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# New Technology, New Soundscape. Environmental Transformations in a Colombian Traditional Neighbourhood

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**Abstract.** *Through the identification of the acoustic territory and neighbourhood's five most characteristic 'sound objects' (the sound of printing machines, metal shutters, music from bars and shops, trolleys and carts), this paper explains how this result was achieved and the significance that the apprehended sounds have in the particular context of San Nicolás neighbourhood in Cali, Colombia. It will be pointed out that the migration from older technologies to digital setting and urban renewal processes, which will strongly affect its East side, will enable changes in the medium term that will also be reflected in the soundscape and the atmosphere of a place which has been the space of the printing industry for more than a century.*

**Keywords:** *sound heritage, graphic arts, acoustic territory, Cali-Colombia*

## Introduction

Research on the urban environment (and in this case the soundscape) from a cultural perspective is a field that has not been relevant in urban design or public policy. In the first instance, there are no adequate methods to assess situations plus analyses are usually limited to measurements on noise, and secondly, inquiries are based solely on physical knowledge, resulting in applications that deal solely with precise urban situations, forgetting the comfort of everyday life (Augoyard, 2002).

In that sense, the designers and agents responsible for managing the development of the environment must understand that the daily sound is very important in its communication and emotional dimensions. As José Luis Carles notes, 'the concept of acoustic ecology rests on the relationship between people and their acoustic environment, proposing for example if such relationship is balanced or not, if it facilitates the integration of the individual within the community or if it results distant and unsustainable' (2007). We may add that in addition to the well-being, the emotional bonds that can be established with the landscape, including the sound, make us think of the need to conserve or preserve, like a heritage, the positive environmental signs that shape our culture.

The search for new tools to intervene the urban landscape that incorporate the sensitive involves understanding the space and the landscape as a living entity containing individuals in their environment in an integrated manner. The space now

includes the physical and the social 'as an indissoluble set of systems of objects and systems of actions [in which] we can recognise their internal analytical categories. Among them are the landscape, the territorial configuration, the territorial division of labor, the space produced or productive, the roughness and the forms-content' (Santos, 2000). With these assumptions, the research outlined [here](#) has sought to join the works that think the complex dimensions present in the relationship of individuals with their space. In the words of Lynch, 'these sensations shape the quality of places and [...] this quality affects our immediate well-being, our actions, our feelings and our understanding' (Lynch, 1992). The research team was comprised of architects, sociologists, historians, anthropologists, and artists who developed the conceptualisation and subsequent implementation of the strategies proposed to examine the soundscape of the neighbourhood while investigating on its history. The research was funded by the Colombian state between 2014 and 2015.

### *The space*

The neighbourhood of San Nicolás, whose church was built in the seventeenth century and is part of the old town, is located next to the main square of the city and it borders with the line of the old railway, which marked the space of Cali's first industrial zone in the early twentieth century. Today, in spite of conserving housing, it is occupied by industrial activities and commerce. However, the graphic arts industry stands out because of its history and presence, a craft with relevant precedents as in 1894 a local entrepreneur brought to his house in the neighbourhood a typographic printer. Shortly after, some of the most important newspapers in the region were printed there and other printing businesses were installed in the neighbourhood. Currently, according to a census conducted by the research, 527 graphic arts companies, mostly small, are grouped in an area of about 20 blocks (Figure 1). The landscape of this small territory is occupied by the rhythmic sounds produced by the printing industry from 8:00 am until businesses start to close at 6:00 pm. After that time, the neighbourhood's movement slows down, the sound decreases in intensity to shape a silent space, only interrupted by sounds of the night in an unsafe area. The location of the sound space shaped by the mass of the printers gathered in a small area showed a dynamic map that indicates the boundaries and fractures of the landscape from the sound. In San Nicolás, the environment generated by the printing industry traces a rectangular perimeter of 6 by 3 blocks, which shows three edges clearly defined by the sound of traffic in its main roads: calle 15 west side, calle 21 east side, and carrera 5th south side. The north border is characterised by the gradual disappearance of companies and the deterioration of the buildings, creating a 'silent' limit. In its streets, homeless people find shelter, occupying space with carts in which they carry recycled paper (Figure 2).

### *The Method*

The analysis of the sonic composition of the space was done through listening sessions from 6:30 am to 7:30 pm. After this experience, we decided to particularise the study on three streets. To collect the information, registration sheets were designed (Figure 3) where the data was listed, and recordings and measurements of the sound pressure on the established time slots were made. The three streets were selected based on the density of printing businesses, vehicular and human traffic,

and social dynamics. Listening time slots on the three streets were chosen by taking into account the principal moments of transition between 7:00 am and 7:00 pm and were held two days a week (Tuesday and Friday) with different business dynamics, as reported by the interviewed workers. In the listening sessions, the most frequent sounds were systematically counted, excluding those of traffic. The work resulted in a list of 23 ‘sound objects’<sup>1</sup> from which 5 were considered to be the most frequent: a) the pounding of printing machines, b) the rubbing of the door or metal shutter that closes the premises, c) the rolling of the carts carrying supplies, d) the recyclers and vendors’ trolleys and e) the music that, from radios and audio equipment, accompanies the daily life of the sector.



Figure 1. Density of printing businesses in the neighbourhood, 2015.  
 Figure 2. Acoustic territory. (Source: own development)

In addition to analysing the neighbourhood from the researchers’ perspective, surveys and mental mapping with focus groups were held. 247 surveys were conducted in business related to the graphic arts. The perception of the local people was examined through focus groups with graphic arts business owners, printing machine operators and customers of the industry. In these groups, there were proposed dialogues about the location of significant sounds and the acoustic qualification of the neighbourhood through the building of a mental map of the sector.

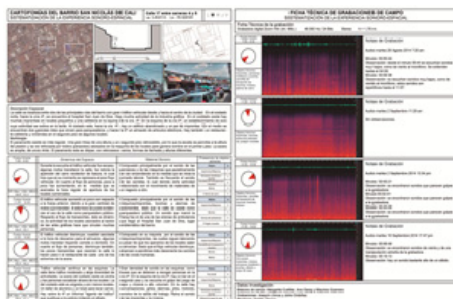


Figure 3. Information systematisation sheet of 17th Street, Tuesday. (Source: own development)

1. Based on the idea of Pierre Schaeffer (2003), the urban landscape would not be composed of noise but rather acoustic signs of a society that, as objects, establish meaningful relationships between individuals and society.

## Impressions

From the morphological point of view, it was established the existence of an *Acoustic territory*<sup>2</sup> (Figure 3) with particular sonic characteristics that contrast with the rest of the neighbourhood's landscape, establishing an identity. The concept of *Acoustic territory* proposed here refers to a system of sonic-spatial relationships essential for the adaptation of the population to the environment. Such system consists of a spatial set delimited and interconnected by nodes and audio streams with similar characteristics with a certain periodicity. The nodes of these networks are made of sound objects whose presence identifies a space. The soundscape of San Nicolás has a clear and consistent morphology, which accounts for a historical process of appropriation of space in which productive structures that leave a mark on their environment have been built. Such territory behaves as an *assemblage* of sound objects, thanks to the proximity, similarity, and density thereof.

The finding of five predominant sound objects is not a neutral set of noise but rather each of them has, from its acoustic manifestation, a role in the social dynamics of the territory. These sound objects have a historicity that links them to the past and justifies its appearance in the results with its own weight and not just as one more item. For example, the pounding of the machines, an identity sound sign of the neighbourhood, not only marks rhythmically the pulse of the environment but also gives information about the proper functioning of the device to its operators. The old printing mechanical typesetting machines that survive, (30% of businesses have at least one according to the census) despite the appearance of lithographic and digital, have been reinvented as die cutting or numbering machines, refusing to silence their unique sound that links the past with the present.

The second sound object (the harsh sound of a metal shutter) is part of a technological modernisation that occurred when wood began to be displaced by metal in carpentry. In the twenties, it already existed in Cali artisans of iron such as the Hurtado family who had a workshop in the downtown focused on blacksmith and carpentry (Vásquez, 2001). This door of articulated metal slats is now a common solution to the closing of businesses; therefore, its concentration in a confined space generates another characteristic sound object. Every day, a metallic sound, between 7:30 am and 8:00 am, is a temporary mark of a territory that goes off at 6:00 pm with the closing of the last shutter. The same applies to the other found sound objects; each of them establishes important relationships with the past or the neighbourhood's present social dynamics, especially recorded music which, although today it sounds from digital players, it has a long history. Many years have passed since orchestras and singers sounded by the crank Victrolas or automatic coin jukeboxes. Today, some establishments keep their vinyl records. Starting the Thirties *La Voz del Valle*, Cali's first radio station opened. Over time, American Westinghouse, Dutch Phillips, and Germans Punto Azul radio receivers began to appear. In addition, the Philco, the Telefunken, the RCA and the Emerson arrived (Vásquez, 2001). In less than a decade, the murmur of radio started being an important part of

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2. The concept of "acoustic territory" has been the subject of theoretical exploration derived from this research and developed by the author in another article.

the neighbourhood's landscape blurring the cars' engines that arrived in the city in 1913 and generated complaints about noise (Vásquez, 2001).

In focus groups with residents, it was found that for some of them there were other meaningful sounds such as the church bells -a mark of the beginning of the day- or the fire siren from a nearby neighbourhood where in the past it was heard always at noon. The discussions also confirmed sounds detected in the listening sessions, such as street vendors carts around 7:00 am when travelling to places where they offer coffee. Its sound is clear and can be considered a sound mark that announces the start of the day thanks to the quiet morning soundscape that does not mask it. It was also mentioned with pleasure, the songs of the birds that inhabit the trees of the park, a sonic oasis among so many automotive traffic roads.

San Nicolás is an exceptional space because, in addition to its historical roots as a traditional neighbourhood, it has established more than a century of activity, a *cluster* around the art of printing (Figure 4). The job of the printer has changed its craft since printing was done with two types until the current digital technology that obviates the craft and mutes its mechanical operation with plotters and laser printers. The 527 businesses concentrated in 20 blocks form an acoustic territory, which contributes to an environmental identity that still survives among the sound of traffic.



Figure 4. The neighbourhood of San Nicolás

With the imminent reinvention of the graphic sector due to the digital modernisation and before urban interventions that predict changes in the neighbourhood, it is advisable to preserve the memory of a craft of proven tradition and rootedness, articulating its coexistence with the housing. According to Southworth, 'in many cases the design of soundscape itself could be a way to make a city less tense, more enjoyable and informative for those who live it' (1969), therefore, the analyses and diagnoses that are made to do urban interventions, should support positive actions

towards a more balanced soundscape, that keeps its identity features. It is necessary to incorporate methodologies, in a creative and interdisciplinary way, that seek to better understand the places from history, perception, and space to achieve tools that contribute to a better management of our habitat. The formerly industrial 'noise' of the printing machines is not itself a *lo-fi* soundscape but rather, depending on the relationship established with the environment, it can be part of a balanced soundscape that inserts into its ambient sounds that identify it. In San Nicolás, machines provide the acoustic condition to the territory, since they subtly add its rhythm to the landscape composing a true industrial symphony.

Today, when architecture accommodates itself to the flows of global capital and is ephemeral by necessity, when networks are changing the traditional concept of physical space, when places are the result of the intersection of physical space and virtual space, the *hi-fi* soundscape, defined by Murray Schafer (1994), accounts for specific cultural features and is one of the elements that counteracts the relocation of culture. This new definition of *territory* synthesises space and society through cultural manifestations that have an acoustic expression with sound objects that well managed, contribute positively to the identity of the spaces.

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## Author

Architect and musician. He is a professor and researcher at Icesi University where he is in charge of courses on art and sound. He is part of the Seminar of Esthetics that deals with theoretical reflections and research on urban topics. Since 2013, he coordinates the annual Laboratory of Visual Arts of the Ministry of Culture about the soundscape of Colombian coffee region.