

Sounding Out Ethnography and Design: Developing Metadata Frameworks for Designing Personal Heritage Soundscapes

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The paper presents reflections on understanding the issues of designing locative sonic memory-scapes. As physical space and digital media become ever more intertwined, together forming and augmenting meaning and experience, we need methods to further explore possible ways in which physical places and intangible personal content can be used to develop meaningful experiences. The paper explores the use of autoethnography as a method for soundscape design in the fields of personal heritage and locative media. Specifically, we explore possible connections between digital media, space, and “meaning making,” suggesting how autoethnographies might help discover design opportunities for merging digital media and places. These are methods that are more personally relevant than those typically associated with a more system-based design approaches that we often find are less sensitive to the way that emotion, relationships, memory, and meaning come together. As a way to expand upon these relationships we also reflect on relations between personal and community-based responses.

0 INTRODUCTION

Ethnography has long been used within a variety of settings in order to articulate and understand the everyday worlds of work and leisure. It is particularly important to highlight the role and impact that autoethnography has when we consider the move from the public to the private spheres of life, a space where researchers are perhaps not welcome and where a more open, intimate, or existential representation of lived experience is required in order that we might *really* understand about people. As Chamberlain et al. [1] wrote, “the computer has steadily moved from the workplace to the domestic space and beyond, in all manner of forms . . . we can truly say that this technology pervades our day-to-day lives.” It is autoethnography that will in part be able to offer understandings about technology and the way it pervades and intertwines with our lived practices, social existence, and our past. However, as we shall later discuss there is disjoint between the personal, social uses of meaning and metadata versus the apparent “abstract” nature of metadata that is used at a system-based level. In this article we start to unpack some of the related issues around such topics as a way to support human-centered design approaches to the development of social (i.e., shareable), personal, and place-specific audio-based systems.

Unpacking one’s own world through autoethnographic methods has gained some traction in the Information Systems [2–4]. A key reason for using such an approach is its ability to offer insights into the world of the user as a felt and affected experience, which one might argue renders a less abstract representation of phenomena of the real-world, “in the wild” [5]. This is an important factor in understanding experiential and felt aspects of personal heritage. Studies can be found in other domains, examples of such research are evident in the development of systems for aircraft maintenance [6]; education [7]; ERP implementations [8], and social media systems [9].

Yet, there is little written about the ways autoethnography can potentially inform the ways in which narratives, experience, media, and meaning can be brought together in respect to personal heritage and place. As Thompson [10] writes “based on the premise of our engagement with the world, rather than our detachment from it . . . this life process is also the process of formation of the landscapes in which people have lived.” Landscape or “place” experience is a complex and multisensory enactment that includes cultural narratives, embodied experiences, movement, memory, aspirations, and desire.

We reflect upon ourselves in and as part of the ongoing construction of *being* part of the landscape. Part of that landscape is the experiences and feelings that we attach to

the physically tangible as well as the intangible worlds of memories, feelings, and emotions. There is a genuine case for using autoethnographic design approaches to locate personal media as it goes beyond conventional “implications for design” [11], is more than a “scenic” study [10], or an ‘imposed’ analytic. It is a method of imagination, a lens through which to discover social and personal potentials in design, a way to set in motion our imaginations around how to shape intangible forms of media in a tangible world, to support a self- or autobiographical design [12] agenda. Its purpose is to elaborate and explore shared meanings and expressions into space; sonically, architecturally, temporally, and semantically.

Using methods such as autoethnography allow researchers to design, understand interaction, and develop mechanisms that can inform the creation of future technologies. Autoethnography is a tool that can be employed at a high level, at the often “fuzzy” front end of a design process and in this way inform the discourses that guide the design along, eventually to become a technical system employed in the “wild” [13].

Like Geertz [14] we acknowledge the nature of the ethnographer as an author, and in so doing understand that there is both a literary and narrative nature to the presentation and performance of an ethnographic text. Even the most methodologically dogmatic ethnographies need to “frame” their writings for an audience, in order to offer some sort of validity to their findings. In this paper we are not on a search for empirical truths. Rather, the paper presents some steps towards aiding the ethnographer/designer to connect with their own understandings and embodied experience of the world, and in so doing, attempting to connect those experiences with the experiences of others. However, this is not to say that there are not studies that use autoethnography as a methodological framework. Recent research in regard to the design of mobile technologies [15–16] and also within the field of media and informatics [2–17] indicates an interest in new ways of framing and motivating research, that one would argue is of particular relevance to a range of academic communities.

Autoethnographies are obviously “personal” accounts, and they rely on the ability of the ethnographer to connect an autobiographical account with broader cultural formations [14]. Autobiographical renderings are often open to “vulnerable” narratives that favor the affective and felt encounters with ourselves in the world. They are ways of seeing ourselves engaged in a culture, and as such they are also ways of recognizing (and rendering) experiences that have particular emotional resonances or embodied and affective impacts that “analytical” ethnographies might not be receptive to.

0.1 Sound, Self, Technology

Understanding the nature of and understandings of one’s “sonic existence” is a genuine challenge as our early work has shown [3]. The development of technologies such as the IoT (Internet of Things) [2]—which could be constantly gathering audio data, “crowdsourcing” technologies, which

can enable literally thousands of people to add sounds, stories, and reflections to a variety of platforms and technologies that use audio as part of a locative-immersive experience. A key issue with each of these technologies is one of designing systems that can that can add context to sound. In many respects, the provision of data is not the problem—it is the context of the audio that makes it meaningful. Although this paper is not one that aims to define context, we suggest that context can be (partially) modeled in terms of metadata as descriptors or classifications that suggest semantic, spatial or temporal links. This raises an issue relating to the generalization of meaning; is it ever possible to develop frameworks, semantic-models, and generalizations when we discuss personal understandings. This issue is further discussed at a later point in the paper.

This paper takes a radical step in using non-computational, qualitative methods (namely autoethnography) proposing a semantic-audio design framework that will both enable us to further understand the hypothetical (and currently speculative) possibilities for using audio as medium for place making and the development of possible and desirable future systems. This will enable us to use a personal, participatory design-based approach, which we have previously employed [16] to further examine and explore the nature of personal semantic audio and its use.

1 METHODS

Describing the methods associated with autoethnography is often problematic. A key reason for this is that they evolve and change over the study, with the methodology being evident as part of the ethnographic “document.” Our methodology has evolved from a standard ethnographic position, which in terms of its project relates to understanding phenomena, the “actors” world and their culture, from the perspective of the “actors” in a given study, which gives an insight into the practices of people and understandings of their existence. Therefore this approach to autoethnography takes a more radical member-driven approach to representing one’s world in a way that could be seen to have its roots in Ethnomethodology [18] and Participatory Design [19], offering insights and understanding that may not be observable by traditional ethnographers in the field. This is why autoethnography is particularly useful for understanding the more personal, untold, and complex relationships with phenomena such as sound and other intangible media. The studies are textual but other resources such as images [20] and audio recordings are also used in the study. Our methodology is derived and influenced from other studies, which take a non-theoretical position. That is to say they do not use a theoretical lens to understand the world around them, and unlike Grounded Theory they are not reliant upon an abstraction of a multiplicity of views that are pulled together by an external force (researcher) in order to create a behavioral theory. Other studies by Marshall et al. [21] take, for example, a feminist, post-positivist outlook, while Romero [22] uses a Marxist critical framework. A key difference here might be found in the “critical” nature of such studies, which are rooted in Critical Theory, whereas the

the work presented in this paper is based in the field of design and is existential in nature.

1.1 Expanding on “Art”

The method that we are employing is not to be considered art. It is not an exercise in aesthetics or creative practice per se. Even if autoethnographic accounts can be well written, using artistic or aesthetic elements for communicating about experience and feelings, they have a prose-like quality to them akin to the standard ethnographies as Geertz [14] has pointed out. The vignettes that we present are thoughtful, descriptive, and provide a view of personal understanding and felt “inner lives.” Such renderings might seem hermetic and highly individualistic, but at the same time they engage in reflections on how one’s experience relates to variety of people, particularly those who have a connection with the ethnographer and to their material—people in similar circumstances and those within a particular demographic or with particular interests shared with the ethnographer. It is these understandings, both intersubjective and membership related, that we see as key to designing and developing systems that people can relate to.

Earlier we alluded to Participatory Design. It is important to note the distinction between this and Artist Driven systems such as Peace Camp¹, where people are asked to leave a recording of their favorite poem that formed a collection, and crowd-sourcing systems as used in the CITY-SENSE [23] and Participate [24] projects, which are participatory in nature, allowing people to work together to submit sensed material such as audio files, that when brought together can give an insight into audio levels in a given geographical area. However, the systems are not designed in a participatory manner that can enable us to develop insights to help us understand and develop design guidelines for designers and developers.

2 SONIC SCENES

In the following we use two short vignettes from autoethnographic studies to explore connections between memory, sound, and place suggesting that rich personal textual reflections on one’s self as we encounter the world (i.e., “confessional tales,” see [12]) can point towards broader conceptual opportunities for designing and locating media. The (auto-)ethnographic vignette is used here in order to communicate about felt and personal aspects of experience. In this way, we use them to help “designers see experience” [25] with the assumptions that the highly personal, dynamic, and vague feelings that we are attempting to add to explorations of sound, feeling, and meaning making are difficult to capture in rich ways with other methods.

We would ask the reader to appreciate the highly personal nature of some of the work that we present and in so doing appreciate its relevance as a way to understand the ways in which people make sense of the world. Under-

standing this is key to developing our system design—one in which people leave personal moments, audio vignettes, sonic-memory-scapes for others to find and respond to.

2.1 Scene One

It feels as though I have always been quite sensitive to sad songs. As a child I often had to walk out of the living room when sad (or what I then perceived to be sad) songs were played on the radio to avoid crying and the ensuing embarrassment. It seems I am (still) a sucker for the nostalgic. There is a song—rather more like a sequence of notes (an “arpeggio,” to be precise, a broken chord) that has stuck in my mind. It’s from an old Swedish children’s movie that I watched as a child. Later in life, I still recall that modulating arpeggio from the soundtrack. Often when I think of something sad, the sequence of notes (or is it the sound, the “atmosphere” of the major chord—possibly just [c/g/e/g/e/g:]) played on what sounds like a large electric organ or a slightly detuned synthesizer?—plays in my head.

Some time ago my partner played what sounded just like that arpeggio on our old, out-of tune piano in our living room. At first, I kept an analytic façade and we talked briefly about the chord. Soon after I felt the familiar surge of nostalgia and while I can now keep the tears at bay, my mind was trapped, for a short while, in a kind of moving pictures memory-scape of my childhood. I watched the movie at the cinema in the small town where I grew up.

The cinema is now gone, it was converted into a sports store, and there’s a fast food place next to it, by name commemorating the old theater. I am trying, in my mind to locate the sound. Where does it belong? For some reason, I do not associate sounds with the exact place where I first heard the music. The sounds do not belong in the cinema or even readily call up any images from the movie. In my imagination, the sounds latch on to a childhood landscape of flat, overcast marshlands. It’s like they could have been a kind of soundtrack to accompany the land. I imagine driving through it, sitting in the backseat of my parents’ car. I hear it as an accompaniment to the repetitiveness of the wet landscape? I’d like to think that the sort-of-medieval sounding Swedish romanticism could somehow seep out of the ground or be entangled, somehow, with the wind that so often weaves itself into the reed grown wetlands. I would wish that other people might share my experience of the short musical sequence in what has, for me, become the “proper” setting. Perhaps that chord and the way it sounds to me, the way it sounds on that old recording, is also meaningful to other people? What would other people make of it? Watching the city I live in, now, from my window, the tones take on a character of longing towards something that I have lost, something absent that is lost forever. At the same time, the sounds reflect the choices that I have made, people and places from my childhood that I have perhaps neglected and left behind. Some of my fellow city dwellers might harbor similar nostalgias, similar experiences of an uprootedness; a slight feeling of being out of place, a low mood sometimes cured by a particular sound.

¹ <https://www.artichoke.uk.com/project/peace-camp/story/>

2.1.1 *Sound, Scene, and Community*

The connections I make of a sound with a place are private, but experiencing such connections between sound and place can be positively communal, a notion deliberated in Truax' work on what he calls "acoustic communities" [26]. Communal sounds "are usually acoustically rich and may even have musical value, and therefore they acquire their significance in the soundscape through their ability to make a strong imprint on the mind, an imprint that embodies the entire context of the community. It is the relationship between acoustic richness and functionality within the community that seems to account for the significance and longevity of sound signals" [27].

The sounds in my mind are not a natural part of the "acoustic community" or the ecological soundscape of the place I grew up—they are perhaps more the resonances of a certain type of media (children's' movies) or simply sounds that have somehow come to signify a certain age, a place and a time in the past. The tones in my mind are not pristine or particularly clear—they are formed (and made meaningful) by aging media technologies. The tone, the slightly scratchy sound and dusty timbre of the instruments, as well as the slightly detuned sound of the recording, probably due to tape wear or an unstable analogue synthesizer, contribute to my sense of the sound as appropriate, "shareable," and somehow meaningful to other people that have a connection to the same time and the same landscape. The noisiness (as I recall the sound in the movie) is not external to the sound, something simply imprinted on the sound by an archaic technology, something that might disrupt its pristine meaning, but deeply integral to what the sound means and to my experience of it. Music and sounds can connect us to a memory, a strong nostalgia; a desire for something that feels lost in time. Memories have roots that seem to fix themselves to places and senses, they have a certain materiality that allows us to imagine and sometimes feel an immediate connection to the tangible. Imagining new connections between digital media and archives of digital content such as sounds and music might be a means with which to re-enchant urban or rural sites and the space that exists between such classifications.

2.2 *Scene Two*

I go to the same places quite often; I suppose we are all creatures of habit really. I remember going on a certain walk quite often when I was younger, we always said, "we're going up the Red Road." It was a destination, a starting point and ending point. The Red Road began where the path turned red and finished where the redness ended; a point on the horizon that could be seen from my home. It was red, brick red: crushed bricks that had a texture and sound underfoot. I went there with my family, saw relatives and their friends out walking, we knew the local place names, the paths that crossed the road, where they led and who owned the land. We would be told about what used to be there, placed physically and historically, we'd pick wild fruit from the hedges and examine the natural world in detail. The sun seemed to be constantly shining, we'd

eat bread and cheese, drink water from glass bottles and listen as the adults chatted in their strong local accents, smoking and laying back on the grass. I remember things being fresher then, there wasn't the continual background hum of traffic, or streetlights that bleach out the natural colors of the world. People knew each-other and they knew the place and seemed to be more of a part of it, embedded. It was just ordinary.

I come to this after thinking about my co-ethnographers words; there is something that makes you want to balance ideas when you analyze someone else's world. I look out of the window in my office and see the town—a city full of people, socially aware and connected, and think of personal photographs, I flick through a few and am reminded of the sound of their voices, now distant, of places that are now full of different sounds and spaces to the ones that I knew. My world was a different place then.

2.2.1 *Sharing My World*

I know it's odd, but I'd like to share those kinds of things about the place that I live now. Just leave an audio trail, a story or a thought that people might come across in the ether. There's a Celtic hill fort next to the town that we walk over, and I'd like to leave things for other people that I know to respond to, I have plans to use the defenses of the fort, they are layered like giant steps designed by some ancient architect. I know there are all kinds of people that walk over the fort, from locals to tourists, from ecologists to archeologists. Locating media is about connections, locations, and being there. Understanding the dimensions of the place and its possibilities in a very personal way. Humanizing content is central to it having impact, being able to understand and share the world, and openly inviting response for others, strangers and friends.

As a design response to this, I think about things I've lost, the sound of the spoken accent and dialect of the area, of the landscape of my family and my early voice. Yet, there are things that I have gained; new social connections, a different appreciation for the place that I now live and another language. Place-making is much more than just a design response though. It is about bringing experience into being and allowing the social "accretions" into being, allowing them to surface, displaying and articulating the interconnectedness to places that exists.

3 *AUDIO LANDMARKS*

What are the sounds of my places? What are my sounds? I know if they aren't there, I notice their removal. Sounds in space are a key feature of space; they are audio landmarks, triggers, markers. They relate to people, practices and movement, memories and things. They are an integral part of the landscape, but how do we experience and make sense of a space through sound? Adding audio (media) to a place, understanding its interplay with other features in that context and how, when, and who might discover it, is in our opinion key to its impact within a given context. This is particularly pertinent in spaces where the sound is

ever changing! There have been artistic experiences such as Blast Theory's *Rider Spoke* [13] an experience that allowed its participants to cycle around the city and listen to messages and leave their own messages that were located and added to the city by the artists. This was a powerful experience for many involved and created a liminal semi-confessional space for people to leave stories about love, loss and death, but we believe that allowing people to become the architects of their own media experiences through an autoethnographic response could engender emotional and personal responses that would be difficult to design for and engage with—using other qualitative methods.

4 PERSONAL DESIGN AND COMMUNITY RESPONSES

Our studies have started to explore the methods that we might use in order to involve community in the design process and move from a personal response to one that relates to the responses of others. Our earlier work explored the use of large active projected surfaces as community interfaces [9], the role they play and their application. Dynamic maps offered groups the possibility to look at the areas where they live and examine the possibility of both planning the placement of media in the landscape, reflecting on the physical issues that related to this and discussing it as a group. A design possibility that emerged from that scenario was the possible development of tangible artifacts that could:

- a) Inter-relate to each other to explore narratives;
- b) Have media embedded onto them (in this case audio);
- c) Be used as part of a mixed media projection system;
- d) Be used on map interfaces.

4.1 Self Design

One of our initial responses to these challenges has been to explore the use of AudioCubes (Fig. 1) (www.percussa.com) for reflecting on how communities might articulate and narrate relations to sounds and places. AudioCubes create an interactive and tactile environment where sensor-enabled physical cubes are able to trigger a variety of sounds, either pre-selected by the user or curated by an artist or a researcher.

In some of our sessions with the AudioCubes we have been using Mid/Side (M/S) stereo field recordings of urban and rural soundscapes as material to trigger a dialogue. Our initial findings from interactions with AudioCubes indicate that manipulating cubes and the sounds we mapped out on them (i.e., associating the faces on the cubes with different soundscapes) allowed participants to openly imagine or narrate connections between sounds, places, technology, and experience.

In a project exploring the soundscapes of tourism, we invited an audience to manipulate a number of field recordings from tourist sites. Our interactive installation called “Resonant Tourism” sought to encourage “the discussion of sound as part of the affective materiality in tourism.

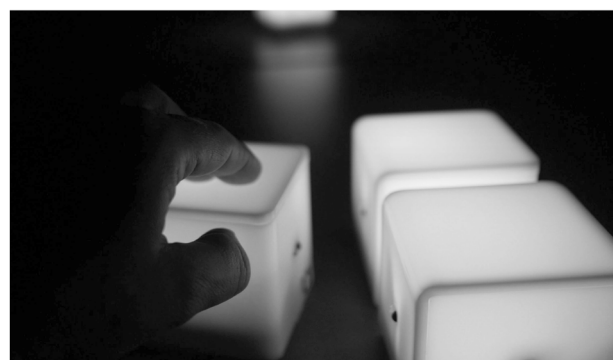
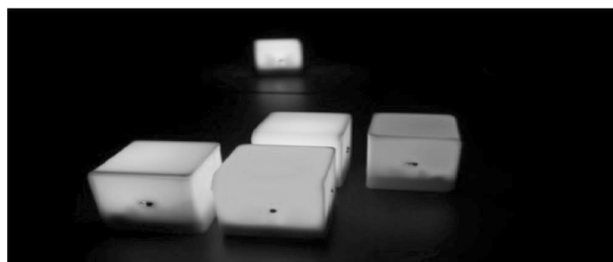


Figure 1. AudioCubes setup and interactions

How, for instance, do sounds and the acoustic environment of places contribute to the affective presence and corporeal situated-ness of being a tourist?” [8]. By asking users to engage by layering different sounds in an explorative manipulation of the cubes, informal stories about pleasant vs. unpleasant soundscapes, past experiences with sounds, musical qualities (rhythm, pitch, timbre) of environmental sounds, curiosity, and the difficulty of “close listening”

practices, as well as questions about the skills associated with creating pleasing and evocative soundscapes arose.

With the audio played back being dependent upon the way that the cubes face each other, their proximity and positioning, we find that the use of such immediately engaging and tangible systems provides an engaging way in which designers can begin to explore public reactions to and connotations evoked by different sounds. By using the AudioCubes, we were aiming to facilitate reactions, ideas, and concerns, and in so doing rapidly build up meaning and experiential trajectories and scenarios for design. Further, they can be used to facilitate participation in the production of metadata for a given audio-based system.

In many respects using such tools is an ideal medium for navigating between the personal and public uses of metadata and highlight the friction between everyday metadata and meanings, and the abstracted nature of metadata that is purposed, modeled, and generic—as an accepted framework. This is further discussed at length in regard to domestic music consumption, meaning, and design [28].

5 METADATA DESIGN GUIDELINES

In this section we start to outline a design framework. This is not a technical framework but is a set of Design Guidelines that may be used to support design-based activities relating to the development of personal and audio-based interactive experiences. This abstraction can be used to reflect on the design of audio-based experiences and also works as an initial way to begin definitions of a metadata framework that can both work on social and system-case levels.

Time—Time is a key component of personal narratives. It is able to set the scene by relating to a period in one's life and it is able to tell us about how long we spent doing an activity. It can be highly specific as an exact time and date or general as “in the Eighties” or “in my childhood.”

This produces a new timescape that is a set of associated temporal relations (time frames, temporality, tempo, sequencing) that work together to produce a temporal audio landscape. This temporal landscape, not only reconfigures the space-time continuum but also the associated temporal rhythms and relations of the environment and extends to all four temporal modalities—“past present,” “present present,” “future present,” and “present future.”

Being able to articulate this in a manner that is both understandable to the system and to the user appears simple. Dates and times are often used by all kinds of technical systems that range from MP3 players to online calendars. The difficulty lies in using metadata descriptors that are context dependent and, as such, rely on a prior understanding of the context that relates to the content that is being described. Being able to define the sounds of times past, or that a sound it reminds me of the period I was feeling down, in love, or stressed out or to connect sounds otherwise to a temporal signifier is something that is in many respects difficult to convey on a “systemic” level but may be a powerful tool when one wants users to empathize and understand content in a given way.

Place—Where things are heard and the impact that places have on sound is a core part of both the production of and listening to sound. As we have seen in the scenes that we chose from our autoethnography, place is used to inform us about what was heard and where we were when we created and consumed sound. However, place implies more than mere location. Place for some people may also infer a specific time, people as well as moods or feelings. Unpacking the multifaceted nature of place and the part that sound plays in the making of place is complex. Looking at the literature that explores the interplay of people and place, it immediately becomes evident that this requires a multidimensional approach as it consists of several interacting factors such as affect, mobility, knowledge, beliefs, and behavior, with the most important aspects being place dependence and place identity [12–29]. As such through these we can see that a tension that transcends spatiality exist between people-place relationships and sound can play a significant role in altering these, as it enables individuals to become emerged in space while appropriating “uncharted environment” so as to interpret and reinterpret their surroundings through it [30]. This enables parochial relationships with space and place and creates the idea of socially empty places, by claiming and re-claiming conceptually empty spaces, individuals continuously fill and empty a territorial mold, and on a conceptual level, repeatedly separate and recombine meanings of space in time [31–32].

People—The social nature of sound is taken for granted, as in many respects are the sounds that we as humans make when we speak and we go about our everyday business. As I write this I can hear myself typing, and listening back to audio recording of walking through snow I am somehow able to trigger memories of who I was with and what we were doing at the time. The sound of peoples' voices, the odd movement, background voices. The social-sonic qualities of our life are powerful and personal and can be used to convey a whole raft of information that supports the understanding of the scene from a human perspective, particularly when this is combined with place and time. In a world full of social media and crowd sourced content, being able to use the socialities articulated through sound needs to be carefully thought about. In particular there are opportunities to develop shared sonic experiences in ways that technology has not previously been able to accomplish. In terms of developing a metadata model, perhaps one may want to examine the “nature” of the social relationship, even the basic knowledge of a social-tie is important.

Feelings—Affective computing is a discipline in its own right and indeed the authors have written on this area [33]. Sounds (whether they are pleasant, naturally occurring, machinic, incidental, designed) create immediate and pre-cognitive reactions in people, moving, mobilizing or in some other way changing the bodies of people [12–32]. We might think of immediate embodied reactions to sounds such as shudders or goose bumps or feelings of relaxation, tension, joy or ecstasy felt through the body's autonomous reaction to acoustic stimuli. Sound also creates the outlines of a certain mood, an atmosphere or an ambience of a place,

giving shape to the identity of a place or subtly invoking a felt “sense of place.”

Mobilities—Sounds can compel us to move. Mobility impacts upon the way that we experience the world. Consider a catchy rhythm, a marching band, or a painful noise that propels the body to move ahead or away in various ways [34]. Sounds may also offer ambiguous cues that entice us to digress or explore a site. Bird watching as well as day to day way finding may rely subtly on sound cues. When moving, the sounds of the body, of clothes or the drone of a vehicle creates a shifting sonic layering.

Böhme subdivides bodily space to space of perception, space of moods, and space of action [35]. Actions are linked to the body; in fact, the body is devoted mainly to actions [36]. Human actions are always ascribed to intentions, and thus our actions have some meaning—even habits or absent minded actions. As such movement is one of the primary sources for creating meaning and thus different kinds of experiences in various domains (e.g., [37–38]). Music can guide people’s actions, lead people to visit locations and even allow listeners to link these locations so that they become part of the experience. This appropriation of space through music enables the listener to explore the “uncharted” environments.

Context—The urban environment presents a challenge for locative sonic experiences. This is due to place and space being full of personal meanings intertwined with functions as emerged from everyday usage and internal (e.g., tasks and goals) and external factors (e.g., social resources). That being said, by taking into account context in relation to the experience of the place, one can argue that sound has the potential to immerse the individual in a parallel dimension that overlays the ordinary. This can enable sound experiences to position the individual at a mind-set where (1) s/he can interpret and re-interpret the surroundings by writing and reading space through music, and (2) experience the surroundings as a stage where the inherent atmosphere and authenticity of a location is distorted and/or augmented by music.

Sonic experiences can be set in the realm of ordinary, and yet users can use such sonic experiences to dis-locate from the day-to-day. However, context can limit and control this [30]. Limits are often self-imposed by the listeners and can also be designed explicitly as part of audio experience. However, since there are several limits in relation to weaving socio-technical experiences in our everyday life that create a resulting “seam,” break, gap, or “loss in translation.” When there is this discrepancy, the media itself can be seen as having some sort of social impetus [39]. This “messiness” in relation to context and interpretations of it can be used in conjunction with the experience to distort place—and even strengthen certain elements of it. Therefore, designs should consider it minimizing or not depending on the outcome. Some limited research from the field of location-based games in seams has indicated that these can be minimized by (1) removing the losses in “translation,” (2) hiding these issues, or (3) revealing them so that the users can make use of this as part of the experience [40]. That being said, it is suggested that the “seams” should be

thought of as part of the design experience and as such it is suggested that the designer to actively consider them—especially with regards to audio experiences as from our explorations it seems that audio and music can affect more a whole host of variables (such as feelings, etc.) than what the location-based systems literature discusses.

6 FUTURE DIRECTIONS

In our early explorations of the AudioCubes we were able to see that the application of such technologies could be used within a co-located scenario collaboratively, or as an individual. One of the major benefits of using the AudioCubes system is that it allows users to use tangible artifacts to locate and narrate intangible content. The interface of the AudioCubes is simple to understand and “master” in an intuitive hands-on fashion. By adding new ways of connecting the AudioCubes (as well as other technologies) to distributed resources, we wish to explore how meaning, understood as the basic feature of a “sense of place,” can be facilitated and expanded

As we discussed earlier, we have previously used table-top mapping systems. In order to further understand the design of located experiences we will be combining the two systems and examine the application of live-streamed audio content from distributed, related sites into the system in order that the users can further understand the context in which their content will be placed. This also opens up opportunities for distributed collaboration and co-curation. With the authors of the paper being based in the UK, Denmark, and China we also have the opportunity to explore cultural and individual differences that may “come to light” when using the system in a distributed fashion and the role that autoethnography plays in the participants’ responses to the system.

7 CONCLUSIONS

Personal archives and infrastructures afforded by digital technologies increasingly allow us to access almost unlimited media anywhere.

There is always a difficulty in attempting to define, standardize, and use static metadata frameworks when using highly personal content. In many respects such frameworks denature lived experience offering a very narrow window onto personal experience. After reflecting upon this we offer a set of design guidelines that may be employed to develop systems and tools. We have started to unpack some of the features of such experiences and the multi-faceted nature of meaning, both in personal and social terms has become apparent. We openly admit there are no hard and fast rules for developing metadata schemes and design guidelines for developing personal sonic experiences. Using autoethnographic methods to explore a design space extends rather than restricts the range of experiences, feelings, or practices that can be included in a project. In this paper we have started to develop a framework that we hope people will add to in order to further explore this growing research area.

In the paper we have discussed the use of autoethnography as part of a self-design approach to adding media to place (in respect to adding media and media to the city). In addition, we have started to suggest how tangible interactive technologies might contribute to community-based (or intersubjective) narratives and foster participatory sense-making around such merging of place with media. As digital technologies are increasingly ubiquitous there are new and exciting possibilities whereby people can self-design experiences, which can be social, located, and mobile, spanning modalities and times. As such systems emerge, we hope that our exploration of these ideas will form a platform for future discussion, reflection, and debate.

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