Swingin' Architecture

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Abstract

The assumption that it is possible to associate the idea of a controlled spatial organization with musical composition, combining rhythm, harmonic rules and proportions is still alive both in the field of musical research and in architecture. Even today, Goethe's evocative definition of architecture, considered as frozen music, intercepts the sensitivity of many.

However, the complexity of the new scenarios in architecture hardly seems to coexist with the need to control the outcomes of individual projects. The architectural project is no longer comparable to a simple device that allows to relate perceptible reality with the formal system that organizes it, but is increasingly affected by the unexpected, compulsive invasion of data and increasingly complex and heterodirected needs as regards this specific discipline.

For the contemporary architect, absorbing the evolution of the actors and the context in the project means cultivating the ability to react and adapt one's own strategies and professional tools, in a word improvising.

Music in the past has certainly been a good model for defining effective analogies with architecture. However, the great changes in contemporary architecture are making this confrontation suffer now. Is this comparison still effective? If so, how or what type of model is the most appropriate? Among the different musical forms, jazz defines a method that places improvisation at the center of its constituent elements.

The organizational form of the creative process, whether based on the code of notation or on the system of communication and transmission of contents between jazz musicians, is very close to the diagrammatic form used by some contemporary architects.

1 Anticipation versus reaction

Properly considered as a process of searching and individuation of problems rather than the definition of solutions, the architectural project, urban project in particular, today appears increasingly influenced by the unexpected and compulsive incursion of needs and data not strictly referred to architecture discipline.

No longer comparable to a simple device through which a perceptible reality can be related to the formal system that organizes it, the architectural project has shifted its conceptual axis from the noun to the verb, abandoning, almost definitively, the primary purpose of create spatial forms by referring more to the processes that produce them. The city is no longer intended as a fixed scene of our lives [Rossi, 1995] and is more properly linked to the progressive importance that the temporal dimension has acquired both in the project and their spatial expressions.

To accept change and unstable spatial and social contexts as part of the project, giving up the primary goal of a final and complete form, brought the architectural project closer to the real problems of communities and territories. However, in this way, architecture has consolidated its current crisis, recognizable both in the processes of defining the project's objectives and in the professional tools that measure its effectiveness.

The Cartesian division between res cogitans and res extensa still seems to strongly pervade the rational idea of the project. While admitting the importance of instability, uncertain data and transformations, it is often preferred to proceed by considering an objective reality "interpreted" by a subjective reality.

However we know that such an objective reality, a set of tangible elements opposed to the subject, does not exist. There is, more likely, a reality described by the incessant flow of relations, defined and linked between the subject and the object. Such relationships are capable of configurations that are different each time and sensitive to every slightest variation of every objective and subjective element.

If on the one hand the current interpretation of the transformation processes of the urban ethos consolidates the uselessness of producing design efforts that order, according to a hypothetical file, pieces of contemporary society, on the other it has allowed the identification of aggregates of behaviors that finally allow us to see the construction of unprecedented areas in continuous transformation and new forms

of social cohesion nurtured in disaffection with the city. "The nature of the urban environment is contact, change, heterogeneity, becoming" [Sobrero, 2009].

Design means, in a certain sense, preparing to face the future with all its load of uncertainties. Triggering a process of conscious and reasoned transformation in its genesis and controlled and assisted in its realization, on the other hand, cannot be protected from unforeseen events. Waiting for the unexpected, being ready to manage change is one of the most pursued, and perhaps least achieved, objectives within the theories on the construction of the transformation processes of space. The construction of the methods of reaction to unexpected data through processes of adaptability, comparison, spontaneous reconfiguration cannot ignore the investigation within disciplines that, although distant from architecture, absorb the culture of the project. Knowing how to deal with and interpret a changing and unstable scenario means accepting and absorbing elements such as improvisation and indeterminacy within the project.

2 Improvisation and decisions

Quickly stimulating or absorbing a change, within the project, means relying on one's reactive skills, cultivating a sense of the "possible", having, in a word, the ability to improvise. The study and reflections on improvisation seem to contribute effectively not only to the interpretation of contemporary phenomena but also to provide significant elements for the construction of the project.

What more than any other consideration pushes different disciplines towards the study of improvisational models is the fact that there is a difficult coexistence, within the same model, of elements that are effective in managing complexity (understood both as a quantity of variable information and as quantity of possible combinations) and effective elements with respect to the forecasting capacity (understood as the ability to direct the project towards the expected results).

Among the different models that are studied and used as a reference in relation to the contribution that improvisation is able to provide in the construction of the project, jazz is certainly one of the most investigated. Jazz is, in fact, a discipline that absorbs and develops phenomena that place these elements at the center of its constitutive laws. The attention referred to Jazz as a valid model for the interpretation of knowledge processes has often crossed numerous scientific fields. Jazz has recently caught up with architectural research. 1. "To account for improvisation it is therefore necessary to refer to a theory of tradition and a theory of practical knowledge, which clarify both the constraints to which generative action is subjected, and the particular competence necessary to create something new by making music together [Sparti, 2005].

Improvisation therefore does not grow in the fading of historical knowledge and It is not aimed at reaching a hypothetical "zero degree" in which everything is yet to be defined, but takes shape from a complex and full-bodied scenario of elements that opens up to new expressive possibilities with every improvisational act. Tradition coincides with this scenario: a world of fundamental acquisitions and resources lying in a state of narcosis until the musician intervenes to regenerate him in improvisation. In jazz improvisation, freedom is a central factor that does not coincide with the absolute autonomy of the musician but with the self-proliferative ability to produce creative material which, starting from consolidated elements, the improvisation itself helps to build.

Tradition is actually something inexhaustible that is produced continuously and cyclically through the performance. Regardless of the historical era, the tradition in jazz is strongly linked to the construction of new meanings and creative directions. The difficulty of associating historical material with new elements is not true in jazz. Actually, what happens in jazz is that the tradition is "updated" every time during improvisation.

3 Jazz as Diagrammusic

Actually, what happens in jazz is that the tradition is "updated" every time during improvisation The new tools for architectural projects today are no longer confined to the usual technical arsenal of the professional. These tools highlight sequential processes in which information is an integral part of the project. The possibility of processing an enormous amount of data in a design project leads us to the definition of a diagram, a device that, albeit with significant differences, unites the positions of numerous contemporary architects (Figure 1). In this sense Stan Allen wrote: "A diagrammatic architecture is not necessarily an architecture produced through diagrams" and again "a diagrammatical architecture is an architecture that behaves like a diagram".

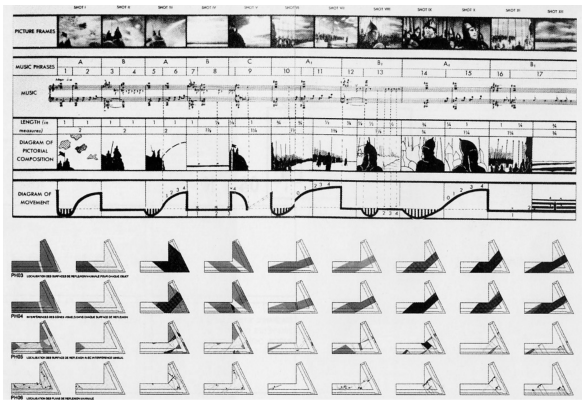

Figure 1: *Diagram score taken from F. Soriano "Fisuras" [Soriano, 2002].*

On the other hand, it is precisely the peculiar characteristic of Jazz to manage a huge number of information contained in not particularly elaborate devices that operate through synthesis. Even the sheets that musicians generally use on stage could be defined as extremely poor compared to the creative and expressive material that emerge from them during the performance. The written notation that accompanies a performance is almost a draft intended as a guide, as a fundamental reference which cannot be used successfully without a significant interpretation. The graphic of the score generally is the same used for classical music: the pentagram sheet. However, jazz condenses all the information necessary for performance into as few sheets as possible. On jazz scores, the graphics provide the greatest amount of information and indications occupying the least possible space. The use of short notations allows musicians to leave space on the page in order to leave each musician free to insert other useful information and notations on his score, perhaps within his own Real Book. It can be said that the score tends to disappear as the musician's skill increases (Figure 2).

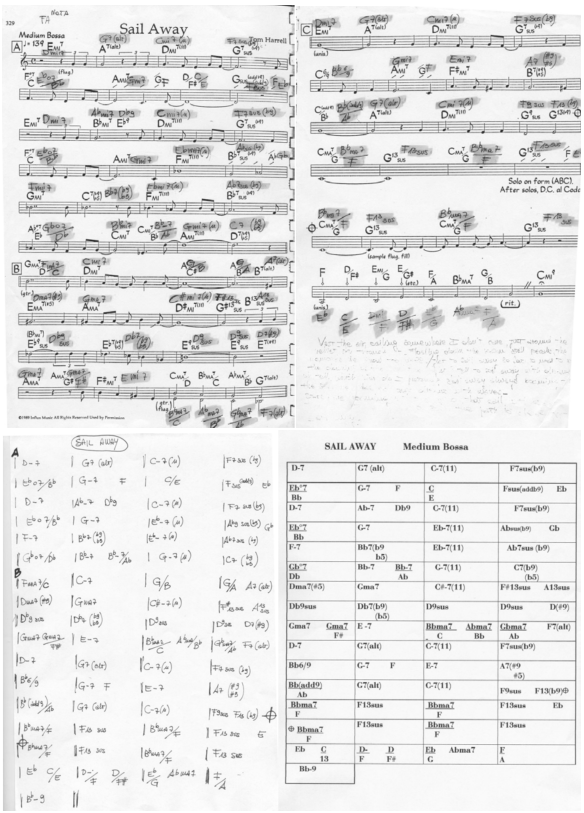

Figure 2: *Semplification process of a jazz score.*

How does the analogy between Jazz and architecture resist, given that the organization of the musician's creative material fixed on paper (the Jazz score) and the proliferative diagram of the architect are considered in an almost opposite way, tending in the first case to evaporate and in the latter to be considered central elements? What would the alleged analogy be supported on?

Jazz creates a process that tends to impoverish the diagram - music sheet of the greatest number of graphic elements when the interpretative skills of the musicians increase. Jazz musicians use scores not only as diagrams but they play within a diagrammatic creative process. The organizational form of the creative process in jazz, whether it refers to the code of written notation or to the system of communication and transmission of contents between musicians, is properly diagrammatic. The jazz score (the music sheet) can be intended as a diagram because it contains the greatest number of information included in the least number of graphic elements. The formal structure (compositive and performative) is considered as a diagram because in jazz it operates as a "machine for instructions" aimed at the possibility of their simultaneous management rather than at the progressive elimination of elements. In this aspect, perhaps more than others, the relationship between jazz and architecture appears particularly promising in the redefinition and reconsideration of the constituent terms of the project.

4 Conclusion

How the contemporary project in architecture can be lead with diagrams, intended not as formal representations but as generative structures of spatial contents, is given by Kazuyo Sejima's work. Talking about Sejima's manner to work, Toyo Ito states: "She arranges the functional conditions that the building should contain, in a final diagram of the space, then immediately converts that diagram into reality" [Ito, 1996] that is the same speed that we can recognize in the creative process of jazz. It is not a matter of manage tested procedures but is related with the capability to translate, into concrete facts, a large number of data coming from different fields in continuous reconfiguration. The goal is to manage a creative process that considers multiple options, without eliminating significant elements absorbing their errors. A creative process which does not translate into a graphic formalization of the project synthesis but which, on the contrary, remains open to new configurations. The architect, like the jazz musician, should be capable of planning and improvising, assuming different roles, seizing unexpected opportunities and bringing them back to the advantage of achieving the final goal. According to David Brown, the architect should consider himself as a jazz drummer who holds together both the potential directions of the creative flow and the internal coherence of the general structure, always placing himself in an intermediate position within the project by managing foreseen and unexpected phenomena [Brown, 2006].

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Is Landscape Sound? A Multidisciplinary Approach to the Soundscape of Trento (Italy)

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Abstract

This multidisciplinary—landscape architecture, urban planning, electronic music, composition, and field recording—research project investigates the relationships and interferences between landscape and sound (i.e., soundscape) in Trento (Italy) through environmental sound sampling and mapping. Interaction between disciplines—and between sight and hearing, in the landscape perception—has a key role throughout the research. This contribution aims to report the stages of the activities carried out in the summer 2021 by the research team and to illustrate the first results, the most substantial of which is the sound map, a catalog of urban sounds; a conceptual sound section has also been drawn, to illustrate additional information and reflections that the map does not highlight.

1 Introduction

In the framework of the research project "Oi Dialogoi" (2021-ongoing), promoted by the Conservatory F.A. Bonporti, Trento / Riva del Garda (Italy), the multidisciplinary—landscape architecture, urban planning, electronic music, composition and field recording—research team started an investigation about the soundscape concept (the acoustic analogy to landscape), its digital registration and fruition, and its subsequent potential application in the urban and landscape planning policies of the historic center of Trento.

1.1 Theoretical framework: the soundscape

The title of the research, intentionally provocative, paraphrases the title of the essay "Is landscape...?" [Doherty and Waldheim, 2016], which highlighted the multiple identities of landscape, exploring the relationships between landscape and other disciplines, but among them the relationship between landscape and sound is not explored.
Nevertheless, the use of the term "soundscape" is spread among various disciplines, ranging from urban design to wildlife ecology to computer science. The term firstly appeared in "The Sonic Environment of Cities" [Southworth, 1969], originally coined by Michael Southworth, a city planner, former student of Kevin Lynch; only later it was popularized by the composer Raymond Murray Schafer, thanks to his "The Tuning of the World" [Schafer, 1977].
An important distinction has to be made between "soundscape" and acoustic environment: this latter is the combination of all the acoustic resources, natural and artificial, within a given area as modified by the environment; a "soundscape" is the acoustic environment as perceived by humans, in context. This recalls the definition of "landscape" according to the European Landscape Convention [Council of Europe, 2000]: "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors".
The International Organization for Standardization (ISO) standardized the definition of "soundscape" [International Organization for Standardization, 2014]—the "acoustic environment as perceived or

experienced and/or understood by a person or people, in context"—contributing to the 3rd (Good Health and Well-being) and 11th (Sustainable Cities and Communities) Sustainable Development Goals (SDGs) adopted by the United Nations.

1.2 Operative framework: the urban landscape of Trento (Italy)

Nowadays soundscape approaches—embedding "sound" into the framework of urban and landscape planning and design—focus on human-centered and context-based solutions that consider people's perceptions, needs, socio-cultural background, and expectations in relation to their acoustic environment. Since this latter is one of the critical environmental factors in judging the quality of life, soundscape analysis and mapping (i.e., "soundmaps") can be considered emerging tools to describe urban acoustic states and trends.
Publicly-shared recordings can be used for specific objectives, such as the study of noise pollution [Anderson, 2016] or the preservation of sound heritage (e.g., historical Venice lagoon's sound traces in Venice Soundmap[1]; Portobeseno's environmental sounds, voices and stories in AlpSound[2]), but also for practical applications (e.g., in the Hush City Map app[3] [Radicchi, 2021] anyone can map, evaluate and discover both quantitative and qualitative data about public quiet areas).
In the context of the Municipality of Trento, the main landscape planning tool is the Landscape Chart (lit. *Carta del Paesaggio*), which identifies the so-called landscape units, the territorial structure of identities and invariants. Here, visual perception is the only one taken into consideration, with no mention of the acoustic perception (and of the soundscape). The Municipality is only provided with an acoustic classification (or zoning) of its territory, differentiating it into six acoustically homogeneous classes, based on the main urban uses allowed and each responsible for specific acoustic limits.

2 Methodology

During three days between June and July 2021, the research team recorded, cataloged, and mapped the urban sounds of the city of Trento, inspired by the practice of "soundwalk", a "method that implies a walk in an area with a focus on listening to the acoustic environment" [International Organization for Standardization, 2018].
The spatial conformation of the historic center of Trento suggested the choice of some sample locations, paradigmatic for their geomorphological characteristics, in which to make the first sound recordings. By reducing the city to its essential geometric forms, generators of space—points, lines, and surfaces [Kandinskij, 2017]—the following were identified:

- The three bumps (lit. *Doss*) Trento, Sant'Agata and San Rocco, as points (in elevation).
- The current and former courses of the Adige River, as lines.
- Open public spaces (i.e., squares, parks) as surfaces.

The methodological steps of the work are described in the following paragraphs.

2.1 Data collection and elaboration

Since people experience space and sound in 360°, the translation at the recording level (made with the recorder Zoom F8n, 48000 Hz of sampling rate at 24-bit) and subsequent reproduction of these essential geometric shapes from spatial to sound was solved as follows, using relatively expeditious and inexpensive means:

- For points, the so-called "XY" technique was adopted by crossing two microphones (Neumann KM184) with "cardioid" polar pattern and making a stereo recording (left and right channel).
- For lines, movement of points in one direction, a microphone called "shotgun" (Sennheiser MKH 416, "super-cardioid" polar pattern) was used, which records in the direction in which it is oriented so that the movement can be rendered. This technique differs from the others because it is performed in motion.
- For surfaces (the most complex), sets of points/line movements, were used four microphones (Neumann KM184) with "cardioids" polar pattern, to define a circumscribed area of about 5x5 m, and a microphone with "omnidirectional" polar pattern (AKG C414), placed in the center of that area.

[1] Available at: www.venicesoundmap.eu/home/.
[2] Available at: www.portobeseno.it/alpsound/?page_id=2133.
[3] Available at: map.opensourcesoundscapes.org/view-area.

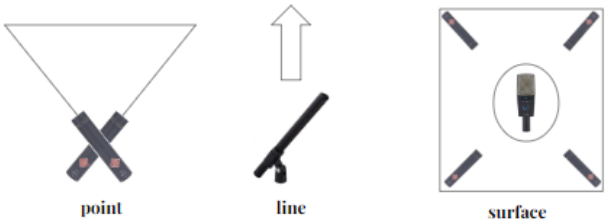

Figure 1: *Points, lines, and surfaces in audio domain*

After a first test of these procedures in Piazza Dante (the train station square), the main change made was in the size of the surface to record (from 12x12 feet to about 5x5 m).
For the data elaboration, the surface recordings were adapted to stereo listening because of the difficulty in reproducing the "surface effect" without a quadraphonic audio setup. Subsequently the audio files were cleaned with a Digital Audio Workstation (Pro Tools) using an equalizer to remove unwanted low frequencies picked up by microphones (caused in most cases by the wind). Rare adjustments were also made on the other portions of the audio spectrum, but only in case of annoying frequencies. After that, they were normalized at -3,0 dB for a correct listening, to resolve the differences of dynamic range in the various recorded soundscapes. Finally, all the audio files were collected, cutted to exactly one minute, and uploaded to a digital platform for listening.

2.2 Data visualization

To visualize these data and make them shareable and usable, a digital sound map has been developed. Specifically, the collected recordings have been cataloged in a geo-referenced sound map using Google My Maps, a platform to publish data, making them shareable and accessible.
The geometry of the various elements—points, lines, and surfaces—had already been approximately drawn directly in the map while recording, using the app on the mobile phone and thanks to the GPS. These traces have been used as landmarks when later the map has been improved and equipped with data. The geometries are clustered according to date and place of recording and accompanied by a brief description of the context.
To complete the map, also representing the sound depth [Feld, 2021], a conceptual section was developed, perpendicularly to the Adige River (from Doss Trento to Doss Sant'Agata): thus, places and their relations (e.g., the relative height) are shown in a different way.

3 Results

The main result of this work is the geo-referenced sound map[4]: points, lines and surfaces are described with soundtracks, photos taken during the recordings and, in some cases, videos. These elements are easily accessible to users clicking on the associated element in the map. In addition, each typology of geometrical elements is characterized by a different color: points in purple, lines in orange, and surfaces in blue; some points are in orange (lines' starting and ending points) and in blue (surfaces' vertices and center).
The framework of the research project "Oi Dialogoi" gave the possibility to present the research project and its first results in different phases, having feedback that enriched the entire process. An interesting experience was the use of the Kahoot app, during a meeting on 24th September 2021, with the audience involved. After listening to a track registered along the Adige River, people were asked to imagine some physical elements of that place, relying only on the sound perception. The results highlighted the little attention usually people pay on soundscape: having sound as the only information tends to confuse our perception of space (for example, someone did not recognize that the recording was in movement or along a river). The results of this experience are even more interesting if related to the history of the Adige River in Trento: in the proximity of the city center, nowadays this no longer follows its original watercourse; in the XIX century, it was deviated to build the railway [Consoli, 2012] and now on its original riverbed there is a street.

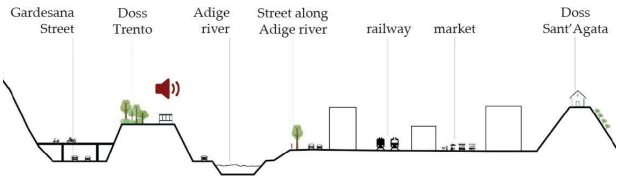

Figure 2: *"Soundscape section"*

Similar considerations emerged during the recording: the soundscape was sometimes very different from the landscape as "visually" perceived; and the "depth" of sound was not

[4] Available at: www.google.com/maps/d/viewer?mid=1cxqHKCpbTI5zDtjZK6iF50Vlvq1i1Tl2&ll=46.072360725662364%2C11.11010809384096&z=14.

always realistically captured (i.e., sometimes the sound source seems closer or more distant than it really is). This latter can be better understood referring to the "soundscape section"[5]: a track registered in Doss Trento (corresponding to the red symbol in Figure 2) is listenable. Some sounds (e.g., motorcycles and trains) do not match with the landscape—the Doss surrounded by trees that prevent the spectator from seeing the city.

4 Conclusions and outlook

Although the literature and multidisciplinary research on soundscape have been growing, especially in the last two decades, there is still a strong need to provide a holistic perspective for designing sustainable urban soundscapes.
This research could move towards the integration between urban planning and policy to noise pollution control and mitigation in the city of Trento. Indeed, considering that maps and sections are different ways to represent relations between spatial elements, and that in this case they are enriched with multimedia files, this research could be the starting point for a qualitative and quantitative data catalog towards a Trento's soundscape description to be used in urban planning. In particular, the in-progress "soundscape section", as conceptual representation, shows potentialities to be explored, beyond its current limits (e.g., it is not geometrically accurate; it is linked to only one soundtrack; it has to be accompanied with other parallel and perpendicular sections).
The considerations about perception during the recordings, as well as following the collective experience with the Kahoot app, suggested open questions: what changes did the modification of the course of the Adige River cause in the soundscape of the city of Trento? Is it possible to find some traces of the ancient Adige course's soundscape into its modern one, and vice versa?
From the point of view of sound sampling, this work can contribute to a better organization of procedures and audio recording equipment, specifically associated with geometrical entities of space (as points, lines, and surfaces). New forms of representation for a better interaction between senses could also be studied and experimented.
Even if the quality of tracks uploaded would not be guaranteed, further development could include citizen participation in constructing the map and the section(s); additionally, this could increase the number of recordings, enriching the data and making them more objective.

[5] Available at: soundcloud.com/sebastiano-beozzo/punto2-dosstrento-cut/s-EgfxJfp5600?si=29d6ef264fe74e8fabdcaba60fd22b0d&utm_source=clipboard&utm_medium=text&utm_campaign=social_sharing.

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Musicians' Work Preferences: Teaching or Playing?

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Abstract

The aim of this work is to analyze the welfare of music teachers. The conceptual background comes from cultural economics literature (Throsby (1994). Building on the observation that music teachers act also in the role of performing artists, our aim is to appreciate to what extent the interaction between teaching and playing supports musicians' welfare. The analysis builds on an original survey that allowed to collect 141 questionnaires filled in by the teachers at the Trentino Music Schools over the first half of 2022, and 50 interviews with musicians and administrators. It encompasses the specific institutional context developed by the Trentino Province, in North-East Italy, and the market-mediated relations with the organizers of music events. We focus on several outcome indicators, including musicians' contractual conditions and pay, professional performances, motivations, and the resulting level of vitality and satisfaction. Our analysis is used as a starting point to suggest the "conducts" that may have determined the observed results as well as some preliminary policy implications for the sector.

1 Introduction and approach

In the economic disciplines, the word 'interaction' recalls the concept of strategic relationships among self-interested rational agents. However, most interactions are based on a wider spectrum of motivations (such as empathy, curiosity, habit, reciprocity, fairness, care), which economists have tried to incorporate into so-called 'behavioural' analyses (Stanca et al. 2009; Thaler, 2017). Also, there are relationships of a coercive nature, such as those established between the state and the community to avoid free riding in the provision of public goods or the financing of public expenditure (Sweeney, 1973). Finally, participating in social networks may require the acceptance of tacit rules among group members, which may radically alter the freedoms that individuals enjoy within and outside the group (Aoki, 2007).

Cultural economics has looked at interaction from the point of view of artists' labour market, and Throsby (1994) in particular focused on musicians' labour market, where the key interaction is between artwork and non-artwork labour choices. In his model, he postulates musicians' utility as a function of the intrinsic value of playing music, and the subsistence level of consumption, which requires minimum earned income. Consequently, after the achievement of a minimum standard of living, utility depends on the time allocated to artistic activity, so that the supply of artistic work follows an intrinsic driver, and the time allocated to it increases as unit earnings increase. In our revised model, the key assumption is that musicians prefer performing music rather than other occupations, and that however, given the level of wages in artwork, for many of them the earned income from music is not sufficient to meet subsistence consumption levels. Consequently, low-income musicians must supply labour to non-art work, where it is assumed that wages allow to meet the subsistence consumption levels. Given the alternative use of disposable working time, musicians will choose the amount of time to allocate to artistic work and to non-art work, while keeping, *coeteris paribus* the level of wage, their preference for artistic work, as it is associated to a positive use value (i.e., musicians are intrinsically motivated). Consequently, if the wage in the non-art labour market increases, the artist will devote more time to music performance, since the subsistence income will be reached with less hours of non-artistic work. Hence, the higher the level of non-artwork wage and the higher the artwork wage, the more the time allocated to music performance, and the higher the musicians' utility.

We use this model and expand it to discuss a specific collaborative solution between the public actor and private nonprofit schools in the Trentino province of Italy, as presented in the abstract.

2 Problematizing the context

In 1987, the Autonomous Province of Trento (PAT) implemented the policy of coordinating production resources for cultural production through a combination of public and private nonprofit partnerships with private nonprofit schools. The aim was twofold. On the one hand, PAT wanted to improve job stability for the many music teachers working in local associations, often without an employment contract, and on the other hand recognize the public value of music culture and fully support its development in both urban and rural areas. Under these conditions, PAT committed to funding schools' costs, largely for staff. Currently this totals about 6 million euros per year transferred to 13 schools and for 301 musicians - of which 60% are males - and 37 admin staff. In order to be co-funded by PAT, teaching activities need to be arranged according to agreed standards and guidelines (for instance defining the duration of a lesson, its frequency, the number of students participating in taught music groups). By lowering entry barriers for users (e.g., in terms of age, pre-requisites, localization, music preferences, fees) this system has improved access to music culture with respect to traditional music education.
Given policy aims, the system of incentives for schools, and their teachers, is centered on the number of students and hours taught. An obvious limitation is that it misses out the artistic component of doing music and music culture creation, which can surface by means of teachers' artistic commitment and relations outside their organizations, feeding teachers' intrinsic motives and as well as students' passion and motivation, beyond the original PAT's aims and standards. From these considerations we derive our research focus on teachers' welfare and assume that desired welfare level by musicians include a combination of teaching and artistic activity that enables them to achieve professional and personal fulfillment, as well as levels of income that are consistent with their needs and the overall cost of living.

3 The size of artistic activity

Even if the focus of the TMS system is teaching, independent artistic activity has continued to be present among musicians. Artistic activities include production, performance, and composition. From an analysis of 241 music teachers' school and personal web pages (not all the 301 musicians are named in MS websites) and major online music platform (e.g. Youtube Music, Spotify, Apple Music, Discogs, Amazon), we found that nearly half of the teachers (45%) are or have been active in record production, while over half of them (56%) are active in performing with bands, orchestras, or ensembles. Composers are 3%. This result is consistent with what emerges from survey data, indicating that 'doing music' belong prevalently to the musician's professional activity outside their music school (54% of musicians), while the others either do not engage (12%) or engage with artistic activities within the context of school-related performances or productions (34%). The demand for artistic activity, looking at the places where performances mostly take place, comes from festival organizers and municipalities, which in most cases co-fund schools together with PAT, and demand musicians some degree of engagement with the town as part of the TMS mission of disseminating music culture. Demand comes less often from clubs, pubs, hotels, and recreational places in general (this may be related with classical music being the prevailing music genre taught and played by teachers, 79%).

4 Job conditions

The survey indicators on contractual conditions and income, as well as those on professional and personal fulfillment, enquire on musicians' perceived levels of welfare.
First, we consider material welfare with respect to contractual conditions, pay and whether musicians regard job-related pay adequate to their needs and living costs. Consistent with the public aim of improving job stability for musicians, 85% of contracts are permanent, and regulated largely by an *ad hoc* collective contract. 45% of respondents are full-time workers, 33% of musicians work part-time but not by choice, as they would prefer increasing their teaching hours, while 22% are part-time and happy with their current arrangement.
Second, we consider monetary rewards: 1194 Euros average salary for a full-time (19 hours teaching per week). Those who undertake extra-school activities earn on average 100 Euros less than those who do not. On a 1 to 7 scale, satisfaction with net salary is below 4, although it is considered on average fair with respect to the school's financial sustainability and inter-personal comparison. Also, it is considered severely insufficient to satisfy personal and family needs, as well as inadequate with respect to living costs.
Third, if we look at salary with respect to changes in musicians' motivation to teach (whether motivation has decreased, increased or been stable), we observe that a higher monthly pay (those who spend more time in teaching) is associated with

lowering motivations. A possible explanation (which is also consistent with qualitative data from interviews parallel to the survey) is that musicians who go away to play, besides teaching, renew their motivation more effectively than those who refer strictly to the school's environment.

Fourth, we observe the motivational drive underlying teaching, and designed items with reference to behavioral theory (Cassar & Maier, 2018). The initial choice to work as a music teacher, an average of musicians' self-rating on a scale 1 to 7, is given by other-regarding motives ('Having the opportunity to teach and pass on my passion for music' 6.32, 'Contributing to creating musical culture' 5.69), as well as by immaterial self-regarding motives ('Professional fulfillment' 5.45) and with living cost constraints ('Need for income and employment' 5.22), while salary (4.12), consistent with low average levels, scores below average (4.77).

Last, we consider on-the-job satisfaction. The items used to study this dimension are adapted from self-actualization theory in organizational psychology (Deci & Ryan, 1985, Pellegrino et al., 2021) and aim at exploring musicians' non-monetary welfare aspects, in particular: relational quality, personal fulfillment, creativity (average score 4.94). Satisfaction is mainly driven by the relationship with students (6.36), on-the-job autonomy (5.38), by the nature of activities, and by the creativity that teachers are able to express through them (5.13). It is held back by the scarcity of opportunities for professional growth and training (4.08), and the low artistic visibility offered by the school (4.15). Satisfaction with collaborations with colleagues is also below average (4.80).

5 The scope of interactions

Musicians see the value of combining teaching and artistic activity (5.79). Consistently, they express their creativity through both ordinary teaching (5.21) and public performances (5.18) (while artistic activities related to composition and arrangement score low, 3.64).

Those who were expanding their artistic engagement (in pre-pandemic years) identify the reason for this growth in their personal attitudes and objectives (6.29), and to some extent to the cultural context and to the choices of the intermediaries demanding music performance (4.53). Very little credit is given to the synergies with the school's activities (3.35) and even less to the contribution of fellow teachers (2.50). Those who reduced artistic engagement associate the contraction with the cultural context and the choices made by intermediaries (6.25), and with production choices in the music industry (5.00). Results indicate that musicians who have a strong personal drive and the capability to meet the industry's requests can surface the waters, while others struggle.

We hence attempt an explanation of personal drivers and focus on what supports musicians' effort in performance and production, enquiring on extrinsic drivers (expected economic reward 2.85; public recognition 4.88), intrinsic drivers (6.05), and creation of opportunities (5.09). The string of effort is pulled by the intrinsic pleasure that one experiences and by the potential for new opportunities, which positively correlate with the criteria that musicians apply to select their partners: their artistic quality, capacity to understand the artistic project and improve it. Oppositely, monetary rewards do not drive the artistic effort. This may indicate that either monetary payoffs are not important to musicians or they are not adequate to their performance level. We opt for the second explanation. And this reinforces the need to problematize the freedom that musicians have when choosing the time they allocate between being teachers and being artists. It is indicative that the subjective vitality of musicians, that is the energy they have when undertaking their school work, scores higher for those who focus on school activities only and have eliminated the trade-off between teaching and their own private artistic activity *tout-court*.

6 Discussion

The artist's labor supply model proposed by Throsby (1994) seems appropriate to represent the musicians' allocative choice of working time between teaching and artistic activities. In fact, being difficult to afford the cost of living with a fluctuating and often low income such as that one coming from playing gigs and concerts, Trentino's musicians devote part of their working time to teaching activities at TMSs, obtaining an additional and regular monetary income in return.

Should musicians receive *de facto* a fixed remuneration for their work, both in the case of teaching and concert activity, without anchoring their wages to their performances (number of students and participants at concerts) a self-interested musician would have no interest in accomplishing his or her job professionally. On the other hand, performance evaluation transfers on the musician the risk of the activity, both on the teaching and on the artistic side, without the latter receiving any compensation in return, as in the case of a mixed wage that is at least pegged to the number of students/spectators. In Trentino, payments are mostly attached to student numbers, while artistic activity is mostly dependent on event organizers and on the personality traits, social

capital and reputation of musicians. An unfair distribution of business risk may indirectly incentivize the musicians to participate in extracurricular activities in schools and in the organizational aspects of gigs/concerts to 'embed' themselves in both systems of relationships and thus stabilize their working activities. As the time devoted to complementary networking activities (useful for both teaching and playing) must be subtracted from the overall working time, when they become more time-consuming, musicians are forced to specialize in teaching or playing activity, losing one of the two sources of income and 'diluting' the remaining one over a higher number of hours.

Also, it is worth noting how such an eventuality may be either an involuntary institutional outcome (context matters) or a voluntarily outcome of self-selection processes. Assume, for example, that TMS teachers tend to self-select by participating in the organization of school activities and that, similarly, concert performers tend to self-select by means of social networking activities. By increasing the duration of organizing activities beyond a certain threshold of engagement, or by increasing social networking activities to a certain threshold, the 'insiders' of the two groups might deliberately marginalize musicians who are interested in adopting a mixed earning strategy. In this case, in fact, the participation in one system would make it impossible to participate in the other, and consequently to contemporarily achieve the composite performance (partly declared, partly tacit) required by the two labour systems. The result is that, even if theoretically feasible, the integration of the two types of activities (teaching and playing) would in fact be unsustainable at least in the long term. This in turn would generate a polarization of musicians, as they would have to 'choose' to become either teachers, or performers. In Pellegrino et al. (2021) the former is considered as a case of 'assimilation without freedom' (p.164).

Finally, the polarization of musicians' work activities could give rise to forms of extractivism, as horizontal relationships are replaced by vertical and hierarchical relationships between teachers and performers (insider-outsider dynamic). In the case of teachers, extractivism lies in having to distribute their hourly wages over a greater number of hours (teaching activities plus organizational activities), while in the case of concert performers, extractivism lies in the imbalance due to the artificial creation of an excess of supply and in the increase of opportunity costs, as both factors may lead to the compression of performers' remuneration. In both cases, the (dis)equilibrium achieved is sub-optimal and further penalized by conducts that, far from being cooperative, may instead be hierarchical and designed to transfer risk from the incumbents to the potential entrants. Finally, to improve musicians' welfare economic policy may allocate resources to: 1) introduce earned income tax credits (EITC) for schools; 2) integrate the artists' income provided that they earn some money in the field; 3) support (also financially) mixed career paths.

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Sounds, Rhythms and Artefacts in Social Interaction

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Abstract

In this essay, drawing upon microsociological approaches to interaction we consider the way acoustics and rhythm feature in, and qualify, social interaction. Then, taking inspiration from social studies of science and technology, we focus on the role artefacts and technologies play in social interaction. By way of both theory and empirical examples, we propose a view of interaction whereby verbal communication is just one of the semiotic systems contributing to meaning, and artefacts do not feature just as mediators of social interaction but as interactants. As if they were propositional contents, sounds, rhythms, objects, and technologies shape (and are shaped by) interaction and relationships.

1. Introduction

In this short paper, we drawn upon interactionism, ethnomethodology and conversation analysis, and social studies of science and technology to show how social interaction does not merely amount to interpersonal communication but involves a varied range of entities including sounds, rhythms, and artefacts. We first illustrate how microsociology developed a distinguished approach to interaction, making it a phenomenon and a unit of analysis *per se* (Sect. 2). We then consider recent developments in such field, with particular respect to the role of acoustics and rhythms (Sect. 3). Further, we show how sociology reframed the idea of interaction as an exclusive human attribute to a more composite construct which entails the active role played by objects and technologies: far from being simply "tools" or "mediators" of social interaction, they participate to everyday life in various ways, thereby enabling changing forms of relationality (Sect. 4). We conclude considering the artefactual dimension of sounds and rhythms in interaction (Sect. 5), largely dependent on the ways technologies and humans relate to each other.

2. Microsociological approaches to interaction

In contrast with structuralist social theories seeing interaction as guided by a preexisting structure of social relations, a varied body of literature which could be labeled as microsociology —ranging from symbolic interactionism [Mead, 1934; Blumer, 1969] to ethnomethodology [Garfinkel, 1967, 2002] and conversation analysis [Sacks, 1972/1992], passing through Goffman's [e.g., 1959, 1967, 1983] interactionist approach — takes a processual and situated perspective on social action in interaction, which is considered as where social order and culture emerge and undergo both stabilization and change processes.

Symbolic interactionism is chiefly concerned with the question of meaning and interpretation. As stated since the opening of the seminal book by Blumer who systematized Mead's theory, this approach rests on three premises: that we act towards things in the world based on the meaning we attach to such things; that such meaning emerges out everyday interaction with our fellow social members; and that is also where meanings can be challenged, possibly leading to socio-cultural change. "Things in the world" are not just material objects, but also institutions, activities, categories of people and social roles, as much as others' actions. Symbolic interactionism maintains that individuals *interpret* others' actions rather than merely reacting to them. Whereas "[m]ost sociological schemes rest on the belief that a human society exists in the form of an established order of living, with that order resolvable into adherence to sets of rules, norms, values, and sanctions that specify to people how they are to act" [Blumer, 1969: 18), symbolic interactionism sees "the essence of society lie[ying] in an ongoing process of action -

not in a posited structure of relations. Without action, any structure of relations between people is meaningless" [*ivi*: 71].

According to Goffman, social interaction is an ordered activity — he talks indeed of the "interaction order" [1983]. Such an order is sustained by social members thanks to their "capacity to indicate their own courses of physical action and to rapidly convey reactions to such indications from others" [1983: 3]. Coordination is based on such a capacity of ours, on the fact that, whenever we "come into one another's immediate presence, [...] the line of our visual regard, the intensity of our involvement, and the shape of our initial actions, allow others to glean our immediate intent and purpose" [ibidem], hence to design their own actions accordingly. This also includes the expressive dimension of social interaction [Goffman, e.g., 1959, 1967], which has to do with social roles, participants' "faces", impression management, and the performance of deference and demeanour. This is has also been called "interaction ritual" [Collins, 2004].

Garfinkel, who was working in the same period on very similar issues [cf. also Rawls, 2022], makes a step further. Ethnomethodology considers social interaction as the ordered basis of the broader social order. Garfinkel [1967] maintains that social action, or "action in interaction", holds three properties: it is designed to result immediately intelligible and reportable to any other member of a given society (*accountability*); it is designed to be self-evident to our fellow social members without accompanying explanations (*reflexivity*); and that is possible based on the context at hand (*indexicality*). The orderliness of social action in interaction, building up to the broader social order, is thus a collaborative, situated and processual accomplishment by social actors.

Such an accomplishment has been then studied in great detail, and in a variety of contexts of both mundane and professional interaction, by scholars in conversation analysis. Whereas at the beginning "talk in interaction" was the only focus and the main aim was identifying systematic aspects of speech, in time many other modalities, or systems of signs [Goodwin, 2000], have been considered and "multimodal interaction" [Mondada, 2013] has been analysed to understand selected contexts of action, and even to orient the design of artefacts and technologies [e.g., Crabtree et al., 2000].

3. Acoustics and rhythm in interaction

Further developments in the detailed study of interaction also brought to greater attention towards the role of aesthetics and form —over content and symbols— in everyday interaction and the sensemaking it entails. Meaning, one could say, is a fleeting, not just conceptual phenomenon.

Scholars in ethnomethodology and conversation analysis studied the acoustic and rhythmical aspects of talk —and more recently, of multimodal interaction at large—, focusing on phonetics, prosody, the timing of turn-taking [e.g., Auer et al., 1999; Local, 2007; Local & Walker, 2004; Levinson & Torreira, 2015] as much as choral coproduction [e.g., Lerner, 2002]. Many of these analyses highlight the role sounds and rhythm play in managing social relationships in and through interaction (thereby showing once more that the structure of relationships does not univocally determine human actions in interaction; the latter, on the contrary, is where structuring takes place). Goodwin [2015], for instance, noticed how given phonation modalities are employed to build and display intimacy (e.g., a creaky voice bringing towards hugging). Cowley [e.g., 1998] analysed pitch matching and concluded that the chief contribution of such acoustic features of talk is to the enactment of relationships. He also found "that the phenomenon is particularly marked in languages where utterances finish with vowels and, as is the case for Italian, where it has been stylized by musical traditions" [1998: 561].

Rhythm is particularly central in simultaneous speech, or choral coproduction. Examples range from brief occurrences such as greetings [Duranti, 1997; Pillet-Shore, 2012] or laughing [Sacks, 1972/1992: 571], to ritualized instances of "joint speech" [Cummins, 2013] such as cheering, chanting and praying during both religious and secular rituals. Recently, Bassetti and Liberman [2021a, 2021b] investigated prologued occasions of improvised simultaneous talk in Italian conversations, where a rhythm is co-created to allow for choral contribution and to enhance and display the sociability of the occasion and the sociable nature of involved relationships. They identified several tools participants use to found and sustain a common rhythm, including lexical repetition (of self and others) as well as "matching each other in volume, pitch, style of vowel-elongation" [2021b: 102]. They found "[s]election of lexical items *for sound* rather than meaning can serve to animate a group of simultaneous speakers", and "vocal gestures that are elongated or that replicate a prosodic contour enhance the energy of the collaborative speaking" [2021a: 8]. "These conversationalists cultivate flourishes of sound, and this allows the number of people who participate simultaneously to increase" [*ivi*: 12]. In such an endeavour, "[s]peakers not only monitor the talk for its sense, but also for its rhythm

and its aesthetic form" [*ibid.*]. Indeed, Bassetti and Liberman also found music-like features of voicing [e.g., onset and velocity, cf. 2021b: 106-107].

4. Not just humans

Although different in the way of framing reality and conceiving interaction, the structuralist and symbolic approaches have one point in common: namely, the assumption that action is an exclusively human attribute and that, therefore, interactions are by definition those between humans.
Given the increasing relevance information and communication technologies have since the Eighties (first in the forms of the personal computer and the Internet, and today as digital technologies such as smartphones and social media), however, the social sciences have grown increasingly interested in the role performed by technologies, objects, and digital infrastructures. Building precisely on interactionist and ethnomethodological insights and borrowing the idea of reality as a social construction [Berger & Luckmann, 1966] since the Eighties social studies of science and technology (STS) question the role of technologies in society, underlining both the social processes that contribute to their stabilization, and the influence technologies can have on social interaction and social practices. In particular, a number of theorists call for an object-centered sociality [Knorr-Cetina, 1997] and the idea that humans and non-humans are actively involved in the making of social worlds. Thus, more and more studies go beyond the analysis of "purely" human interactions to examine how subjects and technologies "go along" together and support each other (as, for example, in online communities, where human interaction is made possible by technologies).
To paraphrase what Lucy Suchman [2002] has written about the demarcation line between human and technological interaction, it can be said that one of the major issues in contemporary social science debate is no longer where to insert a demarcation line between humans and non-humans but how to insert it. The sociality of machines is by now taken for granted: thanks to machine learning and artificial intelligence properties of relationality and competent interaction are increasingly attributed to software and machines, so that what used to be classified as an *object* is now an *emerging subject*. "Objects interpellate us", writes John Law [1999: 24] to underline the mutual relationship that ties people and technologies together and the active stance which characterizes contemporary technological devices. In the view of this author, persons, texts and objects are bound together in a process of *heterogeneous engineering*, in that: "What we call the social is materially heterogeneous: talk, bodies, architectures, all of these are implicated in and perform the social" [Law, 1994: 2].
Law [1994] therefore suggests the notion of relational materialism to pay closer attention to the roles of the materials involved in interaction: as for "structure", "interaction" is an abstract concept which translates in a multitude of material forms, and these are not simply given in nature but are the more or less stable effects of social practices and collective routines. Whether as machines, information technologies, artworks, commodities or architectures, the different materials of which the world is made have become issues of complexity and controversy when considered not simply as tools or mediators but as active components of social interactions [Pels et al., 2002].

5. Artefacts and rhythms in interaction

A striking example of how interaction entails different materialities can be easily found in music, where instruments are essential to make the interaction possible between musicians and between musicians and the audience. Not only, as musicians know well, the specific instrument one uses will influence his/her performance, so that the relationship one constructs with the instrument is an intimate one. Instruments also become prothesis of the body and at the same time they offer to the subject new possibilities of interacting with other subjects and with the world itself.
Trevor Pinch, for example, has reconstructed the history of the Minimoog (the first cheaper portable keyboard synthesizer sold in retail music store from the beginning of the Seventies) in order to show the relevance of users, marketers and salespeople (and of the interaction between these different social groups) in the development and stabilization of a new technology.
On the basis of this study a new vibrant "interdisciplinary area that studies the material production and consumption of music, sound, noise, and silence and how these have changed throughout history and within different societies" [Pinch & Bijsterveld 2004: 636] has emerged. Beside sociology, the areas involved in the so called "sound studies" range from acoustic ecology, to anthropology of the senses; from history of everyday life, to art studies and ethnomusicology. New fields of study are by definition ambiguous and in-process, but what is peculiar of sound studies is that they focus on the musical experience as a socially constructed activity largely depending

on the interactions between technologies and humans. Technology designers actively "configure" users [Woolgar, 1991], and "script" [Akrich, 1992] the appropriate human-machine interaction into the shape and the material functioning of objects and technologies. Users, in turn, by interacting with artefacts can reconfigure technologies [Latour, 1987], becoming agents of technological change. An example of such a recon- figuration is the use of record turntables for "scratching", a use which was not envisioned by the engineers who first developed turntables and which still nowadays represents a contested musical expression [Pinch, 2003].

But to understand how technologies enable and constrain social interaction, it is important not to take either their constraining or enabling features for granted and to envision instead both how technologies, and social interaction built around technologies, could be different [Pinch, 2008].

In conclusion, through this short essay we have highlighted how sounds, rhythms, objects, and technologies shape, and are shaped by, social interaction. Of course, sounds and objects have always been present in interaction, but todays' novelty relies in their becoming forms of relationality in themselves.

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The Network Dimensions of Musical Production

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Abstract

In this paper we look at the relational determinants of record production. Drawing upon data from 253 professional music teachers in Trentino, in the Italian North East, we show how record production is affected by the traits of musicians' collaboration networks.

1 Introduction and main hypotheses

Music making has long been recognized as a social process consisting of innumerable interactions between a multiplicity of actors (e.g. Becker 1982). Researchers interested in its relational and structural dimensions have increasingly relied on network analytic tools to systematically explore those mechanisms and their implications (e.g. Crossley 2020). We contribute to this line of research through the analysis of the impact of relational and structural properties over the artistic production of 253 professional music teachers active in the music schools of Trentino. We ask whether their propensity to engage in record production is related to the characteristics of the relational systems in which they are embedded, such as volume of collaborative ties, balance between ties internal and external to the local music schools' system, and organizational features (in particular, the prevailing relational patterns) of the school to which musicians are contracted. In exploring these issues we rely primarily on approaches to the embeddedness of social action in sociology and organization theory (e.g. Granovetter 1973; Burt 2005), and on our own theorizing on the mechanisms that secure the vitality of individuals and/or collectivities (Sacchetti, 2022).

In the first place, we may expect record production to be correlated with the volume of collaborative ties in which each musician is involved. One should note that collaborations are not necessarily linked to record production. People may collaborate in the context of gigs and concerts; they may jointly contribute to theater shows and other instances of performative arts, or cooperate in music education, or jointly conduct bands and ensembles. The ties forged in all these settings may provide the incentives to engage in record production, but may also work positively against them, as some may prioritize live performance over music composing or recording (Finnegan, 1998, chap. 3). Still, we may plausibly expect musicians with a high volume of collaborative ties to be more likely to find the motivations and the opportunities to also engage in record production:

H1. Musical production will be positively correlated to the overall volume of collaborative ties in which music teachers are involved.

At the same time, not only the volume of collaborators may matter, but also their location. Following Granovetter (1973), the more music teachers collaborate with musicians external to their local environment, the more one could expect them to receive new ideas, technical and emotional support, which might lead to a more active involvement in record production. The relative weight of external ties may be assessed using the E-I index (Krackhardt and Stern 1988), that measures the amount of heterophily or homophily in one's network. In our case, the reference will be

collaborative ties to musicians that are internal or external to the TMS system:

H2. *Musical production will be positively correlated to the proportion of collaborative ties that musicians have outside their local context/regular working environment.*

The structural configuration of the ties in which people are involved might also matter, as the most conducive networks to musical productivity might be those with a balanced presence of local and translocal ties. Being connected to musicians operating in the same environment through daily, face-to-face interactions provides people with a sense of belongingness in an artistic community; it may also encourage them to engage in musical production by mechanisms of mutual control and competition as well as positive influence and emulation. All this may be missing if people are only connected to people located in different, distant environments. At the same time, an exclusive reliance on local, densely-knitted ties may also facilitate complacency and self-referentiality, corresponding to a situation of lock-in (Sacchetti 2022), in which musicians lack the innovative ideas and the exposure to broader sets of experiences that might ultimately encourage production. To measure the balance of one's network we use the square of the E-I index. By squaring we are able to contrast networks with high heterophily or homophily, treated as a joint category (the index will tend to 1 in both cases) with networks with a balanced presence of heterophilic and homophilic connections (the index will tend to 0). Accordingly:

H3. *Musical production will be higher for musicians that may rely on a balanced combination of local and external ties in relation to their working environment*

We can also capture the combination of local embeddedness and external outreach by looking at musicians' position within a larger core-periphery structure. In particular, actors in a semi-peripheral position in their network of collaborations should be best located to bring innovation and engage in productive activity, as suggested by studies devoted to music (Uzzi and Spiro 2005) as well as other fields (Cattani and Ferriani 2008):

H4. *Musical production will be higher for musicians that occupy an intermediate position between core and periphery in their professional environment*

Finally, we also need to look at how the combination of relational patterns within and across specific organizational may affect organizational culture. Burt (2005) notes how organizations need to balance closure and brokerage mechanisms to be effective. Working units need a balance between their capacity to act in a cohesive, integrated manner (reflected in a sizeable number of internal ties), and brokerage, i.e., the capacity of some of their member to fill structural holes and to have access to a broader environment. Performance is higher in groups that achieve that balance, than in groups which are imbalanced in one or the other direction; it is minimal among units that display neither brokerage nor cohesion mechanisms (Burt 2005, 139). Accordingly, we may suggest that

H5a. Musical production will be highest for musicians who are located in schools where on the aggregate teachers hold a balanced combination of internal and external ties

H5b. Musical production will be lowest for musicians who are located in schools where on the aggregate teachers are poorly connected both internally, and to other musical milieus.

2 Analysis

Given that the population is evenly split between music teachers who have and have not at least one record production to their credit, it seems appropriate to conduct two separate analyses looking for the determinants first, of presence or lack of involvement in that particular activity, and then of the amount of that involvement. Results are reported in tables 1 and 2 below.

The most consistent finding is the significance of the gender dimension across all the models we have fitted. Unfortunately, our data do not allow us to established whether women's lower involvement in record production depend primarily on glass-ceiling type of mechanisms, imbalanced division of labor within the family, persistent lack of self-confidence, or else. They point, however, at female musicians' persistent assumption of what are primarily teaching roles.

Moving to our substantive hypotheses, H1 was a purely relational one, proposing that "Musical production will be positively correlated to the overall volume of collaborative ties in which music teachers are involved." This has been constantly supported in all models barring one (model 4 in Table 1): musicians who are involved in several musical collaborations are also more likely to have

some record production to their credit, and a higher number too than more isolated ones. Taking into account that there is no strong correlation between the overall amount of collaborations, and the amount of ties people have built around record production, this is a non trivial finding. It adds one more piece of evidence to the long established view of musicking as a relational process (as summarized e.g. by Crossley 2020).

We also suggested that productivity might be related to involvement in ties that reached out of the setting in which musicians were primarily embedded, namely, the Trento music school system (H2). However, we found no support to the expectation that musical production be positively correlated to the proportion of musicians' collaborative ties outside their local context. As such, strong orientation to external ties, measured by the E-I index, did not correlate with higher productivity. The square E-I index, however, was found to matter for variations in productivity. Rather than reliance on ties outside of one's local relational context, what mattered was a balanced combination of external and local/internal (to the system rather than to specific schools) connections.

Our data support H3 that "Musical production will be higher for musicians that may rely on a balanced combination of local and external ties in relation to their working environment". Rather than on the volume of ties, this finding points at the importance of coupling embeddedness in specific settings with relations that give access to ideas and stimuli from other milieus. Musicians holding many but highly dispersed connections risk isolation from any specific context; in contrast, musicians strongly integrated in their local community but with little contact with the outer world are exposed to mechanism of self-referentiality and lock-in.

We also found the importance of a balance between internal and external ties to matter at the organizational level. In particular, musical production turned out to be highest for musicians located in schools with a balanced combination of internal and external ties (H5a). However, the opposite does not hold for schools that are weak on both grounds. Schools with that profile perform in a similar way to schools with an intermediate profile.

Finally, our data do not support H4: "Musical production will be higher for musicians that occupy an intermediate position between core and periphery in their professional environment". Whether individuals occupied a peripheral, central, or intermediate position in the web of ties that make up the local musicians' field did not seem to affect their productivity.

3 Conclusions

Summing up, our findings suggest that balance between local and external ties plays an independent, non-negligible role in accounting for individual record production. This applies not only in reference to the distribution of ties for each individual, but also at their balance within each school. This suggests that further research is needed on the organizational properties that can play an autonomous role in encouraging artistic production.

This conclusion, however, needs to be qualified. First, it applies only to organizations where teachers are involved in a high number of connections both within and outside the local scene – this is different from what we found at the individual level with the square E-I index. Second, and most important, the overall distribution of internal and external ties is a partial measure of organizational traits, inasmuch as it largely stems from the aggregation of individual properties. It needs to be supplemented with evidence on other aspects of organizational processes that might affect productivity, such as the relative weight assigned by managers to teaching v. performance, lack or presence of interest in their integration, organizational arrangements that encourage participation in the life of the school.

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		Model 1	Model 2	Model 3	Model 4	Model 5
Total collaborations	(H1)	1.11**	1.10**	1.11**	1.00	0.98
		(0.04)	(0.04)	(0.04)	(0.03)	(0.03)
Gender (0/1; 1=male)		3.01**	3.02**	2.98**	2.78**	2.81**
		(0.85)	(0.86)	(0.85)	(1.04)	(1.09)
Semi-peripheral position (0/1)	(H4)		0.89	0.89	1.45	1.54
			(0.26)	(0.25)	(0.57)	(0.62)
Low performance expected (Burt: 0/1)	(H5b)			0.67	1.41	1.36
				(0.23)	(0.70)	(0.67)
High performance expected (Burt: 0/1)	(H5a)			0.76	1.16	1.03
				(0.25)	(0.47)	(0.43)
E-I index	(H2)				1.01	1.10
					(0.25)	(0.29)
E-I index square	(H3)				0.41)	0.45
					(0.25)	(0.28)
constant		0.37**	0.38**	0.48*	1.51	1.47
		(0.09)	(0.09)	(0.15)	(0.96)	(0.95)
N		253	253	253	156	143
Prob>chi2		0.00	0.00	0.00	NS	NS
Pseudo R2		0.11	0.11	0.11	0.06	0.06

Table 1. *Logistic regressions on musicians with at least one production* (NB: odds ratios; s.d. in brackets; model 5 excludes musicians from CDM school; ** $p < 0.01$; * $p < 0.05$)

		Model 1	Model 2	Model 3	Model 4	Model 5
Total collaborations	(H1)	0.04**	0.04**	0.03**	0.03**	0.03**
		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Gender (0/1; 1=male)		0.41**	0.40**	0.38**	0.49**	0.48**
		(0.14)	(0.13)	(0.13)	(0.16)	(0.18)
Semi-peripheral position (0/1)	(H4)		-0.06	0.03	0.09	0.10
			(0.11)	(0.17)	(0.12)	(0.14)
Low performance expected (Burt: 0/1)	(H5b)			0.03	-0.00	0.02
				(0.17)	(0.19)	(0.19)
High performance expected (Burt: 0/1)	(H5a)			0.61**	0.59**	0.50**
				(0.13)	(0.14)	(0.15)
E-I index	(H2)				-0.02	-0.07
					(0.10)	(0.11)
E-I index square	(H3)				-0.34*	-0.46*
					(0.17)	(0.19)
constant		0.52**	0.54**	0.28	0.44*	0.56*
		(0.13)	(0.14)	(0.16)	(0.22)	(0.24)
N		126	126	126	105	94
Prob>chi2		0.00	0.00	0.00	0.00	0.00
Pseudo R2		0.11	0.11	0.15	0.18	0.11

Table 2. *Poisson regressions on number of record productions* (NB: s.d. in brackets; model 5 excludes musicians from CDM school; ** $p < 0.01$; * $p < 0.05$)

From “Space” to “Spaces”: Enabling Interaction with Multiple Environments to Contribute to Politics of Reuse and Audience Development

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Abstract

Reasoning around the topics of sustainability and the European Green Deal is promoting novel approaches to rethink cultural networking and technological innovation in sight of a more resilient economy. Two important themes involve the design of new models to include citizens in the management of culture and the adaptive reuse of available infrastructure to expand audience participation in rural areas and suburbs. Promoting the reuse of available infrastructure means to conceptualize technological interaction in relation to different types of architectures and sociological contexts, boosting new creative practices that account for opportunities to be replicated and scaled up by capitalizing on spaces that were not originally designed to host cultural exhibitions. This scenario can be an opportunity to reconsider how digital technologies and physical environments interact in the perspective of sustainable development, enabling new technological designs that adapt more easily to different contexts. Better and more flexible curatorial practices to empower the community in presenting innovative exhibitions through bottom-up strategies can become a key factor in supporting new inclusive models of cultural management. Such an approach could be informed by a shift from conceiving technological interaction in relation with the abstract space to one in relation to multiple abstracted spaces, in which creative initiatives are accompanied by innovative experimental methodologies and technologies for cultural dissemination that can eventually enter the market and promote new forms of cultural development on a macro-systemic level.

1 Introduction

With the definition of the 2030 Agenda for Sustainable Development, the European Union has undergone profound changes in its objectives and operating framework. The Horizon Europe program has introduced new research priorities focused on culture to enable new paradigms for social inclusion and empower local communities through innovative management models aimed at expanding the sharing of cultural activities among citizens. The New European Bauhaus program takes a relevant focus, promoting initiatives at the intersection of arts and architecture to contribute to the design of more sustainable models to interact with the environment towards a resilient economy. One topic that is at the centre of attention of current politics supported by the European Union consists in the opportunity for arts to revitalize rural and suburban areas, since art and culture are considered as valuable means to accelerate environmental progress [Helicon Collaborative, 2018]. Music is considered to play an important role in such a shift, for its power in promoting

participatory engagement with the community [Wolcott, 2016; Horwitz et al., 2022].

The reuse of spaces to generate innovative cultural services is an important objective within the aforementioned European framework. On one hand, it allows us to capitalize on available infrastructure and generate new dynamics supporting audience development on a macro-systemic level [Viola, 2022]. On the other hand, the approach raises opportunities to reach rural areas more effectively – since the distance from an event is considered as a major factor obstructing cultural participation [Getzner, 2020]. Empowering smaller audiences by reaching dispersed destinations may become a powerful asset to contribute to fighting popular trends in the entertainment industry that favor the creation of festivals, which are considered unsustainable from an environmental perspective as they tend to concentrate large groups of paying participants in uncontaminated fields [Creative Europe, 2019], with negative impacts related to carbon dioxide pollution and waste dispersion.

2 Audience development and new spaces

From a sociological perspective, trends in consumption have undergone substantial changes in dynamics to experience cultural products. The sharing economy highlighted patterns of appreciation by consumers towards new forms of alternative and sustainable tourism aimed at rediscovering natural or folkloristic destinations [Robinson et al., 2011]. Such trends invested the consumption of culture in similar ways, with rising patterns characterized by novel interests in experiencing artistic content in unusual settings through new forms of adaptive reuse of available cultural heritage [Richards, 2011]. The shift poses new challenges for museums and other cultural institutions, since old paradigms aimed at centralizing cultural production and dissemination in dedicated centers located in urban areas have decreased in attractiveness. These challenges have been further expanded by the COVID-19 crisis, which accelerated the need for cultural centers to capitalize on more inclusive management models as a way to promote audience participation in non-traditional ways [Choi & Kim, 2021].
The interest toward new management models for social inclusion triggers novel paradigms in the technological sector to empower communities so as to promote new approaches for cultural dissemination. This topic presents simultaneously an opportunity and a challenge for the field of electroacoustic music or other artistic formats that include digital technologies. New research in digital creativity include the creation of cross-sectoral performances bridging music, dance, theater, and moving images with innovative undertakings mediated by digital media either independently or in combination, with the effect to increase the landscape of digital-led artistic outputs conceived for live exhibition. One research that has moved in this direction consists in the Creative Europe-funded project "Interfaces" [Landy, 2019], coordinated by the organization Onassis Stegi (Greece) and including partners like IRCAM (France) and the ZKM | Centre for Art and Media (Germany). The project aimed to open a discussion on the possibility to rethink and develop new approaches to artistic technology for audience development, including new performance formats in new innovative spaces and across disciplines.

3 Adaptive digital curatorship

The rising paradigm to reuse available infrastructure to promote new forms of cultural development and networking poses problems for scaling up the presentation of outputs produced within the creative and technological sectors on a macro-systemic level. Initiatives such as the mentioned "Interfaces" project [Landy, 2019] tend to imply site-specific approaches to content creation, which may find difficulties for replication in diverse contexts. Whenever conceived for site-specific exhibition, an artwork may perform well in the original environment and poorly in alternative spaces, since the reuse of cultural heritage often presumes environments characterized by different spatial architectures not intended to host musical performances or digital exhibitions.
On one hand, the problem affects research initiatives developed within international projects and artistic residencies, since these innovative management principles may turn useful to maximizing the potential replication of produced artworks and bring benefits on the side of public expenditure. On the other hand, the developing framework on reuse affects the creative process of artistic creators, who are asked more and more to generate flexible cultural products that can perform well in impromptu environments, since irregular spaces force curators and designers to constantly rethink art display tactics [Lindsay, 2013]. Such types of spaces may include historic buildings in urban centres to be re-functionalized, old factories in suburb areas, railways, platforms and stations to be redeveloped, religious buildings, as well as

abandoned military bases, strongholds, or forts. Although the long-lasting reactivation of such types of environments should involve steady policies and investments by municipalities or donors, the depicted sociological context may turn music and arts into vehicles to better attract the interest of the community and local governments towards regenerative opportunities for cultural development, by experimenting new forms of cultural products in the territory and retrieving information on their potential impact.

Such types of inactive and adaptive spaces may eventually present potential to become novel outposts for the dissemination of culture and artistic performances in rural areas and suburbs, by capitalizing on voluntary actions and local policies through new forms of distribution models. An example can be represented by the case of the *Anfiteatro del Venda* [Euganamente, n.d.], an old landslide-mitigation structure that was privately converted into a space for cultural events organized through self-run voluntary initiatives by groups of young citizens to host performances ranging from movies to classic music. The term "adaptive space" not only refers to unused spaces in search for regenerative actions. It includes other types of spaces with potential for exhibition such as public schools, which could be conceptualized as living museums with educational purposes for the whole community if enabled with new affordable technologies to promote such transition over time. An example in this direction may consist in the residency initiative by researcher Rosa Llop as part of the European Interstice project [Universitat Autònoma de Barcelona, 2022], in which the artist developed an audiovisual experience with educational purpose to be presented in both schools and art centers.

Figure 1: *Example of adaptive reuse, the Anfiteatro del Venda, Gazigliano Terme (PD), Italy*

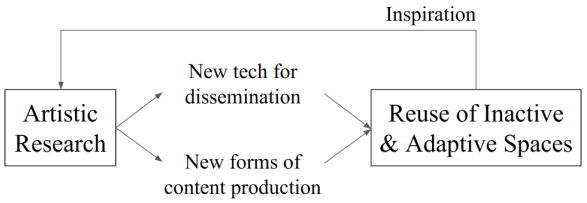

Figure 2: *Circular model for technological innovation inspired by reuse practices*

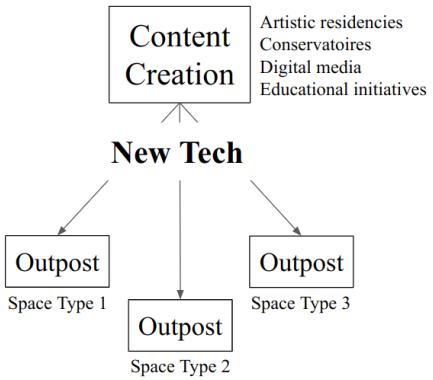

Figure 3: *Distributed model for cultural development enabling replication of content and new technologies*

4 From "space" to "spaces"

The present article suggests a shift in thinking about the interrelation between music (or digital art technologies) and space to account for innovative curatorial models that may be replicated in multiple scenarios, moving from considering technological interaction and artistic creativity in relation to the abstract space to considering them in relation to multiple abstracted spaces, through new research aimed at generalizing different architectural and sociological properties to inform innovative creative approaches with solid opportunities for replication in different contexts.
Acting on and accounting for opportunities to better promote well-curated exhibitions in different environments, as well as opportunities to facilitate the implementation of technology in different contexts may spark creativity in generating new forms of digital innovation together with innovative models or formats for cultural sharing. Such an approach implies a raise in awareness in relating artistic research with innovative methodologies to improve the exhibition and scalability of produced outputs through new forms of curatorial strategies. Previous research on audience participation led the way to introduce anthropological thinking and contextual factors in

art-making practices [Ardenne, 2002], towards the generation of new flexible models of co-creativity and interactivity mediated by innovation in computer science [Hödl et al., 2012; Shilton 2022]. To day, such approaches have mostly focused on the interrelation between performers and digital technologies from the perspective of content creation, and emphasis on investigating emerging characteristics in relation to different physical environments may lead to the generation of new technologies that integrate spaces more efficiently for exhibition purposes.

As highlighted in the introduction, local communities are apt to play a crucial role in the development of new models for cultural management through current Horizon Europe policies. The opening context which foresees a role for adaptive spaces to transform into cultural outposts in sight of audience engagement practices should be supported by new technological paradigms to facilitate citizens in the organization and implementation of innovative culture, and the opportunity to regenerate available cultural heritage may accelerate new forms of distributed management models, connecting museums and larger organizations with local communities through new forms of digital innovation.

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Teatrosofia.
Interactions between Philosophy and Musical Performance

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Abstract

Teatrosofia is a scientific dissemination project launched in November 2014 that investigates the ways in which ancient philosophers interpreted theatrical and musical performance. Until June 2021, every three weeks the journal *Teatro e Critica* published an essay on an aspect of this topic, followed by an appendix with an Italian translation of the main sources discussed in the text. The number of articles published so far is 118. In this article, I outline the goals/methods of the project and offer a very concise case study.

1 Introduction

Teatrosofia starts from the so-called "Pre-Socratics" and is expected to finish with Damascius, or with the closure of the school of Athens (529 AD). This event is conventionally interpreted as the end of ancient philosophy and the beginning of the medieval philosophical tradition [Napoli 2004]. Although this distinction is debatable, for numerous medieval philosophers have continued to think with methods, notions, and languages of the ancients (cf. *e.g.* [Westra, 1992]), the closure of the school of Athens is an important and very symbolic historical event. It can therefore constitute a useful yet arbitrary point of arrival of the investigation of *Teatrosofia*.
The target audience of the column is a cultured audience interested in music and performative arts without being experts in classics and philosophy. Consequently, *Teatrosofia* limits the use of technical language, while maintaining the rigor of the scientific method and refusing to simplify the issues or theories analyzed.
In concrete terms, the long-term end would be to publish five volumes that would contain rewritten versions of the articles that have been (and will be) published in *Teatro e Critica*. At present, the first volume (*From the Presocratics to the first Platonists Plato*) is close to completion.

2 Historical and theoretical goals

Teatrosofia has two *raisons d'être*. The first is that there is no systematic study dedicated to the interpretation of musical and theatrical performances by ancient thinkers. The studies carried out so far are almost exclusively focused on "major" authors, for instance Plato, Aristotle, and the Stoics (cf. recently [Halliwell, 2011].
Yet there are many other interesting figures who spoke of music and the performative arts. The studies dedicated to the authors mentioned above have neglected promising research paths. Thus, Plato is mainly studied for his attack on poetry in the *Ion*, the *Republic*, and the *Laws*, where it is presented as a discipline that leads astray and gives rise to emotional disorder. Far less explored is the "dramatic" structure of Platonic dialogues, which could be read as theatrical dramaturgies, where what emerges from the relationships between the characters is more important than the arguments themselves [de Luise 2017]. In the case of Aristotle, scholars have explored the musical catharsis of book VIII of the *Politics* and of the *Poetics*, neglecting other interesting texts that shed light on Aristotle's view of the performing artist. Suffice it to mention chapter 5 of book VII of the *Nicomachean Ethics*, which refers to the art of acting to explain incontinence, or the tendency to pursue evil against one's will [Crisp 2004, 124]. Finally, there exist numerous studies on the metaphor of the Stoic

sage-actor who knows how to interpret the role assigned to him by fate or by divine providence (*i.a.* [Vegetti 1983]). However, this theme also needs to be studied in greater depth in order to trace how it evolves over time. In fact, the metaphor of the sage-actor undergoes a radical metamorphosis, in the thought of Stoics such as Aristo of Chios, Seneca, Epictetus, and Marcus Aurelius.

A comprehensive study of the discourse of ancient philosophers on music/performative arts will shed light on some aspects of the thought of these thinkers. Many references to music and other performing arts have a strategic nature, for they are used by philosophers to support their ontological, epistemological, and ethical arguments.

The second main reasons for cultivating *Teatrosofia* is of theoretical nature. The historical comparison with ancient philosophers allows us to identify and define some recurring concepts associated with theatrical and musical performance, such as "rhythm"/"catharsis". By examining what ancient philosophy has to say about these key terms, two different lines of inquiry can be opened. On the one hand, it is possible to collect these fundamental concepts in a "syllabary" and try to illustrate the main definitions that were ascribed to them in antiquity. In turn, these proposals could encourage us to reconsider some of the prejudices that we have towards music/theatre and, by extension, to investigate and interrogate them with greater awareness. On the other hand, this investigation would lead us to consider ancient philosophical reflections on more general issues, many of which are still the subject of debate.

3 Methodology and dissemination

From a methodological point of view, these theoretical objectives show how music/theatre and philosophy could positively interact. Indeed, both could learn something from each other. With the help of theoretical reflection, people involved in musical and theatrical productions could better understand the concepts and problems that these arts face on a daily basis. On the other hand, philosophy can elaborate, with the study of performance, a rational method / discourse that can account for the specificity of theatrical language and stage practice. Thus, a sort of "sacred alliance" is established between the two disciplines, which leads to a kind of hybrid field: a "theatrical philosophy", or a "philosophical theatre".

Such a theoretical move could appear questionable to specialists, who might see it as a collision of two incompatible fields: history of ancient thought and performing arts. However, we can interpret it as a positive attempt to create an interdisciplinary dialogue with the hope of fostering collaboration between philosophers and musicians/actors.

In this respect, an interesting form of collaboration could be a "lecture-performance", by which I mean a scholarly presentation accompanied by performative elements. An example is my lecture-performance *From Sound to Mystery*, which focused on Augustine's use of music as a means to understand the providential order of the world. It took place in February 2022 in cooperation with the Conservatorio Bonporti, the Muse, the University of Trento. A lecture-performance could address a complex notion related to music (*e.g.* catharsis or rhythm), using ancient thinkers as interlocutors in order to gain a better understanding of it.

4 Case study: Heraclitus' harmony

I conclude with a brief example on how ancient philosophers can help us reconsider our common conceptions of music and performing arts: Heraclitus' criticism of musical catharsis (for textual references, cf.[Piergiacomi 2018]).

This Presocratic philosopher (535-475 BC) defends the unity or «harmony» of opposites, including that of beauty and ugliness. Heraclitus dialectically recovers this notion from musicians. On the positive side, the latter show that beautiful and ugly sounds are opposites that form a single whole (= the melody). But since musicians of Heraclitus' time were credited with the power to soothe excessive passions with their songs, *e.g.* to generate a mean between anger and tranquility, Heraclitus may have also argued that, on the negative side, music risks to destroy the unity between these two emotional opposites.

Now, if we consider the Heraclitean theory, we can problematize the ordinary view that music must aim at a sort of catharsis. Indeed, Heraclitus could lead us to think that the musical art may harm us, insofar as it "conceals" the "dark" side of reality as it is blended with the good/positive side. In a constructive sense, he can point out to a very different view of the goal of music: to cause spiritual anguish, *i.e.* to create melodies that would allow us to grasp the complexity of the world and the unreality of oppositions. Due to its power to unify beautiful-ugly sounds, the musical art could be conceived as a means for understanding that everything is mixed with everything.

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