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| <p>please leave this blank</p>  | <p><b>emotional geography &amp; soundscape studies: beyond the cognitive approach in (sound)mapping urban spaces</b></p>  |
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|   | <p>Keywords: Soundscape; Emotional Geography; City Mapping</p>  |
| <p><sup>1</sup>. Tempo Reale, Center for Music Production, Research and Education, Firenze, Italy</p> | <p><b>Abstract</b></p> <p>According to the theoretical framework described in the 2nd conference track “<i>Experiential Simulation: the sensorial perception of the built environment</i>”, this proposal would illustrate the <i>tender soundmap</i> of Florence – an output of my doctoral dissertation – in order to claim (sound) intimacy as tool for understanding and representing the world we live in. The doctoral research I developed aimed at reaching the following goals: to promote a new “<i>Sensuous Urbanism</i>” (Radicchi, 2013) which not only describes the morphology but also the character, the time and the atmospheres of places; to support the integration of Soundscape Studies within the disciplinary field of Urbanism; to promote a creative approach to the sonic environment; to encourage eco-sustainable projects according to the European Regulations on noise pollution. To support the integration of Soundscape Studies within the disciplinary field of Urbanism required me to define a new subfield of Urbanism; that allowed me to identify in the realm of “<i>Sensuous Urbanism</i>” the theoretical frame from which I wanted to expose the predominance of sight over the other senses; I also emphasized the importance of finding a holistic approach to the discipline of Urbanism, identifying the sonic dimension in particular as one of the possible paths leading to said objective. I then explored both soundscapes mapping tools and soundscapes design tools within the disciplinary fields mentioned above to show their limits and potentialities. In conclusion, I conceived and proposed the analytical tool of “<i>tender soundmap</i>” of Florence and the design tool of “<i>sonic niche</i>” as a resource for a design process able to achieve the ideal synthesis in designing physical and acoustic space in contemporary city.</p> <p>The “<i>tender soundmap</i>” is an example of soundmap for the city of Florence, which I developed from scratch, where the sonic environment is interpreted from an emotional standpoint. The use and meaning of “<i>tender</i>”, which I refer to in my research, relates to the Emotional Geography (Bruno, 2002), and finds its origin in the <i>Carte du pays de Tendre</i> made by Madeleine de Scudery in 1654, the first <i>tender</i> map because it draws emotions and reveals feelings. The “<i>tender soundmap</i>” represents also an important tool for qualitative analysis of the sound environment, to be integrated to quantitative methods practiced by traditional acoustic planning, in order to go beyond the cognitive approach in (sound)mapping urban spaces. Finally, the “<i>tender soundmap</i>” of Florence aims at becoming a collective sound map - interactive and open source – with the involvement of the population in order to enhance and protect the Florentine urban soundscape.</p> |

## Emotional Geography<sup>1</sup>

To understand the meaning of the adjective “*tender*”, it is necessary to be placed within the emotional geography that includes the beings that inhabit it and the forms of their passage through spaces, including the spaces of life (Bruno. 2002).

Such geography recognizes its origins in the 1654 *Carte du pays de Tendre* by Madeleine de Scudéry, the first “*tender*” map that traced the movement of emotions and revealed the world of affections (Scudery, 1654). The *Carte* mapped a landscape of tenderness, characterized by a varied territory consisting of land, sea, a river, a lake, trees, bridges and various villages, drawn to indicate the road that leads to the land of tenderness. Therefore, it visualized an emotional journey through a landscape that represents at the very end a psychic landscape. In doing so, the map favored the recognition of subjectivity as the foundation of relationships based on more than objectification and exploitation. Further, the strength of its vision is still inspiring today, not only because of the powerful political message it conveys, but also because it allows us to claim intimacy as a tool for interpreting and representing our world. Hereby, I aim at retracing the cultural history of such geography by noting only a few points in order to briefly outline the theory to which the “*tender*” soundmap of Florence refers. The next leg of our journey through emotional geography brings us to the year 1659 with the publication of the *Carte du Royaume d'Amour*. Attributed to Tristan l’Hermite, this map depicted the realm of the main towns, villages and other locations, the path that we must take in order to visit them, and off in the landscape near the city described an erotic love feast. However, with respect to the *Carte du pays de Tendre*, here, forms of control and containment are imposed in the field of love. Indeed, the kingdom of love is portrayed as an isolated island and the journey to it is planned along a torturous winding path. Then, in 1678, there is some positive light with one of the first successful reissues of the map entitled *The Attack of Love* by Matthaeus Seutter, proposing a way to defend and protect the heart against the assaults of love (Bruno 2006, p. 201)! This specific type of emotional mapping implies a passage that links, among other things, eroticism to narrative space, especially involving seductive architectures and topographic structures.

To continue along the journey we find the novel *Petite maison* by Jean-Francois de Bastide published in 1758, whose plot, taking place inside a garden pavilion “a *folie* that was, literally, a shelter for lovers”, initiated a journey of sensations and emotions (*Ibid.*, p. 211). Spatially, the novel described an architecture representative of a lover’s body – *Mélite*, drawn to the *petite maison* by Trémicour, who is seduced by the pavilion’s architecture and “touched” by its furnishings. While perusing and examining every remote angle of the *petite maison*, *Mélite* unraveled a sensuous architectural story, in which, as Bruno noted, a woman is subject rather than object of seduction.

The journey of emotions drawn from the *Carte du pays de Tendre* led us to the map of the situationist city we intend to explore interpreting the construction of situations performed by the group as a research site where the relationship between space and emotion is investigated. The profound influence that Scudéry’s work exerted on the group is evidenced by the fact that a copy of the *Carte du pays de Tendre* appeared as an illustration in the anonymous text “*Urbanisme unitaire à la fin des années 50*” that the group published for the *Internationale situationniste* of 1950. The image of the *Carte* accompanied an aerial photograph of Amsterdam in order to suggest the juxtaposition of flight and navigational practices across space, affirming an intimacy with the city (*Ibid.*, p. 420, note 60). In 1957, the group released the map *Guide psychogéographique de Paris* which, along with *The Naked City*, played an important role in the development of Situationist architectural ideals. This map is an assemblage of fragments, whose composition transforms the urban typology into a social and emotional landscape: it is constructed

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<sup>1</sup> This paper partially illustrates findings of my doctoral dissertation *Sull’immagine sonora della città*. See (Radicchi, 2012)

by assembling nineteen clippings from the map of Paris that, after having undergone a process of moving through a creative intervention producing new relationships between the areas of the city and its inhabitants, is reconfigured with red arrows that connect the various fragments (*Ibid.*, p. 238). This psychogeographic map carries the subtitle *Discours sur le passions de l'amour*, establishing, therefore, a truly passionate discourse referring to the early map of Scudéry from which it was inspired.

In 1988, the Parisian artist Annette Messager realized *Le jardin du tender*, a design, and also a physical garden, which is a clear reconstruction of the Scudéry's *Carte*. From the tree of silence branched a series of paths along which different emotions were manifested in the form of sites or landscape elements, for example, the "curve of tenderness", the "road of confidence", the "mountain of diligence", the "tree of forgiveness", the "lake of temptation", and so on (*Ivi*).

We move from the shores of the lake and continue our way to the discovery of the Argentine artist Guillermo Kuitca who crossed the territory of the *Carte du pays de Tendre* using methods with a delicate sensuality and architectural metaphors, including the geographical plan of an apartment. In 1992, he created the work *Coming Home* that depicted the plan of an apartment as an airport's runway converting the domestic terrain into an airfield: the home acted as metaphor to a real landscape of passage redefined from a path of emotions (Bruno, 2002).

According to Bruno, along this journey, I have aimed at demonstrating how emotional cartography allows us to measure and represent that component of intimacy, that is strictly connected to the experience of daily life, and offers a contribution to the process of overcoming the idea that considers the cognitive map as an unifying and pervasive concept produced by a distant eye, as an hegemonic and authoritative tool. This negative view of the map has its origin in the problematic nature of the cognitive paradigm that provokes the risk of producing a reductionist idea of mapping being placed entirely in the service of power.

Instead, according to De Certeau (De Certeau, 2001), maps were originally intended for the iconic representation of the landscape: medieval maps were above all stories of journeys, in which the route, the action carried out by the subject was prevalent with regard to the itinerary. Gradually as the aerial vision, the measure and the scale developed in the course of cartographic history, the subject was gradually expelled from the representation. Therefore, today, adopting "tender" cartography as a methodological tool could allow us to put the human beings at the very center of the theoretical discourse, to reclaim intimacy as a space for interpretation and to place Sensuous Urbanism and Soundscape Studies in the atlas of emotions<sup>2</sup>. To this end, the operational instrument of the soundmap seems to possess the necessary characteristics to integrate such disciplines and to interpret them from an emotional standpoint.

### **Soundscape Studies and soundmaps: a brief history**

If we look at the past, the first attempts of representing soundscapes through the use of cartography is traced to the 1929 book *Reine Geographie* (Granö. 1929) by Johannes Gabriel Granö. The Finnish geographer made a qualitative classification of acoustic phenomena and tried to represent them cartographically. The analysis was tested in the Valoosari area and the collected material was classified in an interesting legend that indistinctly described and ordered sounds and noises according to the following criteria: time, frequency, and dichotomy between natural and artificial.

A subsequent attempt to represent soundscapes was conducted by Michael Southworth in the research he developed for his 1967 City Planning master's thesis at MIT entitled *The Sonic Environment of Cities* (Southworth, 1967, 1969). Southworth analyzed the soundscape of an area between Beacon Hill and India Wharf in Boston's central peninsula by focusing on two main aspects. First, he evaluated the "identity" of sounds, considering both the "singularity" of the

<sup>2</sup> I adapt this methodology proposed by Bruno as she applies it to the field of cinema. (Bruno, 2002, p. 202)

sounds emitted and the “*informativeness*” of the sounds, exploring their capability in communicating activities taking place and the spatial form of a determined area. Second, he analyzed the “*delightfulness*” of sounds, that is to say those qualities that cause one to consider a sound more or less acceptable. In addition, Southworth evaluated the relationship between visual and auditory perception to understand how physicality and spatial form affects the identity and appreciation of a particular soundscape and, alternatively, how sounds affect the perception of a city’s form<sup>3</sup>.

The term soundmap, however, was introduced by Schafer in reference to sound mapping he produced, together with other scholars taking part in the *World Soundscape Project* (WSP). In 1975, they realized the *Five Village Soundscapes*<sup>4</sup>, a comparative study of the soundscape of five European villages (Bissingen in Germany, Dollar in Scotland, Skruv in Sweden, Lesconil in France and Cembra in Italy). The study’s objective was to extrapolate useful information from the analysis of sonic landscapes in each town. A series of graphic illustrations were drawn to represent soundscapes, such as the “*pitch map*”<sup>5</sup> of the Skruv village, which is of particular interest for the originality of reading and interpretation made (Järviluoma, 2009).

According to Zorzanello, R.M. Schafer’s intuition consisted of considering the emerging frequency in the so-called “*keynote sounds*” (Schafer, 1977) like the note of a potential chord built by the sum, in the listener’s memory, of the various keynote sounds present in a particular area or settlement. The next and decisive step proposed by Schafer is to consider the eventual harmonic function deriving chord-like sets as various semantic aspects have been associated with the harmonic functions and scalar–interval sequences (tension–relaxation, darkness–brilliance, etc.). This association contributes, along with the timbric and rhythmic aspects to constitute important aspects of the emotive atmosphere of a musical passage, so why not, *mutatis mutandis*, to the acoustic atmosphere of a physical place? Further, the pitch map is particularly interesting because it constitutes the example of a case in which the analysis of the quantitative data (the determination of the dominant height in a complex sound signal, expressible in Hertz) determines, according to this interpretation, qualitative effects. Finally, the analysis of pitch allows to investigate possible relationships between soundscape and emotional dimensions related to listening to certain voluntary or involuntary drones, whether tuned or partially tuned (Zorzanello, 2011).

In the past decades, digital technology, interactive platforms and territorial GPS detection systems<sup>6</sup>, permitted a significant revolution in developing sound maps. Unlike traditional cartography methods that rely on static and two-dimensional reality, the soundmap is capable of describing, through sound, space and time the dimensions, and the social and emotional factors related to everyday life.

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<sup>3</sup> To study the interrelationship between visual and auditory perception Southworth made reference to the theoretical seminars that Warren Broady held with the blind (1960-1964) and the work that Peter Knapp had done with the deaf (1948). The analysis of studies conducted on vision-impaired subjects allowed Southworth to further the discussion on the perception of sound, while those of hearing-impaired subjects allowed him to understand the role of sound in the visual perception of the environment.

<sup>4</sup> In 1998, Finnish ethnomusicologist Helmi Järviluoma, together with a group of researchers, initiated the project entitled *Acoustic Environments in Change, Five Villages Revisited* (AEC), a comparative study of the soundscape of the original villages surveyed in the WSP. The project was later renamed *Six Villages* as another study site was added (Nagu, Finland). See: (Järviluoma, 2009)

<sup>5</sup> Pitch corresponds to the degree of height of a tone or sound, as related to the frequency, expressed in Hertz.

<sup>6</sup> The *Global Positioning System* (abbreviated GPS, once an abbreviation NAVSTAR GPS, which stands for NAVigation Satellite Time And Ranging Global Positioning System), is a satellite-based positioning system with global coverage that continues to be managed by the U.S. Department of Defense.

Nowadays, a soundmap can be considered a form of “*locative media*”<sup>7</sup>, conveying information about the visual, spatial, acoustic and temporal aspects of a specific place, aimed at representing the soundscape through the use of an interactive interface. Depending on the technology applied, contemporary sound maps can be classified as follows:

- *Deferred and static telematic sound maps*: the passage is not on the spatial continuum, but is suggested by discreet, point-to-point, shifts;
- *Deferred and dynamic telematic sound maps*: the user simulates his or her movement in the spatial continuum with the consequent modification of the soundscape;
- *Static sound maps in real time*: open microphones placed here and there in various parts of the world offer us an acoustic report, like the webcam model;
- *Dynamic sound maps in real time*: a network of static open mics or on the basis of a structure of a mobile network provided by soundwalkers equipped with smart-phones.

Currently, telematic sound maps described above can be considered as a frontier instrument for the analysis and representation of soundscapes along with advanced dynamic maps and real-time mapping based on multi-layer systems (Zorzanello, 2011).

### The “*tender*” soundmap of Florence

The “*tender*” soundmap of Florence belongs to the *deferred and static telematics soundmaps* category<sup>8</sup>. It does not pretend to represent completely the Florentine soundscape: rather it has been drawn in order to investigate possible relationships between Florentine soundscapes and emotional dimensions perceived by city users of Florence. With this regard, it refers to a qualitative definition of soundscape that means “*simultaneously a physical environment and a way of perceiving that environment*”(Thompson, 2002); something that is not only outside of us - as we are used to thinking about in our visually oriented culture - but it also includes a landscape part, in the metaphorical sense, as an emotional and mnemonic landscape. The “*tender*” soundmap aims also at representing a qualitative tool to be integrated with the traditional quantitative methods of the acoustic planning where the sound environment is mainly explored from a quantitative standpoint, by the means of acoustic maps. Further, it is intended to expand the practice of deep listening, contributing to a better overall experience, in urban settings: soundscape is indeed indicative of social customs, cultural specificity, quality of life, emotions and moods of the human beings that inhabit the city, in short, all those aspects related to the identity of a place that can not be attributed to physical forms, typologies, or numbers, and yet are no less important. Finally, the “*tender*” soundmap is an interactive and open source tool and aims at becoming a **collective** sound map through the involvement and the participation of the Florentine population, city users and tourists (Radicchi, 2012). With this regard, since January 2013 a specific dataset called “*Immaterial cultural goods*” has been created within the Opendata system of the Municipality of Florence to share the data of the “*tender*” soundmap according to the definition of Immaterial Cultural Heritage released by UNESCO in 2003<sup>9</sup>.

<sup>7</sup> “The term locative media was coined by Karlis Kalnins. Locative media is closely related to augmented reality (reality overlaid with virtual reality) and pervasive computing. Whereas augmented reality strives for technical solutions and pervasive computing is interested in embedded computers, locative media concentrates on social interaction with a place and with technology. Many locative media projects have a social, critical or personal (memory) background.” <[http://en.wikipedia.org/wiki/Locative\\_media](http://en.wikipedia.org/wiki/Locative_media)>

<sup>8</sup> [www.firenzesoundmap.org](http://www.firenzesoundmap.org) It stems from my doctoral research developed both at the City Design and Development Lab of MIT (Cambridge, USA) and at the Faculty of Architecture of the University of Florence (Italy). The concept and scientific curation of the website are of the author. From a technical point of view the project has been edited by Ermanno La Commare and realized with the use of tools provided by Google Maps, exploiting the potential offered by Google API made possible through an xml sheet generated by an ASP page and a Mysql database, populating the map with markers.

<sup>9</sup> See: <[http://opendata.comune.fi.it/beni\\_culturali\\_immateriali/dataset\\_0305.html](http://opendata.comune.fi.it/beni_culturali_immateriali/dataset_0305.html)> and

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