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"LISTENING AND REMEMBERING": NETWORKED OFF-LINE IMPROVISATION FOR FOUR COMMUTERS

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ABSTRACT

This paper analyses the experience of the networked off-line improvisation 'Listening and Remembering', a performance for four commuters using voices and sounds from the Mexico City and Paris metros. It addresses the question: how can an act of collective remembering, inspired by listening to metro soundscapes, lead to the creation of networked voice- and sound-based narratives about the urban commuting experience? The networked experience is seen here from the structural perspective (telematic setting), the sonic underground context, the ethnographic process that led to the performance, the narratives that are created in the electro-acoustic setting, the shared acoustic environments that those creations suggest, and the technical features and participants' responses that prevent or facilitate interaction. Emphasis is placed on the participants' status as non-performers, and on their familiarity with the sonic environment, as a context that allows the participation of non-musicians in the making of music through telematically shared interfaces, using soundscape and real-time voice. Participants re-enact their routine experience through a dialogical relationship with the sounds, the other participants, themselves, and the experience of sharing: a collective memory.

Keywords: *Networked performance, Listening, Soundscape, Voice, Underground Transportation, Non-performers, Collective Memory, Ethnography.*

INTRODUCTION

This improvisation was part of the practice-led research 'Linking urban soundscapes via commuters' memories', which was situated in a transdisciplinary field—including soundscape studies, collective memory and new media creation—and used ethnography and artistic practice as research methods [1]. Its ultimate goal was to create a virtual space linking the metros of London, Paris and Mexico, for sharing commuters' listening experience and fostering creative expression derived from their relationship with the sonic environment. The entire research project led in 2009 to the completion of the artwork *Sounding Underground* [2].

1. BACKGROUND

Since 2003 I've undertaken ethnographic research into memories of soundscape initially with commuters on the London Underground [3], and later with commuters from Mexico and Paris metros as its counterparts. Reflecting on the intersection between the theory and concepts of soundscape [4] and of collective memory [5], I was interested in which sound memories passengers of these cities have in common, what is unique to each soundscape and how it reflects on their experience as individuals. Collective memory is understood here in its classic sense as the memory that is shared. Within collective

memory practices Wertsch uses the term 'textual community', to refer to a group using a set of cultural tools, language, and objects to produce narratives or 'a specific type of community---namely, one grounded in the use of a shared set of texts' [6]. This concept of textual community could be linked with Truax's concept of acoustic community. However, these concepts differ in the sense that Wertsch's community is created by sharing texts and producing narratives while Truax's community shares the acoustic environment, no matter how 'this commonality is understood' [7].

Through interviews, recordings of journeys, and listening [8] practices, I investigated commuters' feelings triggered by sound in their travelling routines. During the different stages of initial research in London, participants identified 'voice' as one of the most attractive features of this contemporary underground soundscape. They often miss it as a dialogical and expressive instrument when commuting in that metro. Thus, in subsequent research in Mexico and Paris voice became an important element in the re-enactment of the human experience in this environment, and it provided a opportunity, in this context, for making Wertsch's idea of 'voices of collective remembering' *alive* and *heard*. As part of the ethnographic methodology in the two last cities I introduced voice improvisation with soundscapes as a performance activity.

Sixteen volunteers in Mexico City and sixteen in Paris participated in individual processes of remembering that started with an interview about their commuting experience, and in particular about the remembered sounds and feelings associated with it. Secondly, each participant recorded a journey on the metro, using binaural microphones, experiencing an awareness of details of the soundscape not previously perceived, as well as of their own role within the soundscape.

I connected to the sounds, since I go through these places on a daily basis, and I connected to them as an intrinsic part of my life. The sound of vendors is an iconic sound in Mexico and part of what Mexico means ... its economy, politics, and art. Discursively, the sound context bears an important part of the face of Mexico and the metro. [9]

In a subsequent session, participants listened to their journeys and selected and edited the sounds that they considered most meaningful. The only constraints imposed by the project were the duration of the sounds: 15" for the shortest, and 1'30" for the longest.

The improvisation was the last stage and used networking technologies as tools of exchange between people who are non-performers within an electro-acoustic setting, facilitating the immersive experience of the soundscape. It functioned as a compilation of the entire experience of remembering. Previous fieldwork activities, including feedback in a blog and the writing of personal biographies as commuters, were considered essential emotional preparation for the improvisation:

Ten years of memories that I keep from people, sensations, long conversations, bawdry, readings; between sounds, gestures, odours, movements, and places. Yes, the Metro is also a box full of remembrances that goes at 80km per hour. (OC: Mex, personal biography) [10]

Going back to France, I am still keeping an eye on international relations and geopolitical issues, and trying to make my life an experiment of poetic moments, based on both the reality of the world surrounding me and my imagination. (GC:Par, excerpt of biography)

2. UNDERGROUND CONTEXT

The underground experience has inspired humans and their fantasies since the first attempts to industrialise and exploit underground environments [11]. Williams describes the aesthetic perception of underground worlds as evolving from ugliness, going through the sublime, and ending in magical beauty in European literature from the seventeenth to the twentieth century. The narratives echoed the technological developments of the times. Sublimity, she said, was 'invented to express the emotional power of subterranean environments, a power not encompassed by the traditional aesthetic terminology of beauty and ugliness' [12]. Sublimity in underground environments 'celebrates ambivalence' depending on 'the delicate equipoise of conflicting emotions' [13]. Williams points to changes in the light as an aesthetic influence which arouses those feelings: from darkness (ugliness), to candle light (sublime) to full electrical lighting (magical beauty).

In the contemporary underground soundscape, it would be possible to establish parallel characteristics to describe perceptions of sound in terms of noise, music, and silence. The modern metro, for instance, can be interpreted as quieter, using the example of the automated trains of the new Line 14 in Paris that run without a driver and even during strikes. However, listening perceptions are rather complex in contemporary underground transport environments.

The emotional power of sublimity, as explained by Williams, is useful here to situate the studied underground transport systems' soundscape and its rich mixture of sonic, symbolic, and social contexts. During the journey, repetitive sounds of machinery, reverberant spaces, contrasts between confined and open spaces, artificial and natural light, and the everyday interaction of people with a purposeful activity have created sophisticated sound textures and rhythms, full of micro-events, from which to approach both unconscious and conscious states of commuters' bodies and minds. Symbolically the underground journey can represent death [14], the disconnection from our normal environment and natural light. It can also be thought of as rebirth, the connection to ourselves in a space of detachment, in a 'womb-like' space. In the *isolation* of a public space, guided by the rhythm and movement of machines and people, sonic conditions are created for *digging* into profound human emotions. Comparing the London Underground commuters' experience with those in Mexico City and Paris, it is noticeable that socially each city's underground unveils issues of class, gender, individuality, collective sounding and silencing, processes of migration (national and international), and cultural identity. These relationships are immersed in the cultural appropriation of a technological environment. The sonic aesthetic is created by each individual's full sensorial experience in a particular time of his or her life.

The improvisation takes place within this context as a means of interaction between the experiences of individuals who share a common space. Which sound spaces do commuters create in their imaginations, how do they 'voice' them, exchange them, and which narratives do they create in a networked improvisation?

3. NETWORKED IMPROVISATION

Networked music performances are mostly performed by trained musicians and performers, as such performances traditionally demand musical and technical skills [15]. Barbosa, in his classification of 'computer-supported collaborative music', points out that 'a spontaneous [free] improvisational approach' is suitable in an Internet context, because of the characteristics of this medium, and introduced the term 'shared sonic environments' to describe a kind of performance where people can 'participate in a public event by manipulating or transforming sounds and musical structures or by simply listening to music created collectively' [16]. This 'public event' implies the participation of non-musicians and suggests the creation of acoustic communities
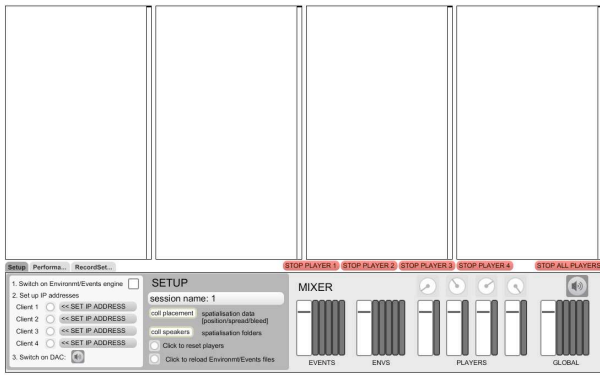
via the Internet that go 'beyond the enhancements of existing acoustic communication paradigms' [17]. On the other hand, listening in an electro-acoustic musical space to environmental sounds implies the expansion of the listening experience, 'transporting the listener beyond the listening space or creating a large space for the listener to inhabit' [18].

Thus, the 'Listening and Remembering' improvisation is described here as a shared sonic environment that extends the perception of space through the use of spatialisation of soundscape sounds and the voices of commuters expressing memories of underground environments. At the same time, it uses an on-line sharing format, involving the naming of sound files as a resource to identify, track, and trigger participants' recordings. Most of the participants had no performance experience. Their knowledge of the soundscape and what this means for their lives were the most important elements brought into the performance space. In terms of geographical location, the improvisation is off-line, meaning a co-located system [19] where participants' computers are linked by a local area network, and share the same room. It has been implemented off-line (co-located) first, in order to establish a model for what could be created on-line (remote), thus including commuters from the other metros.

In order to describe different structural aspects of the improvisation, Weinberg's theoretical framework for interconnected musical networks [20] and their main aspects---such as goals and motivation, musical content and control, social organization and perspectives, and architectures and topologies---are useful for understanding this performance experience as 'an interdependent art form', while they simultaneously present a foil for the ways in which it represents a new approach to networked musical experiences.

4. LISTENING AND REMEMBERING: THE IMPROVISATION

I proposed to the groups of four participants, that they listen to a journey based on sonic excerpts of their own journeys, which I organized and triggered according to environments (street, entrance, ticket office, corridors, platform, carriage), and sonic intervals called events (steps, amplified voices, trains arriving, doors opening and closing). The technical setting, consisted of five computers connected via Ethernet. Two Max/MSP patches were designed: one for the leader of the improvisation---the server (see Figures 1 and 2, next page)---and one for the participants---the clients (see Figure 3, next page).
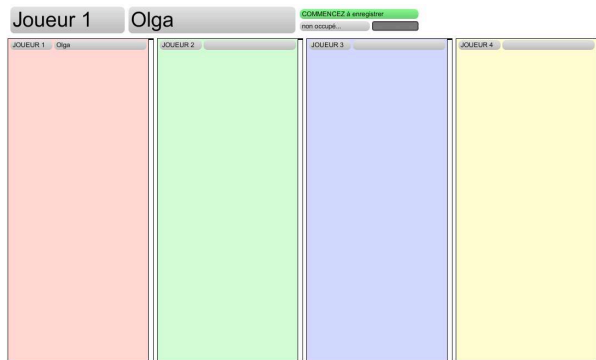
1 | Fig. 1. – Serve patch with features of the setup.

2 | Fig. 2. – Detail of features of the "Performance" tab.

3 | Fig. 3. – Client patch. Joueur [Participant], Commencez à enregistrer [Start Recording].

made with the voice, with or without words, that has been triggered by the soundscape---they were able to record it via the microphone, and each recording was given a name (see Figure 6, next page), to be visible and available for playback on the other three participants' screens. Participants decided to trigger recordings according to the names of the files, but also based on the listening experience.

The researcher controlled the amplitude and triggering of pre-recorded sound excerpts through the server software. The participants controlled the recording and playback of the voices through the client software. As there is no transformation

of sounds, all sonic events and their combinations depend on human input. Thus, the 'musical content' heard during the improvisation is a mixture of commuters' journeys, including counterpoint between human and machinery sounds, and the unpredictable responses that these provoke. All these aspects define two actors in terms of 'social organization and perspectives': the leader (researcher) and the participants (the commuters).

The 'architecture' of the improvisation is a *synchronous* centralized network. Even if participants are stimulated by the sounds triggered by the leader, each is free to record and play back their memories at any time, regardless of the actions of the other participants and the leader. However they can influence rather than 'modify [technically speaking] the music of their peers while it is being played' [21]. Spatialisation of soundscape, the use of participants' memories, and the inclusion of file names on computer screens for the sharing of sounds, are other important elements to add in its 'topology'. For Weinberg, exploratory networks 'do not impose specific directions or goals for the participants' [22]. In this sense, this improvisation maintains the narrative structure of an underground journey and it can be understood as an *exploratory* and *process*-centred network.

Thus, in this hybrid sonic, interconnected, networked

Their interfaces were designed to be colourful and engaging, while being as intuitive and easy to use as possible, in order to enable fluency within the improvisation. The server acted as a hub for all audio activity, receiving controller data (record/play-back triggers) from the clients. The sounds were diffused without any transformation via five loudspeakers that surrounded the participants (see Figures 4 and 5, next page): participants were each allocated an individual speaker through which their memories would be heard, while environments and events were deployed to multiple speakers, presenting a wider acoustic space. When they wanted to express a memory---understood as any form of expression
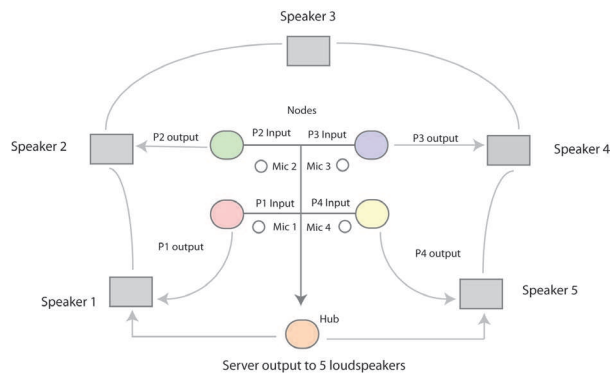
4 | Fig. 4. Topology. P: Participant; Mic: Microphone.

5 | Fig. 5. Participants improvising in Paris.

performance, interdependency, for musical and social achievements, relies on the actions driven by listening and remembering, the connections established between the participants regarding a common soundscape, and an interface that facilitates the process of sharing.

In Mexico City, four groups of commuters improvised in a large, non-isolated space [23]. Their voices were amplified while recording. In this first improvisation, the amplitude of the playback of their voices differed from the amplitude of recording, which was a technical issue that needed improvement. In Paris, three groups of participants improvised in a smaller space, with more controlled acoustics [24]. In order to solve the technical problem that occurred in Mexico, participants in the performance in Paris recorded without live amplification (i.e. 'privately'), and played it back over the loudspeakers, thus discovering only later what the other participant had recorded. These two approaches defined an important difference between the two performances.

5. RESULTS: SONIC NARRATIVES

In both cities, the mixture of metro soundscapes and the intensity of multiple voices remembering created diverse narratives. These are formed by voice snippets, almost in the form of 'chat', that sometimes connect to each other like a conversation while at other times they act as a continuation of a single reflection by a participant. When these voices network sonically, they are especially meaningful as a social transformative act within a contemporary urban reality, opening up the creation of hybrid narratives. These narratives varied according to cultural references and individual expressive and communicative interests. However, there were similarities in their narrative expectations and in the connection with the sonic space. I suggest that participants switched

between a 'real space' (as if they were in the metro), a personal 'memory space' (the memories they shared with their voices), and a 'performance space' (where the metro is perceived as a background space to develop any kind of sonic intervention). These spaces can be considered shared sonic environments that bridge the experience of this acoustic community.

Typologies created in the three spaces reveal the performative strength of the improvisation, with its interweaving of narratives as a collective memory of an underground space. The interweaving of these stories, thanks to the networking structure and the switching between imagined acoustic spaces, made it a special networked performance with extra-musical elements. Participants perceived transformative possibilities: in the tragedy of small misunderstandings, in the exchange between unknown languages, and in imagining a ballroom in a metro; using abstract voicing as an opportunity to join or go out of synch with the rhythms imposed by the routine; or in an intimate expression that resonated within them as the catalyst of their feelings. In the improvisation, we hear 'the unpredictable turns of chance permutation, the meatiness, the warmth, the simple, profound humanity of beings that bring presence and wonder to music' [25].

5.1 IN A 'REAL SPACE'

Participants assume they are in the metro or linked to the reality of the metro. In this manner they reflect about self and the space, incorporate everyday life conversations, and use the improvisation as a diffusion medium.

When reflecting on self and space, participants in Mexico expressed feelings related to the future of the city and the role of the metro as a shelter: 'when an atomic bomb falls I will search for refuge in the

metro station Camarones because it's very deep and surely nothing will happen there' (RG:Mex). Mexico City Metro is described as a hub of popular culture, a chaotic city with an informal economy, and the role of the vendors: 'what I don't like are the voices of the vendors, they saturate me, but I like the ... well some exhibitions are interesting' (EV:Mex). Cultural accents were realised acoustically: 'my unmistakable Chilanga's voice' (RM:Mex) and clapping to resemble the echo in one station, 'let's go and play with the echo' (DG:Mex).

In Paris, comments included the weariness of the routine and the questioning and affirmation of Paris as a city. 'Paris empties the mind? Why Paris and not another city' (BN:Par). 'This is Paris and not the Eiffel Tower. This is Paris' (MM:Par). 'And yes, Paris is also light, concerts, entertainment. Why only the

6 | Fig. 6. Server patch in improvisation in Paris.

negative things?' (BN:Par). The social aspect of the underground was also expressed: 'All in the same boat, in the same train, in the same metro' (GC:Par), 'human misery, the rich, the poor, the homeless, everyone is there' (MM:Par).

Participants incorporate everyday life through snippets of conversations between known or unknown

people. Stories range between typical salutations: 'Mrs Rosa, how are you doing ...' (MR:Mex), 'Hello Syl-vie' (GC:Par), mobile conversations: 'Yes, I am in the metro and I cannot hear you, listen, I'll call you later, listen, the connection is broken, crashed' (GC:Par), to nonsense interventions, which create interesting and humorous stories: 'Is this hand yours?' (OC:Mex). In Mexico, a participant took advantage of a mobile phone call that he received during the performance, including it spontaneously in the improvisation. The other participants followed the conversation by making short comments that made the situation more humorous.
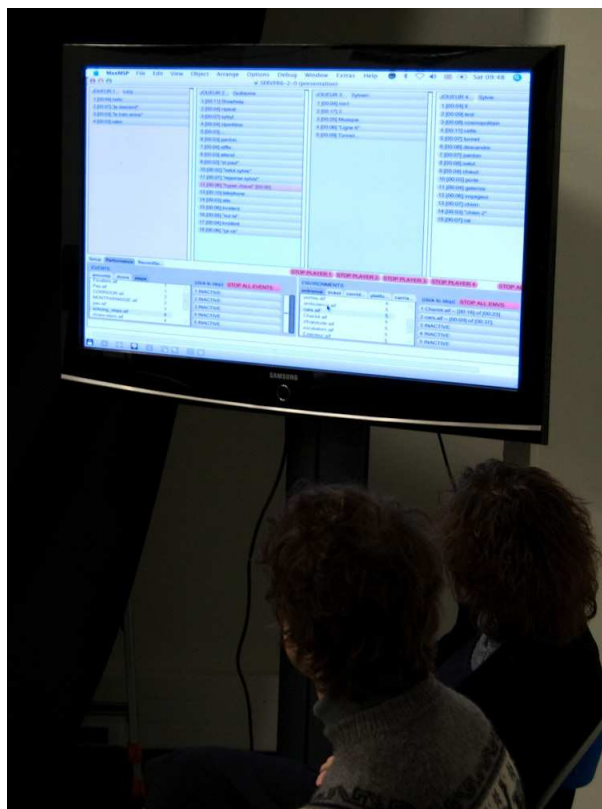
Using the improvisation as a way of communicating, one participant sent a political message: 'I hope people go to vote this Sunday. We cannot permit PEMEX [Mexican Petroleum Company] to be managed by foreigners' (EV:Mex).

5.2 IN A 'PERFORMANCE SPACE'

Participants assume that the improvisation is about performing with sound. In this manner they experiment with sonic play and story-telling. They found musicality through abstraction, transforming everyday verbalization, through poetic sounds and going beyond the meaning of the words: 'Avanzo, avanzo, avanzo, hacia abajo, hacia abajo, hacia abajo' (AI:Mex), 'Des-cendre, des-cendre' (LW:Par). Onomatopoeia was also common. Participants often imitated the sounds of machinery, which also lent rhythm and sonic texture to the experience, such as the case of airy sounds: 'Shhhhhh, silence, silence, shhhhhhh' (MM:Par), 'Pfffff' (AS:Par), or screeching sounds. In Mexico, participants took advantage of one commuter's foreign language to imitate or play with the situation, and also of imitating voices heard in the metro in a nonsensical way: 'fijate que me dijo que nooo, que me dijo que nooo, que le dije que nooo, que me dijo, pues sí, me dijo' (RG:Mex).

The possibility of immediate repetition of their recordings tended to dominate the performance as a way of finding mixtures and rhythms. In some cases this followed the rhythm of the metro, in others it created a completely different soundscape, as a DJ might, which left the metro environment in the background. Within the journey, the sonic space of carriages as they travelled through tunnels was a special place of engagement and intervention from participants playing with rhythms, and repetitions [26].

Dramatic story-telling could take a conversational manner: 'Oh la-la, suicide?' (GC:Par), 'No, ce n'est

pas un suicide. C'est un chien, un chien sur la voie' (SD:Par) ['Oh dear, was it a suicide?' 'No, it was not a suicide, it was a dog, a dog on the line']. And following the story: 'Canine incident, they should have called it 'dog incident' ' (SD:Par). 'They are not dogs, but rats in the metro. I saw it, I saw it, I saw it with my own eyes, I saw it on the platform' (SD:Par).

5.3 IN A 'MEMORY SPACE'

The memory space invited the participants to express more intimate thoughts, re-inventing the space and re-inventing themselves. This is how they created imaginary spaces, shared dreams, and related to absent spaces in the metro.

Participants created imaginary spaces into which they invited each other, for example, to dance 'a waltz', visualizing a bright spacious ballroom. Prompted by the music the participants are listening to, time and space diverge from the routine. Music links other spaces, times, and cultures, and participants take advantage of this to play with the language:

'Quieres bailar?' ['Would you like to dance?'] (WM:Mex)
'D'accord.' ['Sure.'] (OC:Mex)
'Un Waltz?' (WM:Mex)
'No, no, un Breton.' (OC:Mex)

Absent spaces or elements including air and water create powerful images on the metro:

I would like it if the metro didn't have ceiling ... to feel all the air from above. (RG:Mex)

When I was a child, I used to play with sounds. I liked the sound of water a lot, the stream of water. Did you notice how diaphanous it used to be? (EV:Mex)

The feeling of not being obliged to record or play back was an unexpected option here. The setting, with a microphone and a big screen, can be intimidating for many people and particularly for non-performers. In Paris, one group was concerned with intimacy, and their memories were not played back often. Their post-performance reflections concerned having respect for each others' voices or being self-conscious. They talked to themselves about dreams, the particular acoustic of the metro, and the anger felt about a robbery on the metro. The dream story plays beautifully between the dream state and the waking state that is experienced in the metro. The participant tells the story in five sections, while travelling sonically with the improvisation:

I had a dream, I was reading a text message on my mobile. A friend was insulting me, I was furious, and I was calling her to return the insult. I hung up and throw the mobile through the window.
When I woke up I was feeling bad, I didn't know what to do, I wanted to call her, and searched for her number on my mobile, and when I found her number, I deleted it.
Once a young woman was sitting in front of me. She was sad, she was around 20. She started crying. I felt bad, I didn't know what to do, I would have liked to console her, give her a handkerchief, but I didn't do anything.
I imagined that the cause of her sadness was a guy. I would have liked to say: 'don't worry, all men are stupid', but I didn't do anything and she got off.
My friend, the one with the mobile, I don't want to hear from her. Instead I would like to meet that young woman again and to know that she is doing OK. (ER:Par)

6. DISCUSSION WITH PARTICIPANTS

Participants described their feelings about the improvisation, in terms of the listening and sounding experience, the interaction with people, and the interactive system. Regarding listening, in Mexico they described it as a very intense experience with sounds coming from many different sources: 'I lost track. Suddenly there were lots of sounds that I haven't heard before. So, I wanted to listen to them.' (AI: Mex) When the voices were abstract, such as in the DJ's experimental input, one participant felt lost in her listening: 'something was not going well, is it me? What is happening?. Then, I decided to focus on the sounds that I knew.' (LE:Mex). She felt that this experience was similar to the one that occurs in the Mexico metro, where sounds come from different sources in a sometimes chaotic manner, thus she also prefers to focus on something else during her commuting. In contrast, the participant who was creating the experimental sound felt very happy recording and playing back: 'When I was recording more tracks, I felt happier. It was fun; [but] sometimes...I couldn't listen.' (RA:Mex) One can see the balance of sounding and listening by looking at the total number of sound files (nsf) that were recorded by the participants (P): when one participant dominates the sounding, as is the case with this group, where P1=7(nsf), P2= 5, P3= 8 and P4=20, the listening experience can be unpleasant. However, if it is proportional, such as in other groups, where for example P1=11, P2=10, P3=16, and P4=11, there is a more playful and dialogic interaction in the performance. Equally, the name of the sound seems to be important for sharing in each city, as

some files were descriptive in their names, such as 'del_otro_lado', 'hyper_chaud', or 'zipadidoo', while others were named with sequential numbers such as 1, 2, 3, which might prevent other participants from playing back these sounds. The research did not collect data about the frequency of file playing, however the participants' comments, their recordings, and their narratives do suggest their degree of participation and engagement in the performance.

Regarding interaction, one participant highlights interesting conversational moments: 'I realised Rodrigo replied to several of my comments, (…) I felt more involved with the sounds from the four corners, and I felt that interaction, between the sounds of each one and the moment when we are reacting to them' (DG: Mex) He also enjoyed identifying sounds that he had recorded in the metro. As regards space, AI from Mexico perceived two different environments: 'suddenly with the mix of the sounds a different soundscape was created; sometimes a fusion, sometimes as if it was another place'.

In Paris, the sounding was perceived as 'poetic':

When someone repeats something or you can have things that are totally disconnected from what you hear, from very far, and it's very different from the context, being in the metro and suddenly to have a whistle [laughs] that's nice. (GC:Par)

Additional possibilities of listening and recording were proposed by participants in Mexico and Paris, such as recording parts of the performance 'and feed back into the composition, and you can do processing as well. It would be nice to be able to play your own sound while you record as well.' (NM: Par) Some participants suggested it would be better if they were able to trigger their own (previously recorded and selected) metro sounds and not just their voices: 'What Ruth did I found it very interesting, and it would have been more interesting if we would have had access to the sounds that you were accessing, to mix fragments of our own sounds.' (OD:Mex)

Technical issues, such as the volume of different voices, were discussed as potential obstacles to the performance. Acoustic conditions, such as the size of the room, were important and influenced the performances. The main obstacle for interaction described by participants in Paris was the fact that they needed to have a 'Title' before recording: that interrupted the fluidity of remembering, recording, and playback: 'When we record and stop and we have to play, we have to wait, and it [the delay] depends on how many people are playing, and it is frustrating' (AS: Par) Some of the participants suggested the need to experiment with spatialisation: deciding in which speaker their playback will sound.

The performance space created was perceived as being nicer than being in the metro: 'you have all of the sounds of the metro and you can say things about that, and you play, and pause like in the metro when it is overcrowded, it's really lots of fun… and it's nicer than the metro, because when there is noise [in the metro], I don't bother, but these noises [here], I like them.' (MM: Par) And as a consequence she thinks her experience commuting in the metro will change: 'It was a very nice experience, now we see the metro from a different perspective.'

Although the performances were not intended to be public, there were a few people watching them. The creation of stories collectively was a point found interesting by a member of the audience:

What I thought was interesting was the narrative of the whole piece. And to me, you are making a story in sound, on the fly, and that's fun … but also … I can see [from] the expression on your faces that you were thinking about what you were doing and considering whether or not to put this one in or that one in. You were making decisions. (AH: Par)

Lastly, the ethnographic process and its value was highlighted by a participant in Paris:

The steps were interesting: we hear [when recording], we hear again and we choose [when selecting], the steps that we follow are interesting; the way in which you organized this experience. (BM: Par)

Although it is important to stress that participants in these two cities were already engaged with their own sounds and the processes of remembering, some outsiders did join the improvisation. In Mexico, this type of performance also took place in Morelia, a city four hours away from the capital [27]. Volunteer improvisers who were not metro commuters (children, young people, and adults with instruments) interacted in the setting, proving that the metro soundscape could engage people who are not familiar on an everyday basis with this acoustic environment. Although improvising with instruments was not the purpose of this research, this kind of experience alludes to jazz forms. In the same vein, voices that play with repetitions and machinery sounds, suggest the influence of trains and other mechanical and digital sounds as inspirations for the creation of musical and poetical forms, as has been the case in other contexts described by music scholars from

soundscape and jazz history [28].

7. CONCLUSIONS AND FUTURE PLANS

I believe that this improvisation is a catalyst for commuters from diverse backgrounds to perform an act of collective remembering about a shared soundscape: the underground public transport system. Voicing is a powerful act for the process of remembering in this context, and improvisation within an electro-acoustic and networked setting is ideal for bringing non-performers into situations of poetic and musical expression and the collective creation of stories. This offers the possibility to experiment with narratives and aesthetics from the contemporary underground commuting environment, including rhythmical relationships between machinery and commuters' bodies.

In light of Weinberg's proposed characteristics of interconnected musical networks, this improvisation offers additional elements to the genre, such as spatialisation controlled by two sources (the leader and the participants), an emotional preparation of the commuters that is provided by the ethnographic process, and the sharing of sound files, represented in texts and played back through the network. These elements offer strength and singularity, and interdependency goes further than traditional musical expectations, expanding the notion of shared sonic environments when participants locate themselves in either the 'performance space', the 'memory space', or the 'real metro'.

In terms of location, the future of the improvisation is two-fold: as an off-line performance and as an on-line improvisation that integrates the elements developed in this experience. I do not intend to narrow the experience by fixing the characteristics of the space: it has been proved that the setting works for people with different expectations and skills. The ability to structure the performance in different ways also provides a motivation for the participants to explore their creativity. For this participants need time to get used to the setting, to be involved with the journey, and to relax. This improvisation could also take the form of an installation environment off-line, where time and space are flexible for the participants during the sharing of their memories. Options such as the triggering of their own metro sounds, the recording of the improvised sequence, and the improvement of text entry are envisioned. While on-line environments can offer the feeling of being in one's own world, allowing uninhibited sounding expressions, the offline improvisation could also offer participants a clearer statement about what to expect, particularly for the ones who are concerned with intimacy and the enjoyment of their own sonic space.

Imagining this setting as an online performance will have different spatial implications. Issues of delay between distant locations need to be considered anticipating how these will affect and enrich the creation of the narratives and spaces described above. Carôt and Werner, who classified approaches made by musicians in Telematic Music performances, describe two approaches that seem suitable for the 'listening and remembering' online performance: a laid back approach (LBA), that consists in playing 'slightly behind the groove' meaning playing behind the rhythmical beat, and the latency accepting approach (LAA), which allows any delay between participants, as this approach 'has no motivation to create conventional music' [29]. The first approach will invite the voices to join in interplay with the rhythmic qualities of the machinery, provoking counterpoints and unexpected responses. On the other hand, non-rhythm-based experimental improvisations can take place within the second approach.

The use of shared interfaces that use text for the playback of sound files proves to be important in the encouragement of participation, in decision-making, in musical dynamics, and in the envisioning of on-line networked performances that work creatively with the delay conditions of the Internet medium (experimenting, for example, with LBA and LAA approaches). The improvisation is seen as the key activity around which to build an on-line *acoustic* and *textual* community of commuters who can perform with their voices and the metros' soundscapes. This project has established the basis for this community, including the processes of sound contribution and voicing, fostering a transformative social music and poetic act through the creation of hybrid underground narratives by non-performers.

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AUDIO RECORDINGS

Improvisations in Paris:
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BIOGRAPHICAL INFORMATION

Ximena Alarcón, born in Bogotá, Colombia, in 1972, completed her PhD in Music, Technology and Innovation at De Montfort University in 2007. She was awarded an Early Career Fellowship 2007-2009 by The Leverhulme Trust to develop her project 'Sounding Underground' at De Montfort's Institute of Creative Technologies (IOCT). There, in 2010, she worked as a Programme Leader for the Masters in Creative Technologies. Since October 2011, she works in Creative Research in Sound Arts Practice - CRiSAP, at the University of the Arts London, as a Research Fellow, developing her project "Networked Migrations – listening to and performing the in-between space". Deep Listening practice and telematic musical performance are her current interests that expand both the connections to other territories and the social and aesthetic possibilities of working with the migratory experience. She is interested in what is constructed in our memories through listening while traveling underground and in other migratory contexts, and in our options for building collective memories using new media technologies, in the search for identity and place.