



Report

Soundtracks of Possible Futures: About the Futures Soundscapes Lab

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Abstract

The working model of the laboratory of soundscapes of the future, a graduate laboratory inspired by the conceptual framework of Candy, Dunagan, and Schafer, is presented. The concepts of acoustic design, phonosphere, and sonor are addressed to explain the sequence of work then, the results achieved so far, and the areas of opportunity to improve this learning experience.

Keywords

Soundscapes, sonor, phonosphere, acoustic design, futures sounds

Introduction. A World of Sounds

What might the future sound like? This is the central question behind the laboratory of future soundscapes, a learning experience carried out for the past five years in the postgraduate program of Futures Studies at Centro de diseño y comunicación, an educational institution located in Mexico City. How is this workflow, what results has it produced so far, what is the learning experience of the students who have taken the laboratory, what topics appear in the sound pieces, and how can this work model be improved? This work addresses these questions to describe the model, its scope, and areas of opportunity.

The most usual way of communicating future scenarios in the framework of a foresight process is in written form. However, in recent years organizations such as Arup (2019) and the Institute for the Future (2016) have created future scenarios with visual and audiovisual elements.

This paper will understand the soundscape concept as an "acoustic environment as perceived or experienced and/or understood by a person or people, in context" (ISO, 2014, p.1). Soundscapes refer to external and urban environments, although not exclusively, and have a variable duration, ranging from a few minutes to several hours. Over the last few years, authors such as Dick Botteldooren, Catherine Lavandier, Cergy Pontoise (2011); Budhaditya Chattopadhyay (2014); Milena Droumeva (2015); Kang Suna, Bert De Coensela, Karlo Filipana, Francesco Aletta, Timothy Van Renterghema (2019), among others, have studied the production form, attributes and scope of soundscapes in the present.

This text made of sounds is produced by someone concerning a specific time and space (sonic environment); therefore, it implies a context that involves different sensory stimuli (including noises, according to Chattopadhyay, 2014) that can evoke thoughts and emotions in the audience. In other words, soundscapes involve a semiosis process, are meaningful and can be produced and understood as stories (Botteldooren, et al. 2011).

Making a soundscape involves the elaboration of digital scrapbooks, whose potential has grown and become much more accessible thanks to the rise of mobile telephony. In a sense, the act of recording, compiling, and then post-producing soundscapes is a curatorial act, a creative act (Droumeva, 2015). Soundscapes require analytical and concentrated production and listening, so they contribute, when used appropriately, to provide an experience

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and a better understanding of the environment. For this reason, they are used for architecture, planning, and, in this case, to study future representations.

The working model we describe is inspired by Murray Schafer's (1977) framework. He refers to the acoustic design as an "interdiscipline in which musicians, acousticians, psychologists, sociologists, and others would study the world soundscape to get her order to make intelligent recommendations for its improvement." (p. 4). Michael Southworth coined the original concept (1969); however, Schafer amplified the reflection on acoustic design and encouraged the analysis and production of soundscapes, stating that the entire world is a single musical, then the soundscape is a fragment that narrates a series of listenable events.

The approach proposed by Schafer is a response to noise pollution; our adaptation of his vision responds to the need to expand the repertoire of resources for communicating the outcome of the prospective process, resources that help facilitate the understanding and scope of long-term scenarios. By emphasizing the language of sounds (noises, music, dialogues), students increase the repertoire of skills to narrate a long-term story, facilitating the immersion of the analyst conducting the study and the visualization of alternative futures, as well as the audience interacting with the result.

Just as Schafer states that the world sounds, we will consider that the futures have sounds. Alternatively, we can represent a present idea about possible futures using sounds (incidental noises, music, dialogues) that tell a story. To design the story, students take elements from the phonosphere (Tarakanov quoted by Volniansky, 2017, p. 1), consisting of sonors (grammatical particles or single tones) that surround ordinary human life. Through incidental sounds, music, and speech, soundscapes suggest an environment and a series of events that unfold in some direction. In this order of ideas, in the laboratory of future sounds, attendants explore the phonosphere and create future scenarios by collecting, transforming, and organizing sonors.

The registry and analysis of future soundscapes are familiar; many studies worldwide prove this. For example, Josep Llorca-Bofi, Vicent Llorca-Bofi, and Ernest Redondo Domínguez (2019) explore soundscapes as a leitmotif of the architectural work in *Representation of the soundscape in the architectural design process*. In turn, the composer and technologist Marco Alunno (2018) describes an installation with parametric loudspeakers called *The Soundhouse* in *Sound Straight Ahead: Parametric Speakers in Two Soundscape Installations*.

In the paper *Soundscapes of an Outbreak* (2020) Mikki Kressbach explores the sonic experience of silence in the opening scene of Danny Boyle's film *28 Days*. For their part, Yanan Hou et al. (2022) use soundscape analysis to evaluate an ecosystem's conditions in work *Acoustic Sensor-Based Soundscape Analysis and Acoustic Assessment of Bird Species Richness in Shennongjia National Park, China*. In this same logic that takes advantage of the soundscapes for the environmental study, Iván Rodríguez, Jonas Philipp Lüke, and Fernando Luis Rosa (2022) address the case of an instrument for the registration of the biophony, anthrophony, and geophony of a particular area in *MASE: An Instrument Designed to Record Underwater Soundscape*.

However, the value of soundscapes in facilitating immersion in the future scenarios produced in a foresight process is a field with many opportunities for exploration and discussion.

Regarding the Futures Studies framework, this educational experience takes up Joseph Voros' (2002) foresight model and Candy and Dunagan's (2017) approach to experiential futures. For this work, we are considering Voros' sequence, 1. Inputs (analysis of what is happening in the system), 2. Prospective analysis (analysis of what could happen); 3. Outputs (synthesizing the results of the prospective visualization), and 4. Strategy (proposing what should be done based on the findings), we can state that the futures soundscapes lab focuses on stage 3 (outputs).

According to Candy and Dunagan:

[A]n experiential scenario is the manifestation of one or more fragments of an ostensible future world in any medium or combination of media, including image, artifact, and performance. It involves designing and staging interventions that exploit the continuum of human experience, the full array of sensory and semiotic vectors, in order to enable a different and deeper engagement in thought and discussion about one or more futures than has traditionally been possible through textual and statistical means of representing scenarios (Candy, 2010 quoted in Candy & Dunagan, 2017, p.5).

In this order of ideas, the laboratory intertwines the approaches of Candy, Dunagan, and Schafer to facilitate communication and immersion in future scenarios, although elaborating on these sound pieces can be challenging for the students.

Methodology

The laboratory is an online experience conducted once a year during the second semester of the Futures Studies program as a complementary activity to the fixed curriculum. The teaching-learning model is evaluated and optimized yearly to offer better results. The deliverable of this lab is a 1–5-minute soundscape of the Future produced by each student, inspired by the stories the participants wrote in the previous semester during the creative writing of future scenarios course.

The stories that the students have developed explore possible futures of a topic that each student has freely chosen (pedestrian mobility, pollution, the electoral process, etc.). These stories are written in Spanish, and students are encouraged to tell a story that rescues the local look and feel. These attributes shape the scripts that will later become the soundscapes.

The laboratory has a total length of 16 hours divided into weekly sessions, according to the following sequence:

- Acoustic design, conceptual framework, and technical guidelines to create a soundscape.
- Exploration of the phonosphere: noises, music, nature sounds, voices. Fieldwork to listen and distinguish between different sources, stakeholders, and levels of sound experience.
- Association of images with sounds. Exploration of art and mood boards.
- Consulting sound libraries like *Splash Sound* (2022) and *Pexels* (2022)
- Elaboration of a script for a future soundscape. Speculation and exploratory research to transform the original story into a script. Breaking down the sounds that the story will need.
- Sonor collection: noise and dialogue recording, search in public and personal archives.
- Production of a 1–5-minute piece with Reaper software.
- Seminar for listening and giving feedback.
- Optimization of final pieces.

Figure 1 presents a diagram developed by one of the participants (López, A., 2022) to illustrate the laboratory process.

We took special care to ensure that the lab would provide the participant with creative tools to experiment and communicate future scenarios without professional equipment or sophisticated software for acoustic design. That's why the experience involves using accessible sound archives and software to facilitate the replicability of the model.

Participants can design the scenario, collect sounds from available archives, or produce recordings. They include music (no more than one minute of previously recorded music) and dialogue to shape the story. In this sense, the workshop gives greater freedom concerning the original meaning of the term soundscape, which is more a "cutting" of the phonosphere rather than a creative treatment of it.

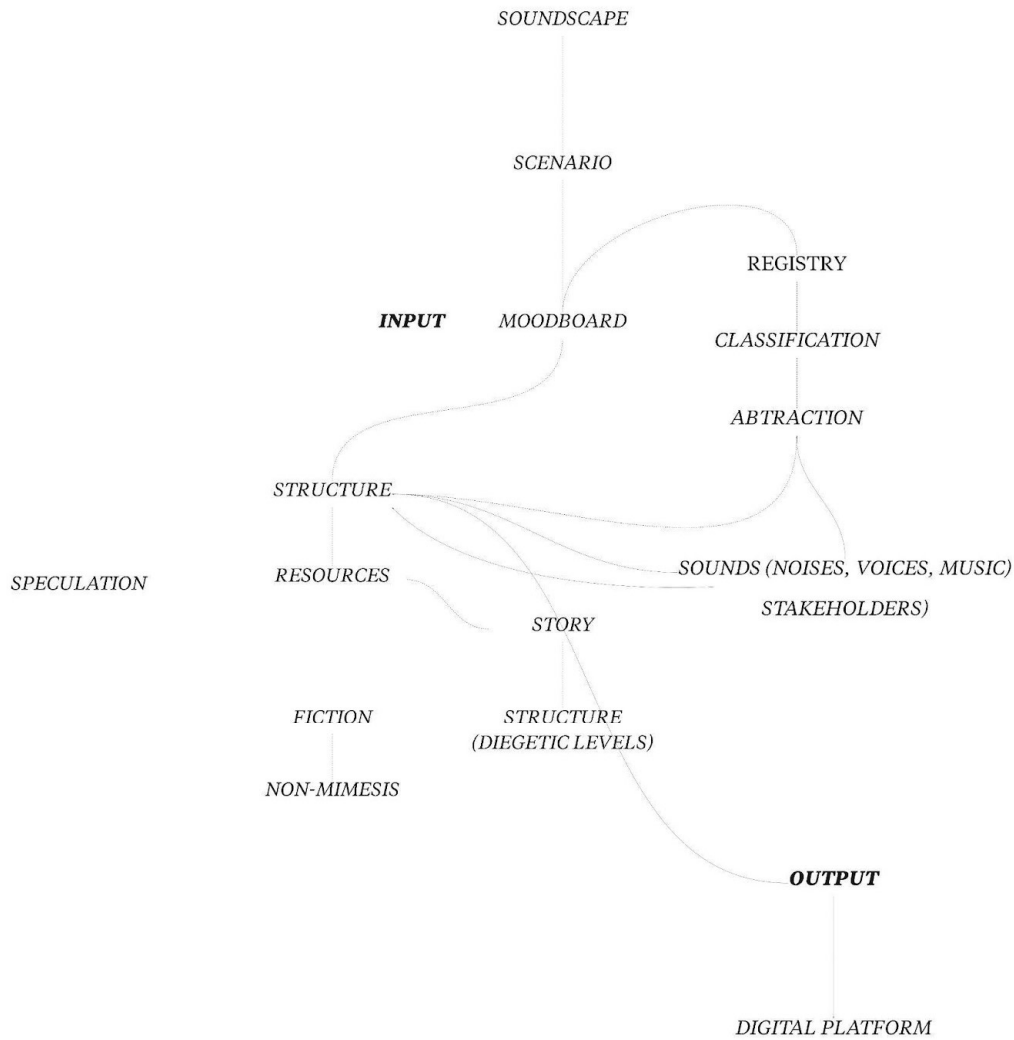


Fig. 1: Futures Soundscapes Lab Workflow. Source: Adair López, 2022.

Between 2019 and 2022, the laboratory achieved 31 sound pieces, some of which were published in the Journal of Futures Studies (Santiago, 2020 & 2021). Most of these materials are available on Bandcamp digital platform (2022), where each sound collection corresponds to a cohort of students.

Findings

We interviewed four workshop attendants between August and September 2022 to document their experiences. To recruit volunteers, we sent an open call for attendants from the most recent generation to have this experience. We asked students about the learning process, the challenges they faced, the possibility of replicating this procedure in other contexts, and the usefulness of the experience.

Students agreed that this is one of the graduate program's most valuable and exciting workshops. Most interviewees had previous experience in storytelling and multimedia text editing, making it easier for them to learn Reaper. "Although I was not familiar with the software we used in this workshop, I had previously edited videos, and that experience was useful for this course" (Quiroga, S., 2022).

During the process, students discovered certain preconceptions about what the future might sound like: "I realized that we associated the future with laser beam sounds and robots because of the heavy influence of the media, so it was an opportunity to question that and look for other ways." (Quiroga, S. 2022). Another meaningful result was that the interviewees found it stimulating to explore sound libraries worldwide to build their stories.

During the sound search process, it was also relevant that the students recorded new sounds and retrieved materials from their archives to create the stories: "I used the ultrasound recording from when I was pregnant in my soundscape; I was thrilled." (Lonna, 2022). It is true that thanks to the daily use of cell phones and applications that involve sounds, such as Spotify, iTunes, and WhatsApp, it is common for participants to possess a personal sound library that can help in the creative process.

Not all interviewees agreed on the ease and enthusiasm for the theoretical framework underpinning the learning model. For some, it was exciting and enlightening; for others, it was complicated and too technical; most considered that they would do a future soundscape again to facilitate the immersion of the audience shortly: "I would propose to make a kind of showcase to present the scenarios with words, videos and sounds, even extended reality, to achieve a more immersive experience" (López, A., 2022), "I used the lab experience to produce a soundscape in another class and was able to easily communicate the message" (García, F., 2022).

An external factor influencing the experience of the program is that since it is not part of the standard curriculum, which contributes to credits to the graduate program, not all students commit to the process and manage to bring the piece to its final version. In this regard, the laboratory will be included as part of the fixed curriculum to encourage students to commit to the process and take the soundscape to the final stage. Distance and skepticism are since not all participants identify the relationship between the production and prospective frameworks. Those who do not have experience in the field may be overwhelmed, even if it is not a requirement to have previous knowledge of acoustic design.

Regarding the themes of the stories, we wrapped up a preliminary classification of all the soundscapes made so far, resulting in the following (Figure 2). These sound pieces express the participants' expectations and concerns about the future: society, values, health, wellness, education, work, and environment appear as the most recurrent threats in Mexico City and the world.

An unforeseen utility concerning this communicative tool is that it facilitates the collective imagination and has an ethnographic value as helpful material for studying desires, wishes, and beliefs.

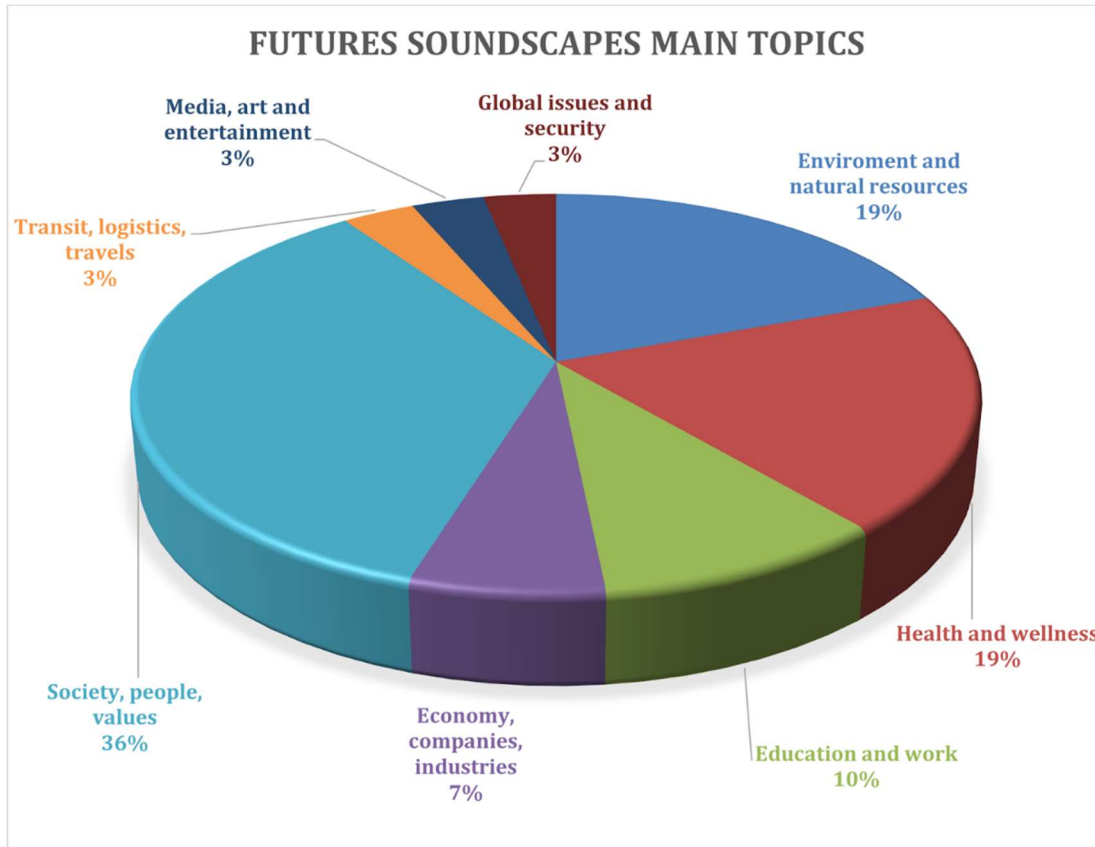


Fig. 2: Futures Soundscapes Main Topics. Source: Futures Soundscapes Lab Breakdown, 2022.

Conclusion

One pending task for the Futures Soundscapes Lab is to improve the technical and narrative quality of the stories, reduce the use of copyrighted materials, and encourage the production of original sounds. We will also enable students to participate in soundscapes international awards and clarify the relationship between the sound pieces and the different phases of the foresight process.

A crucial next step is carefully analyzing the materials to understand the visions about the future and the criticisms and reflections about the change they contain.

Finally, a possibility to be explored is increasing the scenario's term, which currently occurs for up to 20 years. Still, the next edition will consider scenarios over 100 years to contribute to the student's long-term thinking skills (Krznic, 2020).

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