

Conceptual Design for INTIMAL: A Physical/Virtual Embodied System for Relational Listening

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Abstract: *This paper articulates the design for the first stage of INTIMAL: a physical/virtual embodied interactive system for relational listening in the context of human migration, set within the artistic practice of improvisatory telematic sonic performance. Informed by the Deep Listening experiences of nine Colombian migrant women in Europe and integrating Embodied Music Cognition Methods, INTIMAL draws upon sensorial experience in dreams, virtual spaces, and physical spaces to develop a holistic understanding of the body as an interface that keeps one's memory of place. Technologies are intended to be used as mediations aiding the co-relations in listening for the sensing, processing and retrieval of an oral archive of other women's testimonies from the Colombian civil war, while improvisers' body movements, voices, and spoken words resonate with these voices. The author suggests how INTIMAL system could act as catalyst for creating new layers in the reconstruction and transformation of embodied memory, opening paths for individual and collective healing of feelings associated to the migratory experience and the armed conflict.*

Keywords: *interactive system, relational listening, embodiment, memories, migration, Colombian-conflict, women, telematic sonic performance, oral archives.*

1. Background

While working in the fields of sound arts and networked performance,¹ I became interested in opening paths for the creative expression of feelings derived from the migratory experience. Between 2012 and 2016, I created Internet-based Telematic Sonic performances—which involve telecommunications and computers in the transmission of unidirectional or bidirectional streaming of audio. Migrants from all over the world listened to “*in-betweenness*”² in the context of human migration; that is, a limbo experienced in between lands, cultures, and identities, and perceived in one's surrounding acoustic environments.³ Using Pauline Oliveros's Deep Listening

1 Garret Lynch and Denis Rea, “Body, Space and Time in Networked Performance,” Proceedings from Remote Encounters: Connecting Bodies, Collapsing Spaces and Temporal Ubiquity in Networked Performance conference 2013. *Liminalities: A Journal of Performance Studies* 10, no. 1 (May 2014): 2-15.

2 M. Ortega, “Multiplicity, Inbetweenness, and the Question of Assimilation,” *Southern Journal of Philosophy* 46 (2008): 65, 80.

3 Ximena Alarcón, “Networked Migrations: Listening To and Performing the In-Between Space,” *Liminalities: A Journal of Performance Studies* 10, no. 1 (May 2014): 2-21.

practice⁴ and the telematic medium, people in my study engaged in a *set of relations* involving dreams, body expression, voice, and spoken language.

Inspired by the embedded relationality of *migratory aesthetics*, “characterized by its success in interweaving and interconnecting the fragments, disengaged from older structures and discourses”⁵ and the concept of *relational listening*⁶ where the psychological and technological processes are part of the possibilities of listening to others’ listening, I have engaged in the development of INTIMAL: Interfaces for Relational Listening.

Through my development of the art-research project INTIMAL, I hope to gain a greater understanding of the experience of the body within the interrelations among the condition of migration, the voice, and the telematic medium; interrogating *the role of body as an interface that keeps memory of place*, thereby opening paths for the healing of loss and dislocation. Specifically, my research looks at (1) how co-located and telematic technologies can expand a relational dialogue that directly responds to the embodied experience of migration; and (2) how an oral archive that represents a disembodied memory of voices can be integrated into this process of remembering as a catalyst for emerging relations.

I envision INTIMAL as a physical/virtual “embodied” interactive system for *relational listening* that interrelates body movement, voice and language, oral archives, and the memory of place in the context of migration through the artistic practice of improvisatory telematic sonic performance.

To inform this interactive system, I explored the migratory listening experiences of nine Colombian migrant women presently residing in the cities of Barcelona, London, and Oslo - in counterpart with an oral archive containing testimonies collected by the Commission of Colombian Migrant Women for Truth, Peace and Reconciliation,⁷ most of which describe experiences derived from the Colombian armed conflict. Thus, the project is situated in the historical context of Colombia post conflict and the feelings that arise for Colombian migrant women during this process.

As a result, a modular design for virtually and physically mediated ensemble interaction⁸ involving technologies for *sensing* (body movement, voice, and language), *processing* (in relation to the oral archive), and *retrieval* (the audio response that the improvisers receive from the system) has arisen, to be tested in May 2019 by project participants via a telematic improvisatory performance. In this paper, I will describe the conceptual design of INTIMAL, its supporting theories, and the methodology used in my fieldwork with the nine Colombian women. Although this scope does encompass their responses to the oral archive, I have left aside the curatorial, annotation, and technological work that accompanied the oral archives.

4 Pauline Oliveros, *Deep Listening: A Composer’s Sound Practice*. Lincoln: iUniverse Books, (2005).

5 Isabel Hoving, “Between Relation and the Bare Facts: The Migratory Imagination and Relationality.” In Sam Durrant and Catherine M. Lord, eds., *Essays in Migratory Aesthetics: Cultural Practices between Migrations and Art-Making*. New York: Editions Rodopi B.V., (2007): 179–190.

6 Lawrence English, “Relational Listening: The Politics of Perception.” In *Ear Wave Event*, Issue 2 Spring 2015. Accessed 29 September 2015, earwaveevent.org

7 A grassroots organization operating mainly in Barcelona and London, where most Colombian migrants reside in Europe; see <http://mujerdiaspora.com>.

8 Charles Patrick Martin, “Apps, Agents, and Improvisation: Ensemble Interaction with Touch-Screen Digital Musical Instruments.” PhD thesis, Australian National University, (2016).

2. Theoretical framework and methodologies

INTIMAL is informed by interdisciplinary practices and concepts including Deep Listening, the philosophy of embodiment, migration anthropological studies, and the methods and theory of Embodied Music Cognition.

When situating this project in migration studies, Ahmed notes that “journeys of migration involve a splitting of home as place of origin and home as the sensory world of everyday experience.” Embodiment in migration narratives involves a “spatial reconfiguration of an embodied self”⁹ so that issues of absence and presence,¹⁰ as well as a sense of place,¹¹ insist upon daily attention from people who experience migration. To access and explore these migratory narratives, INTIMAL uses Oliveros’s practice of Deep Listening, which invites one to expand one’s “perception of sounds to include the whole space/time continuum of sound—encountering the vastness and complexities as much as possible.”¹² This practice uses sonic meditations, unconscious dreaming,¹³ Chi Kung and Tai Chi Chinese body energetic practices, and free movement¹⁴ to increase one’s awareness of sound in one’s internal and external environments. Listening to and sharing dreams, as well as migratory experiences on a virtual platform creates an interesting experience interweaving different perceptions of space and time, and share unexpected encounters between people in different locations.¹⁵ As Sharon Stewart explains, Deep Listening “is founded upon a remarkable devotion to opening the body, through developing a regular, personal movement practice that helps free the body (of tension) while at the same time stimulates awareness of the energy (flow) of the body.” Stewart favors the label *somatic listening* “which encompasses both a listening inwardly to the sensations and movements of the body as well as a listening with the entire body, which becomes highly sensitive and responsive to the kinetic energy (movement) of the sound it engages with.”¹⁶ Thus, with experience as paramount, nourished also by philosophical Eastern traditions, Deep Listening is in dialogue with practical *Somaesthetics*,¹⁷ cultivating an awareness of listening as potentially reciprocal and non-judgmental: in which when listening to someone/something (e.g. our body, dreams, surroundings) always will imply that someone/something might be listening in return. Deep Listening practitioners have explored listening to the body via different avenues: focusing on a “prosodic body,” which is formed around the sounds we speak;¹⁸ listening with the feet by exploring slow walking and voicing people’s sense of place;¹⁹ and breathing and touch in craniosacral therapy, listening for the “still-point” to create a dialogue with disturbances and

9 Sara Ahmed, *Strange Encounters: Embodied Others in Post-Coloniality*. London: Routledge, (2000): 90

10 Ann Brooks, and Ruth Simpson. *Emotions in Transmigration, Transformation, Movement, and Identity*, 31–51. Basingstoke, Hampshire: Palgrave MacMillan, (2013).

11 Doreen Massey, *Sense, Place and Gender*. Minneapolis: University of Minnesota Press, (2001)

12 Pauline Oliveros, *Deep Listening: A Composer’s Sound Practice*. Lincoln: iUniverse Books, (2005).

13 Carole Ione Lewis, *Listening in Dreams*. Lincoln: iUniverse Books, (2005).

14 Heloise Gold, *Deeply Listening Body*. Kingston, N.Y.: Deep Listening Publications, (2008).

15 Ximena Alarcón, “Telematic Embodiments: Improvising via Internet in the Context of Migration.” In David Rothenberg, ed., *Vs. Interpretation: An Anthology on Improvisation*, vol. 1. 85–93. Prague: Agosto Foundation, (2015).

16 Sharon Stewart, “Listening to Deep Listening.” *Journal of Sonic Studies* 2, no. 1, (2012).

17 Richard Shusterman, “Somaesthetics” in *The Encyclopedia of Human Computer Interaction*, <https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/somaesthetics> accessed 23 January 2019.

18 Robert Kocik, *Supple Science: A Robert Kocik Primer*. Michael Cross and Thom Donovan, eds. On Contemporary Practice: Oakland, CA, (2013).

19 Viviane Corringham, “Listening with the Feet.” In Monique Buzzarte and Tom Bickley, eds., *Anthology of Essays in Deep Listening*. Kingston, N.Y.: Deep Listening Publications, (2012): 143–148.

blockages felt in the body.²⁰

In light of these Deep Listening experiences, embodiment can be understood as a holistic concept; according to Sean Gallagher, embodiment encompasses perceptual, emotional, and interactive processes, the use of language and metaphor; “the exercise of free will in intentional action,” and “the creation of cultural artifacts that provide for further human affordances.”²¹

Also in line with Deep Listening practice, Nina Sun Eidsheim²² proposes transitioning the traditional listening perspectives of singing and other musical performances from the “figure of sound”—that is, the sonic narrative, which focuses only on audio parameters and processes—to the “figure of vibration”—that is, the sensing of sound and listening. This shift helps one to delve deeper into sonic spatial relations, beyond the auditory experience alone.

Shanken and Harris²³ refer to Oliveros’s work as “techno-intuitive” and her methods for extending embodied knowledge and expanding consciousness as a foundation for transforming our relationship with the earth and creating “community and healing”. They highlight Oliveros’s recurring themes in telepresence and telepathy manifested in her Telematic Circle,²⁴ a group of musicians improvising through the Internet, as well as in Dream work led by IONE²⁵ and experienced by participants in Deep Listening retreats. They mentioned further explorations by artists such as Nina Sobell using biofeedback “brain waves drawing over the Internet between Poland and Los Angeles” with the intention of creating “a non-verbal intimacy in cyberspace, one world, one time.”

In non-visual network interface performances, Mills and Beilharz note that listening and the semiotics of sound are the *main mediators*, in that they illustrate “the role of metaphor and embodiment in the perception of musicians creating and responding to musical signs in networked synchrony.” In turn, they also support the idea of using a framework of Distributed Cognition to achieve “fluidity in networked musical dialogue” via extended listening practices, “replacing visual referents in facial expression, body language and the physical marking of time.”²⁶

In my experience with telematic sonic performances that try to listen to someone across the ocean while simultaneously trying to be heard, migrants also undergo what Franziska Schroeder calls Networked Listening, which provokes an “*unselfing*” or decentering, or the “state of moving from oneself to the other.”²⁷ Migratory processes also generate this decentering condition, and this alignment represents the intersection around which this research has interwoven the medium of improvisatory performance into the context surrounding it. In order to delve deeper into embodiment, that is, I incorporate into INTIMAL the use of Embodied Music Cognition as “a method to reveal motion features that contrast with the original audio, or to reveal motion

20 Lesley Greco, “Deep Listening and Touch:Unwinding the Body of My Voice.” In Monique Buzzarte and Tom Bickley, eds., *Anthology of Essays in Deep Listening*. Kingston, N.Y.: Deep Listening Publications, (2012): 153–159.

21 Sean Gallagher, *How the Body Shapes the Mind*. Oxford University Press: Oxford, (2005): 247

22 Nina Sun Eidsheim, *Sensing Sound: Singing and Listening as Vibrational Practice*. Durham, N.C.: Duke University Press, (2015).

23 Edward Shanken, and Yolande Harris, “A Sounding Happens: Pauline Oliveros, Expanded Consciousness, and Healing.” *Soundscape: The Journal of Acoustic Ecology* 16 (2017): 4–14.

24 See <http://paulineoliveros.us/telematic-circle.html> accessed 03 December 2018

25 IONE, “Deep Listening in Dreams: Opening to Another Dimension of Being.” In Monique Buzzarte and Tom Bickley, eds., *Anthology of Essays in Deep Listening*. Kingston, N.Y.: Deep Listening Publications, (2012): 299–313.

26 Roger Mills and Kirsty Beilharz, “Listening through the Firewall: Semiotics of Sound in Networked Improvisation,” *Organised Sound* 17, no. 1 (2007): 16–27, doi: 10.1017/S1355771811000471.

27 Franziska Schroeder, “Network[ed] Listening—Towards a De-Centering of Beings,” *Contemporary Music Review* 32, nos. 2–3 (2013): 223, accessed 14 August 2013, doi: 10.1080/07494467.2013.775807.

features that are not easily visible to the naked eye.”^{28,29} Recalling Eidsheim, such methods assist in the measurement and understanding of *vibrations* represented in biofeedback signals such as muscle movement, breathing, and body macro and micromovements that are not usually considered to be sonic in networked performances, and which, in combination with Deep Listening, might enable “an understanding of the relationship between mind, body, and matter, using methodologies that draw upon experimentation and computer modeling.”³⁰

Focusing on language and voice as its principal listening resources, INTIMAL treats oral archives as disembodied voices that present *vocality*, an expression of embodiment and uniqueness,³¹ and the historical memory that is carried by the voice and speech. In turn, migrants’ performative expressions, rooted in free bodily improvisation, the voice, and the spoken word, are understood to represent *multivocalities*, or “private and experimental sites where one can try on new voices or identities without fear, performing the new voice to whatever capacity one feels one is able to perform.”³²

The present methodology, then, derives from issues of loss, place, presence, and embodiment in the context of migration; the invisibility of the body in telematic sonic performance; the possibility of perceiving and *sonifying* “vibrations” using the methods of Embodied Music Cognition; and the role of voice and language as unique and as embodying memories of place. It is intended to help integrate oral archives and the listening experiences of nine women using sensorial, qualitative and quantitative approaches. In alignment with the concept of *relational listening*, my intention is to integrate physical and virtual embodied experiences, where improvisers explore their sense of place and sense of presence as new “spatial reconfigurations” of their embodied selves in migration.

3. Colombian Migrant Women in Europe: Case Study

Colombia is presently in a post-conflict condition following a war that lasted for sixty years and became part of the collective memory of at least three generations of Colombians. Around six million people left the country during this time, looking for a better future all over the world³³ (Bermúdez, 2006). The human disruption has been profound. Colombian migrant women, for example, have experienced loss thanks to the migration itself, but also as a result of the conflict that spurred it.³⁴ Upon arriving in Europe, these women seem to experience an awakening regarding their gender role, questioning social situations that were considered normal in Colombia’s patriarchal society. Based on my interviews with INTIMAL, I associate this experience with the muting of women’s gendered experiences of violence³⁵ minimizing these in the midst of the

28 A. R. Jensenius, and R. I. Godøy. “Sonifying the Shape of Human Body Motion Using Motiongrams.” *Empirical Musicology Review* 8, no. 2 (2013): 73–83.

29 A. R. Jensenius, “Exploring Music-Related Micromotion.” In Clemens Wöllner, ed., *Body, Sound and Space in Music and Beyond: Multimodal Explorations*, 29–48. New York: Routledge, 2017.

30 Marc Leman, *Embodied Music Cognition and Mediation Technology*. Cambridge, Massachusetts: The MIT Press, (2008): 26

31 Adriana Cavarero, *For More Than One Voice: Towards a Philosophy of Vocal Expression*. Translated by Paul A. Kottman. Palo Alto: Stanford University Press, 2005.

32 Julie Choi, *Creating the Multivocal Self: Autoethnography as Method* (New York: Routledge, Taylor & Francis, 2017).

33 Anastasia Bermúdez Torres, *Colombian Migration to Europe: Political Transnationalism in the Middle of Conflict*. Working paper no 39. Centre on Migration, Policy and Society, University of Oxford, 2006.

34 Psychological and physiological consequences of these women’s migration experiences include feelings of guilt, fear, anger, indifference, powerlessness, disillusionment, social and family judgment, solidarity, the experience of silence, and the manifestation of illness. See Commission of Colombian Women in Diaspora, *Truth, Memory and Reconciliation: Commission of Colombian Women in the Diaspora*, pilot phase achievements report, September 2017 (London: Conciliation Resources, 2017).

35 Florence Thomas, *Conversaciones con Violeta: historia de una revolución inacabada*. Bogotá: Aguilar, 2006.

“real violence” of the conflict.³⁶ Given this context, I wanted to explore the spaces for suppressed voicing and listening that overlapped the conflict and look at how an awareness of those spaces might emerge through the women’s process of listening to their own migration.

To establish co-relations, INTIMAL incorporates two sources of migratory experiences: the listening experiences of nine Colombian migrant women residing in the cities of Barcelona, London, and Oslo, both in Colombia and in the places to which they have migrated, and an archive of audio testimonies by other Colombian migrant women. Because the Colombian conflict has touched all layers of Colombian society, this precise comparison between the nine women’s listening and sounding experiences and the stories in the archive is crucial to expanding the relationality of listening to the diversities of the Colombian migration and to opening space for women’s voices in a creative and non-judgmental space for free expression.

Through insights derived from the Colombian case, this project hopes to offer a universal take on experiences of migration caused by armed conflict.

4. Development

Listening to the oral archive

In the oral archive, I identified four *semantic* themes or spheres of migratory memory: (1) *body stories* that emerged as an intimate physical space involving body/mind inner geography; (2) *social body*, which offers a dimension of shared time and identity involving social and family links; (3) *native land* (Colombia, in this case), which broadly represents the historical shared dimension of this specific migrant community, informed as well by the causes that motivate or force someone to migrate; and (4) *host lands*, which offer a dimension of migration that reflects stories in the present land or other foreign territories that have been part of women’s migrations.

Each space includes categories with literal and figurative language forms. For example, body stories include categories such as *body events*, *illnesses*, *selfcare*, *mind*, *sexuality*, and *sensations* and *feelings*. Social body includes categories such as *blood family*, *friends* and *colleagues*, *created family*, key stages of life such as *childhood* and *teenage*, and *values*. Native land includes categories such as *conflict events*, *conflict actors*, *economy*, *education*, *land*, and *values*, and host lands has categories that mirror native land and invite a broader understanding of conflict in contemporary societies. I also identified prosody in the archive via three types of voices: the *disillusioned voice*, the *demanding voice*, and the *transformative voice*, communicating emotions (Scherer, 2003). These spaces are not intended to be fully representative but served instead as a basis for understanding body/mind in geographical dislocation, and for opening creative paths for a balanced listening in between memories of place (Figure 1).

³⁶ Laura Tolton, “A Groping versus ‘Real Violence’ in Colombia. Contrast as a Minimisation Strategy.” *Journal of Critical Discourse Studies* 11, no. 3 (2014): 322–341.

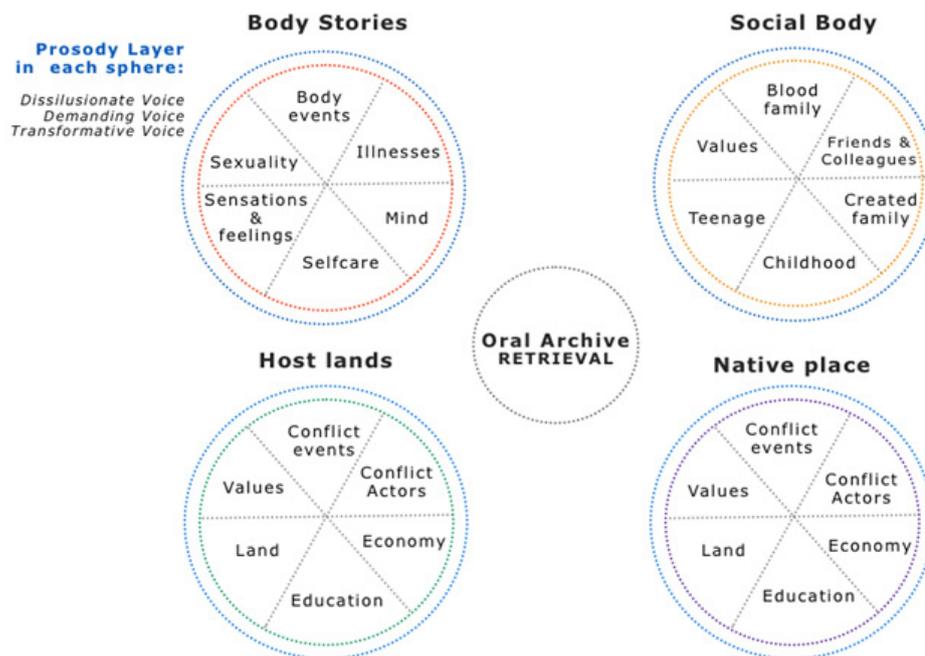


Figure 1: Spheres of migratory memory derived from the Oral Archive.

The spaces and categories described above define selected fragments from the oral archives that are understood in the project as short stories. These will be retrieved by the INTIMAL system to be heard by other women and trigger their own memories. The INTIMAL system will help the sonic retrieval of fragments of the oral archives, according to the actions of the performers.

Fieldwork with nine women

By integrating my previous research experience with Deep Listening and telematic performance into the methods of Embodied Music Cognition, I designed a methodology to holistically understand nine women's migratory experience via (1) semi-structured individual interviews, (2) dream-awareness online virtual workshops, (3) a Deep Listening intensive workshop, and (4) a motion-capture session. Each step in the methodology contributed to the INTIMAL system design, and its integration with the oral archives is described below.

By exploring the women's listening and sounding as spaces that sound but that also have "vibrations" generated by body movement and feelings (see Eidsheim above), the interviews revealed their daily efforts to embody different public spaces and work environments. Their responses indicated how difficult it was to freely move and navigate in the public environment without feeling invaded by unwanted whistles that explicitly referred to their bodies and how they are sexually desirable, or worrying by their safety, as well as the ways in which they automatically embodied other ways of being in a working environment:

"I had to do many things to be able to walk in the streets in Bogotá. For instance, I needed to know where geographically the construction was to avoid whistles and piropos (...) which were mostly very ugly. (...) As a woman I have done thousands and thousands of things to avoid the bombardment of situations like finding geographically the space [where I could move], knowing what time I can leave, what time I should arrive." (LR)

“I remember that if I was not teaching, my voice was like . . . how to say it, very thin. And once I was teaching I had a different voice, another strength, otherwise I could not survive in front of 30 male students (...) [feeling it] in the body too, a bit warmer but at the same time stronger, I had to be stronger, present. I had it very clear; it was a bit automatic.” (VO)

The need to map their public spaces, the *muting* and transformation of their voices, together with the difficulties of freely expressing religious, sexual options and reclaiming agency over their bodies represented, to me, physical and metaphorical revelations of minimized violence. The women’s accounts offered accumulated reasons for leaving the country, which one of them expressed metaphorically as having:

“plenty of sounds in myself, and in Colombia (...) I was repeating the same note, the note that was expected from me, that was part of the score, as the society expects that we all sound. That was the note that I was sounding externally, but internally I knew I didn’t want to remain in that.” (CL)

After migrating, their listening experiences in their host lands involved further *muting*, but also an eventual expansion and expression of sounds, once they managed to learn the foreign languages and new cultural codes—that is, to become *multivocal*.

“I was almost mute for one year (...) I had moments in which I was scared of buying a burger, it might seem silly (...) I wasn’t able to order a burger; I felt judged all the time, and it was an enormous effort. (...) My sound was opaque, very opaque. It took lots of effort. It was not lots of time, but, yes, lots of work and effort to find again my voice.” (LR)

“I am not sure if [it is] because the Italian and the Spanish are similar, but at some point I lost my speaking voice. I think I was lost in a corporal level of memory and identity, and it was a linguistic colonization that took me to the silence, until I said to myself, “here something is happening,” and until I left Italy (to come to Norway), I realized I needed to recover my native language, my Colombian identity in every sense (...) Norway is a very silent country.” (AR)

Despite these women’s different ages and migratory experiences, the current Colombian moment of post-conflict has revived shared feelings regarding Colombian space and old and recent memories of the Colombian conflict. This situation, then, “touches” them, overlapping directly and indirectly upon their migrations:

““It was a contrast between the sound, like of happiness, to be with all your friends and all of a sudden the eruption of the firecrackers of the demonstrations, and of the Red Guard. (...) I think that defines very well how I did feel there, a deep desire of being with people there, but also a very unstable situation, with very strong sounds that suddenly erupted and silenced all of that.” (BS)

“And I went to bed (and when waking up) my partner said...the NO won [referring to the Colombia Peace Agreement Referendum in 2016]. And I couldn’t stop crying,

I am still crying, and it was a moment of rupture for me, of saying “I don’t want to be Colombian, I don’t want to be part of that country... it has nothing to do with me”. I don’t know why I am still crying. It was very strong, and that has been the last thing that has happened to me, to reconnect with being Colombian (...) I am that, but I don’t want to be that country, I am a country that doesn’t exist anymore and never will exist because the NO won.” (BS)

In light of these memories, sonic creative expression activities in the fieldwork focused on the exploration of interstitial spaces such as dreams and virtual space—spaces that might offer “texture” for imagining telematic presence. While listening to their dreams, the women were invited to explore spaces and sounds that could be heard there. This dream work was crucial to opening spaces of memory involving mobility devices such as trains, wheeled devices, and scooters, as well as blended sounds and voices that reflected the state of their migrations. Also, the women shared feelings that were present in their migratory processes, such as the need for “breathing” or the feeling of being “without voice,” as well as the presence of judgmental voices in their dreams. Within the limitations and possibilities offered by the virtual platform, they improvised with body movements and gestures, expanding the possibilities of nonverbal expression. They experimented with words that emerged from their dreams and allowed for alternate meanings, breaking linguistic agreements and opening spaces of silence, releasing the stress and need to be heard in any language. Sounds of the sea and seagulls were also powerful for some of the women, as was an increasing awareness of a spiritual appreciation for all beings. The women gave themselves permission to question relationships with known and unknown characters in their dreams and collectively proposed keywords to summarize their takeaways from each dream session, including “flow and transition,” “take the voice out—integration of the other,” and “sensory spaces.” Because dream awareness touches upon issues of identity, agency, and power that are part of the daily challenges they face as migrants and as women; this exercise prepared them to speak out and move beyond the rigid limits of rational thinking to fearlessly explore new possibilities for expression and being.

At the two-day Deep Listening workshop in Glasslåven art centre in Norway, the women expanded their listening to their inner geography³⁷ and their multivocalities³⁸ and established connections with the Earth through early morning walks.³⁹ They also practiced spontaneous responses to voices coming from “dreams” or other unknown voices⁴⁰ in preparation for listening to the oral archives. These exercises opened spaces for each of the participants to accommodate respectful and powerful sharing as well as creative expressions, bringing to the surface common, diverse, and even opposing perspectives regarding Colombian culture. For example, the role of humor or the need for silence opened the need for acoustic spaces for Colombian cultural diversity and a shared history of conflict. These listening exercises informed a set of possibilities for expression for each woman regarding her migratory journey, with which to improvise in two free body-voice and spoken word experiments: the “migratory journey” and “listening to the archive.”

37 Using the score titled “TAPPING into your inner PLANT (Discovering your Sound Seed),” a guided meditation by Sharon Stewart.

38 Using the score titled “Chhhiomatikflui” by Ximena Alarcón.

39 Heloise Gold, *Deeply Listening Body* (Kingston, N.Y.: Deep Listening Publications, 2008), pp. 3-10.

40 Using the score titled “Histomemoriology” by Ximena Alarcón.

Experiments in the MOCAP Lab

In the Motion Capture Laboratory (MOCAP Lab) located at the Department of Musicology in the University of Oslo, I used technologies such as infrared cameras, sensors for muscle activity (EMG) and breathing sensors, and close, ambisonic, and directional microphones, to record body movements and acoustic information. Participants wore a total of 63 infrared markers each, placed on the face, limbs, back, and head, as well as a pair of EMG sensors in the cervical trapezius and breathing sensors. The motion-capture software *Qualisys* recorded video of the experiments. I looked for patterns in the women's bodily expression of their migratory journeys, for the ways in which they cross-influenced one another in free improvisation, and for the ways in which their vocal narratives might interrelate with stories in the oral archive.

Experiment 1 – Improvising their migratory journey

In the first experiment, a floor score derived from the four spheres of migratory memory guided each woman's improvisation by offering a space for listening. They improvised in trios that were grouped according to the city where they lived in Europe. Each participant had some time to perform as the *main improviser*, while the other two, called the *resonators*, accompanied her journey. The resonators were free to join the main improviser using body movements and voices, including spoken words. They stood in a triangle, with the main improviser at the point and the resonators to the sides. They were free to move all over the stage space. The solo performance was approximately two minutes each, and then the resonators joined the main improviser. The full performances lasted between about three minutes and about eight minutes (Figure 2).



Figure 2: INTIMAL participants, group 1, experiment 1.

I developed a process for analyzing this material using visual computational representation (plotting) of the collected data, direct observation of the video, and listening.⁴¹ Plots helped me speculate regarding how the participants moved in the space over time. In the Mocapgram (fig. 3), a tool to understand how the different markers moved in time and space, each horizontal

41 (1) I used mocapgrams, a tool to understand how the different markers move in time and space dimensions, and plottings of breathing data and EMGs showing muscle tension; (2) I looked at video (without audio) and wrote general observations about things such as repetitive body movements, then compared those with the mocapgrams and other plottings; (3) I watched the video with audio; and (4) I listened to the audio only, looking for vocal expression and relations among their narratives and their body movements.

there were repetitive gestures of *head up* and narratives of *land* involving other beings, trees, and mountains.

In the *horizontal displacement*, I observed running, marking steps, slow walking and the rhythmic, repetitive movements of foot stomping, all in relation to migratory journeys.

Because of the uncertainty that migration brings, rotations in a space and the search for directions or decisions regarding taking a step forward (in their narratives) or not are key movements to focus on in the INTIMAL system.

Poetic body movements acting as metaphors for a migratory journey also appeared in the brief encounters between improvisers while they were walking; they seemed to represent little pauses for mirroring movements. Resonators' movements and separations seemed to reassure the main improvisers as gestures of respect and acknowledgment regarding the story that the main improviser was telling. Group movement patterns were very distinct and suggested the influence of the space in which the given participants lived—those from London tended to be very individual in their movements and directional paths, whereas those from Barcelona seemed to engage more in collective body movements, and those from Oslo seemed to accompany one another, aligning themselves in the space and maintaining a certain distance. This aspect cannot be further studied in this stage, but it is open for exploration at later stages of the INTIMAL system.

When looking at the breathing data in Figure 4, we can see along the timeline that the breathing of the main improviser differed initially from the resonators, but when resonators became more active, at around the 700 milliseconds, for example, the representation of their breathing indicates more activity in response to the main improviser. I suggest that studying and sonifying breathing patterns in real time, when speaking or in silence, could offer the improvisers a sense of individual rhythms and togetherness, both in a co-located setting and with the others at a distance, telematically.

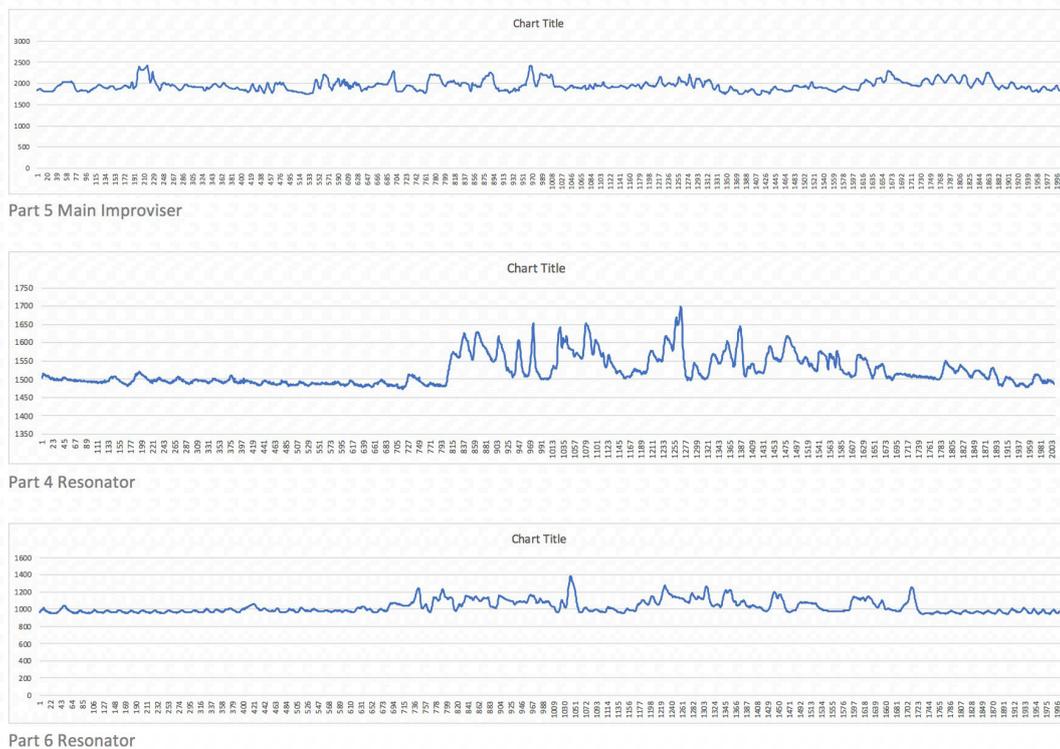


Figure 4: Breathing data for one improvisation involving the main improviser and resonators.

Voice, narrative forms

Participants used different narrative forms, such as poetry, conversation, and the performative voice. When they engaged in conversation, they summoned the voices of people from their pasts who offered advice or judgment. Performatively, they experimented with voices at a high pitch, or even screams, as the body stretched and they played with speed and transformations of words in different languages; creating fresh and evocative metaphors of migration. Changes between languages reflected “multivocalities” and the freedom to express oneself beyond one’s official native language, even by creating new words. (See video 1 as an example of body movement and narrative voice)⁴²

Experiment 2 – Listening to the archive

In the second experiment, in order to create an intimate listening experience (in addition to the technologies used in the first experiment) participants also used earbuds. They did not face one another so to not permit free reactions without direct influence from the others (Figure 5). They listened to twenty-two minutes of fragments from the oral archive that included stories from three women. Silences of forty seconds between the fragments were intended to allow for paused listening and a time to react through improvisation. The fragments were selected according to the four spaces of migratory memory.



Figure 5: INTIMAL participants, group 2, experiment 2.

Body movement

Body stories seemed to inspire more variety in the movements, whereas during *land stories* the performers seemed to move in a more rhythmic manner than in, for example, *social body*. The upper body offered rhythmic patterns that seemed to be dictated by the voicing and spoken word. The hands also came into the rhythm, according to what the performer was saying, as part of the description or expressive amplification of the story. Shaking was a movement that was introduced in the Deep Listening workshops, and it was performed by some of the participants in this experiment. As in the previous experiment, walking was an important feature and also

⁴² <https://vimeo.com/304188356>

meaningful in all of its variations, including side to side and either slow or fast.

At different moments, there were noticeable synchronic opposite movements between the participants. For example, one participant closed her arms and bent down (to cry), while at the same time another opened her arms up and raised them above her head. This made me think of different responses to the same archive that could be used for co-relations in a telematic performance. In *native land*, stories of the Colombian conflict generated conversations between the women. When there were themes of reconciliation and transformation, the improvisers raised their heads. At the end of the experiment, performers in the three groups engaged in free movement as a ritual for ending: a collective acknowledgment of, and gesture of complicity in what they had heard together.

Voice narratives

Participants either translated, performed, or amplified the stories that they heard from the archive in their own words and gestures. They also engaged as commentators, as though part of a conversation or a secret confession of similar stories:

“Sometimes it was like a dialogue (...) There was a moment... that almost we had parallel lives (...) she told about the fish in the Magdalena river, and then I remembered when I went to the Magdalena river, it was strange. At the beginning it seemed that our lives were very similar, but no, they were very different.” (LR)

They evolved feelings about what they heard and released them dramatically, either with their body or their voice. The participants spoke in voices that perhaps evoked the *disillusioned voice*, the *demanding voice*, and the *transformative voice* from the oral archive, which needs further analysis using sonic retrieval techniques. They recalled childhood and other songs, and they responded with a strong body action-voice to the story of a *machete* (bowie knife). Words that reinforced and extended the archive material included, for example, *mamita* [mommy], *papa* [daddy], *campo* [countryside], *paz* [peace], *pilatunas*, *sol* [sun], *morir* [to die], *sangre* [blood], *machista* [macho], *mama* [mum], *guerra* [war], *maternidad* [maternity], *manos* [hands], *mujer* [woman], *correr* [to run], *niños* [children], *violencia* [violence], and *cuerpo* [body] (see video 2 as an example of body movement and narrative voice reacting to the oral archives).⁴³

In summary, listening to and annotating the oral archives, brought to the project the understanding of testimonial narratives of migration and conflict from Colombia, leading me to propose a structure and aesthetic of fragments, with semantic and prosodic content, to incorporate these into the INTIMAL system, and to be heard by other women.

In the fieldwork, conducting interviews regarding nine Colombian women’s listening experiences in native and host lands, and engaging them in online and physical Deep Listening practice—dream awareness, listening body, and improvisatory expression—contributed to distil and catalyze their feelings and the essence of their “migratory journeys.” Through body movement, abstract voice and speech, the free improvisatory individual and collective expression of their journeys, invited them to express their unique self, feeling accompanied by the others, who resonated with their stories, and who are physically present in the host land. The integration of fragments of the oral archive, brought different perspectives of listening to women they don’t know, and whose stories might touch some collective experiences. These fragments helped them to connect with a shared history, fragmented in itself, and to trigger a reflection on how to listen

⁴³ <https://vimeo.com/304189572>

to, embrace and connect with these voices of migration and conflict.

Motion capture technologies revealed features to infer emotional links to body movement/voice as well as movements that can be integrated through navigation in the archives and the interaction between theirs and others' migratory journeys. Qualitative observation of data representation (plots) helped to reveal and choose the most salient features that could aid the interaction with the sonic material and with others, physically and telematically, and the aesthetics involved in the design of interfaces for relational listening.

In this paper, I have touched biodata superficially, and only as a material to speculate conceptually what are the most interesting features to use for implementation in the first stage of the project, for instance: movements such as walking and breathing, as metaphors for sense of place and sense of presence, in the context of migration. For implementation, and being the scope of another paper, this data is being studied by choosing specific markers, measuring displacements of participants in space, to act in co-relation with the triggering of the archives, and developing ways of real-time sonification of breathing data to transmit across distant locations.

5. The System

Based on this study for this first stage of INTIMAL, I have found the actions of walking, speaking/voicing, and breathing to be the most meaningful movements toward strengthening the metaphor of performing a "migratory journey." INTIMAL will be tested live in a telematic sonic improvisation between the cities of Oslo, London, and Barcelona in May 2019. To perform a retrieval of the oral archive in co-relation with the individual migratory journeys, the system will *sense* walking, rotation, and voicing, allowing pauses and helping improvisers to locate traces of words and movements in the navigation. This *sensing* feature is intended to interrelate their own migrations, and the voices of the archive. Using machine learning, the system will *process* the correlations that are established between improvisers' location, rotation, and steps, and the location of the stories in the archive: for instance, in the spheres of migratory memory, co-relating the rotation angle with each category, and bringing together fragments of the archive according to their similarities (how close these are), or differences (how distant these are). Thus, these will be *retrieved* according to the steps and distance travelled by each improviser. The emotional content of the archive, measured according to the three types of identified voices (*disillusioned*, *demanding*, and *transformative*), will help the system trigger an emotionally set of stories for the listener (too many demanding voices, for example, could be emotionally exhausting).

Improvisers' spoken-word responses will be recorded as new layers of memory triggered by the archive. The employment of keywords that resonated with the nine women in this study, as well as references to place, is intended to aid the navigation but also to create a sonic path that the public audiences can hear even as the improvisers engage in the privately shared listening experience. To expand the telematic sonic performance beyond the "figure of sound," and to perceive vibrations in the distance, the system will *sense* improvisers' breathing data and *process* it for sonification, which will be streamed in real time between the distant locations. As a *response*, the audio of the *sonified* breathing data will be heard in loudspeakers, while the audio from the archive will be heard in the headphones by the improvisers. Some keywords from the archive will also be heard through the loudspeakers by the audience. Any performance using the INTIMAL system would then represent a shared listening ritual of collective memory (Figure 6).

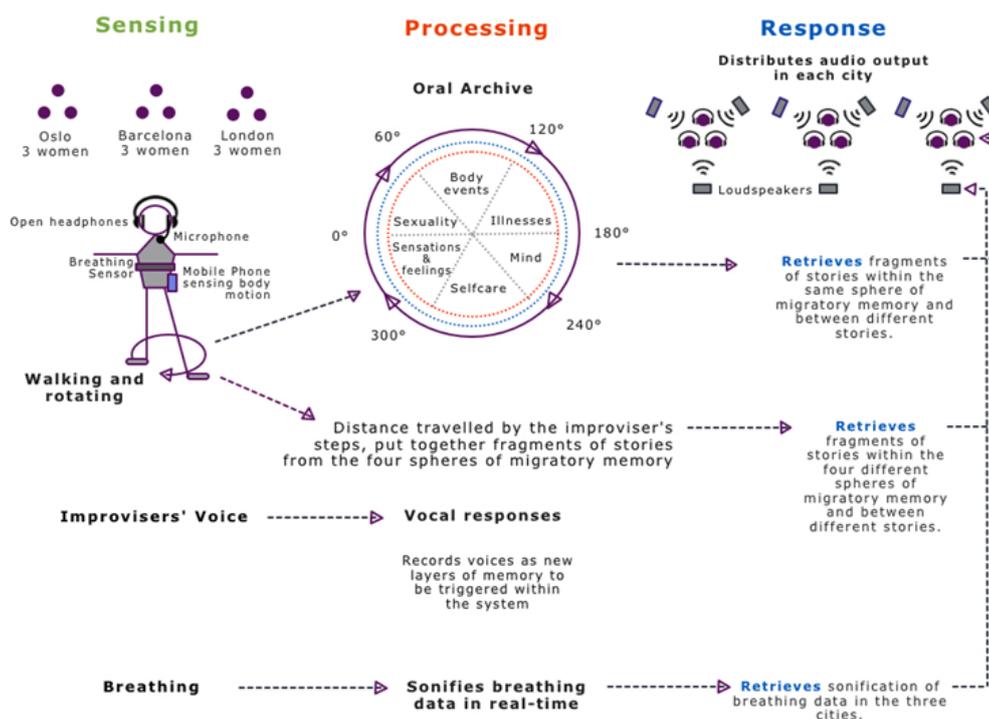


Figure 6: Diagram of the INTIMAL system with sensing, processing and response modes.

6. Conclusions

Upon completing her part in the fieldwork for the project, one of the INTIMAL participants said: "I feel I am not from Colombia, nor from Spain; I am from INTIMAL, from my cells" (SV). This indicates the way in which the empirical study of embodiment can impact the perception and sense of place of migrants, transcending geography in favor of the body. Physical and virtual improvisation can help migrants to negotiate and connect different spheres of migratory memory and expand a sense of presence within the context of migration and loss.

The use of body movement, or *the body as an interface that keeps the memory of place* as a means of interacting with the archive, provides a path toward working on the memory of migration. Walking alone is a powerful metaphor for migration, involving decisions and the search for direction as one seeks one's path. Using also biofeedback, specifically sonification of breathing data in real-time will offer non-verbal and intimate communication, in a co-located form and telematically across locations.

After the technical development of this project, I envision performers connecting telematically from Barcelona, London, and Oslo and becoming involved in a dream virtual space, loosening the rigidity of known narratives of the self and others by transforming them into expanded embodied vocal expressions. Performers (via headphones) will experience listening as an intimate subjective experience and the body/voice as a primal expression for connection and healing. Audiences will listen to paths and rhythms represented in some of the words triggered by the archive, to the body/voice reactions of the women who are physically in the space, and to their sonified breathing.

I propose that *relational listening* brings together the spatiotemporal dynamics of sonic encounters that occur when one listens to one's inner body as a place to ground oneself; listen

to others' body movements, dreams, and voices; and listen to vibrations, which, when amplified with technologies, contributes to an awareness and expansion of our sense of presence.

After the fieldwork, participants decided to continue engaged with the Deep Listening practice physically and online, giving birth to the INTIMAL women's listening community. They have been listening to and sharing their dreams in connection to waking time, as they relate to the four spheres of migratory memory, leading to awareness moments that open healing paths for them, ranging from awareness of body, place, language, land, and options for inner and outer conflict resolution exploring relationships in their native and host lands.

In the context of human migration and historical backgrounds with armed conflict and other violence, the existence of an online listening community, which also engages in public telematic sonic performances, could supply a catalyst for creating new layers in the reconstruction and transformation of memory in the interests of individual and collective *healing*.

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