Soundhouse.

over a background of sound made from breathing, water flowing through pipes and indecipherable radio signals.....

voice one:

Hello, hello?
Are you still listening?

I am.
I always hear.
I am always here.

Sometimes there is too much amplitude.

And sometimes,
when there is too much blocking,
I have to go through the operator.

I have to ask the operator first
to make the connection.
Only when I am connected, everything flows.

The voice, the breath, the tears,
it leaks, the energy leaks out of me.
The light, the sound, pour out of me.

voice two:

I was shut up for fourteen years
so that my breath
could not come out anywhere.

That is the very highest suffering,
that not even the breath
can come out.

And always, the voices inside.
Electric voices,
supplied by telephone.

No connection to the outside,
the nerves don't stretch that far.
That is the very highest suffering.

For you to hear me, I have to breathe.
But then the breath is stopped,
the flow cut into by words.
The words,
echoing the electric voices,
suffocate me.



My mobile, it's my alibi.
When I hear the voices I reach
for my mobile telephone.
I can talk to them and hear them
clearly. It is my thought amplifier.

Before, they were in my ears
or just behind my head.
Now they're in the `phone, in my bag,
always at hand.

These days many people have the
voices with them.

I see them walking with their mobiles,
I smile at them but they are trans-
ported, they are elsewhere, in
ecstasy.

I can deal with them now in public.
It's very normal these days, modern.

Only, when the batteries are low,
they get unpredictable.
I never know when they will ask me to
act.
they are everywhere,
we are everywhere,
there are millions of us.

I can hear through my skin,
through my pores.

Millions of pores.
Millions of tubes.

and then, at last,
the breath, the voices,
through speaking tubes
directed outwards.

I couldn't hear, only from inside.
I saw people stretching cords.

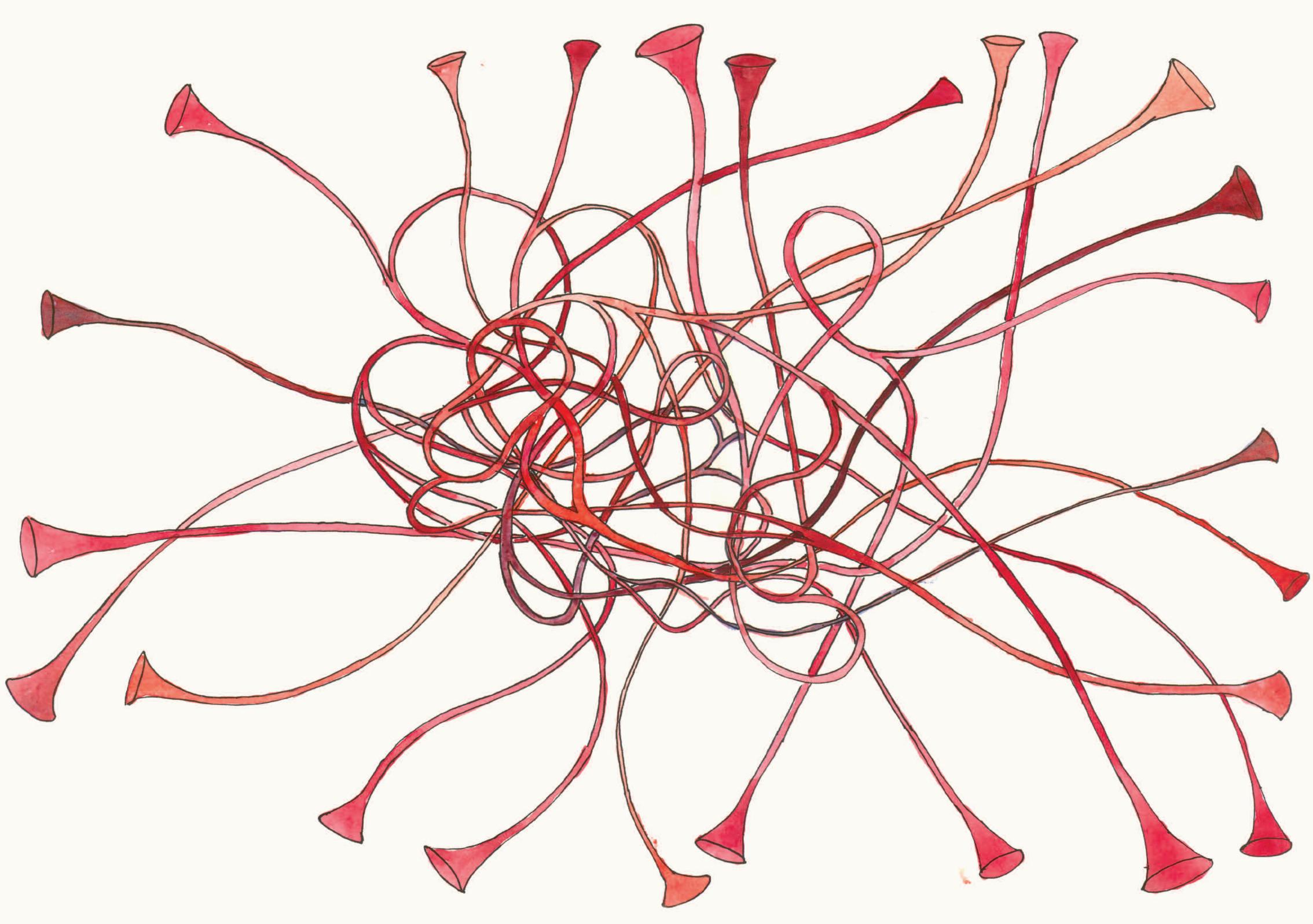
Telephone cords that supply voices.
Spinal cords that supply feelings.

Chords of soothing music.

There are great discords,
the body,

broken into.

And then, the terrible stretchings.
they're continually stretching me.





Demolitions

Lowering the needle into the grooves of the city we trace a path broken into by the scratches and glitches of dysfunctional architecture and town planning.

The city consists of contrasting spaces that are constantly being re-made, re-defined, destroyed, demolished and re-built.

The boundaries between commercial, housing, leisure, administrative and industrial areas (and thus between public and private spaces) are constantly being re-drawn.

These spaces are filled with, and crossed by flows of people, traffic, goods, utilities, money, language, information and energy.

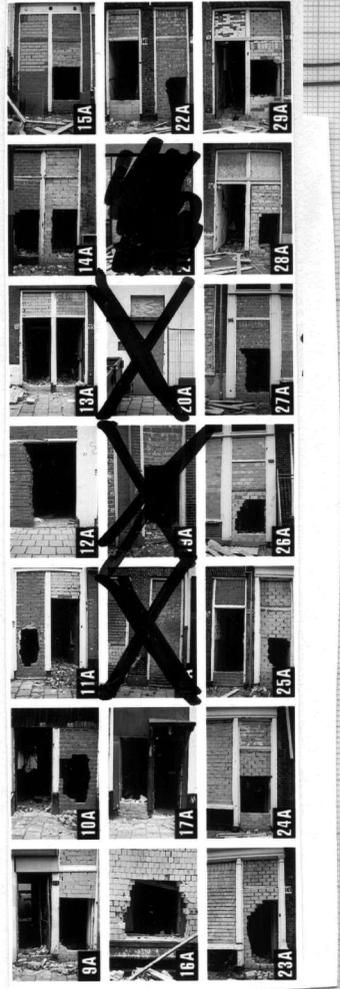
One can see the city as a machine or an organism that constantly reconstructs and reconfigures itself.





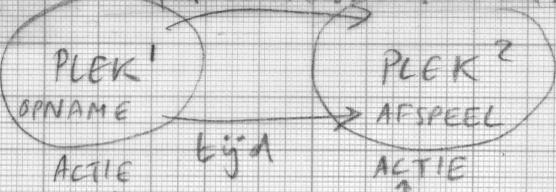
the city is full of guilt

- . familie
- . familie
- . 1 vrouw. 1 stud.
- . 3 antikraak (kunst(en).?)
- . 2 families
- . fam.
- . 8-10 illegalen (tuinbouw)
- . fietsenmaker (zwart)
- . gekraakt
- . ook?
- . familie
- . bordeel
- . stel
- . familie
- . fam.
- . dakbedrijf
- . familie
- . timmerman (tevens pooier)
- . stel (bakker)
- . 2 stellen
- . oude mvr.
- . 2 oude mannen
- . familie



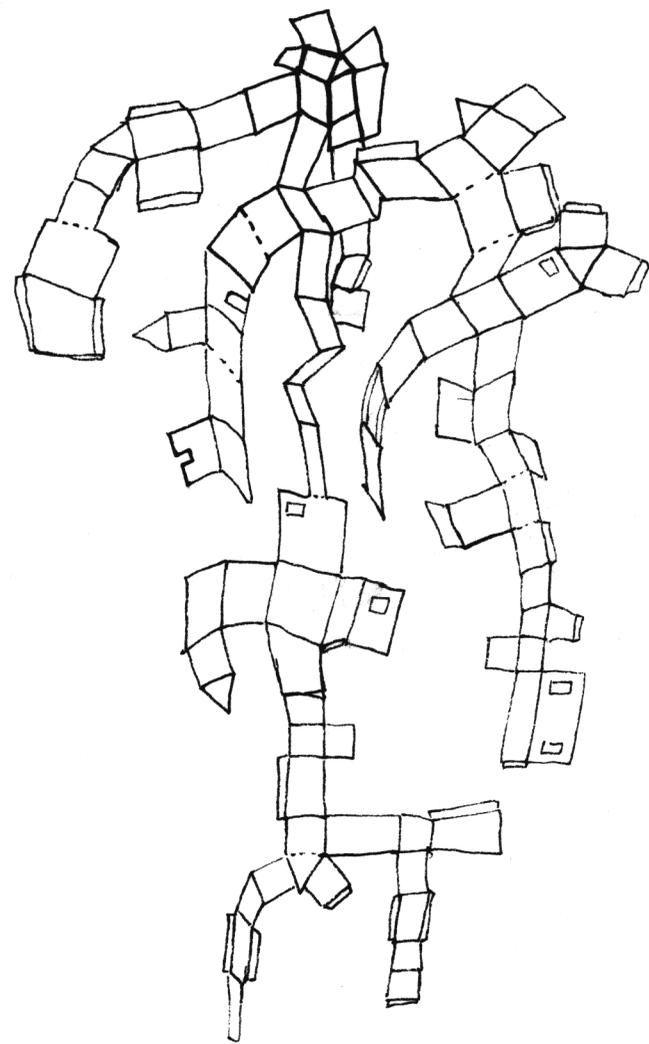
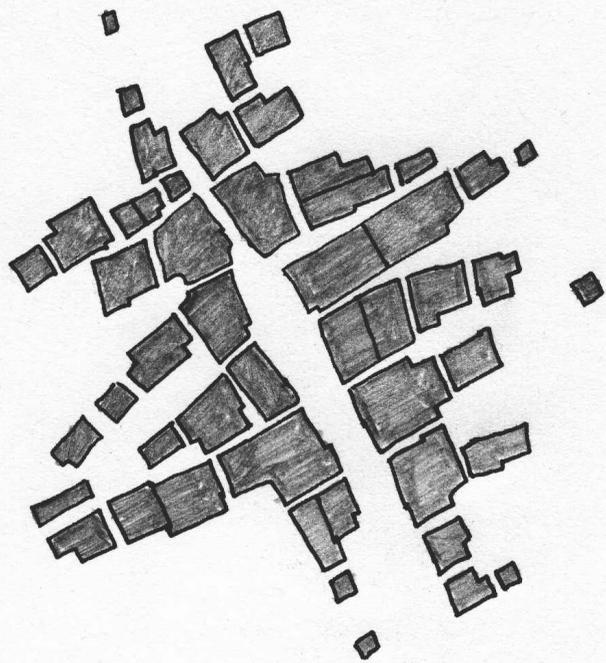
Everything I say is being recorded and will be used against me in a court of law.

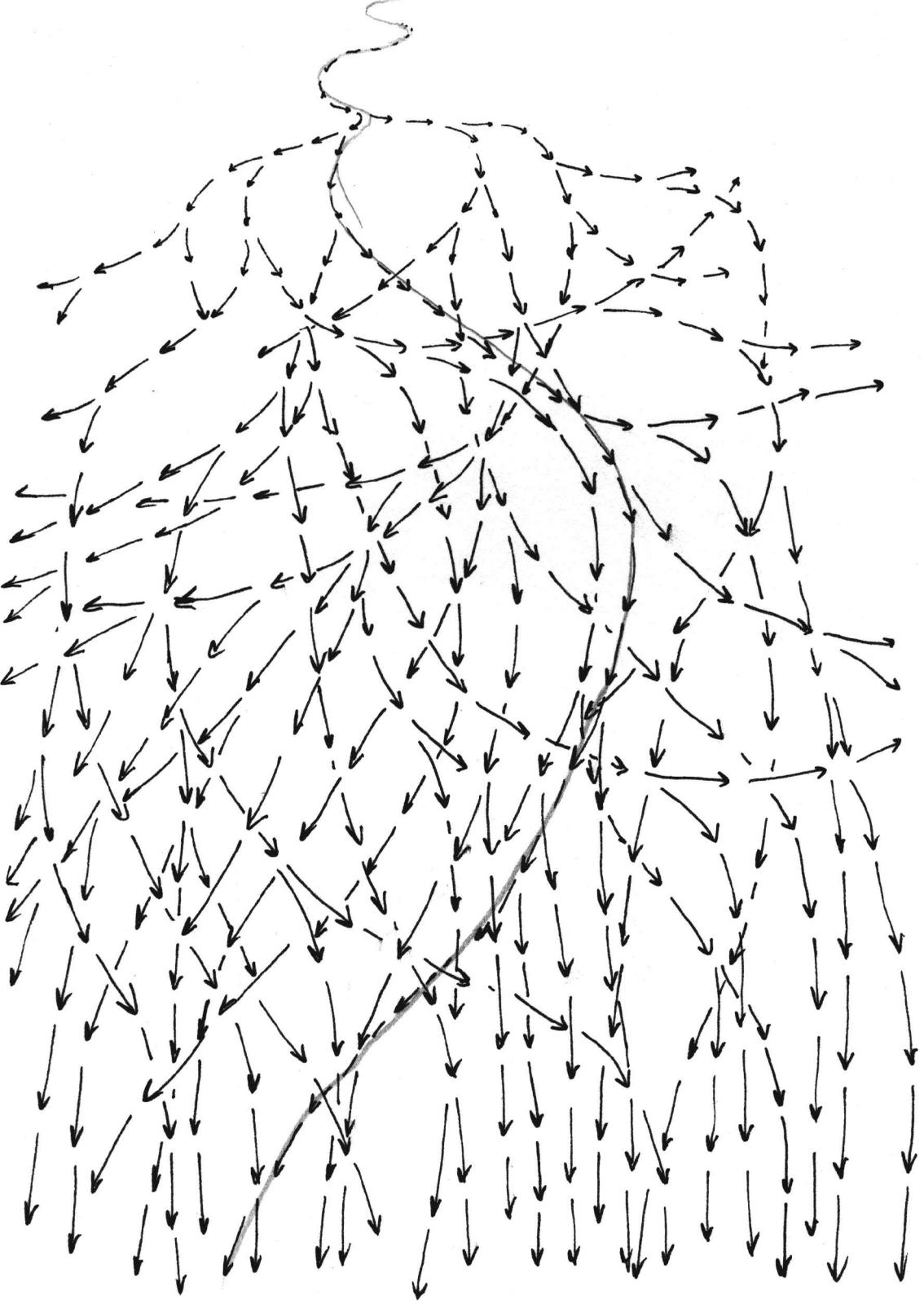
Soi. II/34 every idea which in us is absolute, that is to say, adequate and perfect, is true.



Audio guide for Den Haag (excerpt).

< sounds of breathing, footsteps in rubble >
 "You're walking outside, I'm inside, a couple of meters away from you, but shifted in time.... You hear through my ears..." < dripping > "...I don't know what you can see, what the houses look like now. Now, during this recording, they are empty, waiting to be demolished..... It's night time, and it's raining in."
 <soft rain and drips> ".... god, they certainly let these buildings fall to pieces.... Maybe you were here before once.... this one was a bicycle repair shop.... They came up with some plan or other.... they could sell the ground for a good price. The residents were turned out.....Here lived an old woman with a lot of makeup.... a white face, with eyes like coals....then came the squatters..... and illegal immigrants. I heard radios behind boarded-up windows...They were booted out onto the street by heavy guys. The police did nothing.....nothing... Walk on a bit further....." <footsteps crunching in glass> "Here was a brothel, working up until the very last moment... I can see how the space was divided - tiny cubicles.. lots of mirrors.. delicate girls.... fat men, with even fatter wallets...."
 <more rubble underfoot, breathing.> "Then came the anti-squatters - students, ripped off by some dodgy organisation, 'cause everyone was out on their arses in no time. Then we had arson, rats, pigeons, junkies, shit, chaos, misery.... now and then a splash of blood on the pavement.... And now, the demolition. The day-shift is an asbestos taskforce in spacesuits, in the evening the kids do their bit, and the night-shift is worked by shadowy figures that stumble about..."
 <distant shouting, bangs > Soon they'll be here with the heavy machines, then they'll start building... I've seen how that works these days. I wouldn't live there if they paid me.... And, so?.....have they finished? what are they like, the new houses? what sort of people live here? and how long do you think they'll last? ten, fifteen years? before the whole process begins again.... There's a lot of money in it, I hear, especially under the table..... luxury holidays..... a new garage for the second car..... visits to exclusive saunas, etcetera, etcetera... things just have to be knocked down, papers just have to be signed, the wheels must turn.... ok, I admit, this is conjecture, pure guesswork, there is no proof, they are rumours. But I enjoy rumours.... I listen out for them... oh, and you can just keep on walking, over the Stationsweg.. watch out for the cars... and then sit for a moment in the park on the other side. I'll catch up with you there..."





Listening to the urban rumour.

Rumour is noise, disturbance, an unidentifiable sound on the edge of perception, a vague feeling, or a premonition of what is to come.

Rumour is the sound that guides us through the streets as we wander. It attracts and repels. In vain we search for its source. It is everywhere but nowhere at the same time.

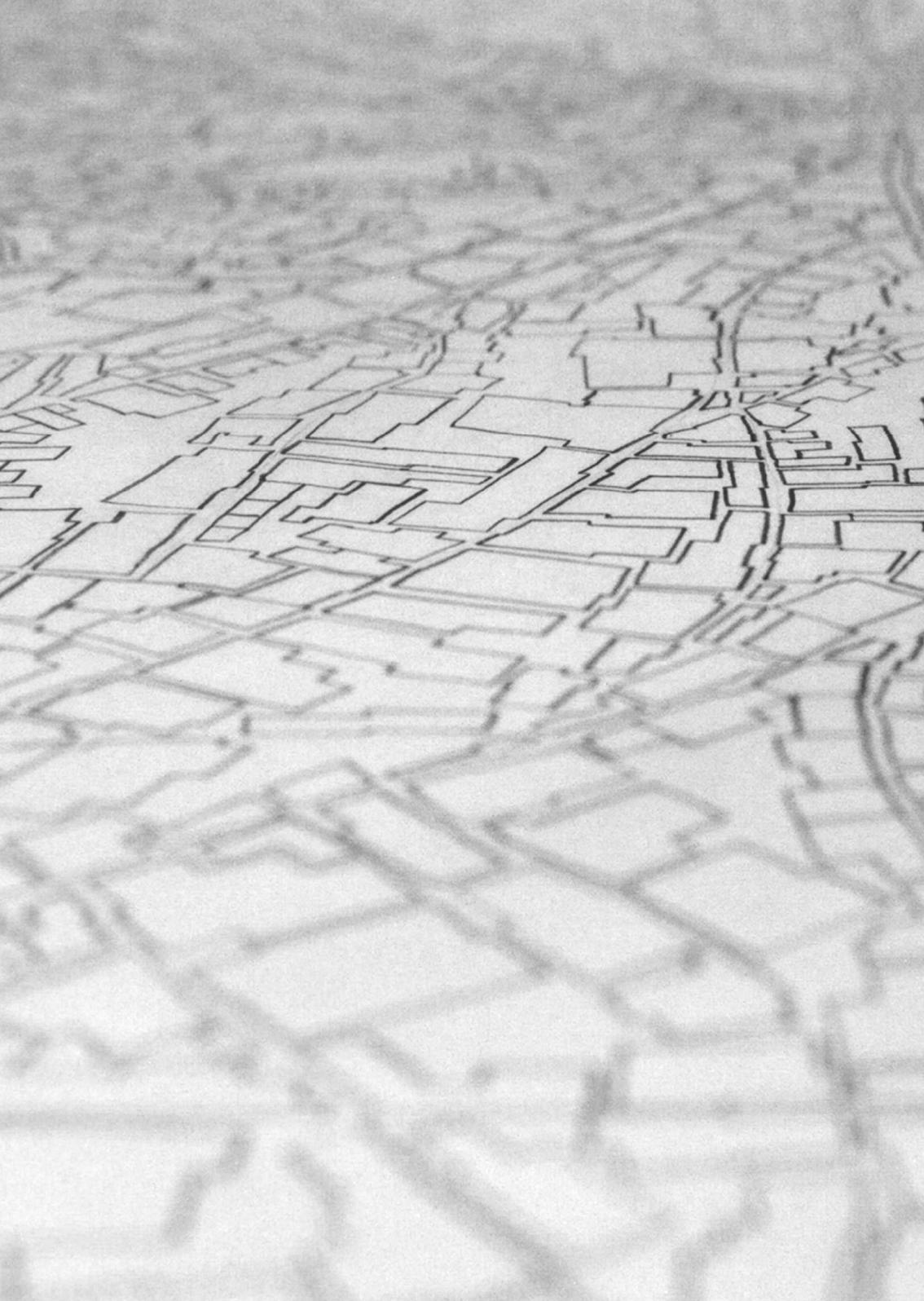
Rumour is the sound of many things multiplied and filtered as it resonates through countless spaces on its way to our ears.

Rumour is the sound of many voices, acts, and movements.

Rumour is the sound of stories. Stories that pass from mouth to ear and, in spreading, form a vector for multiple tales and points-of-view. Translation, interpretation, misunderstanding, hyperbole and desire infuse rumour with conspiracy, jealousy, humour, intolerance, politics or morality.

Rumour heard from afar sounds like an ever changing drone, a soundfield that surrounds and fills the city with energy. We are listening to the city's inhabitants, its architecture, its rhythms and that ungraspable thing that defines a city's sense of place.

Rumour is the sound of the city itself.



Maps.

The map drawings are an obsessive, rhythmic exercise but also an attempt to grow a large form out of smaller elements. There are always things happening at different scales. If you view the work from different distances you see other forms, but they are all made at "ground level". Each building is drawn separately, sometimes even imagined as a real building or plot in the mental city.

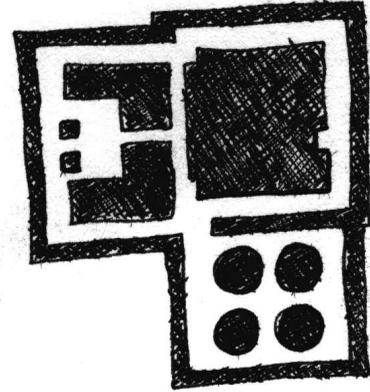
One map, "Portable city", is a home for all the people I could remember in one afternoon. They are all given a place within the drawing and have their own system of connections - the social connections I could remember, but also purely intuitive connections. Thus the drawings become a diagram of the structure of memory.

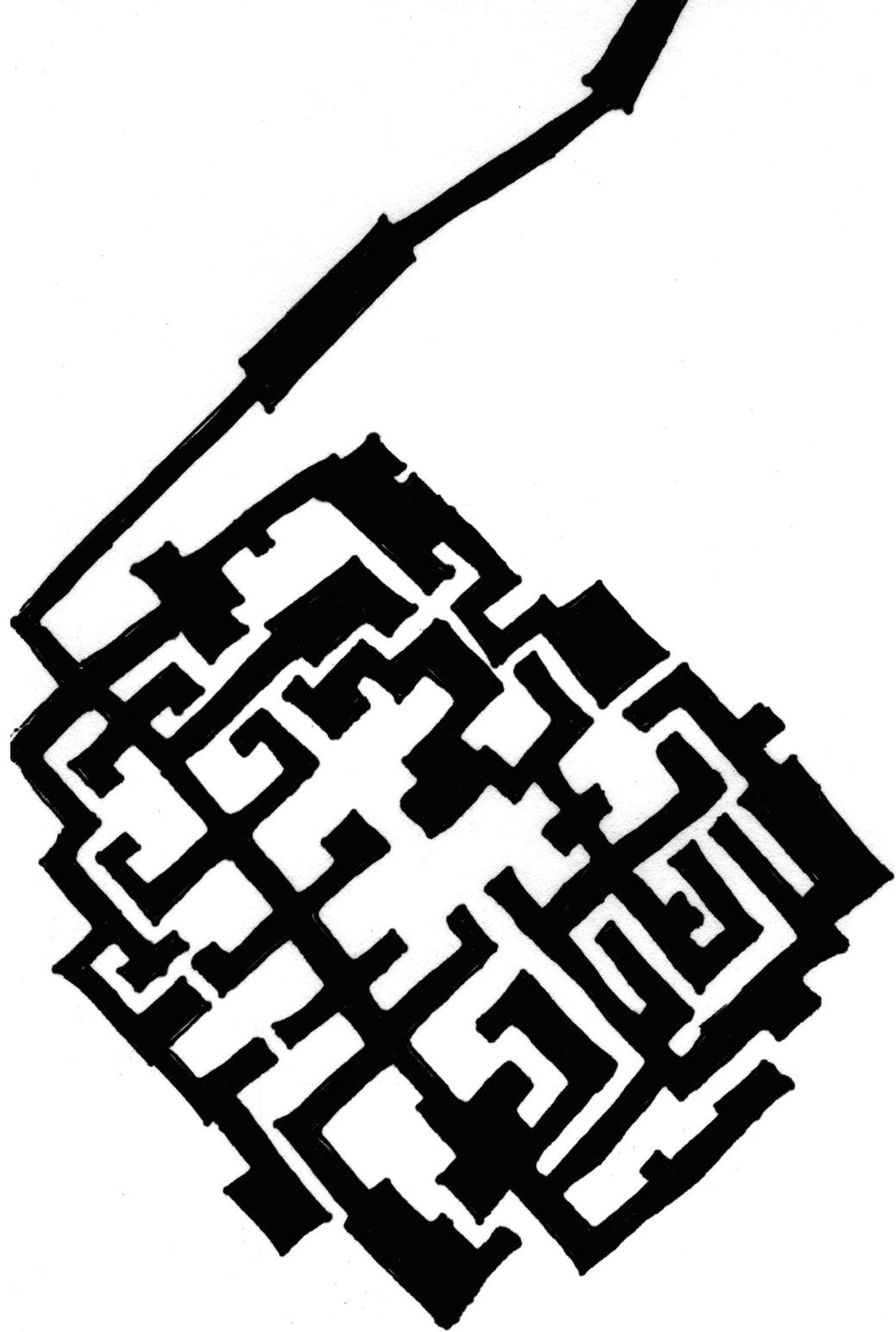
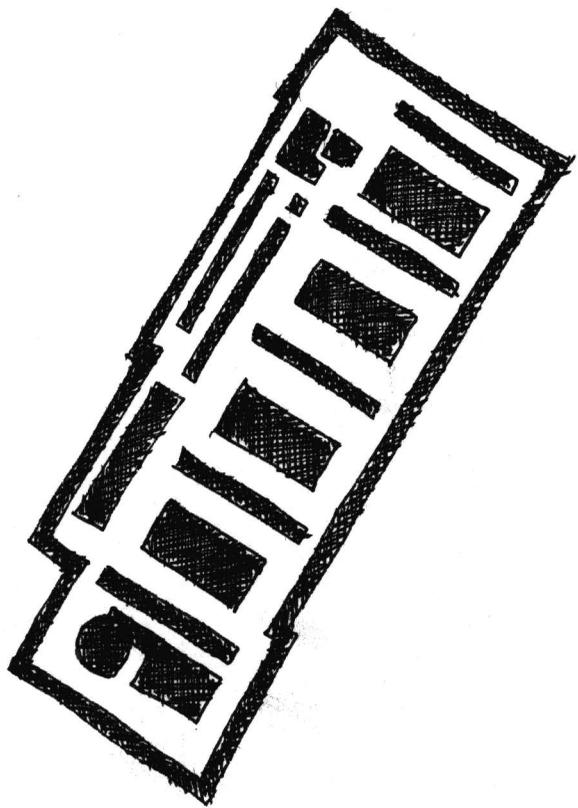
Another set of drawings are of buildings that are not shown on maps: military or other 'sensitive' installations. Cut out of maps they are like empty signs or like parts of mazes, labyrinths built to keep their unspeakable contents mute.

In some drawings all that is left of the city is dust, rubble, noise, as if some terrible catastrophe has taken place.











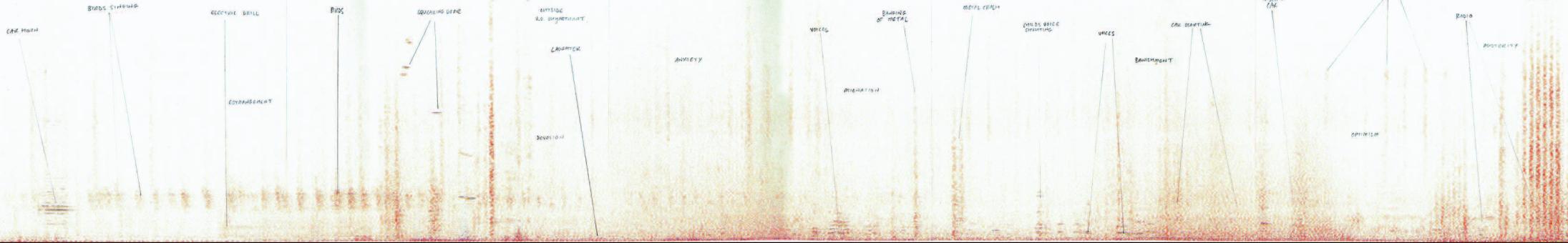




Cacerolada.

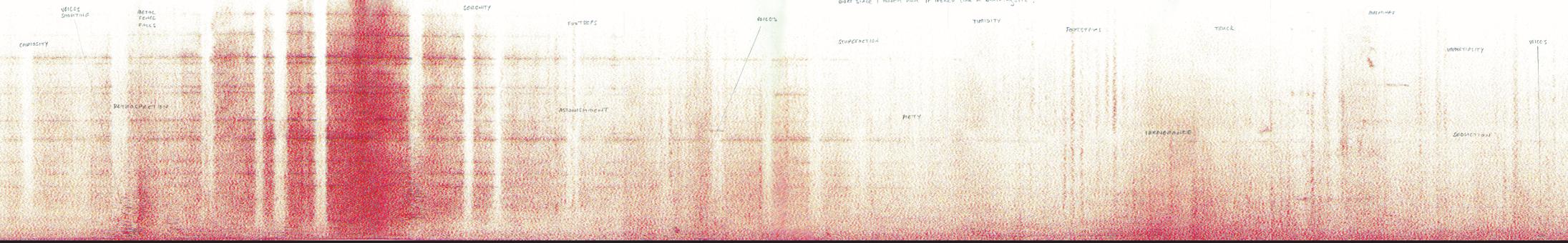
During the American-led invasion of Iraq, protest in Spain is at its most ubiquitous. Ninety percent of the population, apparently, is against the war. One night, we hear a rumour that some action will take place at ten in the evening and that everyone should turn their lights out. The part we don't hear is that everyone should take a pan from the kitchen and bang it: the *cacerolada*. At ten exactly, we turn the lights out and go out onto the roof. Suddenly, a distant tinkling, on the threshold of hearing, moves through the city at the speed of sound, swells and turns into a screaming, crashing roar that is everywhere. Everyone bashes away ecstatically, much, much longer than the required fifteen minutes. The next night, spontaneously, at ten exactly the same thing happens. Friends who live on the other side of the city tell the same story - the whole city a festival of noise. The third night, I decide to pre-empt the *cacerolada*, setting microphones high up on the roof to get a good recording. We go out at ten, pans in hand. The clock strikes, then.... nothing. We wait, then try a few tentative bangs, then some more. After about a minute someone down the street joins in, then another, then another. But it seems only to be in our street, nowhere else. After about five minutes we give up. The next day we hear that there had been an appeal on radio and tv not to carry on the *cacerolada* every night, but to save up the energy until next week. It had been too loud, too disturbing and altogether too successful.

Through ground without a flashlight



DRILLING

DRILLING INTO STONE



ANXIETY

VOICES

ALIENATION

BANGING
OF METAL

METAL CRASH

CHILD'S VOICE
SHOUTING

VOICES

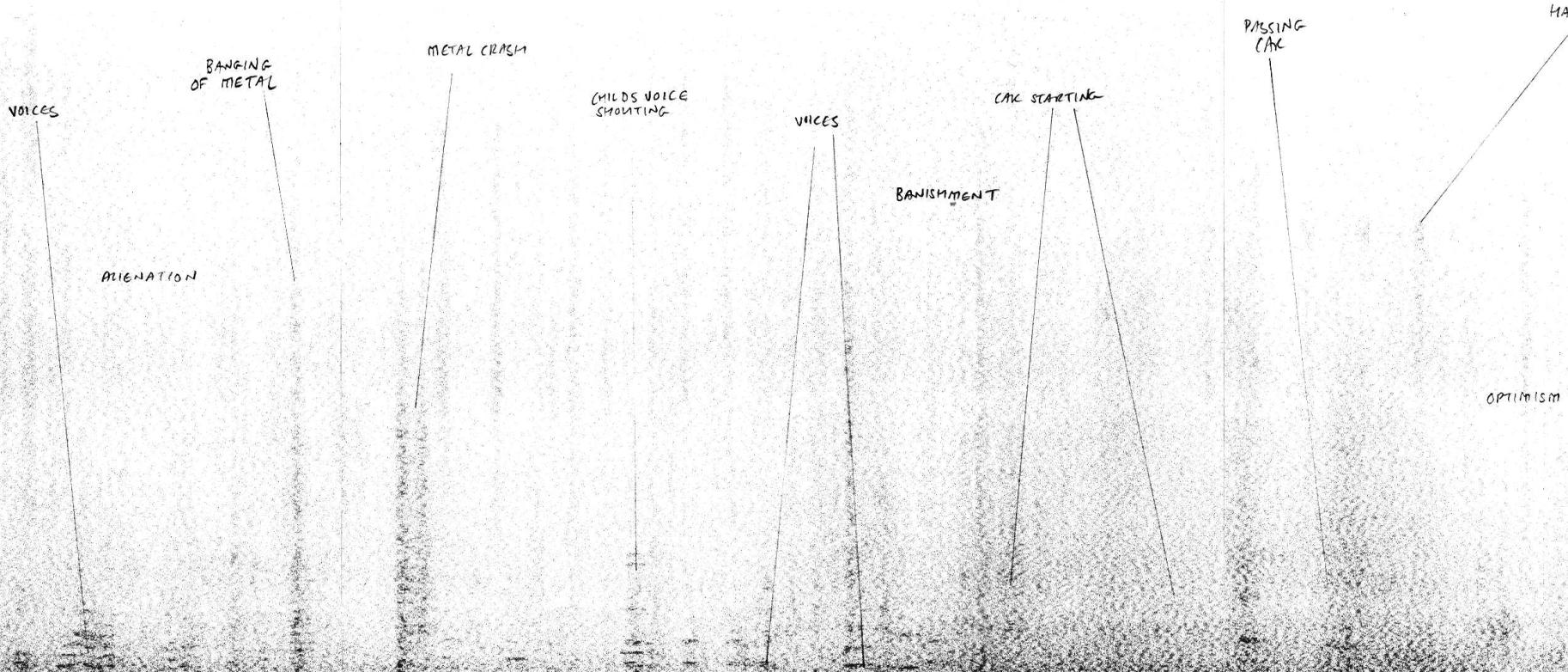
BANISHMENT

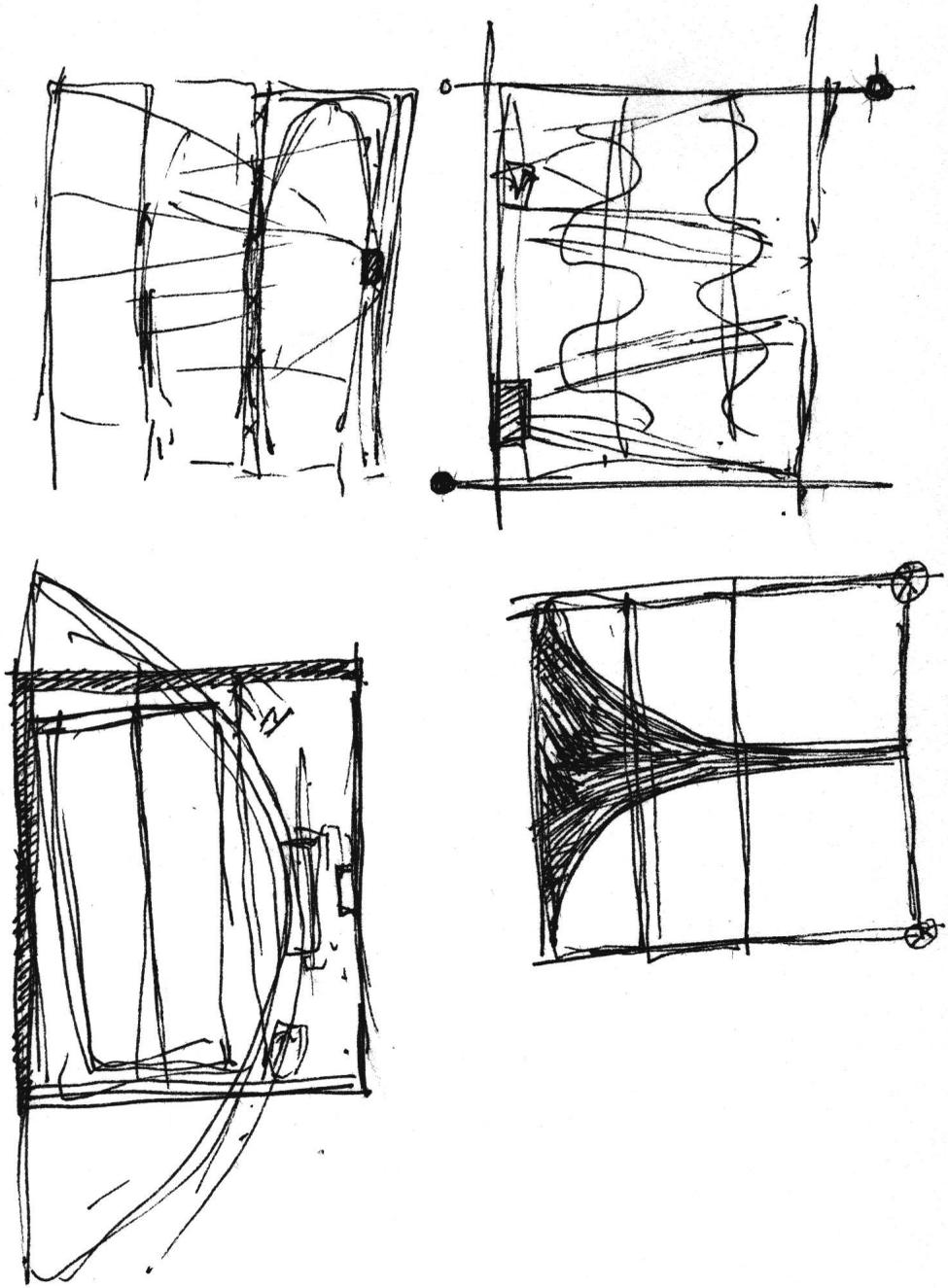
CAR STARTING

PASSING
CAR

OPTIMISM

HAPPY





**Placed in time, placed in space.
On experiencing music and architecture.**

When thinking about sound and architecture, the first task is to define the subject matter. It is possible to invent, discuss and theorise many different connections between many aspects of the two subjects - there are already many conceptual and technological links between them. Buildings can contain examples of repetition and counterpoint, or one can design sounds at micro-level to form the building materials for constructing a finished piece.

So, what am I thinking about?
sound or music?
buildings or urban planning?
acoustics of concert halls?
architecture as frozen music?
buildings as musical scores?
room resonances?
mathematical structures and proportions?
architecture and music as the creations of individuals,
or as products of social or political structures?
musicians as sonic architects,
or architects as composers of space?

And if I should demonstrate some connection or parallel between the two, of what use is it? Theory should attempt to develop concepts which can be useful in practice, rather than being a search for some kind of truth.

To say that architecture is connected to sound is just as much a truism as saying that it is connected to light. Sound waves and architectonic volumes interact obviously, physically and perceptibly to the naked ear. We experience architecture through our ears just as much as through our eyes.

I'm convinced, though, that there is a basic and deep connection between music and architecture, and that I come across this connection constantly when working with the sound *of* places, and with sound *in* places. I think that the connection exists not so much as a link between the two different media, the two different arts, but in the way in that we experience them.

When we listen to music¹, it unfolds, modifying our sensation of our place within time, the "here and now". Music sets up temporal structures and processes that dynamically affect how we perceive the present.

The extent and duration of the experienced "now" depend on the listener and on the music. Listening operates on the razor-edge between the not-yet-here and the already-gone. Our short term memory, waves of electricity echoing across our brains, integrates sonic elements closely spaced in time. However, with music, this "now" extends further backwards into the past and forwards into the future because of our ability to remember what has been, and to anticipate what may come. "Now" can be a split-second, a note, a phrase or even a complete piece.

Xenakis² suggests that we perceive musical time with the help of "perceptive reference units" that are held in our memory and are thus held "outside time". This would suggest that our perception of the structure of music is time-less, like the score or other generative system. I contend, however, that our perception of these events, whether in short or long-term memory, modulates our experience of duration, the flux of time itself.

This process though, relies on the music being understood within a certain aesthetic or cultural context. Whether consciously or subconsciously, one has to recognise a phrase or a rhythm in order to remember or anticipate its development.

Improvised music, music based on aleatoric systems or repetitive rhythms create completely different senses of "nowness" to 19th century classical music. Music is not timeless and surely the ability of the listener to hear music has changed over the centuries just as much as the music itself. Neither is music autonomous; visual, theatrical, concrete and spatial elements all work on and modulate our perception of the here and now.

Music is a social phenomenon, and "nowness" is intensified within audiences and within groups of musicians or dancers by their sense of belonging, of participation. Music which is experienced through playing or dancing is coupled to the body itself through movement and gesture - modulating our corporeal sense of time.

For all the organisation, structuring and striation that exists in composed music, one of the most valued effects of music is that of enrapturement. Not just placed within the moment, we journey, we are transported, travelling a line of flight, lost in music. In this sense music can become a "smooth space",³ like the desert, the sea. "If someone never gets lost he never grows up. And this is done in the desert, the forest, places that are a sort of machine through which to attain other states of consciousness".⁴

Architecture and urbanism change our sensation of place - where one is placed within space. They create and modify places by constructing or implying physical or symbolic boundaries within space. They thus form volumes, rhythms, sightlines and vanishing points, and potential routes, dwelling and diversions.

It is the *inhabiting* of architecture and especially the viewer's passage through space, that creates place. "The movement of the body as it crosses through overlapping perspectives formed within spaces is the elemental connection between ourselves and architecture."⁵

By moving, feeling, looking and listening, one senses the different materials, volumes, weights and contents of a space. This determines the relationship of our body to our surroundings - we are emplaced.

Not only does architecture create places, but the holes that it leaves in the fabric of the city, *terrains vagues*, voids are also important places with their own character and use. Social groups create and form places by appropriating architectural spaces and voids for their own uses; places to play, for instance, or places to practice legal or illegal trades. Participating in these activities strengthens the sense of "being there". We are part of the place and its movement, not just observers.

Architecture is not necessarily static - it can create places of staying and places of going. One can inhabit a building, wander through the city or roam through the landscape. All these spaces can be organised by architecture. "the nomadic city is the path itself".⁶ When choosing a trajectory through the city, one creates a sequence of movements in which our sense of place changes and develops as we trace it out. The Situationist derive and the later actions of land artists have elevated this wandering to cultural myth, but probably it is an everyday occurrence in the subconscious of everyone who walks. Transport by vehicle, however, distorts our perception through isolation from the environment or through its speed, numbs the changing sense of place by keeping us in limbo, in transit.

Thanks to the possibilities of sound reproduction and diffusion, combinations of architecture and sound or music are commonplace. The most familiar example is that of Muzak, mostly used as an attempt to make one feel comfortable in an obviously unpleasant place. Architects sometimes use acoustics in an unorthodox manner or explicitly base their projects on musical structures, and musical structure can be extended into space (Boulez' horizontal arpeggios) or can be written for a specific site.

With the integration of digital technology, works of both arts can be responsive, sensitive to the user, the inhabitant, or the performer. This responsiveness

leads to an attack on the immutability of the building⁷ or the score⁸ and brings the creation of form itself into the present.

The "present" of music and the "place" of architecture could be considered as mere by-products of the creative act of construction, of dividing up time (music) or space (architecture), but for me the here-and-now, where the subject engages "in real time" with the object, is the locus for working with sound.

The confluence here of music and architecture is a difficult thing to analyse. Their places and events are experiential. One cannot observe them from without, only from within our bodies while *inhabiting* the sonic or spatial construction.

One can use spatial techniques to build places with sound, make a soundwalk as an urban intervention, install sounds in a public space or integrate recordings of real places with musical structures. All these actions are situated exactly in this little sliver of time and space, this place where music and architecture meet in the body of the subject. Here, these thoughts about place begin to form a basis for theorising the synthesis of music and architecture, or the confrontations and interventions between them.







Sound Gardens.

Acoustic Garden.

A garden, especially a *Hortus Conclusus*, forms a micro-environment with its own ecology, and thus its own soundscape - its own set of sounds and rhythms. These sounds and rhythms contrast with those of the world outside the garden.

Garden sounds are usually quiet and acoustic.

Garden rhythms are seemingly purposeless or incredibly slow, following a day/night rhythm.

Gardens absorb and filter the sound from the surrounding city. Trees and walls create reverberation, smoothing out abrupt sounds and intensifying the sense of distance to the city outside.

Flowing water and the wind blowing through leaves and bamboo create a soft "curtain" of noise, masking sound from outside.

Sounds from within the garden - birdsong, voices or water focus our attention through their isolation and their unpredictability.

The lack of direct echoes in open spaces makes conversation private and intimate.



Musical Garden.

The garden has often been used as a musical model in traditional Japanese and Korean music.

In recent times we can note the work of Toru Takemitsu, Christina Kubisch, Max Neuhaus and David Tudor. The image of Tudor performing with his electronic circuits, mug of tea in hand, was reminiscent of someone pruning roses, fine-tuning his environment.

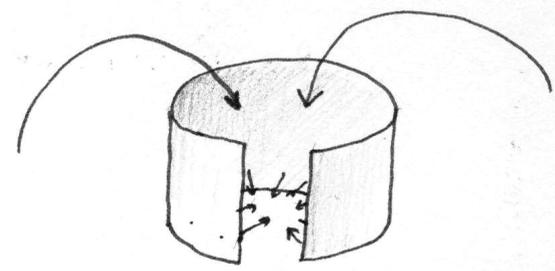
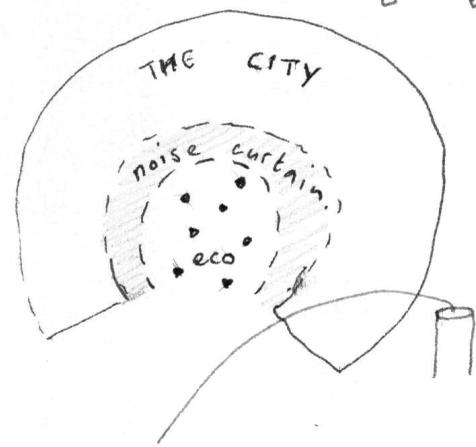
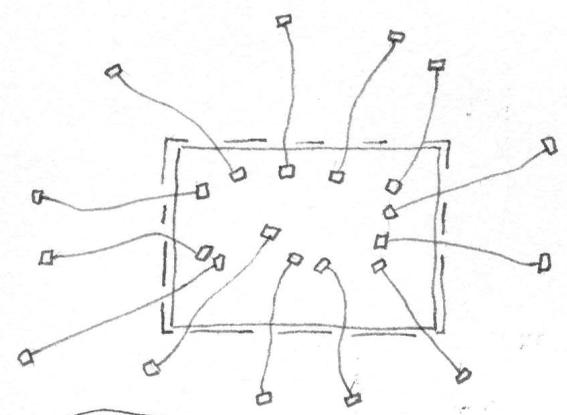
The Spanish composer Llorenç Barber has a roof garden in the centre of the city that is almost purely sonic, consisting of caged birds and an artificial stream.

Although usually silent, the Zen garden with its rough rocks set in sand forms an image of a sound event. It is as if sound waves - ripples on the surface of the world - have been frozen for eternity in a perfect configuration.

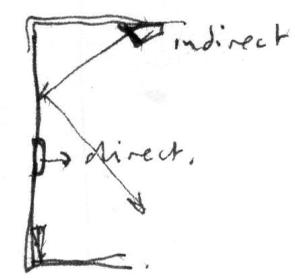


Breeze of Air

- biosphere
- filter
- isolation
- intimacy
- rhythm



function of noise.
(wind, water) air!



1. sound proper to gardens.
 - > wind/plants
 - > birds
 - > water
 - > aleatoric
2. sounds from outside.
 - > traffic
 - > voices
 - > distance.



Sound Garden.

One can make a sound garden from acoustic or electronic sound.

One can plant trees and grasses, channel water and air, encourage insects, birds and animals, or set up loudspeakers.

A garden can be made by silencing sounds or by jamming all electronic communications.

A walkman can be a portable sound garden.







Listening to Places.

I spend a lot of time listening to places and recording them. Whether experienced or remembered, a place can be defined by its ambience, or "sense of place". This can be a physical or an emotional response to the space itself, the objects and activities contained within it, or to its acoustic manifestation - its soundscape.

Listening to a place situates us in our own bodies, and in the "here and now". It gives us spatial and temporal information not necessarily determined by our point-of-view - we can hear something coming and we can hear around corners.

Architectural or natural acoustics and ambient sound contribute to the soundscape of a place as much as the sonic details or intentional sounds.

Listening to a recording of a place thickens the plot. It stimulates immersion in the soundscape by removing visual cues, but creates distance through its transposition of space and time.

One of the implicit meanings created by listening to a recording is that of "not having been there".

Somebody was there, however, and this "primary listener" made selections, choices and alterations to the recording for cultural, ideological, or aesthetic reasons.

A recording of environmental sound is an inscription tracing the engagement of this primary listener with the soundscape at that time, in that place. We, the secondary listeners, form a second, mental place, here and now, from the acoustic traces written onto tape.

When recording a place, capturing the spatial distribution of sounds, their movements, resonances and reverberation is often more important for me than making purist recordings of the sound sources themselves. It is possible to make many decisions in real time while recording: by stopping and starting, moving the microphones, or walking through the place itself.

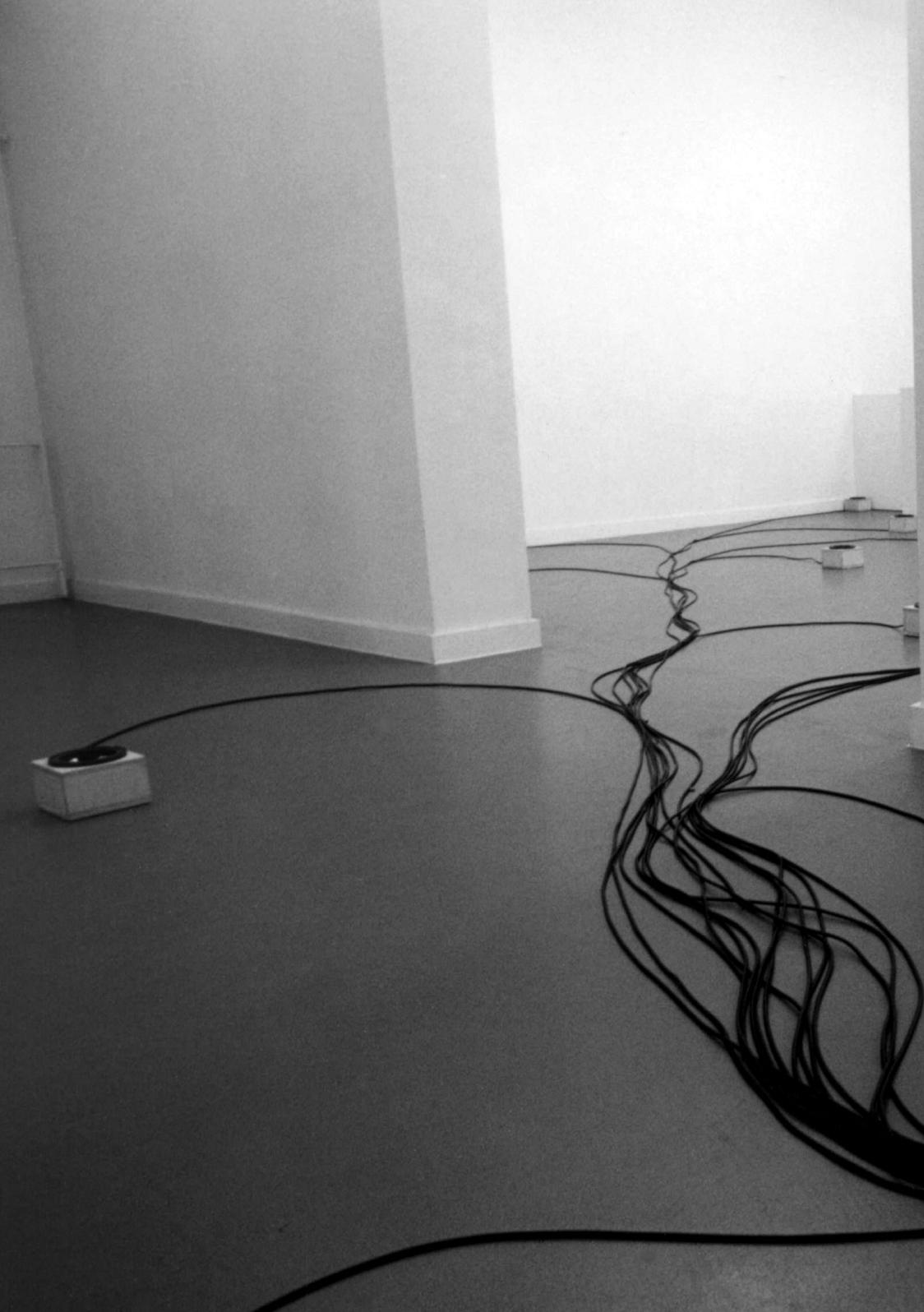


While working later in the studio with the recording, I follow the original trace, sometimes editing or adding other elements, but more often just focussing on aspects of the recording that I find interesting or typical. This process can be repeated, adding layers of interpretation to the original recording process.

Making a spatial soundwork is, for me, creating a place. Whether using sonic details from recordings, long ambient sounds or computer generated sound, much of the work takes place in situ, at the last moment. I already have at least three spaces to deal with; the place where the recording was made, the encoded and transformed space of the processed recording, and the real acoustic space of the exhibition venue.

The work lies in tuning the spatial distribution, the frequency and time structures of the piece. At some point, hopefully, I find the point where it starts to "work" synergetically with the room, transforming it into a new place altogether.

When making a piece for a public space, listening to what is already present is even more important. Timing and volume levels in relation to the flows of people, the existing sounds and the social uses of the space become essential.



Site.

In the series of soundworks called "site", I use acoustic details from location recordings; fragments of sound that refer to objects, movement and materiality. For instance, we hear the actions of feet stepping on twigs, wind in leaves, or falling stones.

These small sounds are isolated, taken out of their original context and arranged in a new, conceptual space within the computer.

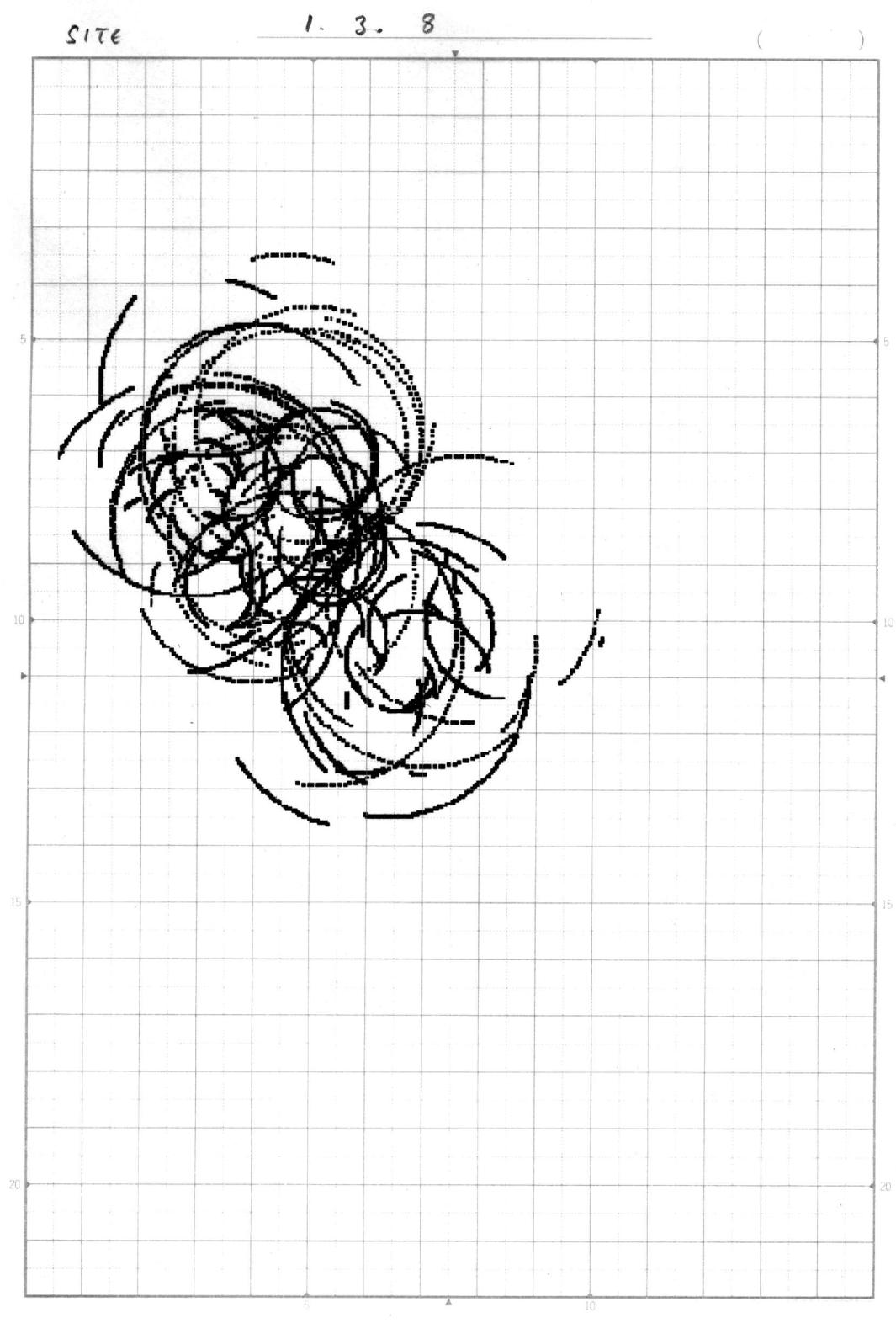
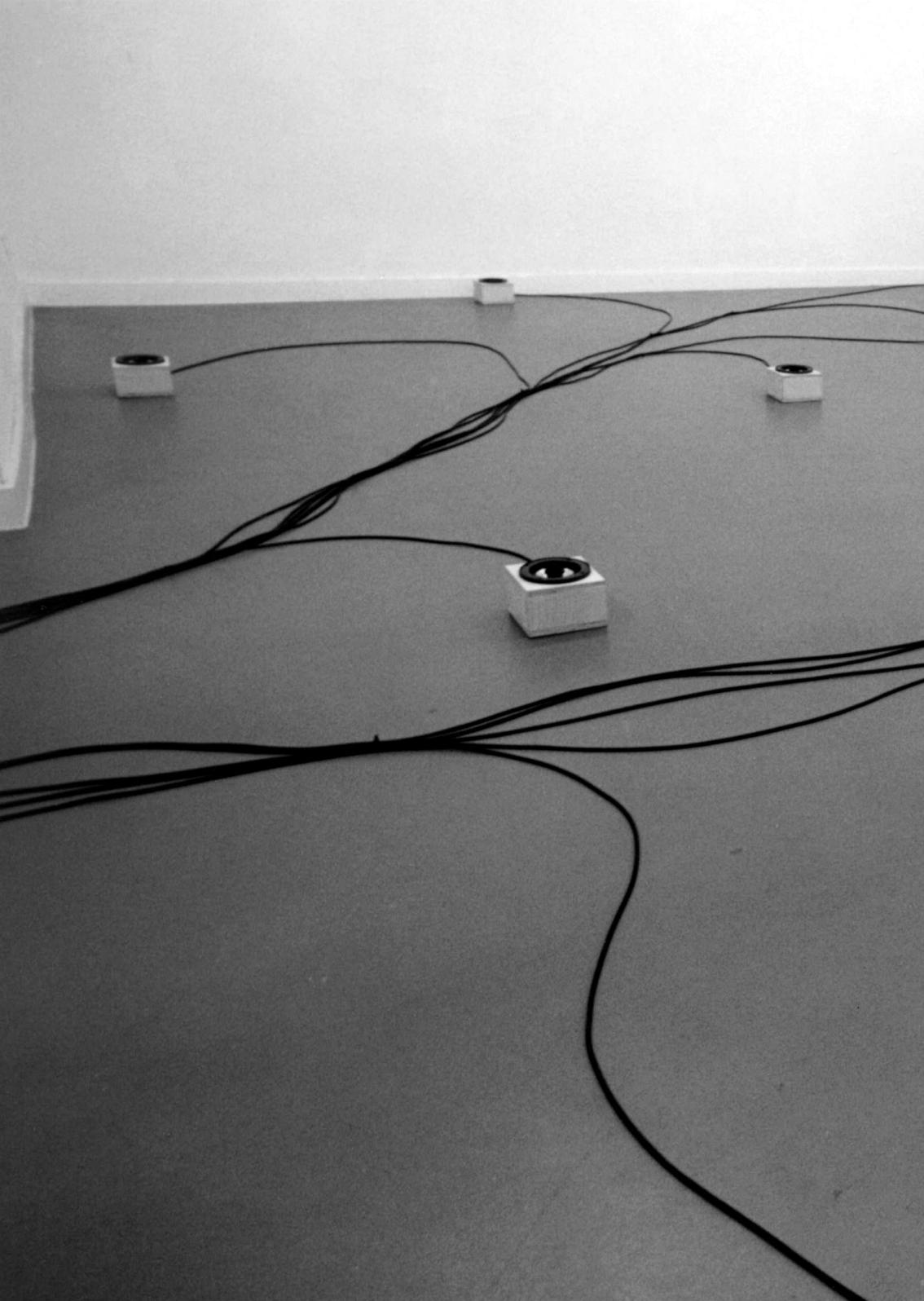
A gesture, which could be like a swirling gust of wind or the movement of a hand that draws, moves through this structure, sounding the invisible objects within it.

By placing a number of loudspeakers in the exhibition space, this conceptual place can manifest itself within real space and real time.

The structure is gradually revealed by a series of gestures, just as a drawing is gradually built up out of lines. Here though, these lines are drawn in time, in memory.

In listening to these works we construct our own mental place/site by listening to the recorded materials and the gestures in relation to the real architecture and acoustics.

There can be great differences between the exhibition space and the recording location. The work though, exists somewhere else, in the gap between here and there, and between then and now.



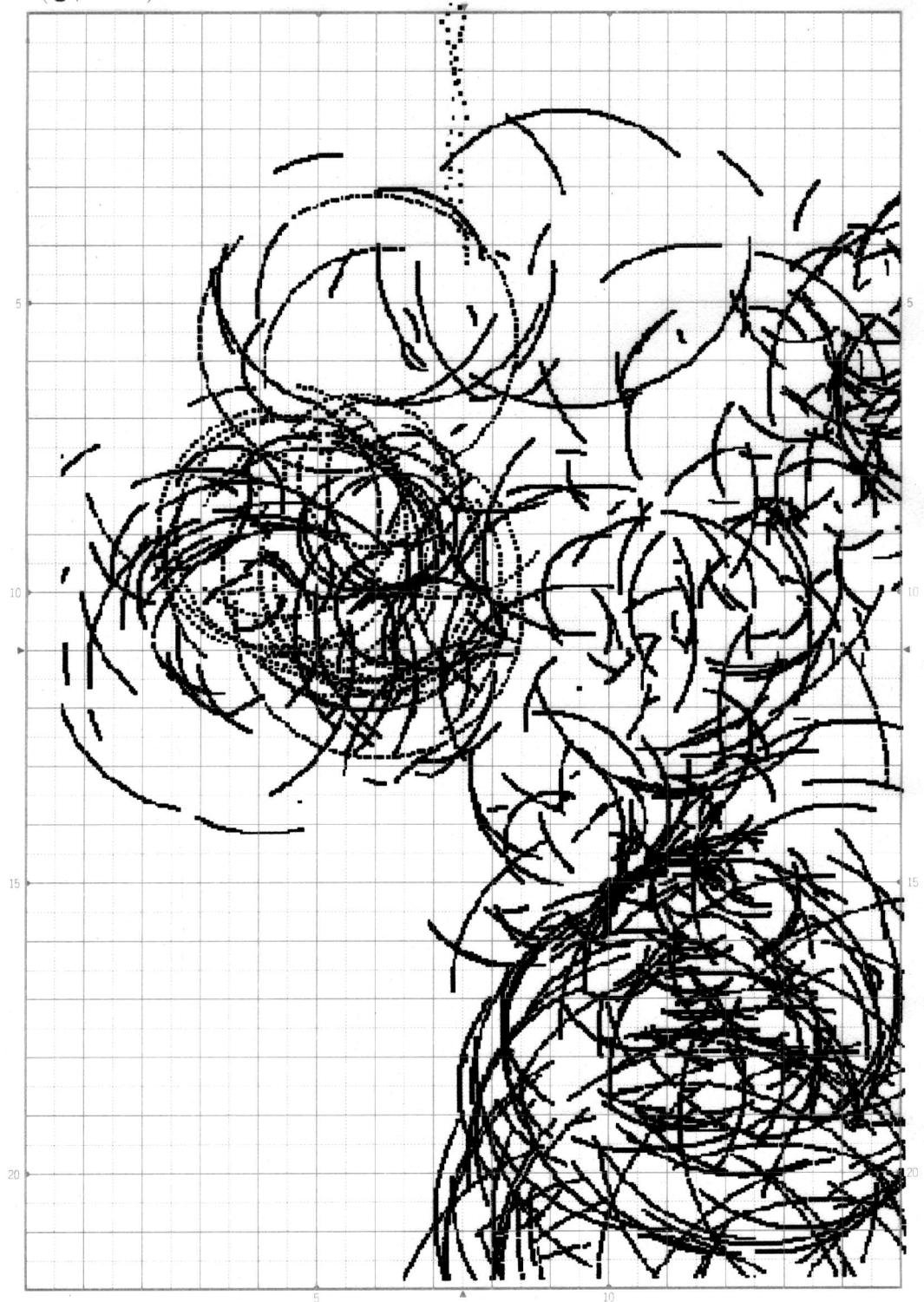
(SITE)

2.1.7



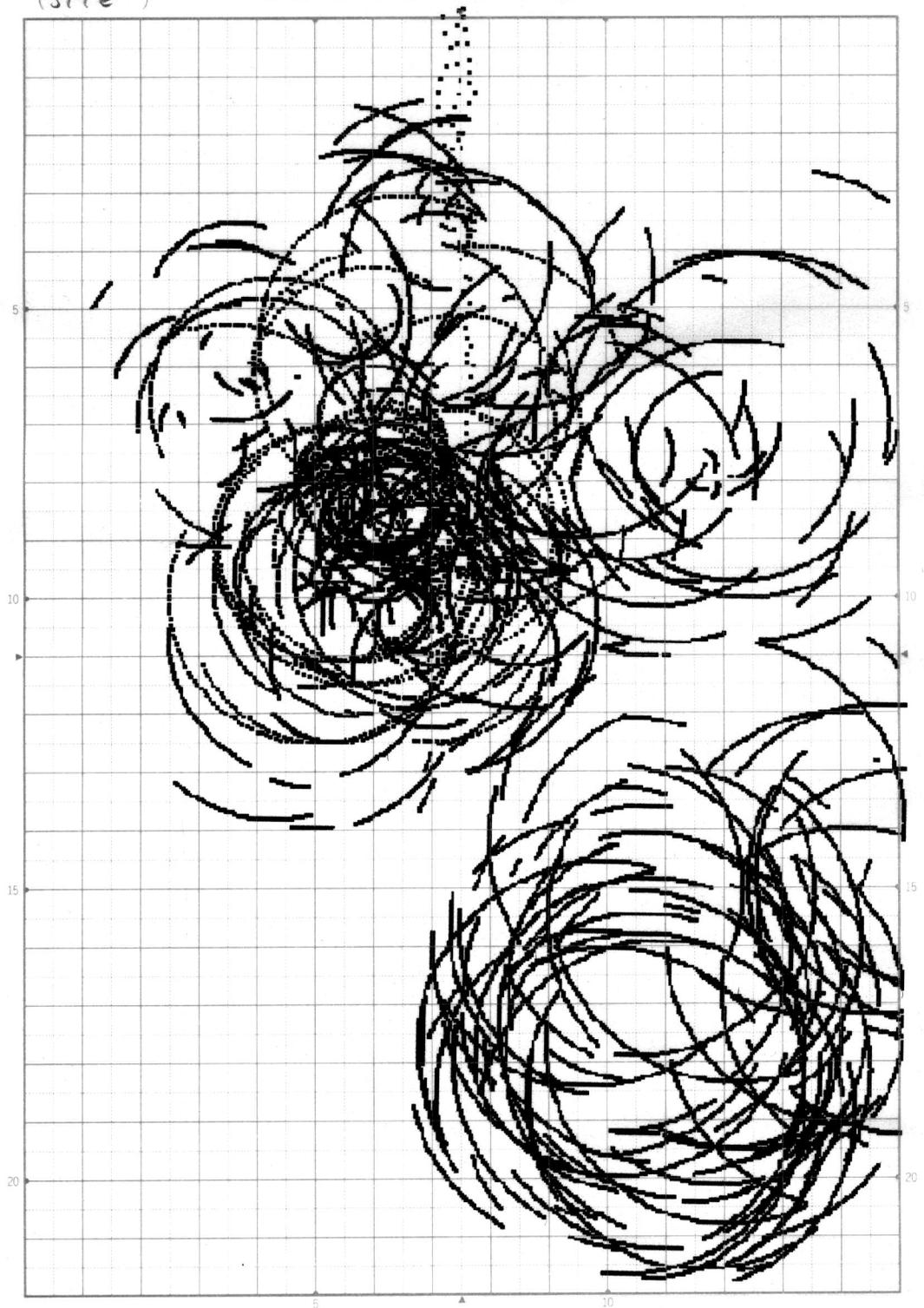
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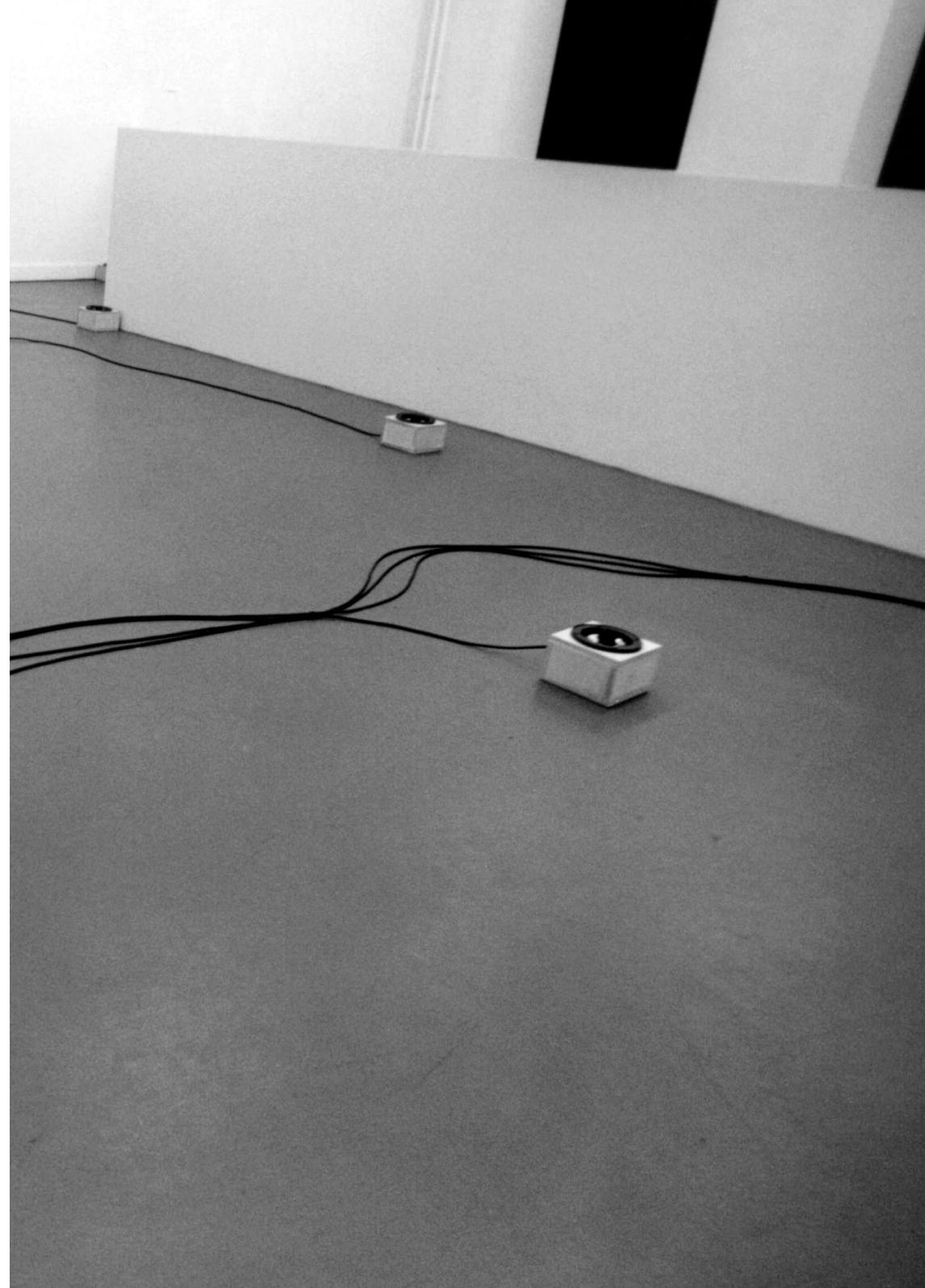
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S . S . 6







Rumours / Resonances (BCN)

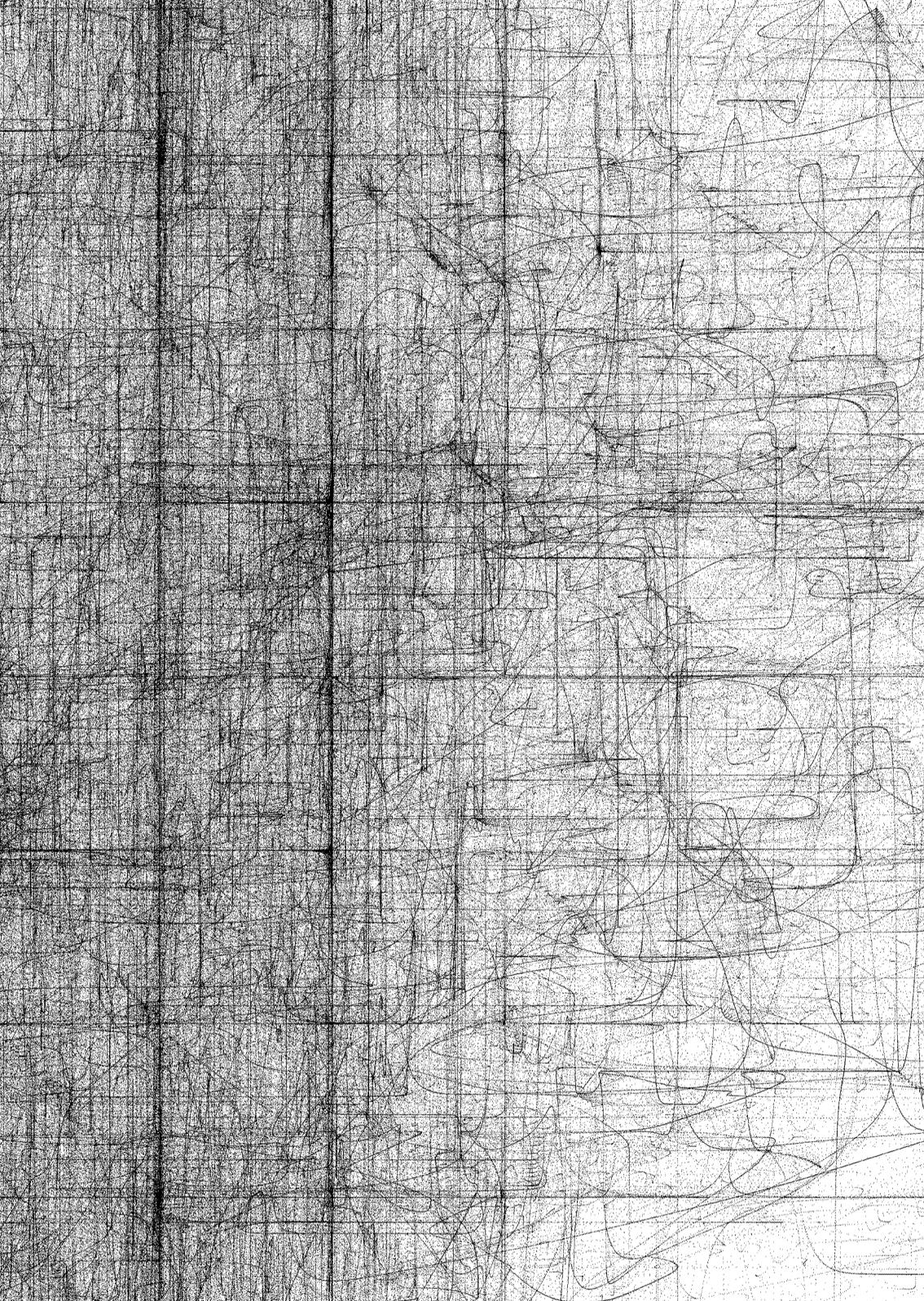
In Rumours / Resonances (BCN), the sound from the street below and the surrounding area is picked up by a moving microphone. The recording explores the differing resonances of large and small spaces. The resonances emphasise different aspects of the ambient drone, revealing tones, rhythms and layers of sound previously masked by the noise.

identifiable sound sources:

- voices in street
- sirens
- pigeons
- swallows
- seagulls
- airconditioning units
- traffic
- church bells
- aeroplanes
- music from a radio
- insects
- doors slamming
- my footsteps and breathing

resonators:

- rooms
- courtyard
- stairwell
- holes in walls
- pipes
- windows
- bathtub
- water containers on roof



Synesthesia.

Current audio-visual technology, especially when embedded in the personal computer, encourages the arbitrary mapping of sound and image in both directions. Photographs and drawings can be "read" as scores, sound can be analysed and then visualised in many ways.

What is common, however, about these approaches is that they are all technological mappings. The parameters or the dimensions of data are mapped one onto another. These dimensions; for instance amplitude, frequency, phase, RGB values, alpha channel, are determined by the analysis methods used by the hardware or software, rather than being in any way related to the dimensions of human perception.

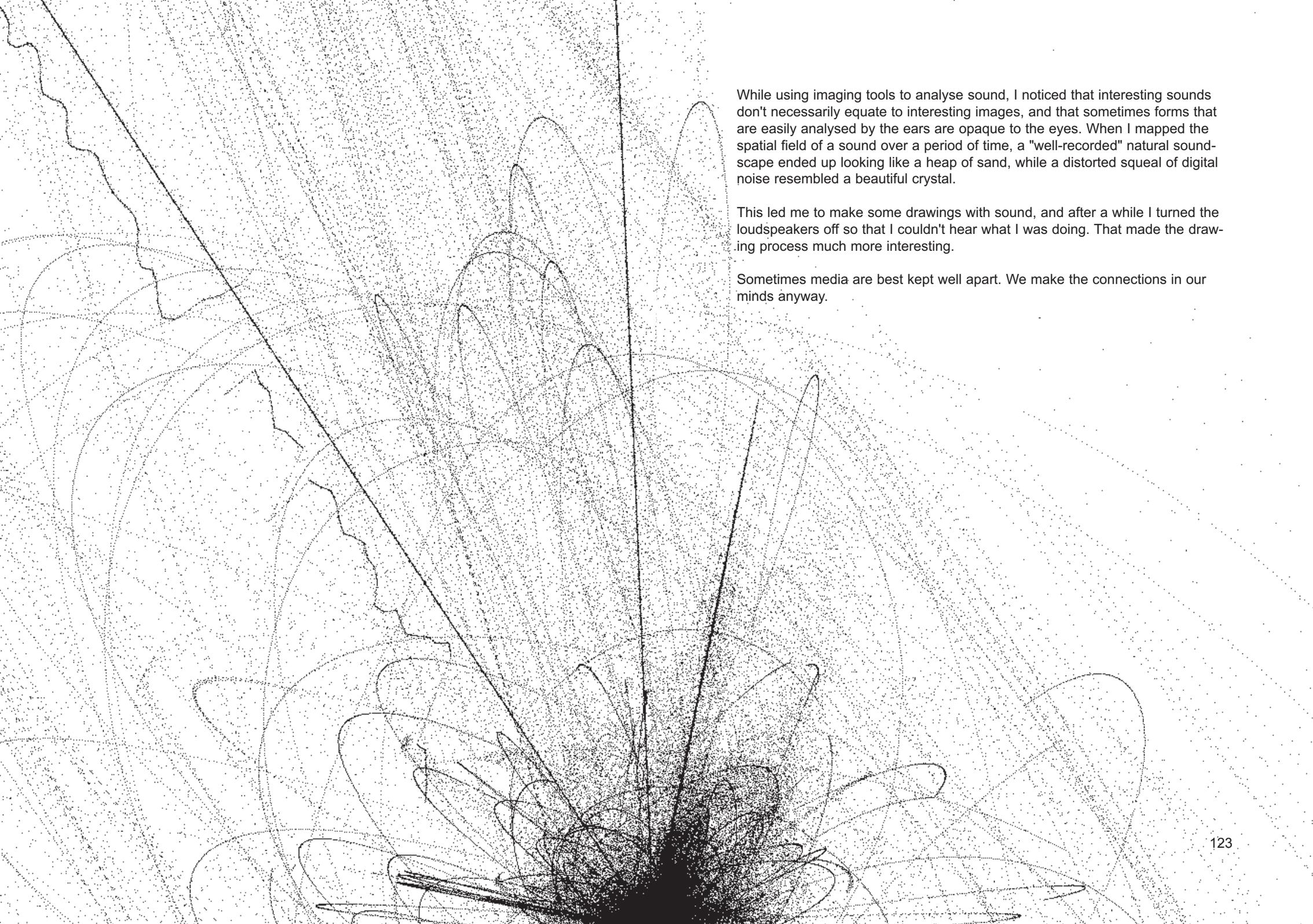
Although science tells that the retina contains red, green and blue receptors, and that the inner ear works as a Fourier analysis engine, the raw inputs from these organic sensors are translated into perceptive objects, streams and categories in the mind. We see objects, colours, form, depth and movement. We hear distinct sounds, distances, resonances and positions.

The biological version of these mapping techniques would be like hard-wiring the blue retinal cells into an inner ear hair receptor. This, like the use of drugs to alter perception, would probably produce a synesthetic experience but it could also be very disturbing.

If the psychedelic experience reveals the structure of the human brain and nervous system, then computer-based image/sound mappings tell more about digital coding than about any synesthetic truth.

Another criticism of these software techniques is that many are based on a very traditional view of the score as being the locus of music, treating an image as if it were a text to be read (left to right!) and interpreted as sound.

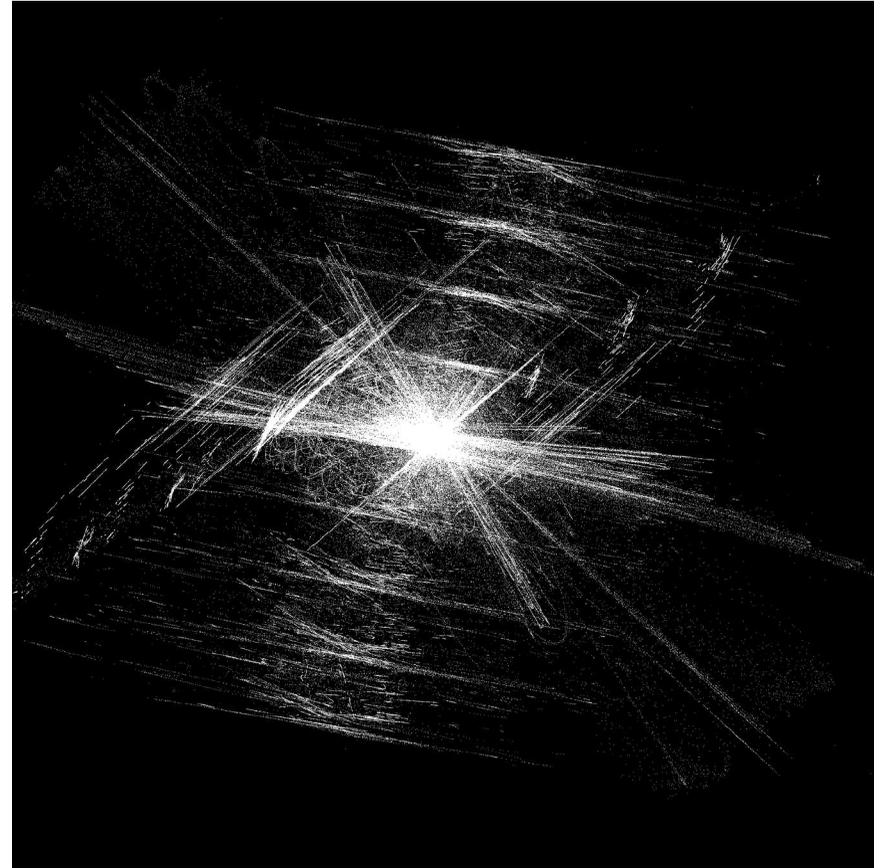
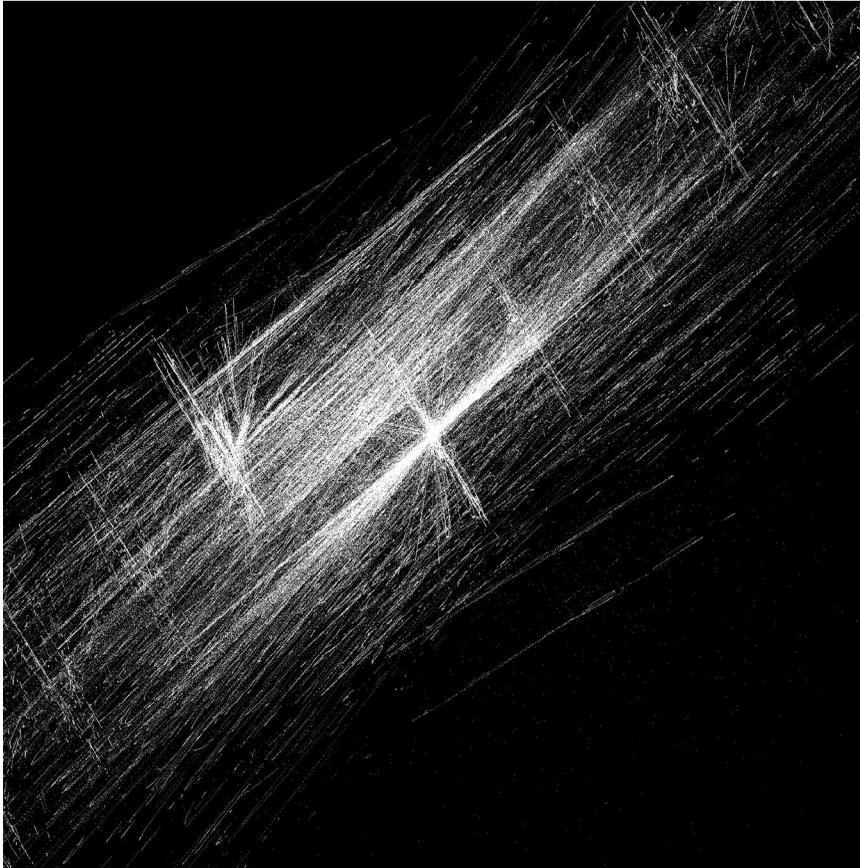
This is not to say that arbitrary mapping techniques are not useful. One can use images to create sonic structures, movements, timbres, but also as a tool in analysing sound - seeing details that the ear cannot resolve.

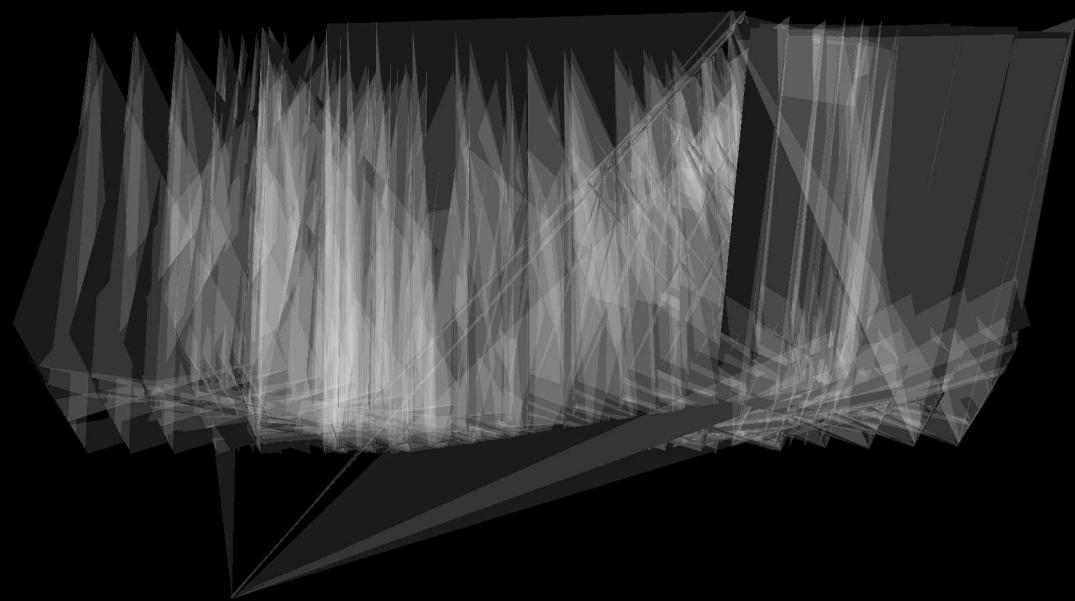
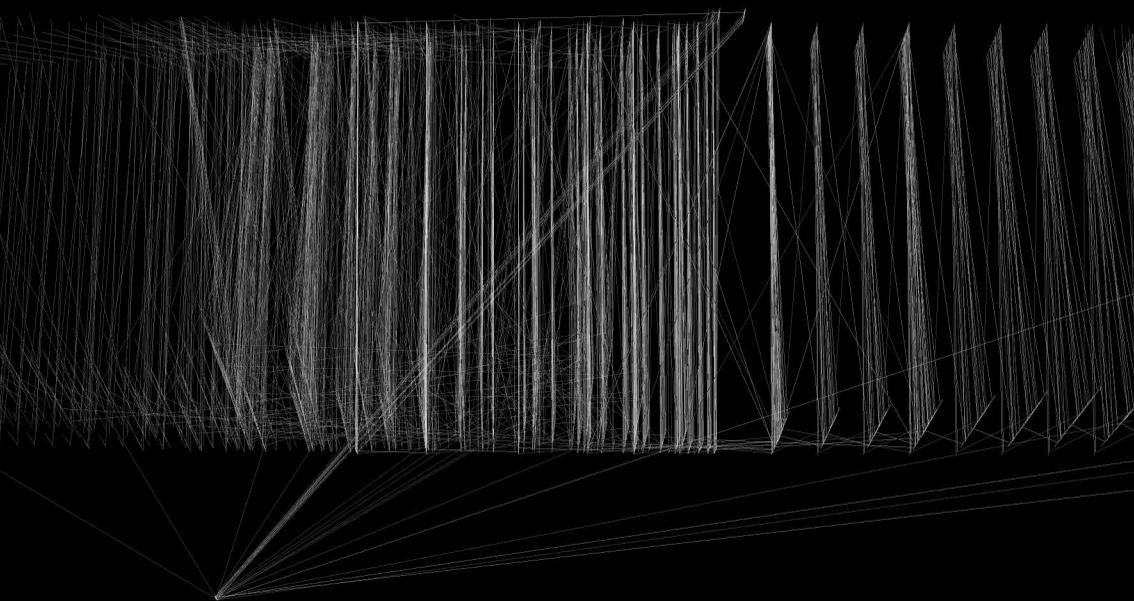


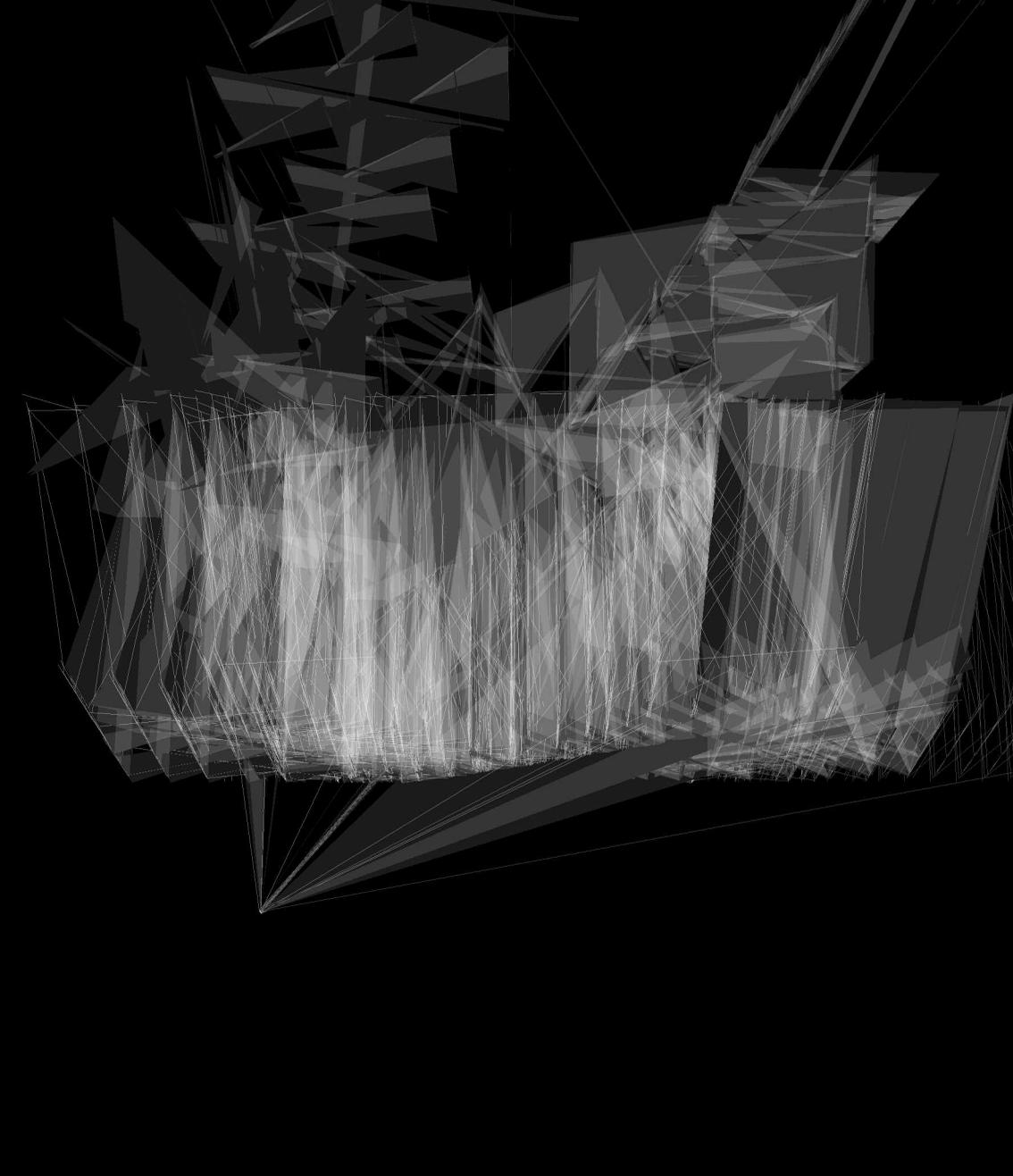
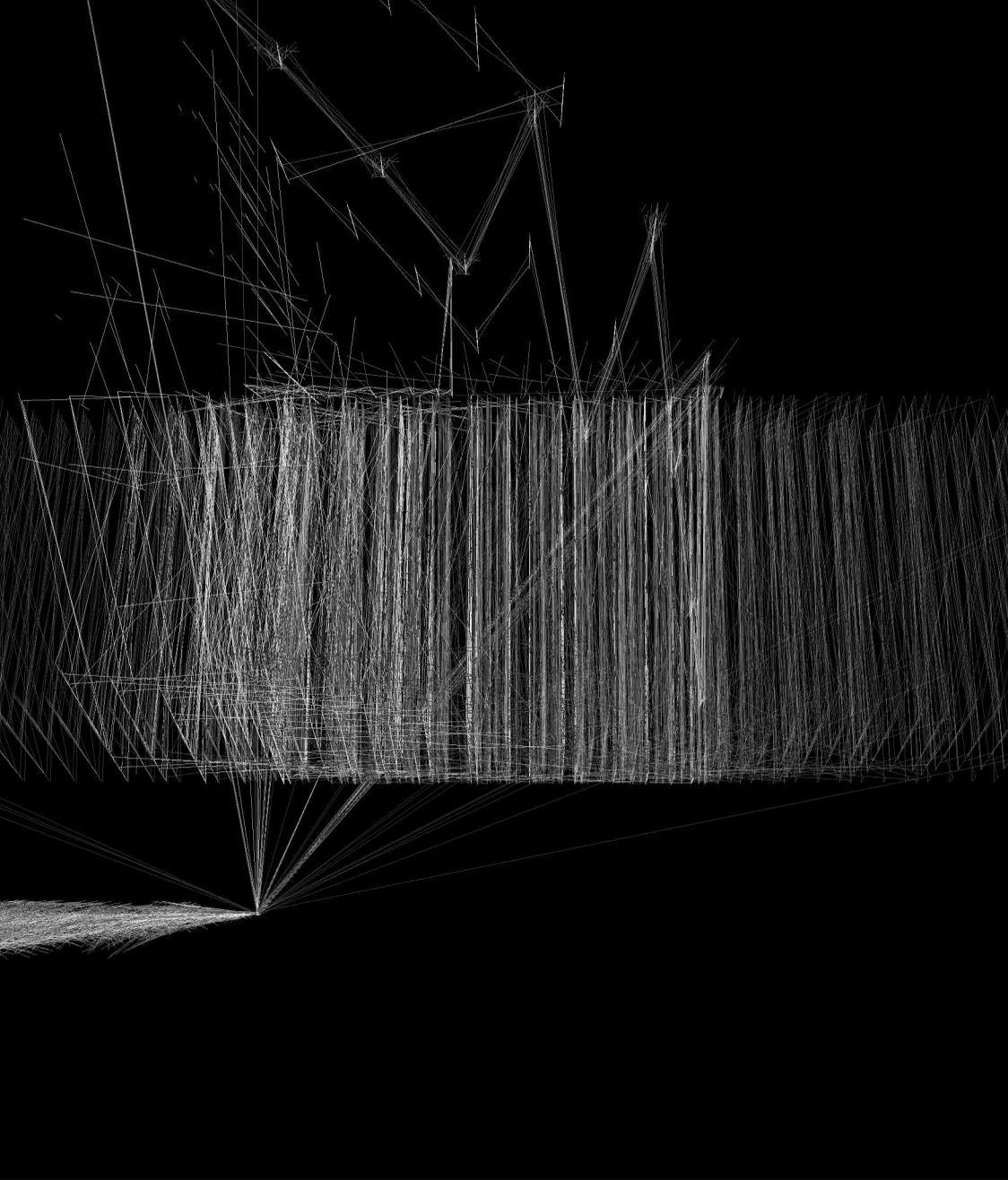
While using imaging tools to analyse sound, I noticed that interesting sounds don't necessarily equate to interesting images, and that sometimes forms that are easily analysed by the ears are opaque to the eyes. When I mapped the spatial field of a sound over a period of time, a "well-recorded" natural soundscape ended up looking like a heap of sand, while a distorted squeal of digital noise resembled a beautiful crystal.

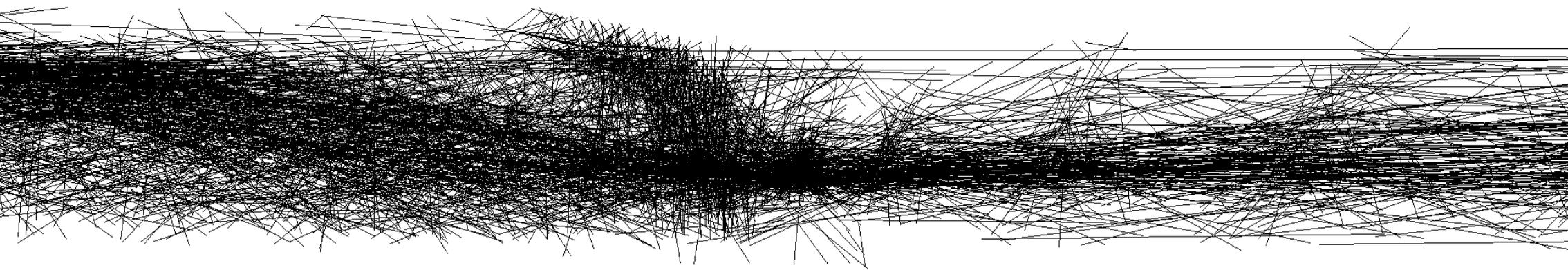
This led me to make some drawings with sound, and after a while I turned the loudspeakers off so that I couldn't hear what I was doing. That made the drawing process much more interesting.

Sometimes media are best kept well apart. We make the connections in our minds anyway.













Europa.

Europa is an ongoing project to map european borders with sound.

I have made recordings at borders of the wind blowing through fences, of distant sounds blowing from outside and of the ambience of the places themselves.

In the installation versions, sounds from borders combine to form imaginary places: deserted, empty landscapes where the wind carries the few traces of life from afar.

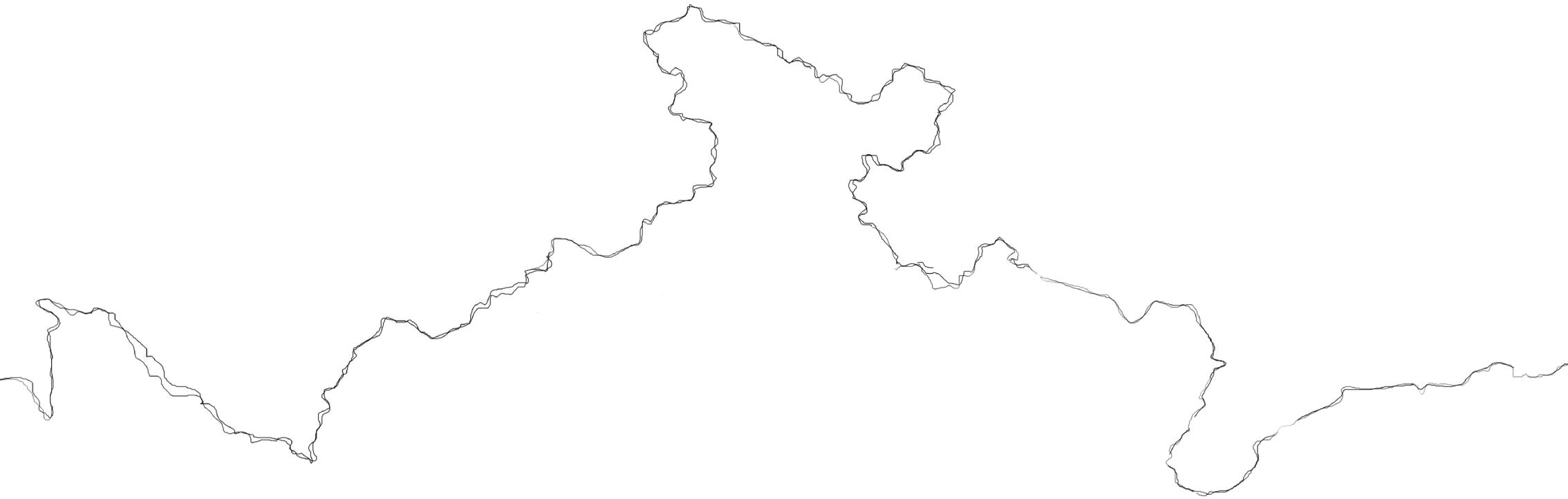
Each place is generated "in real time" by a computer program using drawings of borders to determine timing and movement. The resulting soundscapes are often similar, but never repeat.

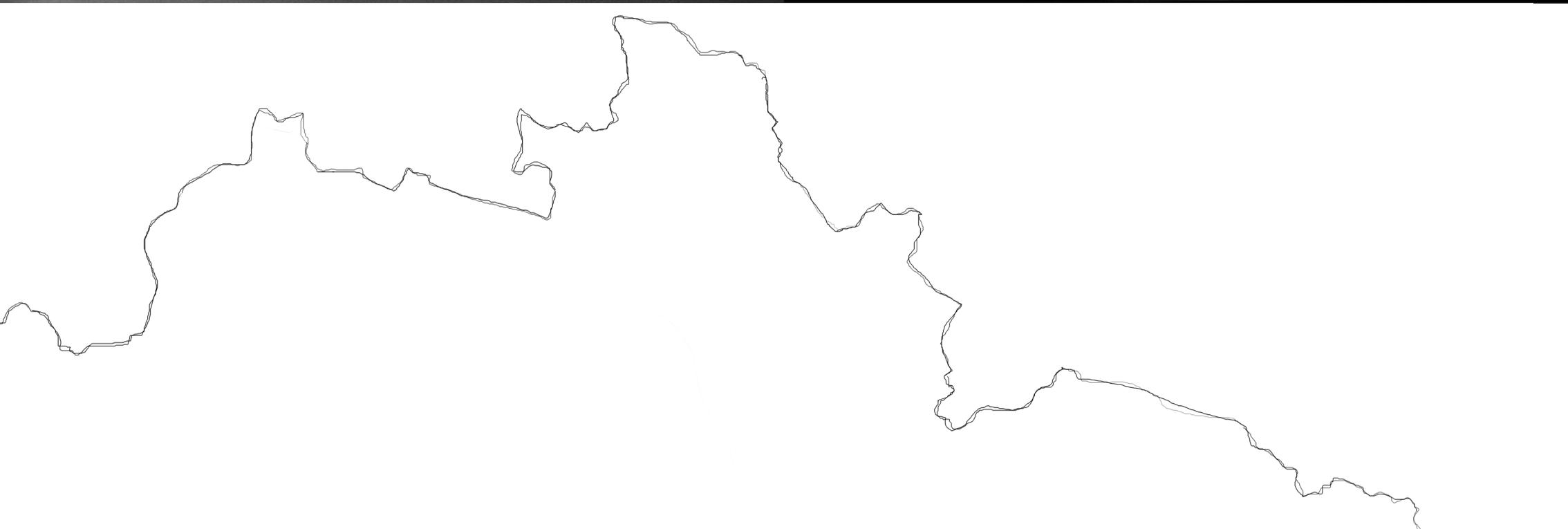
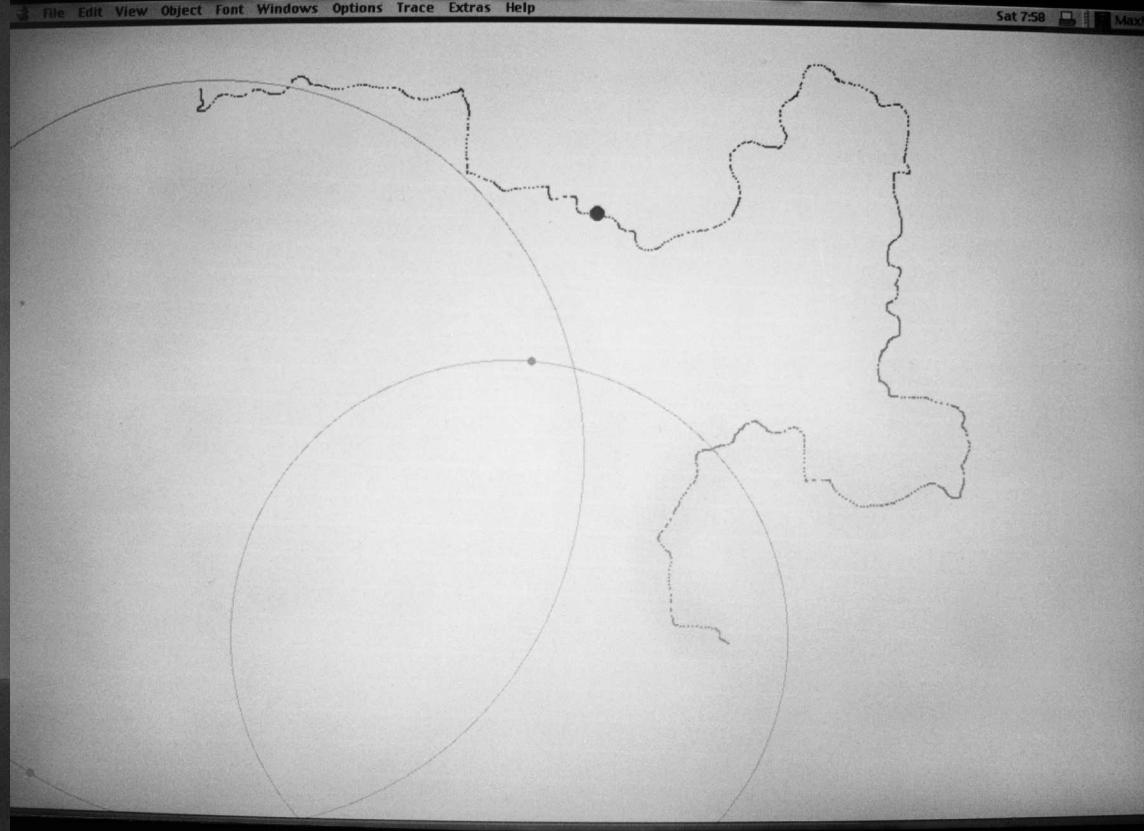
National borders seen on maps are often formed by coastlines. These fractal outlines are combined with other internal borders made by rivers cutting sinuous curves, bureaucrats and politicians drawing along a ruler or armies advancing and retreating.

Sometimes the logic of the line fails and countries break up into enclaves, land-locked islands.

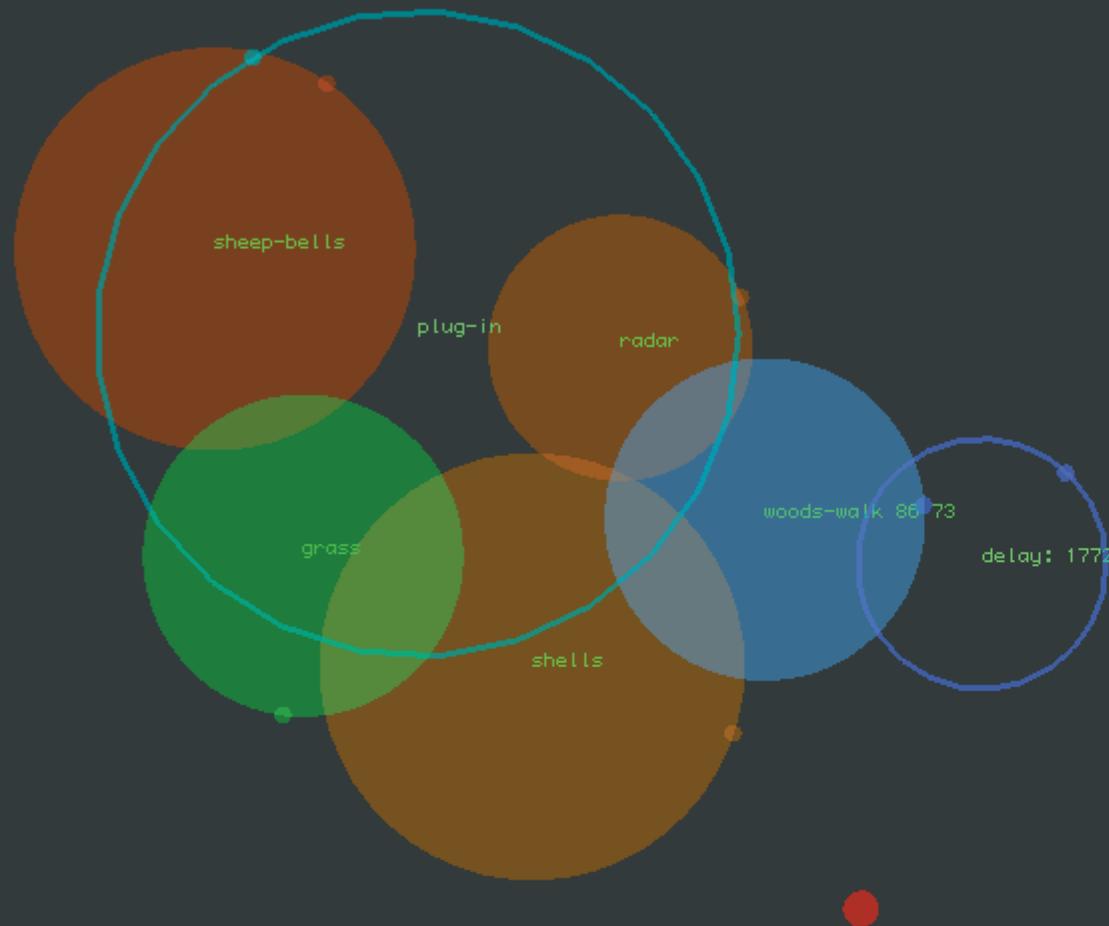
As the state of the European Union expands, the internal borders become indistinct and forgotten. The borders on the outside however, get longer and the fences get higher, making the project of mapping an increasingly absurd undertaking.







Ezekiel



Ezekiel is a software environment for sound composition and live performance. It is based on a spatial paradigm rather than the time-line or mixer-style approach used in most music software.

The spatial soundfields of sounds and processes are visualised using coloured shapes on a two-dimensional plane.

Mixing, movement, spatialisation and many other aspects of the processes are controlled by moving the virtual position of the listener.

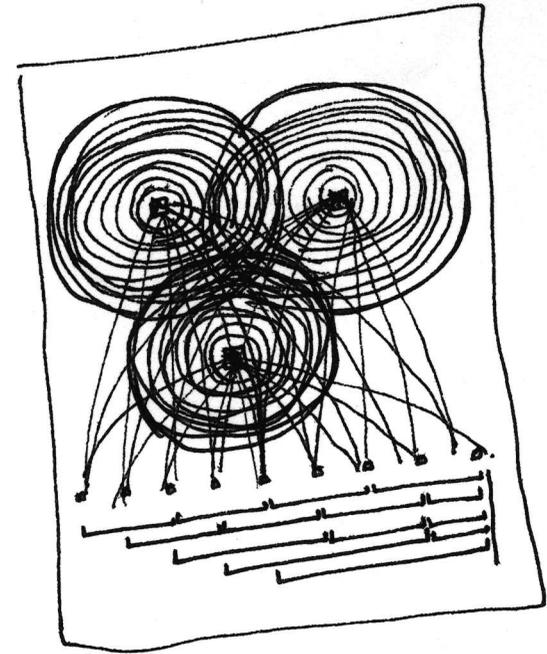
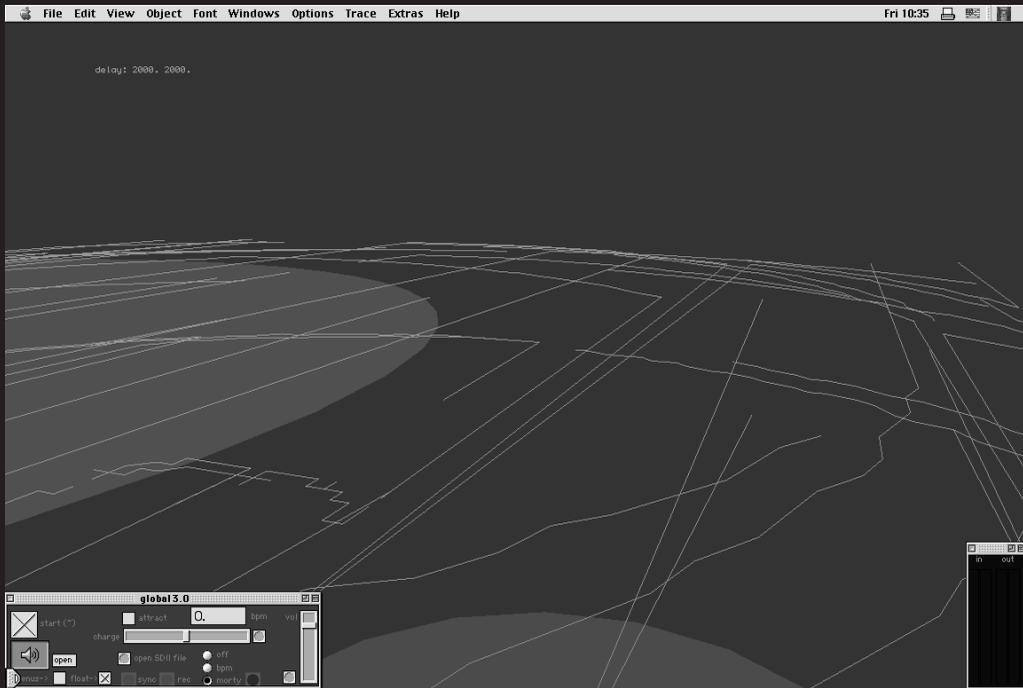
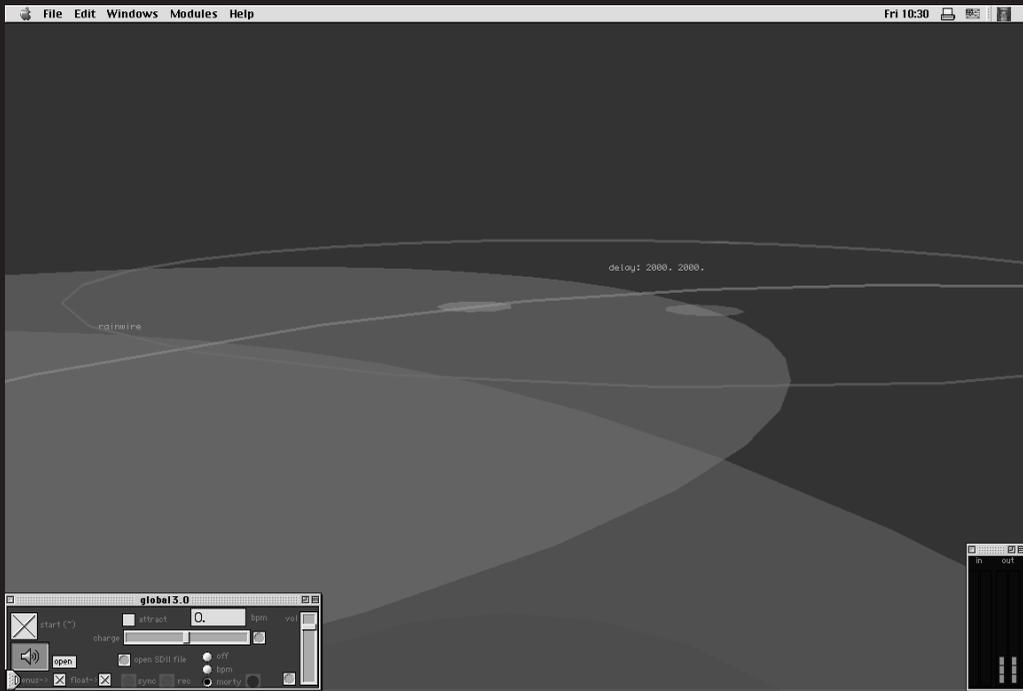
The position of the listener is represented by a red dot.

The intuitive nature of the graphical interface makes it ideal for improvisation, generating sounds or processing live sounds.

Control is possible using the mouse and keyboard, graphics pads and joysticks.

Ezekiel was initially designed for working with stereo recordings due to my work with field recordings. Throughout the program, sounds are treated as being two-dimensional sound-fields, rather than having a discreet number of "channels". Because of this, the method of presentation is also flexible - various surround-sound configurations are available as well as stereo.

The movement of the "listener" and also of the soundfields themselves can be automated. For instance, the installation version of "Europa" is made using Ezekiel. The program chooses sounds, arranges them in space and then determines the path that the listener takes. The sound is then spatialised through six loudspeakers.



LISTEN
LUISTER



Mystery sound.

Our neighbours from downstairs ask "have you heard the new noise? We haven't slept properly for weeks!".

The next night I think I hear what they mean; a deep bass buzz, which is impossible to ignore once you've heard it.

The neighbours swear that its from the new restaurant next door. I get to visit the kitchen and put my head into the crawl space above, full of airco pipes.

The neighbours invite the cooks onto the roof.

I get out my parabolic mic and headphones, thinking that I can find the source.

After giving up and just using my ears, I decide that it comes from the usual suspects - the council building across the street.

The council admit that they have a temporary heater that comes on at night, but claim that it will stop in a few weeks.

In the end it does stop, at least for me. The neighbours don't notice any difference. After a few conversations it transpires that they sleep underneath our refrigerator. I move the fridge half a centimetre, and the noise stops.

Materials: notes on the illustrations and texts.

cover: masclela 2003
photographic print 28x21 cm (detail)

p1,2 (untitled) 2003 photographic print 28x21 cm

p5-9 noise crescendo 2003
inkjet print on paper 12x75 cm

p7-8 text: Let there be noise 2003
notes:
1. Philip S.Rawson. Tantra p117. Arts Council of Great Britain 1971.
2. Abraham Moles. Information Theory and Esthetic Perception p 78. University of Illinois Press 1968.

p10,11 (untitled) 2000 ink on envelope 23x32 cm

p12 flight turbulence 2000 ink on paper 16x23cm

p14 (untitled) 2003 graphite on paper 23x16 cm

p15 (untitled) 2003 graphite on paper 23x16 cm

p16 automaton 2003 ink on paper 23x16 cm

p17 helices 1998
ink and graphite on paper 23x16 cm

p18 antenna 1998 ink on paper 24x16cm

p19 interference 1998
chalk and graphite on paper 75x50cm (detail)

p20 magnetic pools 2001 ink on paper 23x16 cm

p21 resonant vessels 2002 ink on paper 23x16 cm

p23 untitled 1998
ink and graphite on paper 21x15cm

p24 untitled 2000 ink on paper 21x15cm

p25 untitled 2000 ink on paper 21x15cm

p26,27 untitled 2000
photographic print 21x28 cm

p28-31 magnetic city installation 2000 copper arrows and figurines on floor.
dimensions variable.
This version at Box23 Lab de Arte, Barcelona.

p33 wasteland 2000 multi-channel sound, computer system, loudspeakers and cables on floor. De Verschijning, Tilburg (detail)

p34-35 (photograph of sound archive)

p35 text: Archive 2003

p36 noise banner (volem dormir) 2003
photographic print 28x21 cm

p37 text: Butano 2003

p38 untitled 2002
ink and graphite on paper 23x16 cm

p39-41 text: Listening at a distance - Materiality in concrete sound 2003 notes:
1. Francisco López. Environmental sound matter from CD La Selva. Sound environments from a Neotropical rain forest. V2, Rotterdam 1998.
2. Brandon laBelle. Field Recording or Found Sound, in Amplitude of Chance, Kawasaki 2002.
3. Musique Concrète is a term first used by Pierre Schaeffer in the late 1940's. He applied the concept of the atom to sound, isolating *objets sonore* from recorded "living sound". His attempts to classify these sound objects into a musical *sofège* led to *Traité des objets Musicaux Seuil*, Paris 1966.
4. Dick Raaijmakers. Cahier M. p. 43. Morpheus Institute, Gent 2000.
5. This is again one of those twentieth century attempts to "set sounds free" - in Schaeffer's case liberating them forcibly from their context while objectifying them.
6. Daniel Teruggi, the present director of Pierre

Schaeffer's institute, Groupe de Recherches Musicales (GRM), in conversation with Mario Flecha. Untitled Magazine no. 29 2003.
7. Michel Chion. Audio-Vision p114. Columbia University Press 1994.

p43 soundproof room 1998 ink on paper 21x15 cm

p44,45 speaking tubes 1998
ink on paper 28x42 cm

p46-49 soundhouse 1998 transparent pipes, funnels, 2 channel sound, dimensions variable. Soundhouse was commissioned by De Vaalseberg, Rotterdam. Tubes snaking through the space carry the sound of the two texts. The text spoken by voice two is based on citations from Ms. St., a patient of Jung, quoted in Avital Ronell. The Telephone Book. University of Nebraska Press 1989.

p50,51 arterial system 1999
ink and watercolour on paper 32x59 cm

p52,53 untitled 1998 photographic print 21x28 cm

p53 text: Demolitions 1998
Demolitions is a work for cd commissioned by the Stadscollectie, Haags Gemeentemuseum in 1998. Destruction and architecture are used throughout as opposing structural metaphors. Published in a signed limited edition of 75 (with extra disc) and an unlimited edition on Spore Records.

p54,55 untitled 1998 photographic print 21x28 cm

p56 page from book "Audio Guide for Den Haag (rumours/resonances)" 2001

p57 text from section 7 of audio cd. "Audio Guide for Den Haag (rumours/resonances)" 2001 was commissioned by Stroom HCBK in 2001. A cd for headphone listening with a guide-book, takes the listener through dark alleyways, backstreets, and underground parking lots on a paranoid wild-goose-chase after "the secret sound of the city".

p58 grey city 2000
ink and graphite on paper 21x15cm

p59 maquette 2002 ink on paper 21x16cm

p60 rumourmachine 2000 ink on paper 21x16cm

p61 text: Listening to the Urban Rumour 2000
"Urban Rumours" project Fri-Art, Fribourg.

p62-65 untitled (large city map) 1997 graphite on paper 12 sheets 300x300 cm (details)

p66,67 portable city 2000 indian ink, ballpoint and graphite on paper in 29 sections total dimensions 120x120 cm (detail)

p68 untitled (secret place) 1999
ink on paper 21x15cm

p69 untitled (secret place) 1999
ink on paper 21x15cm

p70 untitled (secret place) 1999
ink on paper 21x15cm

p71 untitled 2003 ink on paper 21x16cm

p73 untitled 2003 ink on paper 21x16cm

p74 untitled 2003 ink on paper 21x16cm

p76 noise banner (soroll = incivisme) 2003
photographic print 28x21 cm

p77 text: Cacerolada 2003

p78-81 Soundwalk 1998 inkjet print and graphite on paper 9 panels, each 22 x 120 cm. Soundwalk is an acoustic section through the city in the form of a frequency/time plot. comments and anecdotes were added in pencil. Software: SoundHack by Tom Erbe.

p82 sonic spaces 1999 ink on paper 21x16cm

p83-86 text: Placed in time, placed in space. On experiencing music and architecture. 2003 notes:
1. I use the term Music throughout to signify works of organised sound in general.
2. Iannis Xenakis. Formalized Music p262-264. Pendragon Press, Stuyvesant, NY1962.
3. from a discussion of the theories of Pierre Boulez in Deleuze and Guattari. A Thousand Plateaus p477-478. Athlone Press, London 1988.
4. Franco la Cecla "Perdersi..." quoted in Francesco Careri. Walkscapes p47. Editorial Gustavo Gili, sa 2002.
5. Steven Holl Parallax p 26. Birkhäuser 2000.
6. Careri. p38.
7. for instance, Jacques Derrida and Bernard

Tschumi write on the idea of architecture as event - not just the event of construction but one that continues to occur in the "now".
Derrida, Point de Folie - Maintenant l'Architecture. AA Files 1986.
Tschumi "Event Cities" MIT Press 1994.
8. See Harris and Bongers. "Approaches to creating interactivated spaces, from intimate to inhabited interfaces." Organised Sound Journal. Cambridge University Press 2002.

p88-89 cityscape (cd cover)
litho on paper 1997 54x49 cm (detail)

p90-91 untitled (transit space) 2001
photographic print 20x29 cm

p92 untitled (garden) 2003
photographic print 28x21 cm

p93-99 text: Sound Gardens 2001 from exhibition guide for "Breeze of Air - Hortus Conclusus", Witte de With, Rotterdam.

p94 untitled (garden) 2003
photographic print 28x21 cm

p96 untitled (garden) 2003
photographic print 28x21 cm

p97 untitled (sound garden) 2001
ink and graphite on paper 21x16cm

p98 untitled (garden) 2003
photographic print 28x21 cm

p100-101 noise garden 2003
inkjet print on paper 21x29 cm

p102-103 untitled (place) 2000
photographic print 21x28 cm

p103-105 text: Listening to places 2000
adapted from catalogue text "Just About Now"
TENT, Rotterdam.

p104-105 untitled (place) 1997
photographic print 21x28 cm

p 106 text: Site 2000 adapted from catalogue text "Just About Now"

p106-108 The Site series has been shown in various places. These photographs are from the

installation in the exhibition "Just About Now"
TENT, Rotterdam.

p111-115 untitled (site) inkjet print on ruled paper. 4 from a series of 10 prints, 25x18 cm
The drawings are made by the "site" computer program that distributes the sounds over the loudspeakers placed on the floor. They show how the gestures build up a hidden geography of the space over time.

p118-119 resonators 2000
photographic print 21x28 cm

p119 text: Rumours/Resonances (BCN) 2000 is a soundwork made for the "Sonic City" project first shown at "Mutations" Arc en Reve, Bordeaux.

p120- 125 all images: untitled (2d cumulative plots of stereo soundfields) 2003 inkjet print on paper 21x29 cm (small images 15x15 cm)

p121-123 text: Synesthesia 2003

p126-128 all images: untitled (3d cumulative plots of noise particles) 2003
inkjet print on paper 15x15 cm

p130-131 untitled (2d cumulative plot of sound trajectories) 2003 inkjet print on paper 21x29 cm

p133 EU external borders 2002
ink on transparent paper 28x21 cm

p135 EU internal borders 2002
ink on transparent paper 28x21 cm

p136-137 untitled (border) 2002
inkjet print on paper 21x28 cm

p137 text: Europa 2002

p138 untitled (borderfence) 2002
photographic print 28x21 cm

p139 untitled (borderfence) 2002
photographic print 28x21 cm

p140 untitled (border) 2002
inkjet print on paper 21x28 cm

p142 untitled (border) 2002
inkjet print on paper 21x28 cm (detail)

p142 europa 2002 sound, loudspeakers, computer. dimensions variable.
this version at CCNOA, Brussels.

p142 screenshot of computer programme used for "europa".

p144-146 images from "ezeziel" computer software 2001-2003. Made with Max/MSP/Jitter from Cycling 74.

p147 listen/luister 1997
ink and ink stamp on paper 21x16cm

p148 noise banner (shouting man) 2003
photographic print 28x21 cm

p149 text: Mystery Sound 2003.

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