

Introduction to the Sociology of Music Technologies: An Ontological Review

Introducción a la Sociología de las Tecnologías Musicales: Una Revisión Ontológica

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Abstract

Adorno's work, in particular the texts dealing with the relationship between music and social behaviors or structures, has been the target of criticism, especially in the second half of the 20th century, being considered by many to be generalist, dogmatic or even elitist. This work proposes the analysis of musical technologies not only as a set of compositional techniques, as Adorno does, but, in fact, as material conditions for the realization of a certain type of sound/music. The colonialist character of these technologies is also analyzed. Based on a review of some key concepts in Adornian theory, a dialogue is sought with more contemporary authors from the sociology of music.

Keywords: Adorno, sound, music production, audio technologies, technocoloniality.

Resumen

El trabajo de Adorno, en particular los textos que tratan de la relación entre la música y los comportamientos o estructuras sociales, ha sido objeto de críticas, especialmente en la segunda mitad del siglo XX, siendo considerado por muchos como generalista, dogmático o incluso elitista. Este trabajo propone el análisis de las tecnologías musicales no solo como un conjunto de técnicas compositivas, como hace Adorno, sino como, de hecho, condiciones materiales para la realización de un determinado tipo de sonido/música. También se observa el carácter colonialista de estas tecnologías. A partir de una revisión de algunos conceptos clave de la teoría adorniana, se busca un diálogo con autores más contemporáneos en la sociología de la música.

Palabras clave: Adorno, sonido, producción musical, tecnologías de audio, tecnocolonialidad.

Summary

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1. Introduction

The title of this article is a reference to Theodor Adorno's work: *Introduction to the sociology of music* (1989). It is not a direct critique or an endorsement of his considerations about twentieth-century artistic production, especially the relationship between music and social behavior or social structures. In general, his ideas about the cultural industry have been reviewed in many aspects, especially in the second half of the 20th century, being considered by some of his readers as generalist, excessively dogmatic or even elitist. This paper is not concerned with such criticisms, aiming, instead, at contributing to the discussion about contemporary ways of making and listening to music from a social, historical and geopolitical perspective.

That specific approach to the act of producing and consuming music, although different from the perspective presented by Adorno, can also be seen as the study of a kind of alienation of the modes of production (a very important notion in his essays on the commodification of music). The difference lies in the fact that for Adorno this alienation takes place in the process of underestimating the possibilities of "enlightenment" that music and its "technologies" can provide society in order to develop the historical and social consciousness of listeners.

The demand for a proletarian theory and praxis, dependent on a consciousness not suppressed by or subjected to class domination—a crucial issue for Adorno—is placed as an alternative to the alienation of the reified work of art. Its transformation into a commodity would bring sensual satisfaction through the feeling of possession of the object, while discouraging reflection on it and on the society from which it should not be analyzed separately.

Following a different path, this investigation will focus on the analysis of musical technologies not only as a set of compositional techniques, as Adorno does (Adorno, 2002), but as material conditions for the achievement of a certain type of music. That specific object inevitably involves social, economic and historical arrangements, allowing distinct material configuration. Therefore, this investigation seeks an initial description of the material conditions for the production of specific categories of sounds and, at the same time, for the justification of the existence and circulation of these sounds.

As we will see later, the construction of specific sonorities¹ (as well as the terms used to describe these sonorities) responds to a globalized (and colonialist) structure of the division of labor.

The main objective of this work is, from the description of contemporary technological environments and the confrontation of current sound practices with what Adorno calls musical "technologies", to provide an initial analysis of the agency of sound technologies in the context of late capitalism. The current moment, called by some authors Neo-Globalization or Post-Globalization (Flew, 2020), makes even more evident the importance of rethinking global technical arrangements in the face of a reassessment of the role of nation-states and hegemonic technological models. This research seeks to contribute to the critique of technologically mediated sound practices associated, especially in Western culture, with the idea of globalization. It understands technologies not only as a tool for a specific purpose, but as discursive models linked to internal and external conjunctural factors.

This article is therefore organized into the following sections: after a short discussion about its methodological, epistemological and ontological premises, it presents, in the Results section, a brief review of some of Adorno's most known concepts about music, its condition as a commodity and the effects of this condition on the listener/society. For this task, we bring some of DeNora's speculations about the relevance of Adorno to a sociology of contemporary music and the usefulness of working within this perspective, since, according to DeNora (2003), the more traditional sociology has historically placed music and society in separate fields.

To account for a series of practices and material arrangements in music production, especially in the 20th century, it brings some ideas from Théberge (1997) regarding changes in the very nature of music in the face of technological changes in audio studios. His work, despite being published more than twenty years ago, is still relevant to the issues discussed here.

In the Discussion section, the article addresses the colonialist character of recording technologies and the discourses created from them. In addition, some lines of flight are presented as models for rethinking technologies in sound/music production.

¹ For a more detailed description of the semantic possibilities of the concept of sonority, see Mazer *et al.* (2020).

2. Methodology

This article proposes a theoretical review of audio technologies discursive instances and the mediation they exert in our daily lives. However, this review is less an update of current literature within the more traditional limits of qualitative research, than an ontological and epistemological reconsideration about the presence of such technical objects and their unfolding in our daily activities.

Methodologically, this work dialogues with post-qualitative research, insofar as it dispenses (at least initially) with prescriptive procedures such as interviews, participant observation, etc. For St. Pierre, “methodology should never be separated from epistemology and ontology (as if it can be) lest it become mechanized and instrumental and reduced to methods, process, and technique.” (St. Pierre, 2014, p. 3). By delegating, even partially, to the technological apparatuses and material conditions a sufficient level of agency in the conformation of practices and sociocultural relations, we approach what some theorists have been calling “neomaterialism” or “neoempiricism” (St. Pierre, 2014). The “material turn” (Lemos and Bitencourt, 2021), which emerged in Science and Technology Studies, stimulated the emergence, in the human sciences and philosophy, of different perspectives such as Actor-Network Theory—ANT (Latour, 2005), Object Oriented Ontology—OOO (Harman, 2002), Speculative Realism (Brassier, 2007), studies on the Materialities of Communication (Gumbrecht and Pfeiffer, 1994), etc. Such heterogeneous perspectives have in common the assumption that social life is built by the interaction of human and non-human elements, calling into question the centrality of human subjectivity, modeled within the tradition of correlationism, that is, the idea that everything that is knowable is correlated with the (possible) experience of the subject. Thus, before starting with a qualitative description, in which one central subject frames and limits the voices of the different actors participating in the phenomena, we must be open to “a methodological turn in the research perspective that calls into question the process of coding and analysis of evidence, as well as its subsequent visibility in the final product” (Segovia and Gonzáles, 2019, p. 161).

When bringing to light questions about the constitution of a hegemonic set of practices and a relatively autonomous model of the technological environments (since, built from a teleological perspective, it stands as a logical, pragmatic, objective and unavoidable fact), this work looks for the discursive layers in the set of technical objects, performing an archaeological exercise along the lines of Foucault, questioning “on what kinds of assumptions, what kinds of familiar, unchallenged, unconsidered modes of thought the practices that we accept rest” (Foucault, 1988, p. 154). Still on post-qualitative research, Hernández-Hernández and Benavente point out:

This framework allows us to think about the meaning of research from another perspective, with other foundations and purposes. But above all, there is an openness to the imagination that allows us to think that researching is not just following a predefined path, in which some methods are applied, to give an account of the results that can be foreseen in the initial questions (Hernández-Hernández and Benavente, 2019, p. 27).

By questioning technologies from the perspective of decolonial studies (an approach of great importance, especially for authors from the Global South), this work seeks to displace the already classic discussion about the instrumental purpose or about the “essence” of technique, as we see in the Heideggerian notion of “revealing” the nature (Heidegger, 1977) or in the technological somatism of Ernst Kapp (2007). The interest of this particular investigation is to understand the modes of existence of technological objects and their mechanisms of agency, even if this agency responds, to some degree, to other contemporary geopolitical dynamics. The effects of this agency on society have the important – and often underestimated – ability to shape subjectivities, aesthetic standards and worldviews.

3. Results (from literature review)

3.1. Adorno and music consumption

In a first look at the relationship between Adorno and music, it is common to highlight his criticism of the “facilitating” character that popular music presents in satisfying listeners’ subjective needs. These needs are shaped, along with the other objects of consumption, within a capitalist logic, in order to suppress any relationship with material reality. By offering easy solutions, in compositional terms, popular songs make use

of emotions as a way of addressing the audience and obtaining quick responses in terms of popularity and commercial results. The diatonic-tonal model, more easily assimilated and already widely adopted, is the main tool (which Adorno will call technology) responsible for the standardization of popular compositions of the 20th century.

Adorno saw the generalized rationalization of economic processes spread across the various social spheres as a “despiritualization”. At the same time, the irrationality of the social relations permeated artistic production so that the identification between the artist and a “spiritual” universe acted as a mitigating factor for structural tensions. The “spirit” was also identified with the bourgeois personality, which sought to adapt some cultural values of the nobility. The approximation of the cultural world gives the bourgeoisie an ideological identity that helps it to strengthen itself as dominant not only in political, economic or social terms, but also cultural ones.

Likewise, Adorno sees the mechanization of performance as a technification and rationalization outside the realm of music, the cause of a generalized process of alienation of work. In his view, rationality as a form of engagement with artistic creation, especially in music, is considered the ideal way of experiencing art.

The improvements and innovations in the realm of mechanical musical instruments, which make possible a more precise reproduction than that given by mediocre and uncontrolled “free” interpreters, might well have influenced the ideal of reproduction; at any rate, it has affirmed the claims of social interpretation of the conditions of musical production insofar as their immanent complex of problems has brought the same limitation of reproductive freedom and the same tendencies towards technification and rationalization experienced outside of music in social and economic developments. The perfection of the machine and the replacement of human forces of labor through mechanical forces has become a matter of reality in music as well (Adorno, 2002, p. 414).

By proposing a hierarchically structured classification of the musical conduct of different types of listeners, Adorno (1989) reaffirms his concern with the superficiality of the experience he sees in popular music and in other pre-established formulas of composition. This can be observed not only in music industry, but also in other capitalist productive arrangements. In his systematization, Adorno pays special attention to the so-called *entertainment listener*, defining him as a “passive” listener, created by the industry. Therefore, an adequate analysis of this type of cultural consumer would only be possible in the context of the mass media of the beginning of the 20th century, with the development of radio, television and cinema.

Music for films was another of Adorno’s object of study. He and Hans Eisler (Adorno and Eisler, 2005) endeavor to describe the “bad habits” of the film music composer. These habits, according to them, were born from the empirical character of cinema and from the intellectual circuit of Tin Pan Alley (a group of music publishers and composers in New York that dominated popular music in the United States between the late 19th and early 20th centuries). The compositional structures used in films were, therefore, the result of the crystallization of practices that facilitated music production, which ended up migrating to film scores. Some of these structures were adapted from the so-called “erudite music” (more precisely, from classical and romantic composers) whose influence was fundamental for the constitution of a specific way of film music to work.

Adorno and Eisler (2005) identify in the evolution of the technical domain over sounds and images a market strategy to standardize their reception. The subsumption of music as a mechanism of social control is one of the elements that makes DeNora (2003) see in Adorno’s work an underestimated potential for analyzing music based on its effects on people’s behavior.

Music as a form of control makes use, as Adorno points out, of an unconscious relationship with musical objects, which guarantees them a fetish quality in the consumer society. This type of fruition of the work of art gives rise to a “feeling” —a subjective apprehension of a quasi-religious character—, which, despite being barely controllable, is endorsed by the transformation of music into a technically manipulated object. Recording and reproduction technologies, in this case, mean a stability in the production of “feelings” arising from music. Music education, cultivated by bourgeois culture, promotes the study of general concepts of style, but moves away from the social function of music, which would be stimulated by the deep understanding of its formal aspects.

“Light” music would work, in this way, as a satisfaction of immediate desires, identified with general emotions and with an inner state of the listener. Adorno, on the other hand, proposes that the channeling of emotions through music must be a material effect of the composition: this means a greater complexity of the idea of emotion than simply a temporary state of mind. Thus, channeled emotion is closely related to

recognizing the structure of music. It is an effect of aesthetic contemplation that, unlike bourgeois ideology, does not seek art to respond for the voluptuousness that life denies.

Finally, Adorno identifies in the process of listening, particularly the *expert listening*, one of the ways of understanding the world. The superficial satisfaction of bourgeois needs distances music from its role of mediation between listener and reality: "the ideological essence of 'musical life' is its ability to satisfy the needs of the bourgeoisie adequately — but to do so by means of a form of satisfaction which accepts and stabilizes the existing consciousness" (Adorno, 2002, p. 421). For Adorno, social complexities are revealed in the contradictions between music production and its reception. The structure of listening would therefore be a key to understanding these complexities.

3.2. Sound production technologies

For Adorno, the improvement of sound recording technologies is a way of limiting the performer's freedom in a process of alienation of the workforce and its commercialization in physical objects. However, the sophistication of music production in studios should not be seen as just an intensification of this alienation, but as a reconfiguration of the musical production chain itself.

Material conditions were fundamental for Adorno to think about the impact of music in emotional and reflective terms. Musical materiality is subject to an exegesis of musical form through culturally acquired (and dialectically constituted) tools. Capitalist society would discourage this attitude:

With society irresistibly turning bourgeois and the exchange and performance principles victorious, the good listener —again, in proportion to the increasing numbers that will listen to music at all— may be presumed to keep growing rarer and threatening to disappear (Adorno, 1989, p. 6).

In this case, material conditions would work in an almost subliminal way to stimulate social awareness. When studios become central places and indispensable tools for musical production (and not just popular music), such materiality becomes effectively tangible, still evidencing more of these relationships.

Analyzing the changes in the modes of production of the cultural industry in the 20th century, we can verify that, together with the growth of production in radio, music, cinema and TV, there is an increasing process of rationalization and specialization of functions. The aesthetic experience is closely connected to the development of material supports and these, in turn, are produced from the logic of technical improvement and maximum efficiency of the productive structure.

Different technical constraints modify the type of sound that is recorded and the result can be classified as technically acceptable or not, whether by sound engineers or by the common public. Therefore, the logic of technical perfection distances itself from a material concreteness of the world that it supposedly intends to mirror, to formulate a self-centered discourse of functioning, in which the representation acquires, more and more, independence from the represented. It is important to emphasize that this same discourse paradoxically reaffirms the importance of closeness between both. However, the connection between representation and represented is abstracted due to a discursive imperative built on a teleological idea of an eternal and inevitable technical development.

This construction of specific sonorities, as mentioned in the introduction to this article, refers to the way sounds addresses things, but also to a relational structure of thought. It is only possible to think about the nature of certain sounds, and, consequently, attribute them adequately to this or that object, if we do so taking into account different levels of discourse and interaction between elements internal and external to our conscience, making the relation between sounds and things to be possible within our horizon of events.

The role of cognitive affect that sounds exert on listeners should be taken into consideration. That sort of cognition has a different nature from the one described by Adorno, but even so it goes far from an "exogenous aesthetic appreciation". Adorno refers as "exogenous" to the description of the euphonic character or to the extra-musical considerations made around the music, but not intrinsic to it².

Cognitive effect of sounds is a way of apprehending the world and placing it within a certain logic that is not —and will never be— the logic of the concrete world itself. Even Adorno recognizes that this logic is

² By stating that "music is a constitutive ingredient of social life" (DeNora, 2003, p. 151), DeNora criticizes the separation that the more traditionalist current in the sociology of music makes between music and society.

unattainable, but the political project instilled in his idea of cognition cannot give up the attempt to do so. In this way, the world makes sense from the relationship between the possibility of sounds and what makes these sounds possible. Technological networks and the discourses originated from these networks allow and give density to a representation model of the world through sounds. This is a dialectical relationship in the Adornian sense: each side provides the substrate and feeds on the other. There is no sound without a technical discourse validating it and vice versa.

Théberge (1997) describes how musical technologies, especially those used in recording studios, changed not only the way music was made in the 1970s-1980s (the time frame of his research), but the very concept of music. Electronic and, later, digital instruments altered the musician's relationship with compositional issues, demanding a new bond with such new sounds. Théberge describes the adoption of the term "sound" among musicians and studio technicians quite precisely, albeit abstract in essence, and as a freer alternative to the idea of "music".

In his analysis, contemporary musicians would carry out the task of producing a particular "sound", with personality and that provokes the listener. Théberge describes the change in the nature of the musical object from the introduction of different technologies and procedures during music production. The change in the way music is perceived inevitably brings a change in the role of the musician and of the musical instrument. Understanding that, in a very reductionist way, the instrument is the object that produces the sound that the musician expects and that only through the interaction of both is this sound possible, the new recording technologies should also be considered musical instruments. It is a different kind of logic, since the composition would no longer deal with the organization of abstract sounds (musical notes, which only obtain their concreteness when performed), but with the organization of the sounds of things. The ideality of possible sound reaches a different level than that of the structure of "language", but that of the material organization of the process *per se*. In this sense, the sound technician (or the sound engineer) becomes a key player in the production of sounds. He is the one who best understands the new interfaces, being able to produce acceptable "sounds" within a series of cultural and social constraints. The term "sound" becomes, confirming Théberge's proposition, more suitable for the musical production of the 20th century (especially in its second half) because that is exactly the objective of the studio's work: the creation of "appropriate" sounds.

Sounds are no longer sounds of things, but sounds that often refer to almost abstract categories of things. The sound effects are, in this sense, a good example of how technological control (or certain uses of it) detached sounds from objects and could create very personal narratives about the audible world³. Sound effects are, in certain cases, narratives of technical objects about technical objects.

Théberge also describes how the different uses of recording technologies result in different "sounds", articulated with local scenes and with the personal styles of each artist. Building on the work of William Ivey (1982), he describes the development of the so-called "Nashville sound", between 1957 and 1971, as an attempt to carve a niche within the American music industry and as an initiative to strengthen country music consumption on the radio. The curious thing, Théberge points out, is that the "Nashville sound" was not necessarily made in Nashville. This example brings us to the next part of this work, about the dissemination, internationalization and commodification not of sounds, but of ways of producing sounds.

4. Discussion

4.1. Technocoloniality

The re-elaboration of audio studio environment reflects changes in production-related practices. The organization of the technical structure is now more logical, pragmatic and intuitive, albeit sometimes more mysterious. As large recording companies gave way to small home studios, via the popularization of multitrack recorders and, later, of digital sound interfaces and recording software, much of the old empirical knowledge gave way to a more concise (and less material) model of articulation between apparatuses, at the center of which software plays a decisive role. As a tool to replace tools, software fits new and already existing needs, many of which are inherited from earlier devices.

³ For a more specific approach to sound effects as a sociotechnical mediation of sounds, see Castanheira (2020).

The machine's network logic, not restricted to the physical environment of the studio, has a great influence on the logic of body training and performance of the instrumentalists. Traditional recording techniques are relativized in face of new of sound manipulation parameters. Anachronistically, the diatonic-tonal model and more common rhythmic patterns remain a compositional reference for the new digital black boxes. Pitch correction plugins work upon the existence of a basic tonality; irregular metrics are commonly overlooked in favor of the indiscriminate use of 4/4 time, default preset on every drum machines. Classical compositional structures are subjected to an even more coercive logic. The simplification of elements and the friendly character of interfaces favor the popularization of digital tools. However, our hypothesis here is a little more complex.

The standardization of production modes is not only aimed at a "democratization" of music. The current regulation of digital tools creates greater subjection in relation to the corporations that develop them. More than a physical dependence on equipment and equipment parts, there is a logical demand that forces musicians and producers to be in constant renewal. You cannot "open" software to alter one of its parts (at least not legally) as you would do with any equipment you paid for. Software is volatile, as are the operating systems that run it. They are updated as needed by the manufacturer who is ultimately their real owner.

The widespread adoption of digital as the basic logic of sound production devices reduces the chances of direct interference on the architecture of the machines. The digital increasingly behaves like a black box, with well-defined capabilities, whose deep levels of activity are hidden under a friendly interface, but not so open to non-factory programmed functions.

At the same time that they determine specific approaches to the way of making music, digital technologies appropriate sound particularities of different places and times, in order to constitute an accessible "universality" of timbres. Théberge mentions the sample libraries that emerged in the 1980s which promised a collection of exotic sounds from different parts of the world, in a kind of "sonic tourism" for musicians from the industrialized world: "in this way, they simultaneously fuse discourses of the exotic with those of 'tradition' and 'authenticity'" (Théberge, 1997, p. 202). Although the author does not see this commercialization of "exotic sounds" as a threat to the "purism" of those musical traditions, or as a reductionist look at different cultures practices, he admits that this product is the result of a process of globalization that expands in search for new cultural habits. I would add that this globalizing discourse also searches for new markets, even though through the bias of cliché and pastiche.

The interface of the new digital instruments, generally speaking, is not entirely suited to the multiple ways of sounding from different cultures with their specific vicissitudes. Therefore, we can see some inadequacies involving the ways of making music in different places and the need to make it circulate as widely as possible. The simple use of "exotic sounds" cannot lend legitimacy to the songs of mainstream artists who seek a popular and disseminated "sonic tourism". The so-called universalizing character of pop music engenders discursive strategies to justify belonging to a global culture, in which common references are widely shared and can acquire local "colors".

The main logic of the means of production and circulation, however, is that of erasing specificities. The technicist discourse functions both as a material impossibility (certain things cannot be recorded in the original "local" form, except through a technical adaptation), and as a force within a globalized imaginary (if the whole world records like this, with these specific tools, that must be the best way to do it). This tension is object of a constant negotiation in order not to lose the material element of the performance (often imbued with ritualistic values), and, at the same time, to meet the technical parameters of a historically and socially constructed notion of recording quality.

The recordings of Brazilian samba schools are an example of this relationship. The sound produced by the large group of percussionists of samba schools during Carnival parades has an impressive physical impact on the audience. However, it is practically impossible to do it justice in the recording, unless from a profound adaptation of the musicians' performance with a result that is not always satisfactory. Moehn (2004), when commenting on the recording of the album of *Sambas-Enredo* by the samba schools from Rio de Janeiro, in 1998, describes what he calls "structural oppositions" between live performance and recording, although he admits that many of these values, aesthetics and practices are not always in tension with each other. Even understanding the two spaces as equally mediated by a large technological apparatus, one of them (the studio) completely excluded amateur elements.

For example, the sound of the “masses” of spectators in the sambadrome was approximated in the studio through the doubling of the choral parts, and by adding liberal amounts of reverb to these tracks. In some cases, samples of fireworks are included on the disc to simulate the beginning of the procession in the sambadrome (Moehn, 2004, p. 49).

It is natural to suppose that the weight of the musical canon had a great influence in the recording techniques history so that these meet more adequately the parameters of European/Western, diatonic-tonal music. The structure of the music production chain, globally speaking, is more suited to a specific type of product and, consequently, encourages greater production and circulation of that very type. The use of ethnic or exotic elements meets different demands of the complex discourse of late capitalism, but, in the end, it is subjected to a very rigid logic of conformation to conventions vertically defined by the phonographic industry or technologies development companies.

The search for the most sophisticated musical instruments or for the latest recording technologies are symptoms of the need for adequacy to industry standards. The fetish of technology ends up having a great effect on the final product because it satisfies a personal need of the musicians, but also of the media environment in which music will circulate. The adoption of certain technologies has effects not just in the immediate production of sounds, but on the very possibility of the music being played in different media. Technical criteria are not unique or universal, but largely delimit what can or cannot be heard on records, on streaming platforms or even in live presentations.

Formats; codecs and compression rates; file size; number of channels, etc. are mandatory criteria for music to circulate. In recording protocols, the list of technical demands is even more complex. The musical experience, within mass media perspective, involves knowledge and adaptation to these requirements. Music producers that do not meet these precepts, following their own non-standardized habits, may find it difficult to be considered “professional”.

Contemporary technologies of music production, by forcing the entire production chain to follow the same logic —pragmatic and dependent on solutions developed by large transnational corporations—, are colonialist tools, whose effects of erasing the “different” can be equal to the impact tonal heritage from European music had on non-European cultural practices.

4.2. Biophilic technologies, gambiarras and empiricism

Let us look at some examples of existent/proposed lines of escape for such colonial effects of late capitalism and untethered globalization.

Contemporaneously, Global South researchers have been conducting original discussions about colonialist aspects of different sound media or sound technologies. Different concepts, dealing with both formal elements of music and technical mediations in different recordings made in Latin America and Africa, point to the close relationship between sound practices and criticism of the colonialist historical project. Cárcamo-Huechante (2013) introduces us to the notion of “acoustic colonialism” by describing the discursive domain of massive broadcasting corporations in Chile and how Mapuche activists opposed to this hegemonic discourse by producing and broadcasting programs that created, from their own voices, a public space of audibility for the Mapuche people.

Speaking of formal aspects of music, Kofi Agawu demonstrates how the notion of tonality “played a role in the network of exchanges and impositions that defined European colonialism in Africa” (Agawu, 2016, p. 335), serving as a tool for its ostensive “civilizing mission” from the 1840s onward.

In countries from Central and Latin America, some artists have experimented with practices centered on local solutions, as a form of resistance to the dominant technological models. Susan Campos-Fonseca (2019a), in a lecture held at the Museo Reina Sofia, in Madrid, describes Western music, especially its tonal structuring, as one of the most powerful colonialist models at work in developing countries. She reports her experience in Costa Rica, with devices produced from the local reality to create their own sounds and musical procedures (Campos-Fonseca, 2019b; 2019c). For her, we must create a “space for dialogue that proposes to rethink what we consider ‘high technology’, exchanging the neoliberal productivist and consumerist paradigm for a ‘biophilic’ technology created to become with life, decolonizing nature, science and the arts” (Campos-Fonseca, 2019b).

In Brazil, the well-known term “gambiarra” refers to adaptations and improvisations to solve everyday problems, whose solution is not within reach of someone or simply does not exist. The notion of gambiarra (perhaps roughly translatable as “life hack”) is part of the way of being of most of the Brazilian population, especially those groups with less access to expensive products or services. Obici (2019) describes the gambiarra within the artistic universe:

The term finds resonance in areas such as visual arts, music, sound art, media art, and activism. Additionally, in the framework of the ensuing discussion, it could be seen as part of a wider trend that includes the following terminology: “do-it-yourself” (DIY), instrument sound design, circuit-bending, hardware hacking, dirty electronics, cracked media, *povera* technology, and residualism. By reinforcing the connections between sound and materiality, each of these terms suggests a re-envisioning of the musical instrument as a source to be explored in the different contexts of sound art (Obici, 2019, p. 115).

According to Tragtenberg *et al.* (2021), the gambiarra is usually considered “negative, humorous, and ingenious. The colonized minds tend to consider it inferior to industrial technology from abroad” (Tragtenberg *et al.*, 2021). The creative practices evidenced by the ethos of the gambiarra, based on material limitations of “underdeveloped” countries, re-signify and transform technologies from “developed” ones. The very notion of underdevelopment is nothing but a neocolonialist strategy in many different aspects: economic, political and epistemological. Within a decolonial perspective, the same authors still refer to the concept of Techno-Vernacular Creativity (TVC), by Nettrice R. Gaskins, as “a set of adaptations of mainstream technologies carried out in the periphery of the planet” (Tragtenberg, *et al.*, 2021), something close to the idea of gambiarra. In the words of Gaskins:

African American artists (and artists from other UEGs⁴) combine or subvert existing knowledge systems in order to invent new ways of using, creating and performing with technology. These maneuvers enable practitioners to reclaim different levels of technological agency (Gaskins, 2014, p. 18).

In terms of the development of local technologies, the figure of Cláudio César Dias Baptista, one of the members of the Brazilian band of the 60s, *Mutantes*, stands out in the history of music in Brazil. The enduring media folklorization of his talent to build his own equipment with the same technical quality observed in international standards shows the clear distance between a corporate industrial model and local experimental initiatives. Specialist journalism (Oliveira, 2014) describes him as a kind of heroic character, especially with regard to the construction of his *Regvlvs* guitar, an elegy to the knowledge acquired through personal experience, in contrast to commercial solutions. It resembles the historical stereotype of the musical genius of past centuries, but in this case, he is a genius of technical empiricism. At the same time, the journalistic article appeals to the nostalgic feelings of music lovers in their romantic but innocuous sense of authenticity lost in the past:

This is the story of the best guitar in the world. No, it is not a Gibson or a Fender. The best guitar in the world was built in the mid-60s, in the Pompeia neighborhood, in the west of São Paulo, by the young Cláudio César Dias Baptista, brother of Sérgio Baptista, the guitarist of the *Mutantes*” (Oliveira, 2014).

Another example of this type of “informal engineering”, using basic knowledge of electronics (acquired, in this case, in a mail order course), are the “Gatorras” (a kind of handmade guitar, with electronic circuits, which produces and allows the manipulation of different types of sound waves, working as an analog synthesizer with electronic drum sounds), created by Tony da Gatorra, in Rio Grande do Sul, southern state of Brazil. Although Tony’s initial goal was to create an instrument to make protest songs, he ended up building equipment by demand of musicians and fans over the last two decades (Lima, 2018). He has sold versions of his Gatorra to international musicians, such as Lee Ranaldo (Sonic Youth), Lovefoxxx (CSS) and Nick McCarthy (Franz Ferdinand). Despite that, Gatorra continues to be seen more as a curiosity than a feasible tool within the current production model, so much so that its creator still struggles to make a living from his talents as a luthier.⁵

⁴ Underrepresented Ethnic Groups.

⁵ For more details on the construction of Gatorra, see: https://www.youtube.com/watch?v=a_Mtj-qb17o

5. (Questions instead of) Conclusions

After all these considerations, the inevitable questions remain: Is it possible to propose different models for the creation and circulation of sounds? What models would these be? How to deal with contemporary geopolitical complexities and with the specificities of each place, of each way of being? How to rethink the technological question so that it works more as potential than as limit?

Thus, we must create conditions for different populations to develop their particular techniques, to organize their sound ecology in the most inclusive way and learn new forms of relating to audio technologies. These must not be chained to a globalized and rigid system of transnational protocols. At the same time, local knowledge must overcome the difficulties of crossing the borders of its communities. We must ask ourselves to what extent technological models adopted globally are in fact the result of multicultural practices dissemination or just a reinforcement of the abyssal line (Santos, 2020) representing different levels of inequality between the global North and South, within a strengthening of structures of power and knowledge coloniality (Quijano, 2005). The effort required of each of us to understand the complexities of thought and to translate the world through the sounds present in each constellation of knowledge is not a fruitless activity. On the contrary, if we want to re-elaborate a specific point of Adorno's propositions, this is perhaps the most effective step towards "enlightenment": the perception of the other and of everything that is not us.

In this way, we question not only the established models of production and circulation, but also the very possibility of music. Technologies helped to rethink the social role of the composer and of the different musical objects in contemporary society. It is time to reassess technological mediation itself and its effect of erasing particular traces of listening. Just as the forced adoption of the European tempered tonal system reduced our possibilities of hearing and, consequently, of sound-describing the world, the almost unconscious naturalization of generalist and institutionalized technical solutions can impose drastic limits to our sound boundaries.

References

- Adorno, T.W. (1989). *Introduction to the sociology of music*. Continuum.
- Adorno, T.W. (2002). *Essays on music*. University of California Press
- Adorno, T.W., and Eisler, H. (2005). *Composing for the films*. Continuum.
- Agawu, K. (2016) Tonality as a colonizing force in Africa, In: R. Radano. & T. Olaniyan (Eds.) *Audible Empire: music, global politics, critique* (pp. 334-355). Duke University Press.
- Brassier, R. (2007). *Nihil unbound: enlightenment and extinction*. Palgrave Macmillan.
- Campos-Fonseca, S. (2019a) Experimentalismo(s) y microcolonialidad de la escucha. Museo Nacional Centro de Arte Reina Sofia. Available at: <https://bit.ly/3ecJBbu>. Accessed 18 August 2020.
- Campos-Fonseca, S. (2019b). Decolonizar "La ciencia que se busca". Susan Campos-Fonseca: Composer and Writer. <https://bit.ly/3TpU2bj>. Accessed 18 August 2020.
- Campos-Fonseca, S. (2019c). Música experimental tecnofeminista. Susan Campos-Fonseca: Composer and Writer. <https://bit.ly/3e5cNkr>. Accessed 18 August 2020.
- Cárcamo-Huechante, L.E. (2013). Indigenous Interference: Mapuche use of radio in times of acoustic colonialism. *Latin American Research Review*, 48(Special Issue), 50-68. <https://doi.org/10.1353/lar.2013.0056>
- Castanheira, J.C.S. (2020) Sons alterados: uma perspectiva arqueológica sobre efeitos sonoros. *Eco-Pós*, 23(1). <https://doi.org/10.29146/eco-pos.v23i1.27456>
- DeNora, T. (2003). *After Adorno: rethinking music sociology*. Cambridge University Press.
- Flew, T. (2020). Globalization, neo-globalization and post-globalization: The challenge of populism and the return of the national. *Global Media and Communication*, 16(1) 19-39. <https://doi.org/10.1177/1742766519900329>
- Foucault, M. (1988). *Michel Foucault: politics, philosophy, culture*. (L.D. Kritzman, Ed.; A. Sheridan & others, Trans.). Routledge.
- Gumbrecht, H.U., & Pfeiffer, K. (Orgs.). (1994). *Materialities of communication*. Stanford University Press.
- Harman, G. (2002). *Tool-being: Heidegger and the metaphysics of objects*. Open Court.
- Heidegger, M. (1977). *The question concerning technology and other essays*. Garland Publishing, Inc.
- Hernández-Hernández, F. y Benavente, B.R. (2019). La perspectiva post-cualitativa en la investigación

- educativa: genealogía, movimientos, posibilidades y tensiones. *Educatio Siglo XXI*, 37(2), 21-48. <http://doi.org/10.6018/educatio.387001>
- Ivey, W. (1982). Commercialization and tradition in the Nashville sound. In W. Ferris & M.L.Hart (Eds). *Folk music and modern sound* (pp. 129-138). University Press of Mississippi.
- Kapp, E. (2007). *Principes d'une philosophie de la technique*. J. Vrin.
- Latour, B. (2005). *Reassembling the social: an introduction to actor-network-theory*. Oxford University Press.
- Lima, J.G.A. (2018). The Gatorra: a technologically disobedient instrument for protest music. In *xCoAx 2018: Proceedings of the Sixth Conference on Computation, Communication, Aesthetics & X*, (pp. 55-64). Universidade do Porto.
- Lemos, A., & Bitencourt, E. (2021). Sete pontos para compreender o neomaterialismo. *Galáxia*, 46,1-10. <http://dx.doi.org/10.1590/1982-2553202152017>
- Mazer, D. et al. (2020). O estudo das sonoridades: perspectivas teóricas e epistemológicas. In J.C.S. Castanheira et al. (Org.) *Poderes do som: políticas, escutas e identidades*, (pp. 13-52). Insular Livros.
- Moehn, F. (2004). "The disc is not the avenue": schismogenetic mimesis in samba recording. In P.D. Greene and T. Porcello (Eds.). *Wired for sound: engineering and technologies in sonic cultures* (pp. 47-83). Wesleyan University Press.
- Gaskins, N.R. (2014). *Techno-vernacular creativity, innovation and learning in underrepresented ethnic communities of practice*, [Ph.D. Dissertation, Georgia Institute of Technology] Georgia Tech Theses and Dissertations. <https://smartech.gatech.edu/handle/1853/53163?show=full>.
- Obici, G. (2019). Gambiarra's perspective. In R. Chaves and F. Iazzetta (Ed.) *Making it heard: a history of Brazilian sound art* (pp. 115-132). Bloomsbury.
- Oliveira, C. (2014). Um gênio, uma guitarra de ouro e uma maldição. In O Estado de São Paulo, 16 October 2014. <https://bit.ly/3E2mpaP>
- Quijano, A. (2005). Colonialidade do poder, eurocentrismo e América Latina. In: *A colonialidade do saber: eurocentrismo e ciências sociais. Perspectivas latino-americanas*. CLACSO. Available at: <https://bit.ly/2zLa23c>
- Santos, B.S. (2020). *O fim do império cognitivo: a afirmação das epistemologias do sul*. Autêntica.
- Segovia, S.C., & González, P.V. (2019). Movimientos y desplazamientos en la investigación. lo post-cualitativo como reconceptualización en dos tesis doctorales. *Educatio Siglo XXI*, 37(2), 159-180. <http://doi.org/10.6018/educatio.387061>
- St. Pierre, E. A. (2014). A brief and personal history of post qualitative research toward "post inquiry". *Journal of Curriculum Theorizing*, 30(2), 2-19.
- Théberge, P. (1997). *Any sound you can imagine: making music/consuming technology*. Wesleyan University Press.
- Tragtenberg, J., Albuquerque, G., & Calegario, F. (2021). Gambiarra and Techno-Vernacular Creativity in NIME Research. *NIME 2021*. <https://doi.org/10.21428/92fbeb44.98354a15>

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