

## ***Resound/Su Sonu Torrau in Assolo – A case study on soundscape enhancement as a means to impact on the depopulation process in a disappearing village of Sardinia***

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### **Abstract**

This research aims at analysing the connection between soundscape and depopulation in Assolo, a Sardinian village with a population of 447 that, according to statistical projections, is doomed to disappear within sixty years.

While Assolo's landscape is rich from a sensorial point of view, it is at the same time endangered by the depopulation characteristic of an economically impoverished area.

This research, the first of its kind in Italy, brings together an esthetological analysis, enriched by a musicological approach. Resulting data are assembled through an artistic gaze that facilitates a multimedial fruition of the sonorities.

Because the relationship depopulation/soundscape has not been object of thorough studies until now, this research has the potential to provide an unprecedented insight into the mechanism that transforms awareness of acoustic soundscapes into a driving force that, based on the enhancement of local soundscapes, could attract visitors, thus triggering an economic return.

Added value of this project is the fact that Assolo's population will be directly involved in the collection of sounds and also be educated in the recognition, conservation and restitution of sounds. The community will form into a living, sustainable laboratory, able to work on the acquired awareness of their immaterial heritage.

### **Keywords**

Soundscape, depopulation, endangered soundscape, immaterial heritage, soundscape recognition, soundscape conservation, soundscape restitution, Sardinia.

### **Introduction**

The first time that we thought of a relationship between soundscapes and depopulation was after visiting *la città invisibile* [1], a photo and video exhibition aimed at capturing the people of one of Sardinia's disappearing villages.

Inspired by a research published by the Regione Sardegna [2] in which 31 villages are forecast to

disappear completely within 60 years due to an irreversible process of depopulation, the exhibition shows the black and white portraits of the villagers, printed by artist Gianluca Vassallo in poster size and placed at the facades of several buildings and walls around the village.

It was reflecting on how a visual documentation of (disappearing) places and people felt urgent and necessary, that we started to think about documenting another important element of life: soundscapes.

The coming together of an aesthetician, a musicologist composer and a storyteller, and the alignment of our professional combined experiences, resulted in a dialogue that became a true exchange of intelligence, skills, and practices: three approaches that, while retaining their autonomy, have harvested the richness emerged from their encounter. Early in our discussion, we realised that such a multidisciplinary approach was a novelty in the academic field, as was a novelty the idea of soundscape enhancement as a means to impact on the depopulation process.

*Re-Sound/Su Sonu Torrau* is, first of all, a project that has an urgency to be narrated. Depopulation in Sardinia has been, for decades, at the centre of an on-going conversation, with an increasing number of studies and articles being published by an increasingly wide category of subjects across the political spectrum, engaging the most diverse fields of expertise.

In some areas of Sardinia, depopulation is a phenomenon that goes back to the mid-nineteenth, but it is in the past sixty years that it has reached worrying levels, as emphasised by the study that inspired the photo exhibition:

"[...] within the 60 years between the 1951 and the 2011 censuses, 60% of the municipalities have shown a demographic decline (228 over 377 municipalities) with one third of these (35.5%) recording a decline above 40%." [3]

Studies and commentaries, outlining the seemingly unavoidable disappearance of yet another municipality, occupy with frequency Sardinian newspapers and

television channels, while solutions are explored at every level of government, ranging from the mayor who tries to halt the process with the ingenious expedients of selling houses at the price of €1 to whomever be prepared to move into his municipality [4], to supplying super-fast internet connections to attract professionals [5], to the trade union suggesting to counter

## Mapping Assolo

Assolo, the village at the centre of our project, has a tiny population of 392 (with a 2,16% negative variation in the 2009-2015 period) [9]. The origin of its name, which sounds almost ironic today, is thought to be related to the Phoenician word *hescel*, meaning dense forest, although the actual etymology remains obscure and is probably linked to the pre-nuragic era starting around the 6<sup>th</sup> millennium BC. What is undeniable is that the name Assolo has an instant, evocative musicality in it.

The village is immersed in the thick forest typical of the Marmilla region, with century old holm oaks crossed by ancient pathways leading to the Giara, a steep-sided basaltic plateau at about 500 meters (1,600 ft) formed some 2.7 million years ago and still home to an ancient Sardinian horse breed, *cavallini della Giara*, the last known herd of horses still roaming wild in Europe. The irregular geometrical plan of the area and the considerable variations in altitude, create a landscape of breath-taking views, punctuated by the stony severity of a multitude of stern *nuraghe*, rippled by the gurgling of lush springs and waterfalls, framed by the rustling of evergreens.



The village, overlooked by a continuous rocky wall, has retained its rural imprint, unfazed by modernity. The little economic activity continues to be based on agriculture and farming, while 55% of the total income earned in Assolo comes through the collection of pensions, and half of the population has an average yearly income of just €4,506 [10].

Assolo has a density of population of 24, compared with 68.8 inhabitants per square kilometre of Sardinia and Italy's 206. The modest population consists of 175 families, divided among 231 houses, with 32% of the families being single-person and another 27% two-

depopulation by relocating in the remote villages those refugees landing on the Sardinian shores in search of asylum [6]. One is the point that meets every body's-agreement: depopulation is inextricably linked to an impoverished economy [7] and to the consequential loss of basic health, education and transport services [8].

people households. Since 2005, only 8 new buildings were built in Assolo, with the bulk of its 231 houses (62%) built before 1971 [11].

Located outside any means of communications that is not a private car, excluded from most major (and minor) commercial activities and long ignored by mainstream media, Assolo has hit the deadlines in recent months as one of the 31 villages doomed to disappear within the next sixty years [12]. But why, amongst the 31 villages, have we decided to concentrate on Assolo?

It has not been a random pick considering that, from an acoustic point of view, the tiny village in the middle of the Marmilla region represents a “happy” example on how, next to a farming economy with its artisans’ knowledge – playing a pivotal role in the sonic communal life - we find the sounds produced by the natural resources, the forests from the Giara towards which the local population shows a strong attachment. This is compounded by the fact that Assolo falls among the 20 municipalities belonging to the *Paesaggio Protetto della Marmilla* (protected landscape of the Marmilla region) and that it already hosts a *Centro di Documentazione Ambientale* (environmental documentation centre), an institution that, in the past years, has promoted several educational and recreational activities finalised to the fruition of the territory through a sensorial approach. And last but not least, Assolo’s local administration has, already in the past, demonstrated interest in exploring innovative approaches for a rebirth of the village, a local administration currently oriented at the enhancement of the material and immaterial heritage, enhancement that has the potential of being achieved also thanks to the presence of the *Gruppo di Intervento Locale* (local intervention group) of the Alta Marmilla, a consortium company geared to the local development of 44 countries associated to it.

The aim of *Re-Sound/Su Sonu Torrau* is unambiguous: a research on soundscapes that starts by probing its theoretical principles first and, only subsequently, is aimed at an actual intervention on the territory, an action that, we hope, will help trigger a virtuous economic cycle to counter the haemorrhage of a population leaving to find means of living elsewhere.

It is important for us to specify how any intervention from our part will be subject and subordinated to the in-depth study of Assolo’s sonorities and to their classification. We believe that the first step towards the restitution of any heritage of intangible sound can only pass through its deep knowledge and understanding, a thesis that we will develop and explain later in this paper.

## **In the beginning was the hearing: an aesthetological approach**

The premise of this research is that all soundscapes are intangible common assets and that their wealth is the result of the stratification of different rhythms and 'sound narratives'. These are but the product of the very cultures linked to the act of inhabiting, each of which 'resonates' in a unique way, different from any other. The places that we inhabit are, therefore, marked by a profound identity of sounds, an identity linked to the *morphology of the territories*, associated to their specific natural configuration, to the forms of settlement, to the cultural dimension of its inhabitants.

We need to go beyond the dominance of the sense of sight for a preliminary aesthetological reflection on the acoustic characteristics of a place and a reflection on our ability to experience place through hearing. This will result in a new spectrum of analysis, rooted in the phenomenological field.

Soundscapes, understood as *invisible and immaterial assets* that can change due to a multitude of factors, offer themselves as objects of an aesthetical research, thus serving and supporting a new 'sensorial' approach. This is intended to lead an exploration of places aimed at bringing out modes of perception that have been neglected until now. For this reason, our project, starting from its generic approach and zooming into the object of investigation, will always translate into the examination of soundscapes in relation to the subjects which, interacting with the surrounding environment, experience them.

In virtue of what stated above, it could be useful to dedicate a preliminary reflection to the very concept of soundscape as it defines a perceptive phenomenon centred in the ear but, to apply an analogy with the classical definition of landscape, we can certainly acquire at the same time R. Murray Schafer's definition of soundscapes as any field of acoustic study consisting of events *heard*, not of objects *observed* [13].

Notwithstanding the side from which we approach the issue, we can state with certainty that, just like it happens with a landscape, soundscapes too fail to resolve into an object, because the concept of soundscape does not present itself as objective but rather perceptive and, as such, its focus falls through the 'hearing' of a subject through the ears. Hearing represents the leitmotiv of our research in Assolo to such an extent, that we could start our reasoning around soundscapes by saying "in the beginning was the hearing". This approach is further validated by some comments of Schafer himself who places in the Renaissance and the discovery of the press and of the prospective vision, the end of the primacy of the ear in the western world [14]. Since the Renaissance, the eye has conquered primacy giving birth to today's ocularcentrism in society: "Before the days of writing, in the days of prophets and epics, the sense of hearing was more vital than the sense of sight. The word of God, the history of the tribe and all other important information was heard, not seen." [15]

These are essential clarifications, if we want to study soundscapes starting from the subject experiencing them. And we are talking about an experience which, when compared with the visual experience, retains its own specificity because, as explained by French philosopher and aesthetician of the phenomenology Mikel Dufrenne, listening "means to internalize sound" [16] from which derives that "what the ear can do is but welcome the sound". We can also reconnect this to Schafer's passage stating that "the eye point outward; the ear draws inward" [17]. While eyes have eyelids, ears do not have *ear-lids* to be shut on demand, this makes them play an important role in the aesthetic experience of place, be it urban environments, natural landscapes or simply architectural structures. Although we are used at thinking of urban, architectural or landscape spaces as visual, they all define also a soundscape. To quote Rosario Assunto's *Il Paesaggio e l'estetica*, "the act of listening, such as involuntary listening and therefore so much more conditioning, belongs to the aesthetic experience [...] just like and with the same authority as the act of seeing" [18] from which emerges an explicit relationship between auditory and synesthetic perception. The mere fact that humans have ears positioned laterally, ensures that the sense of hearing is one of the most significant in spatial terms. Assolo has immediately appeared as an ideal object of examination and the perfect candidate for our case study. Furthermore, in a world dominated by hi-fi systems, the tiny village represents still a lo-fi soundscape where it is still possible to listen into the distance, thanks to the role played by the element of silence.

We must, at this point, specify that silence is not to be intended simply as the absence of sound. Silence is a presence, a positive value whose importance is even more evident when we consider that it is through the very negation of silence that the advent of modernity manifest itself: through the roar that breaks the silence and with the pause that marks the rhythm of the sounds. As noted by Gillo Dorfles [19], silence is comparable to the void, it is the pause between two sounds, the in-between, "what lays in the middle of two or more distinct identities" (ibidem). It is only through silence that it is possible to listen, as silence poses as "aesthetic generating factor that allows us to taste that interval between [...]two phrases of a musical composition" (ibidem) or, more simply, it allows us to listen to the sound of Assolo's local church bell, acoustic centre as well as physical barycentre of the village that, depending on how the clapper punctuates the tones, is calling everybody to celebrate or announces a new loss for the community.

But, as we will discover, silence in Assolo can take on a variety of connotations, like when it appears to signal the loss of those rhythms that were used to mark the life of its community. This is what happened with the bell of Assolo's primary school, strong signal of a denied soundscape. "It's all because of depopulation", they tell us in the village. There are not enough children in Assolo to justify keeping the local primary school open, so children are 'forced' to merge into the primary

school of a nearby village and Assolo's school bell rings no more.

When we understand silence as pause or diastema, Assolo makes itself perceptible to the ears even before becoming perceptible as a visual space. It seems then inevitable to recall yet again Mikel Dufrenne's passage in which we read that if objects reveal themselves to us through vision, then it is through the sound that they announce themselves [20]. Hence we can state that Assolo announce itself first of all as an atmosphere.

But what are we specifically talking about, when we refer to an atmosphere? Here we face a rather "esoteric" concept, as defined by Salvatore Tedesco [21]; but what concerns us is that it offers itself as "immediate and, at the same time, difficult to topicalise *because* immediate." The atmosphere presents itself as "an emotional-affective state induced by certain environmental factors where the opposition by the subject who is taken out of the environment stops, and gives way to a maximum continuity between the two." [22]

In this respect, Tonino Griffero explains how "Atmospheric perception is [...] a holistic and emotional being-in-the-world." [23]

As we know, a reflection about atmospheres revolves today within the contexts of diverse practices and heterogeneous disciplines. And yet, what we would like to highlight is that Gernot Böhme, leading representative in the study of atmospheres, in his *Asthetik* (2001) and *Architektur und Atmosphäre* (2006), interprets atmospheres as a privileged tool to approach the aesthetic experience. In this respect, since we can think of atmospheres as 'interstitial' phenomena between subject and object, intermediate phenomena located between psychic interiority and environmental exteriority (which, beyond the 'natural' includes also a 'social' and a 'communicative' environment), we should ask ourselves whether it is possible to aesthetically fulfil a place based on its sonic atmosphere. This being a query to which Wim Wenders' *Lisbon Story* (1994) gives a masterful answer through its narrative, and which is central in the development of this research and analysis of our case-study.

Not wanting to remain relegated within a world of ideas, aim of this work is also to grasp the uniqueness of different soundscapes. This is why, inspired by the time coordinates followed by the exhibition *Sense of the City*, cured in 2005 by Mirko Zardini at the Canadian Centre for Architecture of Montréal [24], soundscapes will be analysed both in relation to the passing of the hours as well as in relation to seasonal and climatic changes.

## The case study

As we write this paper, we are still in the process of finalising the steps for the practical implementation of *Re-Sound/Su Sonu Torrau* and, therefore, this study does not propose to present final data yet but rather to outline the steps of the process that constitute the case study.

### To Step 1 – gauging the baseline

We will start the implementation of the project by administering a questionnaire to measure to what extent the bulk of Assolo's population is already aware of the meaning of soundscapes as a unique asset. The questionnaire is going to be administered face-to-face by the researchers. The administration of the questionnaire will also represent a first occasion to acquaint Assolo's population with terms, aims and objectives of our project. The baseline so obtained will be used at the end to measure the extent to which *Re-Sound/Su Sonu Torrau* has reached its intended goals.

### Step 2 – training the Masters of Sound

As an integral part of *Re-Sound/Su Sonu Torrau* is the direct participation of the population, early in the project we will identify a number of Masters of Sound: people from Assolo interested in being trained in the recognition and classification of soundscapes. This step is crucial not only to assure that the project is developed *with* and not *for* the population, but also to guarantee sustainability, providing Assolo with the tools to expand and continue to collect, catalogue and present the soundscapes beyond the existence of our project. The Masters of Sound will undergo a 10 hours practical seminar, along the lines of Roberto Favaro's 'sound walks' [25] during which they will learn how to recognise and catalogue a range of sounds.

### Step 3 – collecting soundscapes

We aim to collect three categories of soundscapes: soundscapes of nature, soundscapes of activities and soundscapes of memories. Soundscapes of nature and soundscapes of activities will be collected with the assistance of the Masters of Sounds who will have the opportunity to practice the notions learnt during the practical workshop, while for the collection of the soundscapes of memories we are going to create a physical space in which the inhabitants of Assolo can leave their sonic mark.

### Step 4 – cataloguing soundscapes

Classification and characterisation are often a first step, so several methodologies will be utilised for this purpose. Perception and quality studies have identified a factor that relates to dynamics of the sound, hence the aim of this paper to use it for classification.

The long-term variations in level and pitch of different kinds of music mankind has produced have already been studied in the late 1970s. All of the musical genres that were studied showed the same *1/f* spectral behaviour both for level and pitch variations. Artificial sound with these characteristics was also recognized as "music" by a listener.

In 1987 however, Bak et al. [26] proposed that many complex systems naturally self-organize to a critical state, with the consequent scale-free fluctuations giving rise to spectral power laws. In creating music, man thus seems to imitate the temporal fluctuation of self-organized critical systems, which are quite common in (natural) living environments.

Given the above observations it seemed obvious to analyse the spectrum of amplitude and pitch fluctuations of urban and rural soundscapes and to look for *1/f*-like

features. At one hand, the urban and rural soundscape can be assumed to be the voice of a complex system. At the other hand similarity to music can be an indication of quality.

The collected soundscapes will be marked also for analytical data, such as emotions linked to the soundscape, history, role in the Assolo community, whether it is an endangered/disappearing soundscape.

#### Step 5 – multiplatform storytelling

Through the utilisation of QR Codes and location-triggered podcasts, the soundscapes will be assembled in a physical path to create a soundmap of Assolo and its immediate surroundings. The simple digital platform will allow the visitor to discover Assolo's rich sonic assets. Each element of the soundmap will consist of a description of the soundscape 'augmented' by storytelling in form of a narration based on and intertwined with the words and experience of Assolo's population.

### Acoustic methods

Sounds fragments of 10 minutes will be used for this study. These will be recorded using an electret microphone with omni-pattern, blue colour code, frequency response: 20Hz-20kHz. The spectral density of A-weighted level variations will be calculated using the standard FFT scheme after down sampling, using a rectangular time window of length 10 minutes. The curves obtained in the  $\log(\text{amplitude})$  versus  $\log(\text{frequency})$  domain will be smoothed by 1/24-octave band averaging. For urban and rural soundscapes, often a breakpoint seems to occur in the spectra between 0.1 Hz and 1 Hz.

The method of classifying constituents of soundscapes will be based upon (a) sound type, (b) information category and (c) acoustical information. The sound type is broken down into *music*, *speech*, *abstract* and *everyday*.

The information categories will be: *visible*, *hidden*, *imagined*, *patterns*, *passing of time*, *emotions* and *position in Euclidean space*. This will allow us an insight into the information content provided to the soundscape inhabitant.

Questioning the inhabitants of the soundscape about an individual sound event's interactive function(s) gives us an insight into its perceived semantics. Not only can we see where listeners share interpretations, but also where there is a mismatch between the intended design of a sound event and its common interpretation.

Finally the model will include acoustical information, or the level of listening: which can be either *foreground*, *contextual* or *background*. Foreground sounds are those with which the listener actively engages, contextual sounds provide an underpinning to the foreground, and background are all of the other 'ambient' sounds, often not attended to.

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## Authors Biographies

Cristina Marras graduated in Foreign Languages and Literature with a thesis that analysed the feeling of uprootedness in German exile literature. She was based eight years in Berlin, from where she began to work on the ethics and aesthetics of photography while travelling extensively in Europe and Asia. In 1992, she moved to Melbourne and attained a Master of Communications with a thesis on future scenarios of the Internet. Cristina has worked as a radio journalist with Australian national

radio broadcaster SBS, starting creating audio installations/dramas in 2012. Her creations have been acquired by international network PRX, American broadcasters KHSU and KUT, and by Australian national broadcaster ABC. Cristina has created audio narratives under commission from public bodies (Cancer Council of Australia, BreastScreen Victoria) and private businesses (Polaron Language Services). In August 2016, she returned to Italy where she continues to create sound installations and sound narratives.

Federica Pau (Cagliari, 1979) studied at the University of Cagliari, where he graduated in Philosophy (2004) with an aesthetics dissertation on *The Theory of the Novel* by György Lukács titled *Forma e vita nel pensiero del giovane Lukács. Teoria del romanzo e Manoscritto Dostoevskij*. Later she studied at the University of Palermo, where he earned a PhD (“dottorato di ricerca”) in Aesthetics and Art Theories (2008) writing a paper on urban aesthetics in the thinking of Rosario Assunto, titled *Forma Urbis. L'estetica della città nel pensiero di Rosario Assunto*. Currently she is member of *Equipe de recherche Metaphysique, histoire, concepts, actualite* at Institut Catholique de Toulouse (Faculté de Philosophie) and teaching assistant and exam committee member at the Faculty of Humanities (University of Cagliari). At the University of Cagliari, she has taught several courses, including Aesthetics of Landscape (Faculty of Architecture) and Aesthetics of Architecture (Faculty of Engineering and Architecture). She is a member of SIE (Società Italiana d'Estetica).

Roberto Zanata completed his studies in music composition and electroacoustic music at the Conservatorio in Cagliari and his studies in philosophy at the University of Cagliari (Italy).

He teaches electronic music, acoustic music, live electronics and multimedia in the classes of degree music and new technology at the conservatory of Foggia in Italy. Since the middle of nineties he has worked on chamber music composition with electronics, music for theatre, acousmatic music as well as multimedia works. In International competitions his works have been awarded Grands Prix Internationaux de Musique Electroacoustique (Bourges), Interference Festival (Poland), Sonom Festival (Mexico) and others. His publications focus on the studies of electroacoustic music, soundscapes, multimedia, contemporary music in a cross-arts context, access and the contemporary time-based arts, and devising practices in the performing arts. His music is published by Audiomat, Taukay and Vacuamoenia.

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