



SILENCE, NOISE AND PRESENCE OF THE TELE- -SONOROUS BODY

Ivani Santana

Abstract

This article discusses the concept of tele-sonorous bodies as applied to dance configurations designed specifically for distributed environments, and interconnected by advanced telecommunication networks. To illustrate, I will explain the research into the body/sound relationship that motivated the performance project, *Embodied in Varios Darmstadt 58*, a joint project conducted from Brazil, Spain and Mexico. The concept of the tele-sonorous body is substantiated by studies of Peirce's semiotics (Santaella, 2001), the cognitive sciences (Gallagher, 2005) and by reflections on the art of sound (Migone, 2012). The prefix "tele" refers to the term telematics and to projects configured as network art. The goal is to investigate new forms of relationships between remote bodies beginning with the tele-sonorous body, thus removing the primacy of the image usually found in the field of telematic dance.

Keywords

Telematics, Sound, Body, Dance, Network

I have nothing to say and I am saying it.

John Cage

(1961:51)

This paper presents the concept of the tele-sonorous body that I have developed from studies of Peirce's semiotics (Santaella, 2001) and cognitive sciences (Gallagher, 2005) as applied to the field of dance, as well as through reflections on the art of sound (Migone, 2012). The prefix "tele" refers to the term telematics,¹ and applies to works I have developed as network art since 2001.² My goal here is to investigate new forms of relationships between remote bodies beginning with the tele-sonorous body, thus removing the primacy of the image usually found in the field of telematic dance. I wish to address two interrelated issues: the understanding that the body is sonorous and the exploitation of this condition in network art configurations.

From the release of Rede Ipê (Brazilian Academic Network) in 2005 - when I performed the first high-speed network telematics dance in Brazil - to 2010, my projects have investigated the relationship among geographically distant dancers in view of the possibilities that the image could offer to develop strategies and bodily states, as well experiment with the aesthetic of the work.

In artworks such as *Verus* (2005),³ carried out among 3 Brazilian cities, the image was captured and processed before being sent to the other point of presence. For example, remote partners received the image of the dancers' bodies textured by letters of the alphabet. At other times, the image was transmitted in closeup creating a hyperdimensioned body (e.g., a giant hand), resulting in a heightened image quality that served as a stimulus to the remote partner. **(Figure 1 and 1.1)**

From experimentation with the technical language of dance screen to increase internet potential in *Por onde cruzam alamedas* (Where Paths Cross) (2006), we began to explore image overlays to create what I came to call the principle of layers. This same condition was quite explored in *(In)TOQue* (2008).

A breakthrough done with the Grupo de Trabalho em Mídias Digitais e Artes (Working Group on Digital Arts / GTMDA) enabled ampler, continuing research during the years 2009 and 2010, along with a performance presentation replay in 2011. This creative continuity allowed us to develop *e_Pormundos Afeto* (2009/2010),⁴ in which image was kept as the main focus not only for the aesthetic composition of the work, but also for the development of a computational tool - Arthron - centered in high resolution video transmission, with low latency and remote management of inputs and outputs of information flows. **(Figure 2)**

In 2010, I began to realize that the question of sound had been little explored from the point of view of the body. Musicians composing in real time had been involved in all of the projects, so the quality of sound and music was assured, but there was, until then, no specific investigation of the relationship body / sound. However, in the first version of

e_Pormundos Afeto in 2010, a sensor (accelerometer / wiimote) was coupled with the body of the dancer in a manner that the motions performed activated fragments of music.

But it was only in 2011, with the project Laboratorium MAPA D2 de Arte Telemática⁵ that we actually began researching the relationship body / sound in network art. Seven research groups from four Brazilian cities participated in this project: the Laboratório de Poéticas Cênicas e Audiovisuais (LPCA, Universidade Federal do Ceará, coordinated by Dr. Walmeri Ribeiro and Dr. Hector Briones), with an emphasis on vocal experimentation; the Núcleo de Artes e Novos Organismos (NANO, Universidade Federal do Rio de Janeiro, coordinated by Dr. Carlos Augusto Nóbrega), responsible for the creation of an electronic - digital sculpture that received inputs from the actions of dancers and actors in order to interact with them; and the Grupo de Pesquisa Poéticas Tecnológicas from the Universidade Federal da Bahia, which was responsible for dance and sound composition that took advantage of the actors' voices to construct and conduct the performance as the dancers evolved scenically. The LPCA worked in partnership with the Faculdade de Computação da UFC (Ceará). In Rio de Janeiro, the Telemídia group of the PUC (Pontífica Universidade Católica) participated, and those working from Salvador relied on the advice of the Superintendent of Information Technology. The Laboratório de Vídeo Digital of the Universidade de Paraíba provided Arthon technological support for all the groups. (**Figure 3 and 3.1**)

A postdoctoral appointment at the Sonic Arts Research Centre (SARC), Queen's University Belfast, UK in 2012 allowed me to do research regarding the tele-sonorous body. Several studies were being conducted both in Northern Ireland and elsewhere in Europe at that time. In Portugal, while working in the Fundação Oeiras in the performance space coordinated by Ricardo Jacinto and Beatriz Cantinho, I was able to explore technology related to binaural audio through small microphones whose recordings simulated human hearing, thus providing spatial referentiality to sound events. This, then, structured dramaturgy and provided a "soundtrack" for the performance, thus implying a direct relationship with a person in the public who participated using headphones. These experiences culminated in the artwork *Surrurros* (Whispers) (2012), presented in the Graça Brandão Gallery in Lisbon.

In CentQuatre, developed in Paris, I investigated how the body could disrupt the sound space, generally considered as being fully occupied by music. Sonorous conditions were continually mutating according to the individual's behavior in the environment. This work was developed as artist in resident with Cyril Hernandez and Caroline Baudouin's Company La Truc, with whom I had developed the performance piece *Sonho e Sons* (Dream and Sounds) in 2010. With *Sonho e Sons*, we explored audio feedback as a compositional element, although still linked to the musician's performance rather than to the dancer's. My objective during my residence at CentQuatre was to explore the possibilities of

modifying environmental sound coupled with small microphones in the body (hands, feet, torso), which produced feedback in the eight speakers positioned to surround the studio space.

Developed later in the SARC, this project concluded with *Disturbance* (2013), a performance created in partnership with musician Pedro Rebelo and presented at the Festival of Contemporary Music Sonorities in 2013. The artwork was originally designed for remote composition, i.e., I'd be dancing in Belfast and another dancer in New York, one producing and interfering with audio feedback from the other's environment. However, because of technical issues, the presentation took place simultaneously, but not distributed. Other network performances were held for Sonorities 2013, such as *Ellipses* and *Sound Me*, both in connection with New York University. *Ellipses* was created in partnership with Robin Renwick and Graham Booth and consisted of a distributed performance in which the movements of the dancer from New York modified the sound spatialization in Belfast, while my performance in SARC altered the sound parameters of the work. (**Figure 4**)

Sound Me was created in partnership with Miguel Ortiz and Franziska Schroeder. In this performance, the soundscape of 4th Street New York became part of the composition created through biosensors used by Ortiz to capture a sound universe, and the sound of Schroeder's saxophone, with which I interfered bodily. The dancers in New York danced in the street using wireless lapel microphones and the audio captured was sent to Belfast thereby contributing to the sound composition of the work. In the SARC, we had a view from the top of 4th Street that showed both the pedestrians and dancers, and which was projected as backdrop on the SARC stage, which, to some extent, promoted an immersion of musicians and the dancer into the remote space image. (**Figure 5**)

All of these postdoctoral research projects were crucial to design *Embodied in Varios Darmstadt 58*, carried out in 2013 with Spain and Mexico, a performance I will analysis later this text after some fundamental observations about the concept of the tele-sonorous body.



Figure 1. and **Figure 1.1** Versus (2005, Salvador, Brasília, João Pessoa)

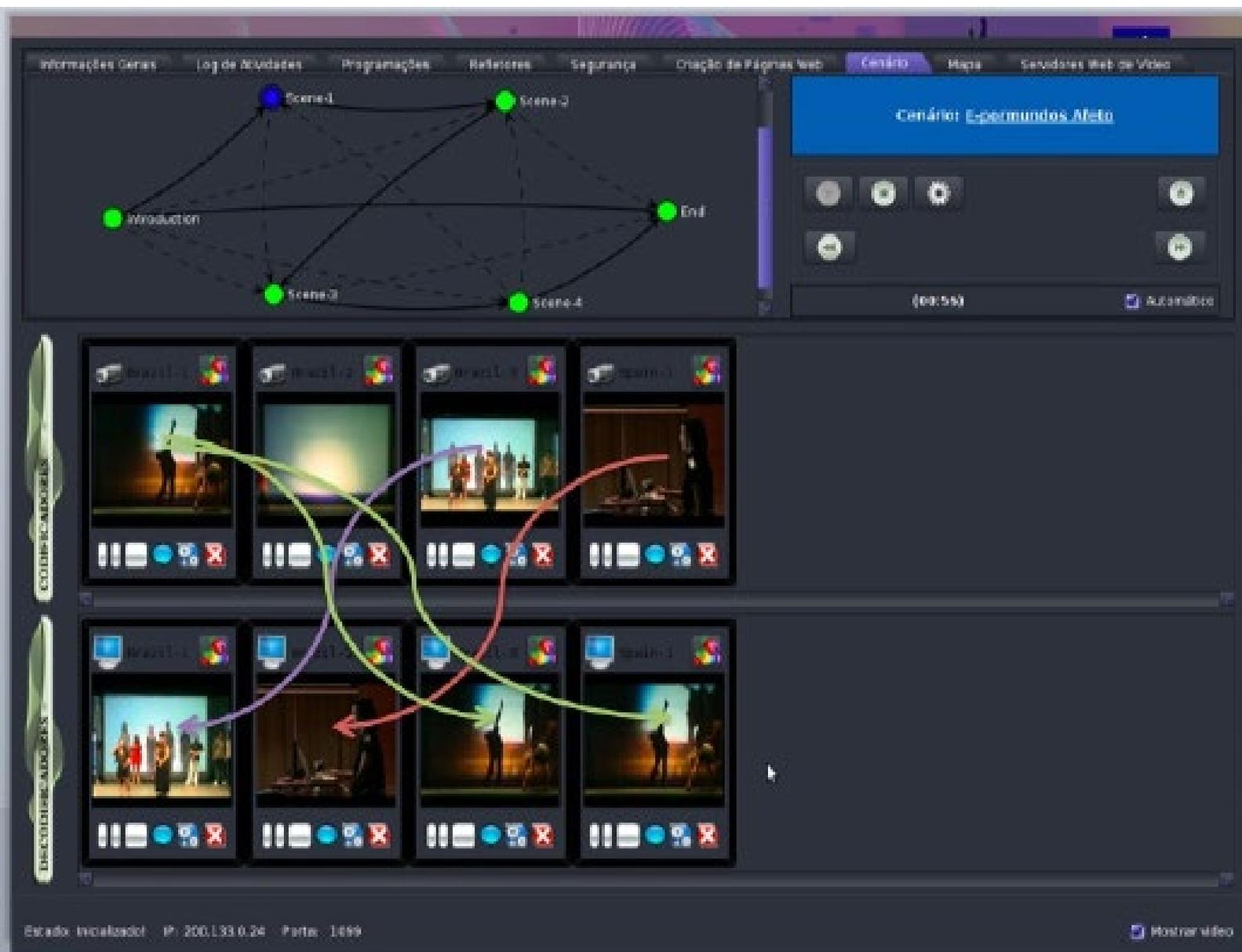


Figure 2. Arthron (2011)



Figure 3 and **Figura 3.1.** Frágil (2013, Rio de Janeiro, Fortaleza)



Figure 4. Ellipses (2013, Belfast, New York)



Figura 5. *Sound Me* (2013, Belfast e Nova Iorque)

The Sonorous Body, A Peircean Triad

This desire to understand the relationship between body and sound reminded me of some situations experienced in the past: an everyday experience and an artistic creation.

Some time ago, when I lived near a school for deaf and dumb teenagers, almost daily I could watch them talk through sign language. One day, I witnessed a discussion between a group of teenagers and, despite not knowing sign language, I could “hear” how loudly they were arguing. It was really noisy! Those bodies were very audible or, put in another way, “unsound” in the sense proposed by the artist and curator Christof Migone when he says that “the realm of what cannot necessarily be heard, and what is left unsaid still belong nervously, tenuously, longingly to the territory of sound, even if it has crossed a border we would have heretofore considered beyond return.” (Migone, 2012:4)

This reminded me of scholar and musician John Cage’s (1919-1994) initial expectation of finding absolute silence in an anechoic chamber.⁶ However, rather than the expected silence, he eventually managed to hear the sound of his blood flowing and of his nervous system (Migone, 2012:7). “This event thus constitutes a moment and place where silence and emptiness become noise and plenitude, despite itself (and himself [Cage]). Despite itself, the event contained a body.” Cage is quoted at the moment as saying, “I have nothing to say and I am saying it.” (Migone, 2012:7)

Another memory that came back to me was from the *Ateliê de Coreógrafos Brasileiros*, a dance festival realized in 2002, in which I was one of the resident choreographers. In one scene of the show *Pele* (Skin), that I created during the residency, two dancers were standing, facing each other in the center of the stage, ready to move at any moment, while two others, sitting on the side of the stage, “spoke” the dance in the first person. In other words, the dance was transmitted by language, rather than by movement where the audience had to create an imaginary choreography instigated through sound (Santana, 2006):

George talking:

- I’m looking at you.
- I... I’m .. I’m placing my right hand over the side of my face...
- ... I’m caressing my skin...
- ... I place my hand over my mouth

- ... We let our arms drop down

Norma talking at the same time:

- Me, too.
- I’m placing my right hand over the left side of your face and slowly tracing my little finger toward your nose...
- I’m retracing my finger and now pulling at your cheek...
- ... I’m coming down from half-point to the floor now, and we’ll let our arms drop down....



Figure 6. Performance Pele (2002), by Ivani Santana performed as part of the Ateliê de Coreógrafos Brasileiros, Year 1. Dancers: Norma Santana, Paullo Fonseca, Adelena Rios and Jorge Alencar.

The performers continued to talk at the same time, maintaining the same level of voice: always in a direct, objective, yet serene, manner. Perhaps because of the simultaneity of speech, the superposition of the female voice over the male voice, or the always steady rhythm, the piece's effect did not occur through a description of the action, but rather through the sound that lulled everyone into imagining how the dancer were "dancing" albeit with their bodies immobile. In this respect, "Sound's capacity to fill a space is operative in both physical and the psychic dimensions" (Migone, 2012:14.) Or, as Bruce Naumann says: "There is no silence. Your mind makes noise" (Migone, 2012:16).

The memory of these experiences and concerns that emerged from them ignited a network performance that had as its main connecting factor points of presence between the sound of each body rather than the body's image. In order to get this project underway it was necessary, first of all, to define the concept which would function to center research: the sonorous body and, in the case of network art, understanding the tele-sonorous body.

According to the French musician Pierre Schaeffer (1910-1995), the sonorous body would be that which produces sound. In this sense, the concept of the sonorous body as defined in this article would be the same as for Schaeffer. However, for the composer, the sonorous object - which is produced by the sonorous body - is always an audible instance and may even be a noise, which contradicts the concept of the sonorous body that I intend to address here. Let's first look at Schaeffer:

A sound object is defined by its causal coherence; it coincides with the short history of a noise event. (Schaeffer 2007:58). [He goes on to say] The phenomenon and sound event are perceived together, as a coherent whole, listened to with an attitude of semi-attentive listening that is self-referential, regardless of its origin or its significance. The sound object is defined as the correlate of this listening attention: it does not exist in itself but rather through a specific constitutive intention. It is a sound unit perceived in its raw texture, qualities and in its own dimension. (Schaeffer: 2007:72)

The examples above show that my understanding of the sonorous body is not restricted to the issue of human hearing, but also to what we would consider a psychological or emotional listening to a body: the noise from the discussion I described in sign language, for example. It is worth adding that, just because the sounds emitted from the heart or inside the body are not in the frequency range of human listening, i.e. between approximately 20Hz to 20,000 Hz, it does not mean that these sounds do not exist. I am interested in the capacity of the body to be potentially audible, not only from the point of listening to a perceiving third party, but also to the person whose body it is. Therefore, the concept I follow here is most closely represented by Peircean semiotics.

In her book *Matrizes da Linguagem e Pensamento*, the semiotician Lucia Santaella considers dance as being made up of the combination of sound with visual language, “these mixtures constitute a key to the understanding of hybrid languages, such as, for example, dance (between the visual and the audible) “ (2001:21).

All languages, regardless their means of support, means of transmission and channels, and notwithstanding the specific differences they acquire from these supports, means of transmission and channels, are grounded in only three matrices. This argument represents the belief that there are specific logical and cognitive roots that determine the constitution of the verbal, visual and the sonorous as well as of the full range of sign processes they generate. (Santaella, 2001:29)

A sound language is related to Peirce’s term “firstness,” i.e. a class of qualitative signs.⁷ To Santaella, the most basic level of sound language is associated “only with non-realized possibilities” (2001:106). When considered as occurrences in time, this mere possibility, pure quality, takes on actual existence, thus passing to another level of the same sign.

To illustrate this argument, we return to the example of *Pele*. In the scene narrated above, after the two dancers - Jorge Alencar and Norma Santana - “dancing through words” - the other two who were standing - Adelenia Rios and Paulo Fonseca - began to dance, performing the same sequence of movements embodied in their colleagues’ words.⁸ At that moment, the pure quality of the dance as conceived of in the public mind became a condition realized by the bodies of those dancers.

Therefore, perceiving the sonorous body is recognizing it in its condition of pure quality before it becomes actually heard, as it happened with me in the instance of the noisy silence of teenagers who spoke through signs. It is not just a matter of when the body actually produces an audible sound, but also the one existing in John Cage’s performance “4:33”, a composition in which Cage remained for those minutes sitting in front of the piano without playing and without moving.

The sound of the body has been investigated in terms of its biological nature for a long time, as in Alvin Lucier’s *Music for solo performer* (1965) in which he transformed alpha brain wave activity - where frequency of 8-12 Hz is out of reach of human hearing - into a sound composition.⁹ This example tells us that the body is sonorous, just not audible without technological mediation. Therefore, to speak of the body in silence is really to talk about a body that is constantly noisy, potentially audible, even if not audibly available to us. As Migone tells us:

A body at its degree zero presents a fitting endnote to the sonic somatic, for it is the condition of possibility for the noise that invariably ensues. (2012:237)

The sonic somatic permeates this peculiar state through the aporetic character of these formulations, in the sense

that they stage a sound where none can be heard. The sonic somatic is precisely that, a sound where there is none, a sound despite itself, a sonic state of silence. (238)

In line with this understanding, I assume the body as sonorous. During my research, I realized that there is a triad to categorize this concept, therefore consistent with the Theory of Signs of the philosopher Charles Sanders Peirce (1839-1914), on which Lucia Santaella's study of languages is based. Thus, to understand the concept of "the sonorous body," I described three instances: the organic body, the acoustic body and the symbolic body. These instances are founded in Santaella's understanding that the sonorous has the nature of a quality and that dance is a hybrid combination of sound with the visual, although some caveats are presented throughout this paper concerning that last statement.

The first level (firstness) is the pure quality that I call "organic." It refers to the sounds that Cage found by listening in an anechoic chamber, for example. This is the very quality of the body to emanate sound, concomitant with its physiology and its pure state of being, linked with the biological, as is breathing and pulse. In terms of listening, it means to hear emotionally (the quality of feeling, to be moved, to be engage emotionally) (Santaella:2001:83), for example, to "listen" to the discussion of deaf -mutes.

A second level - that for Peirce is secondness - refers to notions of relationship, action-reaction, stress-resistance, here and now, and conflict (Santaella:36). For the concept of the sonorous body used here, this level refers to the "acoustic," i.e. when the dancer has significant enough contact with the environment to produce sound, whether that occurs percussively when the dancer hits him/herself or in confrontation with surrounding objects. In this instance, it is enough just hear it reverberating within oneself, with things and with the environment itself.

It is in the level of thirdness, when sound gains a significance of "regularity," when learning or habit imbues a space with sound, that we call it "symbolic." An example can be illustrated by the transformation of the body into binary codes that are then processed by a sound synthesizer. This is a process that has long been used in dancing with technological mediation in which the dancer's movements are captured by a sensor system and the data are transformed into audio and / or image.

For Santaella, as stated above, dance is a hybrid language between sound (quality, instance of firstness) and the visual (relationship, instance of secondness). The matrix of the first is syntax because "there is no material as free and conducive to pure experimentation and syntactic invention than sound" (80); while form constitutes the matrix of the second, although it is not independent of syntax. She continues to assert that "visual form highlights the relation of the sign to what it indicates or represents, i.e. the relationship of the sign to its represented object." (117).¹⁰

Santaella's book clarifies some issues concerning cognition and linking language matrices with perceptual systems, demonstrating the implications between the various human senses - "a wonderful dynamic of interconnecting vessels" (78). For her, "the perceptual processes that make no noticeable languages, because they are moving, subtle and visceral, find transitional dwellings in the languages of sound, sight and the verbal." (78)

Watching dance from the outside, we can understand the combined existence of these two sound matrices (syntax) and visual (form), as affirmed by Santaella. However, I believe that, even for a "lay" public who may not have considered dance as sound and movement in these terms, proprioception provides another condition beyond syntax and form. Quoting Gallagher on this issue:

It is important to note that our beliefs and attitudes towards our bodies, even if non-conscious, will have an effect on how we perceive our bodies and the bodies of the others. In this sense, the body image is not inert or simply an ideational product of cognitive acts; it plays an active role in shaping our perceptions. (2005:26)

Thus, watching dance does not just mean observing and processing forms that run throughout the show in terms of syntax, "of elements that combine to form a more complex unity" (Santaella, 2001:112). Contemplation is not something inert, especially in the case of dance in which there is an identification of the spectator with the dancing body. There is a synergy between the body of the spectator and what s/he recognizes in the body of a dancer, even if the spectator does not have the expertise to execute what is being performed given the degree of skill and complexity of the movements. This identification does not occur through a formal viewing of the performance, but rather because we have an image of the body as well as a corporal system responsible for our behavior and learning in the world. In Gallagher's discussion, he puts it this way:

I define body image as a (sometimes) conscious system of perceptions, attitudes, beliefs, and dispositions pertaining to one's own body. [...] Body schema, in contrast, is a system of sensory-motor processes that constantly regulate posture and movement - processes that function without reflective awareness or the necessity of perceptual monitoring. (37-38)

It is worth adding that, aside from considerations regarding the conventions of ballet or the psychologism of modern dance, as a rule contemporary dance in its various aesthetic propositions and action strategies no longer seeks a formal path, but searches for a different understanding focused on the internal stimulus of the body. If we then

consider the dancer's viewpoint - and not the public's - the event does not occur only through syntax (which combine elements to achieve a complexity) and by form, because within this concept of dance there is no need to illustrate a psychological drama (characteristic of modern dance) or conform to a cadence of musical notes from pre-established codes of movement (ballet). Above all, therefore, the sonorous body is a kinesthetic body.

Understanding these different qualities I have suggested regarding the sonorous body helps to widen creative strategies to help experimenting and investigating the articulation between dance and sound, whether for scenic settings or those distributed through the network. The three instances of the sonorous body - organic, acoustic, and symbolic - informed the development of the network art show *Embodied in Varios Darmstadt 58* (EVD58) (2013).

The term "Darmstadt '58" in the title refers to the famous words of Nam June Paik: "My past 14 years [are] nothing but an extension of one memorable evening at Darmstadt '58,"¹¹ the year that he met John Cage for the first time. In this sentence, Paik demonstrated Cage's crucial role for the world of arts in initiating discussions about sound and silence, about listening and seeing, on the relationship between languages and many other reflections that reverberate until today. We chose *Darmstadt* to be part of the title as the birthplace of New Music (Neue Musik). Since *EVD58's* goal was to review issues of sonority in the body, it seemed quite emblematic to put in the title the name of the city that Karlheinz Stockhausen, Pierre Boulez, Luciano Berio, John Cage, Bruno Maderna, Franco Evangelisti, among other avant-garde composers, turned into a research laboratory on music and sound, investigating various aesthetic ruptures - discoveries that reverberate to this day.

Embodied in Varios Darmstadt'58 was developed among several international groups: our group in Salvador, o Grupo de Pesquisa Poéticas Tecnológicas, the Translab (Centro Multimedia / CENART) in Mexico City and Kónic Thtr,¹² Barcelona. As creator of the project, I requested that each team create their three proposed scenes for the show following these criteria:

SCENE 1 = materiality of the body. The body in silence to the sound of acoustic and organic body [I see the body, I listen to the body!];

SCENE 2 = transformation of the physical body to a body of synthesis. The binary silhouette body [I see the shadow, the silhouette of the body, I listen to the deconstruction of the body's sound!];

SCENE 3 = body code. The sonority revealed by the space-time of embodiment [I see and hear the space - time of a corporeality!].



Figure 7. Embodied in varios Darmstadt'58
(2013, Brazil, Spain, Mexico) scena 1



Figure 8. Embodied in varios Darmstadt'58
(2013, Brazil, Spain, Mexico) cena 2

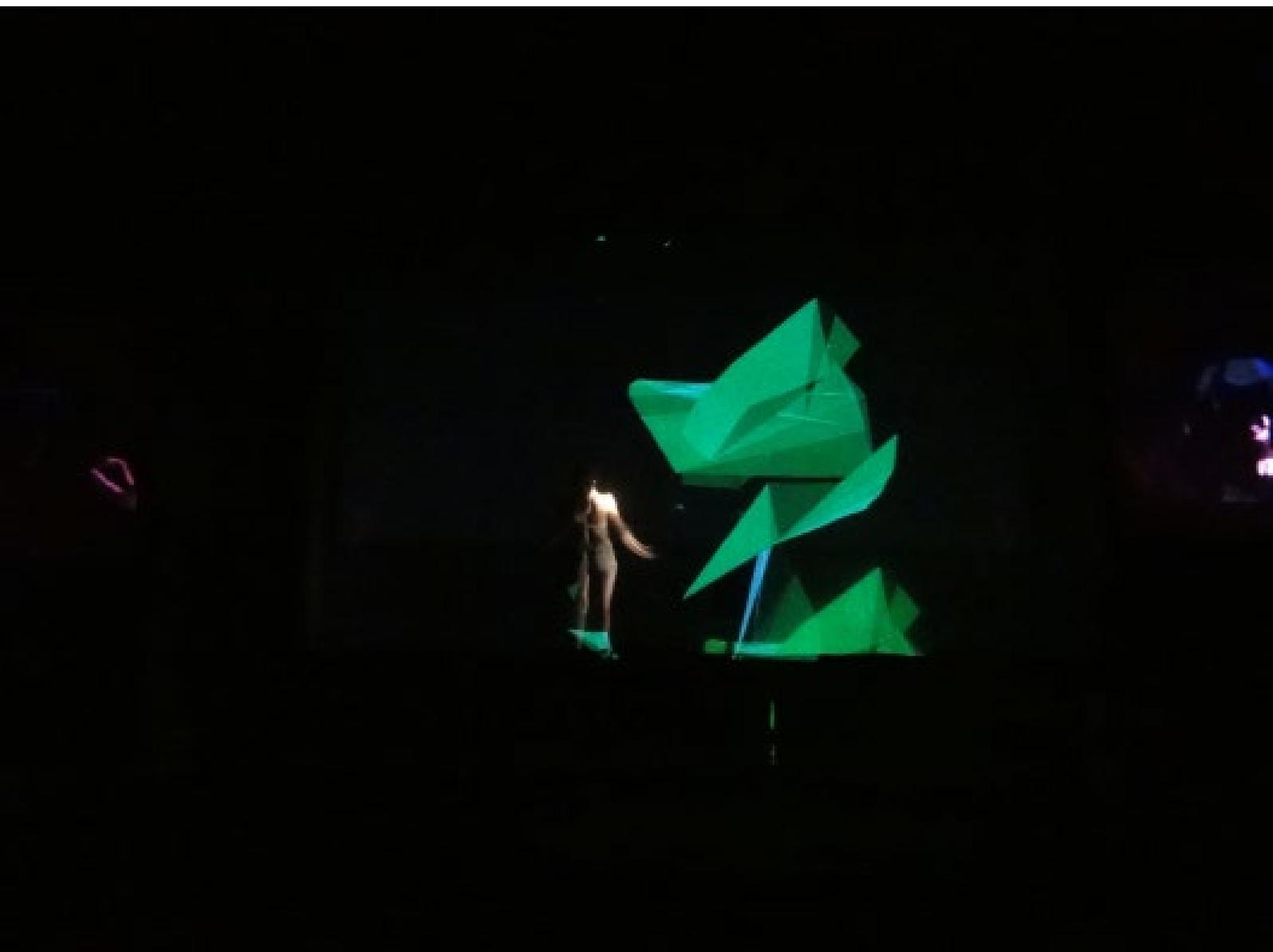


Figure 9. Embodied in varios Darmstadt'58
(2013, Brazil, Spain, Mexico) cena 3

The development of the scenes looked for a transit departing from analog to digital; from the biological body to its computational synthesis; from internal body sound to the sound of space-time of corporality; from the body as present to the tele-present body. Every sound of the performance commenced from the action of the body in both presential and in telematic space-time, since the flow of image, audio and data was overlaid on all points of presence. The composers of each site served as managers of these flows, without the intention to create sound independent from the possibilities arising from the activation and interaction of the dancers' bodies. Each country resolved how to do this according to local possibilities.

The teams were made up of dancers, choreographers, musicians, programmers, visual artists among others, and had the freedom to create starting from the above criteria and from workshops held to discuss the three instances of the sonorous body. Thus, we did not intend to address these levels of the tele-sonorous body linearly, but by previously discussed understanding that provided a basis in order that each group maintained openness and the conditions necessary to enact their local conception. Despite the fact that there are three distinct positions, or locales, I consider them to cohere into one spectacle. My argument about distributed dance realized in the network is that these units are in fact faces of the same object, distinct points of view within the same context or system. Also, the lack of a more vertical hierarchy effectively allowed more creative freedom to each group.

In Brazil, I began the performance off-stage, near the public.¹³ The first scene takes place on the proscenium, while the second and third were performed on stage behind a transparent curtain that served as a projection surface. Configuring this space inside the stage conveyed a sense of an aquarium, heightened by a backdrop on which the projected dancer's body was suspended, immersed in a stage environment where the floor was elevated by platforms almost a meter high. My initial goal was to actually get rid of the image of the physical body and remain with only the sound and, sometimes, the sound graphs. However, I noticed an understandable fear regarding the remoteness of establishing such a relationship without the existence of the "proof" of an image, as if this would validate the facts of the performance.

The first scene was based on the idea of the organic body and towards the end, the acoustic body, but of course, these instances are mixed as in the matrix of languages explained by Santaella. Each scene used a sound level of the body as its incentive for creation. In Brazil, my choice was to use a piezoelectric ceramic transducer, which amplified the sounds produced by rubbing my skin. Right in the opening of the piece, I put the sensor between my eyelashes, and when I opened and closed my eyes, the sound of each eyelash hair crossing by a thin microphone was heard. The sounds produced in my throat or as I struck my bones reached such a degree of amplification that somehow they seemed to reach beyond the confines of my body. I finished off the scene by exploring my body

in the environment, amplified by a microphone pointed at the ground: dragging my feet on a layer of sand, which I also blew, the sound of my hands hitting and wiping my arms, legs, and clothes impregnated with sand, etc. Simultaneous with these actions, I sought to interact with the sounds of the same quality that came from other places, also percussive sounds, such as the Spanish dancer falling on a small wooden table.

In the second scene, the goal was to disrupt space - not acoustically, but rather through sound synthesis. Thus, throughout the development of the scene, the intention of the body was to go in and out of various noise zones, where each zone functioned in a reactive manner, in accordance with the body quality employed. My attention while dancing focused on making a game out of disturbing sensitive sonorous areas, but was also directed to sounds from the performances in the other countries. The sound composition had musicians from all points of presence as mediators to manipulate sound volume and spatiality, but the instigation and development of these sounds depended on the performance of three dancers as they interrelated, remote from one another.

The last scene, that emphasized the symbolic body, was constructed from a game between the three countries that started with solos for each dancer with diminishing durations, i.e., the dancer from Spain began a solo of 16 counts, while the others waited, then alternated to the dancer from Mexico and, finally, my performance in Brazil. The sequence was repeated but with time dropping to 8 counts and 4 counts until everyone started dancing together seeking to interact with the sound of the other. To perform this scene we used a Kinect that captured the shifting silhouette of the dancer who provided the coordinates of the x -axis (horizontal or width), y (vertical or height), and z (forward / backward or depth) whose data were processed and transformed onto graphs that demonstrated the course of space-time as the dancers performed.

Embodied in Varios Darmstadt'58 marked the beginning of research designed to emphasize and explore the relationship of remote presence through sound rather than through the image. We are still in an embryonic stage. However, I believe the concept of the tele-sonorous body and the ensuing process of defining its organic sounds, as well as its acoustic and symbolic instances, can assist in this investigation, thus opening up methodological experimentation toward creating strategies that support the propositions asserted in this paper.

Briefly concluding: syntax (a condition of pure quality), form (a condition of being in relationship) and, especially, for part of my research, proprioception (condition of body image and body schema) are factors found in dance that jibe with and ask for new possibilities given technological mediation, such as telematics, which imposes new ways of understanding presence, proximity and relationship, aspects problematized within the context of network distributed works.

For me, the imperative is to listen much more to the body!

Endnotes

- 1 For a more complete understanding of terms referring to net art, please see: Santana, *Novas configurações da Dança em processos distribuídos das Redes*. 2013. Plataforma Eletrônica Internacional Xanela Comunidad TecnoEscenica. Access: <<http://www.xanela.net>> and <www.ivanisantana.net>.
- 2 I began my research in 2001 as an artist in residence in the Environments Lab, Ohio State University.
- 3 Videos of works cited here accessed through: www.poeticatecnologica.ufba.br e www.ivanisantana.net
- 4 I invited the Catalan group *Kònic Thtr* to participate in this project. Although the group had, up until that moment, never experimented with Internet art, they had always been considered the leading exponents in the field of technologically mediated dance with, having developed significant projects in relationship art-science-technology. Access: <http://koniclab.info>
- 5 This project culminated in the presentation of *Frágil* (Fragile) for the event *Desafios de Arte em Rede* (Challenges in Network Art), performed on December 4, 2011 in the Museu de Arte Moderna do Rio de Janeiro.
- 6 A room so acoustically isolated that no exterior sound enters, designed to contain and demonstrate sound and electromagnetic waves.
- 7 A sign is defined by Santaella in the following manner: "There are only three formal and universal elements, meaning, omnipresent in any and every phenomenon, designated as 'quality, relation and representation (2001:32) ... [...] They are dynamic and interdependent [...] Since they are universal and formal, they neither exclude or enter into conflict with an infinite variety of other categories, materials and particular matter that can be found in all things. (2001:36). However, 'firstness' is related to quality, 'secondness' to the relational, and, finally, 'thirdness' is related to representation."
- 8 Even though the phrases, as spoken, were logical, they were pronounced simultaneously and sometimes reduced to phonemes. Therefore, I don't consider them related to the verbal language matrix as proposed by Santaella.
- 9 Currently, we can cite several artists who compose through what is known as biosensor: Marco Donnarumma, an Italian living and working in London; the Mexican Miguel Ortiz-Pérez, and Benjamin Knapp, a professor of computer science at Virginia Tech University.
- 10 Verbal language, with its matrix being discourse, "is always directed towards the interpretative effects that it is capable of making for communication," (Santaella, 2001: 117).
- 11 Nam June Paik, "*Letter to John Cage*" (1972). In: Judson Rosebush (ed.) *Catalogo da exibição Video 'n' Videology: Num June Paik (1959-1973)*. Syracuse, New York: Everson Museum of Art, 1974).
- 12 <http://koniclab.info>
- 13 The team responsible for the creative process in Brazil: computational programming in Pure Data, Luiz Naveda; sound design by him and Felipe Andre Florentino; video by Valdinei Matos; Net support, Pedro Lacerda, Italo Valcy and Ibirisol Ferreira; support assistance, Jean Ferreira; production, Jason do Espírito Santo; photography, Shai Andrade; with Ivani Santana responsible for project conception, general and dance direction.

Bibliographical References

Gallagher, Shaun. *How the body shapes the mind*. Oxford, New York: Oxford University Press, 2005.

Migone, Christif. *Sonic Somatic: Performance of the Unsound body*. Los Angeles, Berlin: Errant Bodies Press, 2012.

Santana, Ivani. *Dança na Cultura Digital*. Salvador: EDUFBA, 2006.

_____. *Novas configurações da Dança em processos distribuídos das Redes*. Plataforma Eletrônica Internacional Xanela Comunidad TecnoEscenica. Available in <http://www.xanela-rede.net>, 2013. Access: March 5, 2014.

Santaella, Lúcia. *Matrizes da Linguagem e do Pensamento*. Sonora, Visual, Verbal. São Paulo: Iluminuras/FAPESB, 2001.

Schaeffer, Pierre. *Solfejo do Objecto Sonoro*. Translation by António de Sousa Dias. Paris: INA - GRM - Groupe de recherches musicales, 2007.

Biography

Ivani Santana. A pioneer in research about telematic dance in advanced telecommunication networks in Brazil. Santana is a dancer and choreographer who has been researching the field of dance with technological mediation since the '90s. She holds a Masters and PhD from the Program of Communication and Semiotics at PUC/SP. Currently, she is Professor of the Milton Santos Institute of Humanities, Arts and Sciences at the Federal University of Bahia, and has served as Coordinator for the Research Group for Technological Poetics since 2004. Santana is the author of the books *Dança na Cultura Digital* (EDUFBA, 2006) and *Corpo Aberto: Cunningham, dança e novas Tecnologias* (EDUC, 2002), and has articles published in national and international journals in addition to organizing other publications. In 2006 she received the UNESCO Prize for the Promotion of Arts at the Monaco Dance Forum.

Tradução: Leslie Damasceno