

Exploring sonority embedded in cultural heritage: Path, transit and listen through the Silver Route (Way of St James, NW Spain)

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ABSTRACT

Environmental sonority, related to viewing, listening and walking along a path, has only seldom been contemplated in the first European Cultural Route, the Way of St James (Camino de Santiago). The research, focused on a section of the Silver Route (Vía de la Plata) variant (Galicia, north-west Iberian Peninsula), defines several sound environments configured by the sound sources, acoustic properties and the culture of the territory. Integrating the environmental sonority in a musical piece facilitates the promotion of knowledge and awareness of the

sound heritage, together with an implied appreciation for it. The audible spectrum, provided with emotional and evocative power, has an important role in defining cultural heritage from the present to the future. Furthermore, it is particularly relevant in confinement situations as the one experienced in Europe in the year 2020.

Keywords

sound, sonority, audible spectrum, soundscape, sound-walk, musical piece, Way of St James, Silver Route, Galicia, Spain

1. Introduction

The interest in sound transcends its physical properties. Sounds give shape to a sonority generated in a particular sociocultural context that casts how it is lived and experienced (Smith 2000; Prior 2017; Erfanian et al. 2019). Its symbolic content and its evocative power confer sound the capability to work as a vector of sensory communication through an in situ auditory experience or by listening to composed material (Truax 1984; Augoyard and Torgue 1995; Cain, Jennings and Poxon 2013; Revill 2016). Even though the current predominance of the audio-visual component grants the image a larger presence in the processes of perception and appraisal of cultural heritage, the consideration of sonority facilitates the awareness and understanding for both tangible and intangible assets (Pijanowski et al. 2011; Pérez-Martínez, Torija and Ruiz 2018). Sonority intertwines manifold dimensions (ecological, sociocultural, psychological, religious, sportive or recreational) and its analysis contributes to the interpretation and experience of intangible cultural heritage.

The Way of St James, the first European Cultural Route (Council of Europe 1987) and included in the Worldwide Cultural Heritage List since 1993 (UNESCO 2015), embeds a collection of meanings established through time (Sánchez and Hesp 2015). The importance of its touristic function has brought about the replacement of its original sense as a pilgrimage route with that of a cultural product, where the focus is set on bringing into value the tangible heritage (Alonso González 2018). In the present day, walking the Way of St James responds to both sacred and profane motivations (Cova et al. 2019; Roszak 2020), thus making it a destination of a hybrid nature. While following the route, the identities of individual and group become fused together as a result of the very action of walking and of the joint euphoria in the expectation of reaching a symbolic destination in a shared scenario (Lobato and Sainz 2019). According to data from the Pilgrim's Reception Office (2019), among the people who obtained accreditation as pilgrims in Santiago de Compostela (the Compostela), 95 per cent made the itinerary by walking.

As the name 'Camino' suggests, it is of the essence of the Way of St James to complete the path by walking (*camino* is the noun form of the infinitive *caminar*, whose English translation is 'to walk'). Unfortunately, a part of that essence – namely, embedded sounds – is only seldom considered despite the growing interest in sounds

as a research topic (Kang and Aletta 2018). Some artists have composed sound pieces, using recordings made in situ along the Way (e.g. Edu Comelles's CD entitled *Camino. Primera Parte*, 2012), but there are hardly any studies focused on its environmental sonority to promote cultural heritage values. The study of sonority provides an integrated approach to the intangible heritage attached to a multitude of sensory aspects (e.g. hearing, sight, tactile sensations on the face and the feet) that constitute an intangible heritage experience, most of them understood via reproducible media or soundscape. The objectives of the study are as follows: (i) to explore the sonority in the framework of the Silver Route, (ii) to characterise and interpret the character of the sonority in order to integrate it as intangible heritage and (iii) to create instruments to transfer this sonority by means of a sound walk and of a musical piece. This paper highlights the important relationship between sound and place through a record and analysis of the different places that have singular acoustic values along the Silver Route. The results provide an illustrated sequence of the sonic records and a musical piece that also allows functionally disabled people to enhance their experience. They present a creative interpretation of the intangible cultural heritage of the experience of walking the Camino and provide a wider interpretation and presentation tool in promoting the cultural heritage values of a section of the pilgrim route.

The case study is framed within a section of the Silver Route, also known as the Southeast Way or the Mozarab Way, which is one of the nine variants of the itinerary to Santiago de Compostela and starts in the town of Sevilla (Spain). The section runs 191 km from inland Galicia to the town of Santiago de Compostela (NW Spain). This Silver Route variant has been selected due to its key role in the promotion of the cultural heritage for development of less favoured inland areas in Galicia (NW Spain).

2. The power of sonority

From the beginning of the 20th century, sounds recorded outdoors have become an element of the creation of musical pieces. A new language identifying the sources of the environmental symphony emphasised their informative character (Krause 1933). The acknowledgement of recorded sounds as musical objects (Schaeffer 1966) and the concept of soundscape that was born with the World Soundscape Project (Schafer 1969) disclosed the properties of an audible landscape (Schafer

1973) – an audible landscape where ‘once a soundmark has been identified, it deserves to be protected’ (Schafer 1977, 10). In later studies, and with further practice, sounds came to be contemplated as items of information, communication and social construction of space (Altman 1992). In the framework of the World Soundscape Project, composer and acoustic communication researcher Barry Truax (1996) suggested to focus on the communicative power of sonority because this has particular qualities at the local level. Despite the ubiquity of sound, there is no anonymous sonority, and the soundwalks (Westerkamp 1974) activate listening, whether individual or shared.

Sonority entered other fields through its relation with memory and identity, appraising its intangible cultural value. It emerges in an emotional territory (Amphoux 1993), becomes significant through the interaction of sound with cultural context (Corbin 1998). The acoustic-related landscape indicates a strong connection between sound and the way that landscapes are perceived. Sonority interacts with perception and experience through rhythms, vibrations and echoes (Augoyard and Torgue 2005; Dakin 2003), generating a sonic discourse in particular locations, ‘filling relations with local sound, sonic culture, auditory memories’ (LaBelle 2010, xxv). Besides, on recording sonority in material form, it becomes possible to capture sounds that would have been fleeting in the moment (McCartney 2004) and the door opens to the creation of a phonographic, audio-visual or compositional representation with evocative and symbolic power for the listener (Carles 2007; Butler 2007; Doughty, Duffy and Harada 2016). Following the researcher Michael Gallagher (2015, 560), ‘this performative reiteration of worldly vibration can be affectively potent’ and ‘field recordings thus demonstrate that representation and affect need not be opposed’. Nevertheless, exploring the cultural history of sound, Emily Thompson (2012) suggests the inevitable reformulation of the connection between sounds, space and people in a world where technological mediation is steadily rising, since its manipulation might attenuate or even remove any items that are thought of as unnecessary or noisy.

The rise of sound studies and the popularisation of the term ‘soundscape’ (Pinch and Bijsterveld 2012) have promoted the embedding of sonority in the heritage discourse. UNESCO (2017) defines sound’s value as a multitude of dimensions related to the welfare of humans. The promotion of the year 2020 as the International Year of Sound by the International Commission for Acoustics

(celebrated in 2020–2021 due to the Covid-19 pandemic) introduces the meaning of a heritage as experienced or in memory. The concept of sonority as intangible heritage is linked to significant features as much as the culturally embedded practices with associative, sensory and functional values (Fredheim and Khalaf 2016). In this way, sonority integrates several forms of perception and transmission of the sonic environment, and the definition of sound heritage appears when it is concerned with the culture of the territory (Tourle 2017) by considering the listening modes without obliterating the recorded sounds. Missing from the heritage discourse about the intangible values of the Way of St James is the aforementioned understanding of sonority. The knowledge of the Way’s environmental sonority contributes to the contextual understanding of the intangible experience of walking the Camino, suitable for cultural heritage interpretation, protection, enjoyment and education.

3. Exploring the sonority of the Silver Route

The study of sonority throughout a section of the Silver Route is founded on the notion of sonority as a cultural code, emphasising not only the practice of preservation but also the art of making an intervention towards the future. The selection of sites in the case study (Figure 1) encompassed natural environments (with scarce or no human activity) and rural environments (with important human activity). Sampling was conducted in sites chosen so as to include forests, fountains, hermits, *pazos* (‘small palaces’), town squares and the Santiago Cathedral – all of them referents of the Galician culture for the walking pilgrims. The fieldwork was conducted on 1 September 2018, along the path leading from the town of Ourense to Santiago de Compostela in Galicia. Air temperature oscillated between 19°C and 35°C, with relative humidity of 74 per cent when the recording was started. The action of recording itself did not in any way modify or alter the sounds. The pictures were taken simultaneously with the sound recordings.

The fieldwork was made with a SONY PCM D100 recorder, a Canon EOS 1200D digital reflex camera, a GPS and a telemeter. Storage, visualisation and analysis of the records were made with the software applications Sonic Visualiser, Audacity 2.1.1 and Cubase 5. Data visualisation included waveforms and spectrograms, the former displaying sound intensity relative to the silence threshold (0 dB) and the latter displaying the general trend of sonic

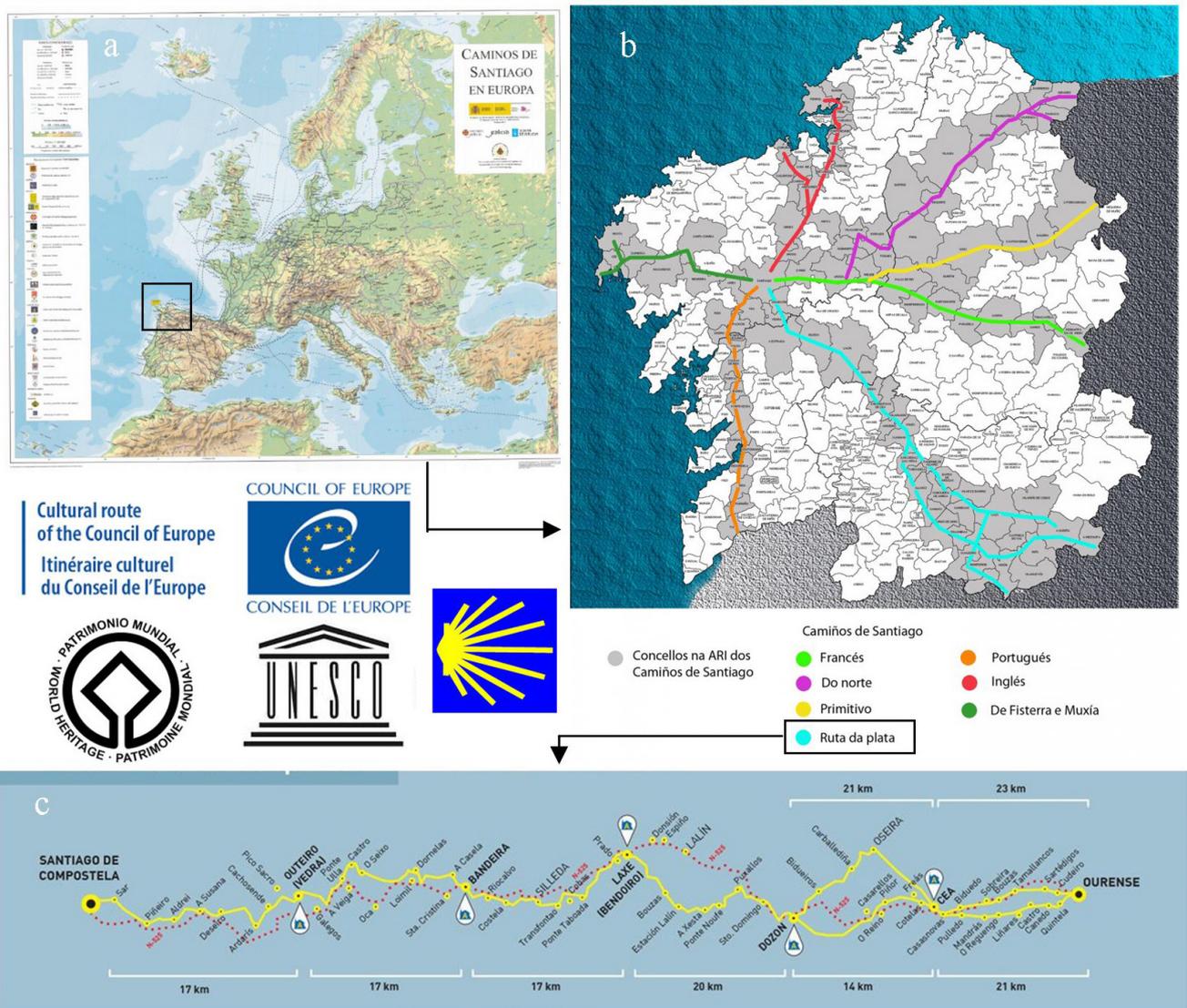


Figure 1
Delimitation of the case study within Way St James variants (Maps from public resources © IGN Spain, © Xunta de Galicia Spain, and © Turismo de Ourense Spain).

energy, the sonic layers and the presence or absence of masking, pink and red colour tones standing for high energy levels and blue colour tones for low energy.

The variables used for the analysis of the sonority recordings (noted as R) were the following: the sound's source, natural, biotic or human (geophony, biophony, anthrophony); its intensity and volume, from quiet to loud (piano, mezzopiano, mezzoforte, forte); the frequency and pitch of the sonic spectrum (frequencies measured in Hz); and the duration and timbre (elements or voices). Moreover, the sonority analysis encompassed its nature (static/dynamic, constant/variable) and its textural properties (rhythmic, melodic or harmonic). The above

variables confer to the sonority a general or a specific character, the former identifying an environment and the latter identifying a particular place. To define the soundscape elements, following R. Murray Schafer, we distinguished among the keynotes (not consciously heard, generated by the environmental conditions), the sound signals (sounds consciously heard, in the foreground) and the soundmarks (unique sounds, proper). The interpretation of the recordings (from R01 to R10) was conducted in natural environments, without population or nearby railway infrastructure that might contaminate the sound environment, and in rural environments, with a population centre or close to a railway infrastructure. Both, in most locations, encompassed elements belonging

to the traditional Galician architecture.

Last, a musical piece was composed inviting the listener to perform a virtual journey through the selected stretch. 'Transit, Listening, and Life' highlights sonority, interweaving instrumental music with environmental sounds.

4. The soundwalk

The presence of constant sounds gives a general character to the sonority that disappears when the sound of water (a soundmark) is present. All along the walk (Figure 2), the acoustic environment is provided with harmonic consonance insofar as the listening has a visual correlate. The sonority is distinguishable by degree of naturalness – namely, those where, among the landscape keynotes, the sounds from birds and water are salient – and those where the anthropic sounds mark the listening

in the foreground sound layer (Figure 3). In places with built objects, human-made sound sources come to the fore as veritable signals. Near fountains and bridges, the presence of moving water is a tonic sound.

At the start (R01), the sound oscillation is small, increasing significantly with the arrival of higher traffic intensity; anthrophony draws the attention of the listener, relegating biophony (birds) to the background. While anthropic sounds have a broader dynamic, the sound line with the highest pitch is the biophonic, which enhances the sonority in terms of rhythm; the wind contributes to the enrichment of this polyphony. Following, the wind and the sounds from the fauna come to the fore (R02). Sonority integrates geophony (wind), biophony (birds and domestic fauna) and anthrophony (voices, moving vehicles), contributing to a decrease in the average frequency (table 1). The general character of the sonority, with average frequency similar to the former, is preserved along the

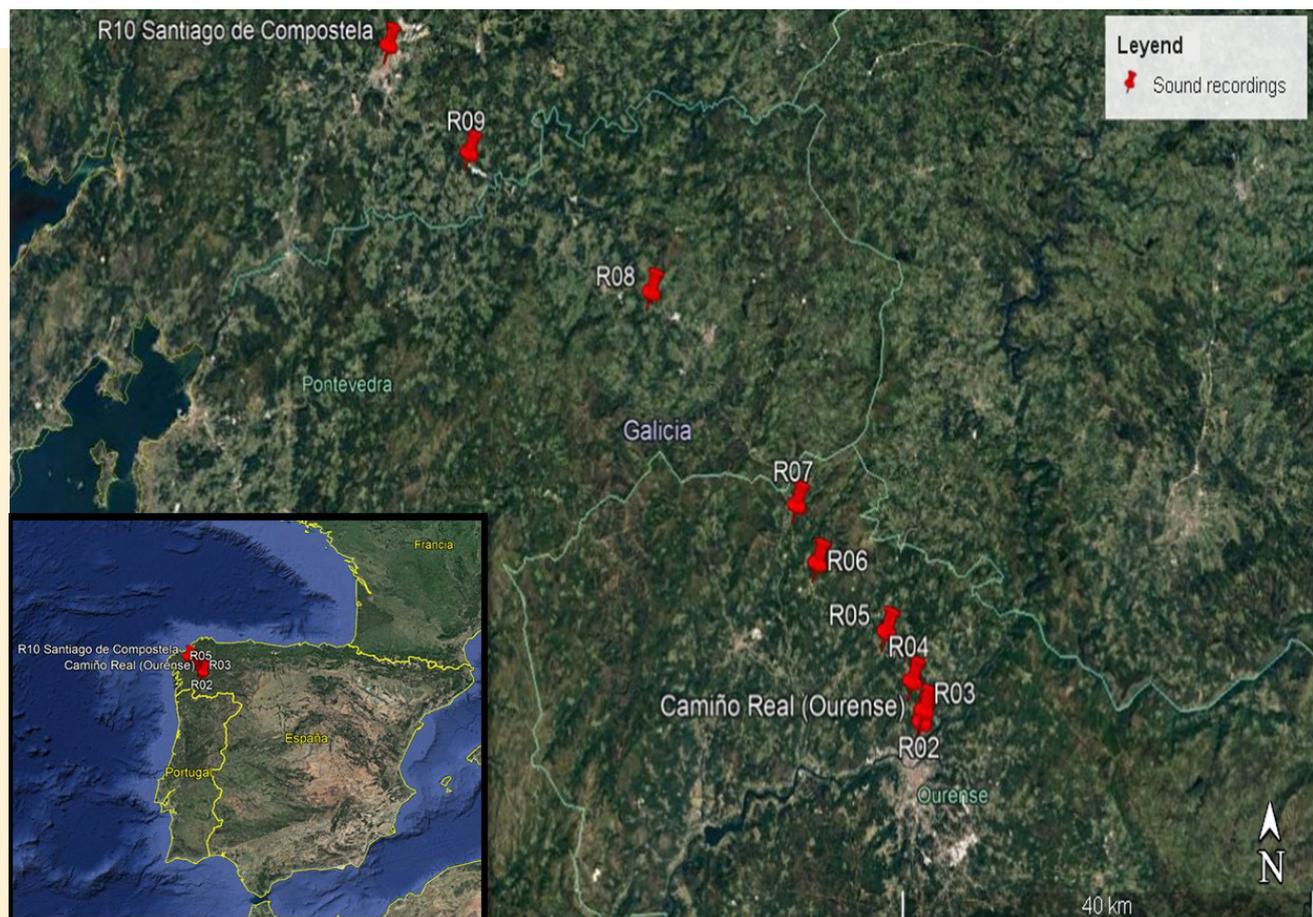


Figure 2
Location of recordings (Source: Own Elaboration).

Table 1
Recordings of Sonority

R	Site (<i>Galician name</i>)	A	C	T	mF	moF
01	<i>Camiño Real</i>	187	Path	10:15	204	151
02	<i>Pazo de Soutelo</i>	224	Palace	10:23	198	117
03	<i>Alto da Costa</i>	309	Hermit	10:38	216	138
04	<i>Fonte do Santo</i>	427	Fountain	10:52	295	157
05	<i>Praza de Tamallancos</i>	443	Square	11:19	120	98
06	<i>Ponte Sobreira</i>	376	Bridge	11:33	305	205
07	<i>Praza Maior de Cea</i>	525	Square	11:50	243	151
08	<i>Bosque de Bendoiro</i>	533	Forest	15:25	193	148
09	<i>Fonte de Santiaguíño</i>	336	Fountain	17:32	138	79
10	<i>Praza do Obradoiro</i>	260	Square	18:20	277	181

R, record number; A, altitude in m a.s.l., T, recording time; mF, mean frequency in Hz; moF, mode of frequency in Hz.

path (R03). In the background layer are the anthropic sounds; in the foreground are the geophony (wind) and biophony (birds and insects). In an additional layer, the sounds coming from building activities can be identified and, near the end of the record, a biophonic timbre is

added that mutes all the other sounds.

The arrival at a fountain on an unpaved and partially wooded site implies a sonority change with the highest average frequency (R04). Geophony becomes audible



Figure 3
Path images (Galician names) including spectrograms: R01 Camiño Real, R02 Pazo de Soutelo, R03 Alto da Costa, R04 Fonte do Santo, R05 Praza de Tamallancos, R06 Ponte Sobreira, R07 Praza Maior de Cea, R08 Bosque de Bendoiro, R09 Fonte de Santiaguíño, and R10 Praza do Obradoiro (Source: Own Elaboration).

in the foreground layer, with micro variations from the soundmark of water. In contrast, sonority without predominance of any particular source characterises the entrance to the square of a rural settlement (R05). Here, human voices and birds singing are sound signals while moving vehicles define the keynotes. Crossing the Barbantiño River (R06), the presence of water gives the sound a high average frequency. The flow of the river is merged with the singing of the birds, following a changing rhythm in the first layer, with the remaining sounds in a second layer, masking the sounds from moving vehicles. The water remains as soundmark in the next stage of the path (R07), while at particular spots, the listening attention is drawn by the sounds of birds, shorter but more melodic and more acute in tone.

Continuing along the path, the soothing sonority highlights the arrival at the forest (R08). The average frequency becomes higher from the presence in the foreground of biophony (sound signals). In the background,

taking the form of keynotes, continual and of longer duration appears the sound of moving vehicles. Water as a soundmark is recovered a little later (R09), where biotic sounds are signals much like a duet with the sound of the fountain in the first layer. Voices from the walkers and the sound of the wind can be heard as a backdrop.

At the end of the soundwalking, the sonority is dominated by anthrophony (R10). On arriving at the Obradoiro square (Santiago de Compostela), the reverberation of the steps on the paved streets, the pilgrims' and the tourists' voices, the chiming of the bells, and the bagpipe music become attached to the culmination of the vital journey performed by the walker. The average frequency is the highest in the entire sound records. Altogether, it conveys a sonority rich in timbre, dynamics and rhythm, with changing and colourful textures, pointing to the journey's end.

The creation of a musical piece informs a work entitled 'Transit, Listening, and Life' (https://youtu.be/H4WP1KVQ_

<CSM 253> (F: 31) virelai "un romeu de França que ya a Santiago foi per Sta Maria de Vila-Sirga" 229v

Como un romeu de França que ya a Santiago foi per Santa Maria de Vila-Sirga, e non pod' en sacar un bordon de ferro grande que tragia en pédença.

R De grad' á Santa Maria / merce e piadade
aos que de seus peccados / lia pede[n] con omidade.
M Ca pola sa omidade / é ela lum' e espello
de todo-os peccadores, / e abrigo e consello:
V e a ssa virgidade / legou forte no vencello
o demo que nos quisera / todos meter so sa grade.

Fragmentos musicales-Tránsito, escucha y vida
Celia Adán

Flauto

Clarinetto

Fagotto

Pianoforte

Fragmentos musicales. Tránsito, escucha y vida
Celia Adán

Figure 4
The conductor's scores of musical piece (Source: Own Elaboration).

FQ). This piece is intended to expand the listener's knowledge, increasing enjoyment of the Camino, as it is a form of heritage interpretation for external use. It joins the sonority of the soundwalk with musical excerpts from the 'Cantiga de Santa María 253 (F: 31) /virelai/ un Romeu de França que ya a Santiago foi per Sta María de Vila-Sirga/229v' performed by two early music instruments, namely, the hurdy-gurdy and the recorder (Figure 4). The listener can explore and recreate the 10 stops found along the Silver Route, discovering the acoustic wealth combined with the harmonic resonance of one of the most important lyrical works from medieval Spain attached to the Way of St James (Monteagudo 2010; Oxford University 2020). The musical fraction of the work includes melodic excerpts from the 'Cantiga'. This part is performed following a score but nonetheless allowing for a certain degree of interpretive freedom (controlled randomness) in regard to 'tempo', 'rubato' and accompaniment in the case of the symphony. The motivation for introducing instrumental sounds is to enhance the recorded environmental sonority, increasing its evocative effect in the long history of the Way of St James with the use of two early music instruments.

The title of the work is significant, since it is intended to generate a full experience of the section comprised by the Silver Route: transit, listening and life. The work intends to motivate the listener to travel through that stretch of the Way of St James (also known as the Jacobean Route), and even though the journey may not be performed in situ, the listener can still perceive the character of the path through the different recorded sound environments. It emphasises the hearing sense while walking over the predominant sense of sight. The sound is alive, and it allows for the identification of the environmental sonority attached to the transit throughout the marked path.

5. Conclusions

The Way of St James is a time bearer, an identity symbol of the European territories from the past to the future, establishing an important referent of European heritage. This first study of sonority in a section of its Silver Route variant mirrors the configuration and the character of intangible heritage, favouring an actual or virtual holistic experience. The study promotes awareness of the sound heritage, which is of particular importance for the experience of the walker. Sounds are vital in this regard because they are attached to the rhythm of the journey and to the culture of the setting. Nevertheless, the role of

sonority in that experience depends on the attitude, mood and approach of the viewer-listener.

The elaboration of the soundwalk builds upon an approach to intangible heritage, understanding sound as both a natural and a cultural component that plays a fundamental role in the experience of the Way. The sonority is a symbol of time and space whose analysis enhances our understanding of the past and the present. Sound records and their use for the creation of composed material not only facilitate the practice of preservation but also contribute to the welfare of human beings in the present and to their projection into the future. The experience and enjoyment of sound environments may help in the reconstruction of emotional welfare.

Since environmental sounds are subject to continuous evolution, the study must pursue new research venues. In the scope of the Way of St James, the study of environmental sonority is only seldom considered. Besides contributing to the possible improvement of the sites and the environments in their different variants, furthering our knowledge of sonority is a fundamental task to promote the awareness and understanding of an important part of its heritage. Often, because acoustic values are poorly understood, they are rarely well managed. The creative interpretation of sonority linked to the intangible experience of walking enhances its consideration and promote its appreciation by a wider audience on site or at home, particularly the Camino tourist.

In this regard, the sonority in transit discloses the importance of sensory experience and appeals to developing the art of active listening while walking through different environments. Acoustic signals send messages that generate emotions, thus expanding our sensory scenario. Although there are moments when sonic experience is peaceful and sound has a character of almost authentic quietness, this is no reason to conclude that sonority has no importance; it is rather the opposite, inasmuch as those are precisely the moments when the walker can enjoy a more reflective environment. The work 'Transit, Listening, and Life' invites a holistic experience of the Way. The environmental sounds of this musical piece are tied together sequentially to emphasise the listening component of the journey while the instrumental sounds highlight the evocative character with resonances attached to the Jacobean Way. 

MATERIAL AVAILABILITY

Recording 01,

https://soundcloud.com/mcar83/r01-camino-real-1/s-cWaXSQz4RyE?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Recording 02,

https://soundcloud.com/mcar83/r02-pazo/s-fKX0l7xoD3e?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Recording 03,

https://soundcloud.com/mcar83/r03-alto-da-costa/s-8G2xFvLQaA1?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Recording 04,

https://soundcloud.com/mcar83/r04-fuente-del-santo/s-ZSNUULibGCr?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Recording 05,

https://soundcloud.com/mcar83/r05-praza-de-tamallancos/s-l7zWrT5aBU3?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Recording 06,

https://soundcloud.com/mcar83/r06-ponte-sobreira/s-cdYEc805vQx?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Recording 07,

https://soundcloud.com/mcar83/r07-torre-del-reloj/s-w0xNMEiex5b?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Recording 08,

https://soundcloud.com/mcar83/r08-bendoiro/s-o8rhUpKf2Kc?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Recording 09,

https://soundcloud.com/mcar83/r09-fonte-do-santiago/s-X8PpdRwsDYI?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Recording 10,

https://soundcloud.com/mcar83/r10-praza-do-obradoiro/s-kFEtp5jpQa0?in=mcar83/sets/path-transit-and-listen/s-0lQwJiFzgVx&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing

Sound walking musical work,

https://www.youtube.com/watch?v=H4WP1KVQ_FQ&feature=youtu.be

REFERENCES

- Alonso González, Pablo. 2018. 'The Camino is Alive: Minor Logics and Commodification in the Camino de Santiago'. *Anthropological Quarterly* 91, no. 3: 969–1000. Project MUSE.
- Altman, Rick. 1992. *Sound Theory/Sound Practice*. New York: Routledge.
- Amphoux, Pascal. 1993. *L'identité sonore des villes européennes*. Grenoble: Centre Nationale de la Recherche Scientifique.
- Augoyard, Jean-François and Henry Torgue. 1995. *A l'écoute de l'environnement*. Marseille: Parenthèses.
- Augoyard, Jean-François and Henry Torgue. 2005. *Sonic Experience: A Guide to Everyday Sounds*. Montreal: McGill-Queen's University Press.
- Butler, Toby. 2007. 'Memoryscape: How Audio Walks Can Deepen Our Sense of Place by Integrating Art, Oral History and Cultural Geography'. *Geography Compass* 1, no. 3 (April): 370–372. <https://doi.org/10.1111/j.1749-8198.2007.00017.x>
- Cain, Rebecca, Paul A. Jennings and John E.W. Poxon. 2013. 'The development and application of the emotional dimensions of a soundscape'. *Applied Acoustics* 74, no. 2 (February): 232–239. <https://doi.org/10.1016/j.apacoust.2011.11.006>
- Carles, José Luis. 2007. *El paisaje sonoro, una herramienta interdisciplinar: análisis, creación y pedagogía con el sonido*. Madrid: Centro Virtual Cervantes. http://cvc.cervantes.es/artes/paisajes_sonoros/p_sonoros01/carles/carles_01.htm
- Corbin, Alain. 1998. *Village Bells: Sound and Meaning in the Nineteenth century French Countryside*. London: Macmillan.
- Council of Europe. 1987. *The Santiago de Compostela Declaration: Santiago de Compostela Pilgrim Routes*. Strasbourg: Reference texts and conventions. <https://rm.coe.int/16806f57d6>
- Cova, Véronique, Julien Bousquet, Cylvie Claveau and Asim Qazi Shabir. 2019. 'The changing dichotomy between the sacred and the profane: a historical analysis of the Santiago de Compostela pilgrimage'. *Journal of Management, Spirituality & Religion* 16, no.1 (January): 109–130. <https://doi.org/10.1080/14766086.2018.1501415>
- Dakin, Susan. 2003. 'There's more to Landscape than Meets the Eye: Towards Inclusive Landscape Assessment in Resource and Environmental Management'. *The Canadian Geographer* 47, no. 2 (July): 185–200. <https://doi.org/10.1111/1541-0064.t01-1-00003>
- Doughty, Karolina, Michelle Duffy and Theresa Harada. 2016. 'Practices of emotional and affective geographies of sound'. *Emotion, Space and Society* 20 (August): 39–41. <https://doi.org/10.1016/j.emospa.2016.06.007>
- Erfanian, Mercede, Andrew J. Mitchell, Jian Kang and Francesco Aletta. 2019. 'The Psychophysiological Implications of Soundscape: A Systematic Review of Empirical Literature and a Research Agenda'. *International Journal of Environmental Research and Public Health* 16, no. 19 (September): 3533. <https://doi.org/10.3390/ijerph16193533>
- Fredheim, Harald and Manal Khalaf. 2016. 'The significance of values: heritage value typologies re-examined'. *International Journal of Heritage Studies* 22, no. 6 (April): 466–481. <https://doi.org/10.1080/13527258.2016.1171247>
- Gallagher, Michael. 2015. 'Field recording and the sounding of spaces'. *Environment and Planning D Society and Space* 33, no. 3 (June): 560–576. <https://doi.org/10.1177/0263775815594310>
- International Commission for Acoustics. 2020. *International Year of Sound 2020–2021*. <https://sound2020.org/>
- Kang, Jian and Francesco Aletta. 2018. 'The Impact and Outreach of Soundscape Research'. *Environments* 5, no. 5 (May): 58. <https://doi.org/10.3390/environments5050058>
- Krause, Bernie L. 1933. 'The Niche Hypothesis: A hidden symphony of animal sounds, the origins of musical expression and the health of habitats'. *The Soundscape Newsletter* 6: 6–10.
- Labelle, Brandon. 2010. *Acoustic Territories: Sound Culture and Everyday Life*. New York and London: Continuum.
- Lobato, Roberto M. and Mario Sainz. (2019). 'On the way to fusión through the pilgrims' route: Factors that maintain identity fusion in collective rituals'. *Group Processes & Intergroup Relations* 23, no. 4 (July): 483–501. <https://doi.org/10.1177/1368430219849690>
- McCartney, Andra. 2004. 'Soundscape Works, Listening, and the Touch of Sound'. In *Aural Cultures*, edited by Jim Drobnick, 179–185. Toronto: YYZ books.
- Monteagudo, Henrique. 2010. *Cantigas de Santa María, Afonso X o Sabio*. Santiago de Compostela: Consello da Cultura Galega.
- Oxford University. 2020. *The Cantigas de Santa Maria database*. <https://www.mod-langs.ox.ac.uk/research/cantigas-de-santa-maria-database-edition>
- Pérez-Martínez, Germán, Antonio J. Torija and Diego P. Ruiz. 2018. 'Soundscape assessment of a monumental place: A methodology based on the perception of dominant sounds'. *Landscape and Urban Planning* 169 (January): 12–21.

<http://dx.doi.org/10.1016/j.landurbplan.2017.07.022>

- Pijanowski, Bryan C., Luis J. Villanueva-Rivera, Sarah L. Dumyahn, Almo Farina, Bernie L. Krause, Brian M. Napoletano, Stuart H. Gage and Nadia Pieretti. 2011. 'Soundscape Ecology: The Science of Sound in the Landscape'. *BioScience* 61, no. 3 (March): 203–216. <https://doi.org/10.1525/bio.2011.61.3.6>
- Pilgrim's Reception Office of Santiago de Compostela. 2019. 'Statistics'. <https://oficinadelperegrino.com/en/statistics/>
- Pinch, Trevor and Karin Bijsterveld. 2012. *The Oxford Handbook of Sound Studies*. Oxford: Oxford University Press.
- Prior, Jonathan. 2017. 'Sonic environmental aesthetics and landscape research'. *Landscape Research* 42, no. 1 (November): 6–17. <https://doi.org/10.1080/01426397.2016.1243235>
- Revill, George. 2016. 'How is space made in sound? Spatial mediation, critical phenomenology and the political agency of sound'. *Progress in Human Geography* 40, no. 2 (February): 240–256. <https://doi.org/10.1177/0309132515572271>
- Roszak, Piotr. 2020. 'Mute Sacrum. Faith and Its Relation to Heritage on Camino de Santiago'. *Religions* 11, no. 2 (February): 70. <https://doi.org/10.3390/rel11020070>
- Sánchez, Samuel and Annie Hesp. 2015. *The Camino de Santiago in the 21st Century: Interdisciplinary Perspectives and Global Views*. London: Routledge.
- Schaeffer, Pierre. 1966. *Traité des objets musicaux*. Paris: Le Seuil.
- Schafer, R. Murray. 1969. *The New Soundscape*. New York: Berandol Music.
- Schafer, R. Murray. 1973. *The Music of the Environment*. Vienna: Universal Edition.
- Schafer, R. Murray. 1977. *The Soundscape: Our Sonic Environment and the Tuning of the World*. New York: Knopf.
- Smith, Susan J. 2000. 'Performing the [Sound]World'. *Environment and Planning D: Society and Space* 18, no. 5 (October): 615–637. <https://doi.org/10.1068/d225t>
- Thompson, Emily. 2012. 'Sound, Modernity and History'. In *The Sound Studies Reader*, edited by Jonathan Sterne, 117–129. Abingdon: Routledge.
- Tourle, Paul. 2017. 'White noise: sound, materiality and the crowd in contemporary heritage practice'. *International Journal of Heritage Studies* 23, no. 3 (November): 234–247. <https://doi.org/10.1080/13527258.2016.1261919>
- Truax, Barry. 1984. *Acoustic Communication*. Norwood: Ablex Publishing.
- Truax, Barry. 1996. 'Soundscape, Acoustic Communication & Environmental Sound Composition'. *Contemporary Music Review* 15, no. 1–2: 49–65. <https://doi.org/10.1080/07494469608629688>
- UNESCO. 2015. 'Routes of Santiago de Compostela'. <https://whc.unesco.org/en/list/669>
- UNESCO. 2017. *The importance of sound in today's world: promoting best practices*. Paris: Document 39 C/49. <https://www.lasemaineduson.org/IMG/pdf/39c-49.engl.pdf>
- Westerkamp, Hildegard. 1974. 'Soundwalking'. *Sound Heritage* 3, no. 4: 18–27.
- Xunta de Galicia. 2020. *Way of Saint James in Galicia*. <https://www.caminodesantiago.gal/en/>