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*Sanne Krogh Groth
&
Kristine Samson*

Urban sound ecologies

An analytical approach to sound art as assemblage

Sanne Krogh Groth

Assistant Professor at Roskilde University

sanneg@ruc.dk

Kristine Samson

Associate Professor at Roskilde University

ksamson@ruc.dk

www.soundeffects.dk



Abstract

Within recent years, there has been a renewed focus on sound in urban environments. From sound installations in public space to sound festivals in alternative settings, we find a common interest in sound art relating to the urban environment. Artworks or interventions presented in such contexts share the characteristics of site specificity. However, this article will consider the artwork in a broader context by re-examining how sound installations relate to the urban environment. For that purpose, this article brings together ecology terms from acoustic ecology of the sound theories of the 1970s while developing them into recent definitions of ecology in urban studies. Finally, we unfold our framing of urban sound ecologies with three case analyses: a sound intervention in Berlin, a symphony for wind instruments in Copenhagen and a video walk in a former railway station in Kassel. The article concludes that the ways in which recent sound installations work with urban ecologies vary. While two of the examples blend into the urban environment, the other transfers the concert format and its mode of listening to urban space. Last, and in accordance with recent soundscape research, we point to how artists working with new information and media technologies create inventive ways of inserting sound and image into urban environments.

Introduction

Art and cultural activities have recently moved from the institutional setting of the museum and art gallery into urban environments. While site-specific art in the 1960s and 1970s had a strong focus on breaking with the institutional setting, but still operated in the institutional setting of the art gallery, recent art and cultural activities venture into social, cultural and political settings in the city. Claire Bishop identifies 'a social turn' (Bishop, 2012) in which art increasingly engages with social questions and where artists explore the complex city patterns between the aesthetics of the urban environment and its cultural and social use, focusing especially on everyday life practices. Founded in the site-specific art of the 1960s and 1970s, we see a tendency for recent sound art, ranging from sound installations and audio walks to sound festivals, to choose urban environments such as abandoned industrial zones, train stations and bridges polluted by traffic as their preferred venues (Illustrations 1, 2). These artistic approaches all share an interest in relating to the complexity of the actual urban environment. They often include the characteristics of site specificity as famously formulated by the curator Miwon Kwon (Kwon, 1997, 2002). However, with the notion of urban sound ecologies in mind, this article will consider sound installations in a broader scope than site specificity. We will not only question the way in which the artwork relates to the urban environment; we will also question how soundscapes integrate with broader urban ecologies and how



*Illustration 1. LAK Festival for Nordic Sound Art takes place in a former lacquer factory in Amager, Cph.
Photo By Kristine Samson*



Illustration 2. The trainstation - Railway_dOKUMENTA in Kassel used a former Railway station as the scenic urban setting for various art works. Photo by Kristine Samson

urban ecologies - understood as both cultural and social environments - influence the artwork. The underlying argument is that recent sound-based artwork is intertwined with the urban environment to such an extent that they must be analysed together. Based on three analyses of sound compositions in urban environments: Georg Klein's public space intervention *transition* in Berlin, Pierre Sauvageot/Lieux Publics & Cie's *Harmonic fields* and Janet Cardiff and George Bures Miller's video walk at Kulturbahnhof during dOKUMENTA 13, we suggest that these approaches are not only 'a tuning of the world', as proposed by Schafer. Instead, they create what the curator Claire Doherty has called a 'genesis of situations' (Doherty, 2009, p. 13) that engage with the social, the cultural and the urban environment.

In order to sketch out the framework for an analysis of urban sound ecologies, we will first give an account of the notion of ecology in the field of sound studies, and then draw parallels to recent understandings of urban ecologies within urban studies.

Acoustic ecologies

Within the field of sound studies, we find the term 'acoustic ecology'. This term was originally developed and defined by the Canadian composer R. Murray Schafer in the 1970s and can be seen as the pragmatic or practical approach to his other important term from that time, the soundscape. In his book, *The Tuning of the World - The Soundscape*, Schafer states:

'Ecology is the study of the relationship between living organisms and their environment. Acoustic ecology is therefore the study of sounds in relationship to life and society. This cannot be accomplished by remaining in the laboratory. It can only be accomplished by considering on location the effects of the acoustic environment on the creatures living in it. The whole of this book up to the present chapter has had acoustic ecology as its theme, for it is the basic study which must precede acoustic design' (Schafer, [1977] 1994, p. 205).

It is hardly breaking news to reveal that within Schafer's investigations of soundscapes and acoustic ecologies we find rather conservative and romantic musical aesthetics, which, among other issues, are expressed in Schafer's definition of hi-fi and low-fi soundscapes. Hi-fi is mainly represented in nature's soundscapes characterised as detailed, varied and quiet soundscapes: 'The country is generally more hi-fi than the city; night more than day; ancient times more than modern' (Schafer, [1977] 1994, p. 187). While low-fi, according to Schafer, primarily represents noisy urban soundscapes: 'On a downtown street corner of the modern city there is no distance; there is only presence' (Schafer, [1977] 1994, p. 188). It is Schafer's view that the overall goal is to learn from nature before we can design adequate acoustic

environments. The aesthetic or normativity of various soundscapes' characteristics is carried on in, for example, Barry Truax' research on acoustic communication:

When the system is well balanced (what we have loosely referred to as a "hi-fi- environment), there is a high degree of information exchange between its elements and the listener is involved in an interactive relationship with the environment. Conversely, an unbalanced (or "lo-fi") environment is characterized by a high degree of redundancy and low amount of information exchange; the listener becomes isolated and alienated from the environment (Truax, 2001, p. 67).

Both Schafer and Truax favour a detailed and balanced soundscape full of perspective.

After studying Schafer's essays and educational material closely, the Danish researcher Jacob Kreutzfeldt, University of Copenhagen, raises a critique of Schafer's theoretical considerations that not only points towards the ideological and aesthetic issues, but also towards the notion of perception and Schafer favouring conscious listening over unconscious hearing – a characteristic that can be traced back to Schafer's background as a composer. When analysing noisy urban environments such a distinction does not make sense, Kreutzfeldt states. He sums up his critique in an article published in *The Soundscape Journal* in 2010:

It seems urban culture has already gone a far way since Schafer coined his concepts. It may even be, that Schafer, with his dislike for modern noise, was already a stranger to the modern Vancouver that was amongst his study objects (Kreutzfeldt, 2010, p. 14).

Despite this relevant critique, Schafer's artwork, terminology and methodology have become canonical and vital inspiration to many sound study scholars and composers around the world.

Reception of Schafer's work has generally developed in two directions. One direction continues the work with environmental issues in order to study, analyse and approve existing soundscapes and acoustic ecologies. The other is the development of genre soundscape composition, which is an artistic practice mainly representing electro-acoustic works using recorded environmental sound as its compositional material.

In order to develop an analytical tool that helps us to understand art as assemblages, as composed in dialogue with the environment, social, temporal and technological dimensions (Born, 2005), and incorporate existing sounds to such an extent that the border between the artificial and the real is repealed, the approach in this article intends to combine the two directions outlined above.

This mode of perception does not consider art as an autonomous and isolated entity, but as a situated and social event. Even though Schafer's thoughts on acous-

tic ecology from the 1970s may lead in this direction, we still find, in the core of his beliefs and practices, clear distinctions between what is considered art and what belongs to the everyday – what is artificial and what is real.

Without leaving the idea of the autonomous work, in a recent article, Barry Truax refers to sound-based art situated in broader contexts:

Clearly, sound-based art has a strong potential to communicate [...] if it appears to be contextualised in real-world experience, as distinct from a purely abstract world. Soundscape composition, in its varied and diverse forms, now has a lengthy tradition of working with contextualised sounds, as well as educating aural perception around everyday listening. Contemporary technology and communication channels provide new opportunities for this kind of work, most of which are only starting to be explored. However, what will give depth to this new form of artistically inspired communication is, in my opinion, a deep involvement with particular social, cultural and environmental contexts, and careful thought about what needs to be said about them (Truax, 2012, p. 200).

Even though Truax mainly addresses new ways of production in this reflection – ‘the role of the artist composer will need to be re-defined and expanded, if not replaced by other roles such as sound designer or acoustic ecologist’ (Truax, 2012, p. 200) – his entanglement of ‘the social, cultural and environmental contexts’ (Truax, 2012, p. 200) is closely related to the analytical approach to sound ecologies in urban spaces suggested in the article above.

Urban ecologies

Recent approaches have focused on the notion of ecology within the field of urban studies. This often covers a cross-disciplinary approach in which the urban environment is reconsidered as a complex and layered site. Similar to Truax’ approach to sound studies, there has been renewed interest in creative and artistic means of spatial production, for instance, how the cultural production of space relates to a social, cultural and environmental understanding of the city. In urban studies (urban and human geography, urban sociology and architecture and design), ecological thinking has within the last 10 years come to mean a break with a linear and mono-scientific understanding of the city. This cross-disciplinary perspective is often linked to the necessity of heterogeneous perspectives when the city is no longer regarded as a site for industrial production and functionality alone, but also serves as a space for sustainable and cultural production in a human-scaled city.

Whereas planners have concentrated on the sensuous landscapes of cities (Landry, 2006) with their audible, olfactory, spatial and visual qualities, urban theory has increasingly been interested in understanding the city as relational networks of social, cultural, political, economic, natural, material, informational and

even technological perspectives. This heterogeneous way of approaching the urban is in itself ecological. It regards the city as spatially open and in constant flux. In addition to urban form, the city consists of rhythms, flows and passions. 'The city should be seen as a kind of force-field of passions that associate and pulse bodies in particular ways' (Amin & Thrift, 2002, p. 84).

The first approach relevant to our definition of urban ecologies is 'landscape urbanism' (Waldheim, 2006; Marot, 2011) or 'ecological urbanism' (Mostafavi, Moshen, Doherty & Gareth, 2010). Broadening the perspective from landscape design and urban design, landscape urbanism takes into consideration the complex layers of nature, culture and history in the city. The aim is to overcome the dichotomy 'landscape' and 'urbanism'. By linking the two areas in 'landscape urbanism' a hybrid understanding of the city is established. This implies 'shifting attention away from the object qualities of space (whether formal or scenic) to the systems that condition the distribution and density of urban form' (Corner, 2006, p. 29).

Processes and relations between elements in urban space and time play an important role. What is important is not what is artificially designed and what is already there as nature, rather 'ecology points to a new set of professional practices characterized by an emphasis on operational and performance-driven aspects of landscape process and urbanization' (Reed, 2006, p. 281). Among these practices, we count art and cultural events, including sound art, as they play a role in the shaping of the urban environment over time. Thus, an analysis of urban environments will accordingly focus on the temporary relationships and the elements conditioning the process.

Another approach to the notion of ecology and assemblage stems from non-representational theories (Thrift, 2008; Amin & Thrift, 2002; Amin, 2004; Anderson & Harrison, 2010). In these approaches, the city is regarded as vast networks of inter-related agencies. Inspired by Deleuze and Guattari's notion of machinic assemblages (Deleuze & Guattari, 1987; Amin & Thrift, 2002, p. 78), this includes an interest in how the body reacts and interacts with other bodies. Here the body is understood in the broadest sense as the human body, the body of a building or the materiality and arrangements of a work of art. Bodies are capable of acting, but are also acted upon (Deleuze & Guattari, 1987; Amin & Thrift, 2002, p. 78). Thus, the urban environment consists of 'complex material systems' in which the human body connects with other nonhuman bodies, such as architecture, artwork, traffic flows, infrastructure, etc. In this regard a spatial analysis must look into this distributed notion of agency and how spaces are assembled. Here, Amin and Thrift underline that the notion of assemblages has consequences for how we understand practice; for instance, we cannot distinguish the technical as separate from the social and the natural. The same can be said in relation to the analysis of urban sound ecologies and we will argue that a mix of categories is present.



Illustration 3. transit. Photo by Georg Klein



Illustration 4. transition. Photo by Georg Klein

In *Taking place*, Anderson and Harrison (2010) relate nonrepresentational theories to the Deleuzian notion of ‘becoming’. Whereas urban studies, in particular urban geography, have been oriented towards a social constructivist idea of how space is constructed, Anderson and Harrison look into what they call the ‘emergent processes of ontogenesis’. They refer to how meanings, perception and space come into being through the entanglements of various urban components. In this context, artwork and cultural events play important roles as artistic practices and initiate processes in the urban environment, for instance by engaging the social or by addressing cultural and historical layers inherent in the site. Their notion of ‘taking place’ thus covers the emergent properties between various agents – sound, noise, light and music, for instance; and in that sense it breaks with the representational understanding of urban space as something either socially constructed or architecturally formed. Rather, urban environments consist of larger ecologies binding the body, perception and material qualities together.

We see ecological urbanism, landscape urbanism and nonrepresentational theories as approaches that open up for a heterogeneous and inclusive approach to analysing artwork and soundscapes in urban environments. These theories are useful to frame the ecological approaches in sound works in which we identify a tendency to

draw on the existing meanings and qualities of space. While theoretical approaches to site specificity (Kwon, 1997) and site-specific performance (Pearson, 2010) look at how the formal attributes of the work of art correspond with the site, an ecological approach takes into consideration the assemblage and the co-functioning between the artwork, the interacting social bodies and the urban environment.

Relating these approaches to the acoustic ecology in sound studies, our analysis of three sound installations in urban environments seeks to investigate how and if sound and urban qualities can be perceived as assembled, and hereby establish the notion of 'urban sound ecologies'.

transition – berlin junction: a sound situation

The first example we will present is German sound artist Georg Klein's installation *transition – berlin junction: a sound situation* (2001) in Richard Serra's permanent sculpture *Berlin Junction* from 1987 located outside the Philharmonie in Berlin (Illustrations 3, 4).

transition is an interactive sound sculpture consisting of four loudspeakers and eight sensors installed in the ground between the two curved metal plates constituting Serra's sculpture. The keynote sound in the installation is derived from different frequencies of sine waves, generated by six computer-based sinus generators (installed in the Philharmonie's foyer). When people enter the space between the rusty metal plates, the static sound of the sine waves changes gradually in correspondence with a computer system – so too would fragments of sentences and spoken words from a poem by Bertolt Brecht (Klein 2003).

In an article published in *Organised Sound*, Klein explains: 'I am not concerned with (more or less finished) works that are installed at a particular site but works that grow out of the site, both conceptually and in their execution' (Klein, 2009, p. 101). Even though Klein addresses other works than *transition* here, we find a similar approach and intention in this particular work.

Klein describes his intention with the two terms 'Raumklang' and 'Ortsklang'. With references to contemporary twentieth-century music (e.g. Stockhausen, Varèse and Boulez), Raumklang describes an approach to 'space understood primarily as an abstract concept', while Ortsklang is an approach to 'space discovered in a concrete manner', also described as 'site-sound' (Klein, 2009, p. 101). In order to develop a site-sound, a close analysis and investigation of the site's acoustics, visuals, architecture, materials, objects, social life, meanings, perception, memory, sociopolitical and potential conflicts must be executed. Klein concludes:

Through this site research – not unlike the psychogeography of the situationists in the 1960s – a thematic focus, a concept, is developed with which the site is altered through sound art – in other words, the situation on the site is influenced and aesthetically intensified (Klein, 2009, p. 101).

Approaching Klein's work from his own point of view, we find various dimensions of the piece: synchronic and diachronic, temporal and spatial, abstract and concrete.

The 'deep involvement with particular *social*, *cultural* and *environmental* contexts, and careful thought about what needs to be said about them', which Truax asked for in the quotation above, is to be found in Klein's case.

The social dimension is a basic premise of the piece. The installation would not be brought to life; it would only be a static sound, if it was not for the activation of the sensors amid the social flows in the urban surroundings. Being an interruptive element in the ordinary urban environment outside the Philharmonie, the intervention succeeded in merging with the site, the sculpture, the sound and the passers-by. To quote observations made by Klein himself: 'Some people were singing, some were playing didgeridoo, some were just going through again and again. One day, a woman showed her friend this place with the works: It's amazing which sounds the wind is producing here. Children coming through discovered the interactive possibilities much faster than adults – and with more patience and joy' (Klein, 2012).

The concrete correspondence with the environment blends with the existing soundscape to such an extent that a blur of the artificial and the real appears; i.e. the woman visiting the sculpture thinks that the sound comes from the wind.

The cultural dimension, which Truax suggests, is explicated both synchronically and diachronically in Klein's intervention. By addressing the sculpture with a critical attitude that intervenes with its original interpretation, Klein not only interrupts the cultural landscape established around Serra's sculpture, but also Serra's comment on the cultural and historical contexts related to the square outside the Philharmonie. 'Serra's sculpture [...] was expressing the status of Berlin during the Wall – two parts paralyzed seem to fall into each other. *transition* was emphasizing a new flow, a changing society in an uncertain, ambivalent moment. [...] I brought in a sceptical view by using Bertolt Brecht's poem *Change of Wheel* from 1953 describing a situation of transition: (...) I don't like where I come from. I don't like where I'm going. Why do I watch the changing of the wheel with impatience?' (Klein, 2012). Since the poetic phrases were presented as fragmented sentences, it is doubtful if even the attentive visitor would have caught the political statement and immanent critique of Serra's piece from the words alone. Instead it can be argued that it is change that constructs the intervention. The metallic soundscape was not only added as a layer or an interruption in the existing soundscape; it was also interrupted by the spoken words themselves, which furthermore brought a new perspective to the piece: a political statement from the past resituated in a present situation.

In addition, the installation blends with and enters into dialogue with the existing environment. Klein refers to how he relates the materiality of the sculpture with his own metallic sound and the sound of the sine waves (Klein, 2003, p.189).

We regard *transition* as an intervention in the processes of a specific urban environment. The urban environment outside the Philharmonie is itself a layered and complex space where new architecture, economic urban development and global tourism blend with the political history of Berlin and its monuments. The city of Berlin is globally known for culture-led urban development and the way it contemplates and reflects upon its complex history through art and culture. In particular, the area around the Philharmonie and Potsdamer Platz is a complex part of Berlin's urban history where relations between culture, history and urban economic developments are constantly negotiated. By inserting yet another layer in this urban environment, we regard Klein's intervention as one that questions the premise of urban development in Berlin. As illustrated above, Klein seeks to integrate both cultural and social layers in his sound interventions. By dispersing the work of art into the broader urban environment, the intervention breaks with the representational character of the artistic and architectural monuments in the area. The ecological approach in Klein's intervention indicates that in the twenty-first century a work of art must no longer refer to the cultural and historical contexts by means of representational monumental architecture and art (like the Philharmonie, Serra's sculpture and the nearby Potsdamer Platz). Rather, it must elaborate on culture through an open and fluid gesture integrating the urban environment on various levels. As it breaks with the object-oriented, monumental character of the urban environment in Berlin, we regard *transition* as an open process: a sensorial territory allowing social interference (i.e. the didgeridoo) and cultural changes to take place over time (i.e. the Brecht quote).

Harmonic fields

Harmonic fields – A symphonic march for wind instruments and a moving audience

is an outdoor installation created by the French composer Pierre Sauvageot. The piece premiered in Martigue, France in 2010 and has since been reinstalled in several European countries. The version referred to in this article was installed at Amager Strandpark, Copenhagen during the 2011 Metropolis festival (Illustrations 5, 6).

Harmonic fields consists of 500 instruments that are carefully installed at the chosen site. The instruments perform without electricity or human intervention as they are activated by the wind alone.

The social dimension. In comparison to *transition*, *Harmonic fields* blends in with the surroundings in a very different way. The visitors to the site could be passers-by, but a majority were people who consciously prioritised visiting this special performance. Most people behaved loyally, in accordance with the design of the installation, and engaged smoothly in the planned route around the site, thus following the dramaturgy and rhythm proposed by the spatial arrangement of the instruments. In this sense, social interaction between the visitors and the various instruments



Illustration 5. Harmonic Fields at Amager Strandpark. Photo Sanne Krogh Groth



Illustration 6. Harmonic Fields. From the concert hall to urban space. Photo Sanne Krogh Groth

followed the orchestration of the composer. People assembled in spatial groups in certain areas, as they were drawn to the particular instruments and wind machines to discover their specific sound qualities. Whereas the wind instruments demanded close listening, other instruments were arranged with the possibility of experiencing the sound together with others, by walking through them or by lying underneath them. People's behaviour was to a great extent choreographed by their engagement with the installations, and a strong territory was created, a territory that was constituted by the sound, the sculptures and the social interaction. One could almost forget that we were in a beach park, and not in an art institution. As written on the project's homepage: '*Harmonic fields is a composer's project*' (web 1). Truax proposes an alternative definition of the composer: 'sound designer' or 'sound ecologist' (Truax, 2012, p. 200). However, in *Harmonic fields* we clearly see the role of the traditional concert hall composer reinstalled in an urban environment.

The cultural dimensions of the installation point in several directions. One of the first posts was a circle of wooden string instruments, such as cellos, violas and guitars. The selected instruments leaned mainly towards a tradition of classical music, but also towards folk and other genres. It signalled that visitors were here listening to the environment as music – it was an invitation to perform a certain institutionalised mode of perception. The installation is furthermore described as follows:

Composing means choosing, and the art of the composition of this *Harmonic fields* involves organising the assembly, the dialogue between resonance, space and temporalities. Composing for and with space. Listening to the wind and learning to understand them. Creating another form of encounter between the audience and a work. Anticipating and organising walking speed, the time taken to stop and listen, the blind sections (web 1).

As stated in the quote above, a strong intention to design the visitors' behaviour is present. Here, the encounter between the audience and the work is, in comparison to the conventional concert hall experience, changed from designing a place that encourages 'pure listening' to also involving the audience's bodily behaviour. However, even in spite of this change, it can be said that the overall idea of this work of art has not changed from the concert hall context: The intention to create a dialogue between 'resonance, space and temporalities' appears as a postulate. Instead we might characterise what actually happens more or less as a monologue consisting of instructions to the audience on how to perceive, react and behave when confronted with a symphony in public space.

Another dimension is the framing of and the signals within the project as being an ecological, organic and holistic project. The information material, the selected site and the installation itself all point towards this issue. The information material from the Metropolis festival describes the event as 'an acoustic park of windmills

playing without electronic interventions, [giving] the urban citizen a meditative charge of sustainable, musical wind energy' (web 2). Besides the use of more traditional string instruments, we also find various kinds of wind chimes and bells that, together with the sound of drones created by the various strings, refer to Eastern aesthetics and philosophy. The site, Amager Strandpark, was designed as a recreational part of the city in compliance with the human-scaled planning initiatives in Copenhagen. Here, nature in the city, sustainability and participatory cultural events are part of Copenhagen Municipality's urban-life politics. With this perspective in mind, the soundscape cleverly combines recreational life and urban sustainability with an experience-oriented idea about participatory art in public space. In this sense, it involves the broader political issues at stake in Copenhagen, as the sound installation perfectly suits Copenhagen Municipality's intentions of being a human-scaled, sustainable and green city.

Alter Bahnhof Video Walk

Alter Bahnhof Video Walk is a video walk by sound artists Janet Cardiff and George Bures Miller commissioned for dOKUMENTA 13. The video walk takes place in Kassel's Hauptbahnhof – the former train station turned into a 'Kulturbahnhof' – a hub of cultural activity (Illustrations 7, 8). The video walk relates to the urban environment and its transformation by telling the story of past events, present situations and possible futures in the train station. Participating visitors are equipped with a portable media player. With the soft voice of a female narrator (Janet Cardiff) and images on the small screen, the video walk guides the visitor through the train station to encounter different situations. The images have been filmed by the artists beforehand, but are at the same time almost exact duplicates of the location. Not only the images but also the sound can hardly be distinguished from the actual sound in the buzzing urban environment. The video walk thus establishes a third space between the pre-recorded virtual soundscape and imagery and the actual bodily presence of the visitor in the real-time urban environment.

The social dimension. Similar to the previously mentioned examples, the video walk is fulfilled through a merging with social activity in actual space. The narrator's voice instructs the visitor to cut across the train station hall, thus interrupting the flow of people passing by. The merging of the visitor's body with the virtual narration and the various social activities found in the space becomes radically more sophisticated during the video walk. The narrator comments on the people around the visitor, like the old man on the balcony and other passers-by, and inserts her own characters into sound and image. Characters from the virtual space are intuitively connected with real people in the actual space.

The video walk thus situates the viewer/listener in two spaces at once: One space is virtual and constructed through sound and fictive situations such as a man play-



Illustration 7. Alter Bahnhof Video Walk. 2012.

Janet Cardiff & George Bures Miller Still frame from representational video walk



Illustration 8. Kulturbahnhof in Kassel (Photo Kristine Samson)

ing the tuba; the other is the actual surroundings of Alter Bahnhof merging with the virtual imagery and sound. However, the distinction between virtual and actual space becomes blurred. For instance, when guided to the waiting area next to the platforms, the people on the screen are smoking cigarettes. When looking up in the actual space, other people are smoking cigarettes around the exact same dustbin as the one on the screen.

The cultural dimension. This is further developed by the way the video walk constructs relations between the cultural past and present. When hearing the story of how Jews left the train station for concentration camps, the visitors are confronted with a small wagon with various documents and images. Whereas the wagon was situated in real space at the train station, serving as a kind of archive, its meaning was enacted and brought to life through the narration. In this sense, the categories of social, cultural and environmental components can hardly be separated in the video walk. Rather, they intertwine and shift positions to such a degree that the listener/viewer/visitor gives up the analysis of actual /virtual space and gives in to the immediate experience. What is past and present, virtual or actual, fiction or real events is no longer important.

Suddenly another level cuts in. The portable device starts to blink, because the battery level is low. The illusion is disrupted, low batteries are real space problems and the reaction of the viewer is, 'Damn you dOKUMENTA. We queue for over an hour and then you forget to charge the device's batteries'. However, you soon discover that this intervention was part of the narration. And you continue the walk with awareness of the role that the chosen media plays in this context. The media itself is physically present not only as the mediator of the urban environment, but also as the unreliable producer of space. Relating to Truax' point about how technologies and media renew our focus on soundscapes, we will have to introduce a fourth dimension: the dimension of the media and how this technology establishes its own ecologies.

The media dimension. It is through the media interface that the real urban environment, subjective perception and the audiovisual narrative are folded together. In so doing, Janet Cardiff and George Bures Miller construct their own mediated ecology of Alter Bahnhof neither as virtual space nor as actual space alone, because the media cleverly combines both. We therefore find it relevant to stress the role of media in this work of art.

Sound ecologies and mediation

Even though this work of art draws heavily on the urban environment, when compared with the two other examples it is the most hermetically closed and predetermined. As the perceiver, you are completely under control during the walk. The

narrator and the imagery direct you. Thus, the urban ecology, drawing from the social and the cultural contexts of the train station, is fully orchestrated by the video walk. Whereas *transition* allowed the social to intervene to the extent that some people did not even realise that it was a work of art, the video walk firmly controls social acts. Whereas *Harmonic fields* was initiated by the surrounding urban environment, the wind, the landscape and the architecture, the video walk instead uses the existing environment as the setting for creating its own hybrid ecologies.

Seen from the perspective of urban ecologies, where heterogeneous elements in the urban environment relate, the soundscape can be considered more or less open towards the existing urban ecology. Whereas *transition* was indeed a work of transition among various components in the existing urban environment – the Serra sculpture, people passing by, the soundscape and the urban development around the Philharmonie – the video walk is spatially productive, as it initiates a processual ecology between the actual urban space and the virtual narration. *Harmonic fields* was composed by integrating the natural and architectural environment of Amager Strandpark and it invited the visitors to enact and discover the sounds with their bodily engagement. In other words, the urban environment and the sculptural sound instruments became mediators. However, *Harmonic fields* also transposed the concert situation into an urban environment. In that sense, it reproduced the hierarchy between the work of art and the listener. In the last example, it is the media technology itself which established a fluid and processual ecology, bringing Alter Bahnhof to life through the media.

Urban sound ecologies

In the three examples we identified various non-representational characteristics, generally speaking: works of art dispersed into the urban environment. These works of art emerge as processes partly defined by the surrounding elements: the passers-by, the wind, nature, everyday rhythms, social interactions and existing cultural monuments. Thus, existing ecologies in the urban environment play a notable role in shaping the sound compositions.

Instead of being an autonomous soundscape, the work of art intensifies already existing ecologies in the urban environment. Thus, analysing urban sound ecologies can reveal how the heterogeneous components are intertwined and related. Broadening the field of study with regard to the notion of assemblage introduces an awareness of how the different sound compositions operate in and transform the urban environment, and how the urban environment shapes and influences the work of art.

With the term ‘urban sound ecologies’ we suggest how we can understand recent sound art and soundscapes in relation to the urban environment. As we have seen

in the three examples, the artwork can both intervene with and be integrated into the urban environment. However, the three examples suggest quite diverse ways of establishing urban sound ecologies:

Janet Cardiff and George Bures Miller's video walk is the most inventive in terms of creating a unique ecological environment. However, as indicated above, the ecology is established in the highly choreographed work of art, whereas the urban environment is the stage for creating the artistic expression.

When it comes to *Harmonic fields*, the soundscape works with an ecological approach as it integrates natural, social and cultural elements creating a strong territory. However, *Harmonic fields* is also an example of how the concert format (instruments) is taken from its institutional setting and inserted into an urban environment. Despite integrating the environment, there is no doubt that the ecology established is the one of the concert – not of the urban environment.

Despite being an intervention in public urban space, Klein's intervention is perhaps the ecologically most sophisticated. Striking for *transition* are the difficulties discerning the work of art from the surroundings. Some people believed it was the wind that made strange sounds. Furthermore, it is difficult to determine where the soundscape starts or ends. It relies on people's interaction and seems to continuously accumulate other acts. A man playing the didgeridoo does not disturb the premise of the artwork. In that sense, *transition* is ecological as it initiates spatial processes and establishes new relations in the urban sociocultural environment.

What non-representational urban theories and landscape urbanism address as emergent processes is in many ways articulated in the way Klein approaches the urban environment and makes sound situations emerge. Here, the soundscape is not an autonomous artwork disconnected from the social, the cultural and the environmental. Instead, it appears as a transitory and relational gesture assembling already existing elements. However, as works of art with a strong choreography which work less with the unforeseen elements in the urban environment, *Alter Bahnhof Video Walk* and *Harmonic fields* provide strong evidence that artists today create new forms of soundscapes by experimenting with media technologies and by elaborating on the rich potential inherent in existing urban environments.

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