

Listening to Music in the Digital Era

Giacomo Fronzi

The relationship between new technologies and the dimension of listening takes at least two different directions, the first dealing with the role new technologies play in the “simple” reproduction and diffusion of music materials that cannot necessarily be categorized as technological music (for example, a Quartet by Brahms heard in Internet streaming); the second concerning the listening modes inescapably involved in the reception of a music product (whether belonging to the so-called “serious music” – i.e. classical music – or to pop music), which depend on the nature of the music itself (for example, an Acousmatic work or a live-performed techno piece). Starting from this basic distinction makes it possible to avoid any misunderstanding about the correct meaning to be attributed both to technology (instrumental function or production-realization function) and to listening (mediated or immediate).

This distinction applies especially today, in an age in which listening to any kind of music is almost exclusively mediated by the electric and/or electronic element. Excluding only the case of listening to live-performed classical works (the performance of which does not envisage the use of microphones or amplifiers), many contemporary musical experiences are characterized by electric and/or electronic mediation. In most cases, music is produced and experienced through technological devices and equipment (Pinch-Bijsterveld [2003]).

But this is not all. The musical interactivity promoted by the web and by IT resources has completely revolutionized our everyday listening modes by combining, blending, and remixing the various genres of music and their place in history, thus «freezing the repertoire in a sort of eternal present» (Cossettini [2013]: 210). In particular, the combination of on-line resources and audio-processing software has placed the musical phenomenon on a new unprecedented horizon, within a new perspective. The domains of music production and reception have been re-invented, and rhizomatic musical

practices, deprived of a single centre, have been projected into the global village just at that very moment, without a definite place and, potentially, without a future.

This situation persuades us to focus our attention on some elements that characterize both the production and the reception of music: (1) historical development of the relationship between technology and music; (2) technologically mediated non-live listening; (3) technologically mediated live listening; (4) ontological oscillation of a work of musical art resulting from its computerization/digitalization. These issues also bring aesthetics into play as to the relationship between new technologies and practices of production of and listening to music. In this developmental stage of the discipline, philosophical reflection on technological music can contribute to the formulation of «a theory that acknowledges the interconnectedness of aesthetics with culture and society» (Demers [2010]: 4).

1. *Technology and Musical Composition*

The phenomena of technological music, electro-acoustic music, computer music, and digital music can be interpreted not as a process of technologizing and mathematizing art, but rather as a way to artistically ennoble, enhance, and aesthetically sublimate a technology that, in addition, establishes an unprecedented relationship with the sphere of the perceptible, thus producing a deep rupture, a revolution in perception and representation (Tavani [2011]: 7).

Starting from the early 20th century, the *history of technology* and the *history of music* have crossed their development paths, influencing each other, and producing changes at several levels. Among all the traditional arts, only music has undergone such a profound upheaval in both its nature and its means of application and communication, due to the coming of the new media and the development of recording, broadcasting and sound-synthesizing technologies (Chion [1994]). Michel Chion attributes the shock music was subjected to in all its elements, to six basic technical effects – i.e. those made possible by machines –which have revolutionized the production, nature, and diffusion of sounds: *sound recording*, *telephony*, *sound setting* (or recording), *amplification*, *electrical generation of sound* (from electrical oscillation generators to synthesizers and PCs), and *sound reshaping* (or manipulation). The impact of the revolution in the relationship between music and technology has brought about different consequences to the three categories into which we can divide, in general terms, the phenomenon of music: music production prior to the development of new technologies, music production that developed along with the rise of new technologies, and music production exclusively

created through technology and new means of communication. These simple, general considerations are sufficient to give an idea of the significance and the issues called into question in the new technological structure music took on during the 20th century.

The great innovation represented by technological music has decisively influenced both the choice of musical materials (which take a completely new form) and the instruments with which these materials are processed. Starting especially from the research conducted by Pierre Schaeffer (in Paris), Karlheinz Stockhausen (in Cologne), and Luciano Berio (in Milan), professional composers began to take the first steps in an unexplored territory, inhabited not only by sounds in the traditional sense (i.e. produced by instruments such as piano, violin, flute, and so on), but also by sound realities that had previously been radically excluded from the musical scene. Through Schaeffer, above all – and even earlier through Italian Futurism – noise plays an increasingly central role in “making music”, and fills a gap that, still today, represents a heritage at composers’, artists’ and performers’ disposal. As regards technical-technological progress, 20th-century musical material is presented with completely new, unprecedented characteristics, seeming to produce an imbalance between the terms “material” and “music”. The unlimited opening of music to the whole acoustic universe has involved an unavoidable change in the meaning of both the idea of material and the idea of music. Making reference to what Adorno intended by the term “musical material” (although it is particularly elusive), we may say that from this point of view, composers of technological music completely embody the concept of “progress”, since they have succeeded in seizing the material at the most advanced stage of its historical dialectics. This material goes beyond the very idea of music, and then, *à la* Hegel, goes back to it, enriching it with new features. This process of “enrichment” has much to do with the technical developments that, from 19th century on, have steered musical research in the most diverse directions. Before dealing with the so-called “IT and digital revolution”, it will be necessary to briefly summarize the course that links Samuel Morse’s wireless telegraph to the digital audio files of our age, beginning in particular from the post-WW2 period.

World War 2, as is the case in every conflict, inevitably speeded up technological progress. In the 1940s, Oskar Sala modified the *Trautonium* (an instrument created by Friedrich Trautwein), and produced the *Mixturtrautonium*, while Harald Bode developed the *Melochord*, an instrument later installed in the Nordwestdeutscher Rundfunk (NWDR) electronic music studio in Cologne. But the 1950s marked a turning point in 20th-century technological and musical development, thanks to the construction of the first sound synthesizers, such as Hugh Le Caine’s *Electronic Sackbut* and the RCA

Synthesizer Mark II, the forerunners of the *ARP Moog*, and Peter Zinovieff's *VCS3*. These new instruments were able to synthesize complex sounds. In 1964, the young sound designer Robert A. Moog built his first synthesizer modules, which shortly thereafter formed the basis of the first synthesizer launched on the market. This synthesizer was based on research conducted by Hugh Le Caine and by the engineers of RCA (Radio Corporation of America), together with the results obtained between the late 1950s and the early 1960s by Bode.

The other two pioneers in this area were Donald Buchla and Paolo Ketoff, both already involved in voltage control activities since the early 1960s. Buchla's model was conceived and developed especially for contemporary composing, as in the case of Morton Subotnick's *Silver Apples on the Moon* (1967), a work specifically composed for this kind of synthesizer, whereas the *Moog* was mostly (but not exclusively) used as a pop music instrument, with the aim of producing new sounds and imitating the sounds of traditional instruments. The most outstanding examples are the albums *Switched-On Bach* (1968) or *The Well-Tempered Synthesizer* (1969) by Walter (Wendy) Carlos, in which the artist offers a "moog" version (used by Stanley Kubrick in 1971 for his movie *A Clockwork Orange*) of some of the most famous works of Bach and Beethoven. The unexpected success of these long-playing records speeded up the development of the synthesizer industry and boosted the invention of a new synthesizer equipped with a small keyboard and wired-up connections, the *Minimoog*, produced by Moog in 1970.

At the end of the 1970s, synthesizers began to be increasingly used in an ever-growing number of forms of commercial and pop music. Eric Siday used the Moog for jingles and sound logos for American television, Pink Floyd made use of the VCS-3 in *The Dark Side of the Moon*, as did Roxy Music and Brian Eno.

The *IT and digital revolution* was a real turning point not only in the area of communication systems, but also in the domain of arts and music. The course marked by the development and evolution of electrical and electronic instruments, which had begun with Morse in the mid-19th century, following a progressive time frame outlined by science and technology, led inevitably to the computer age, the digital age, and still later, to the age of the so-called "post-digital" aesthetics.

These were the years of the great revolutions in information technology, at the height of that frenzied period during which a new, increasingly accessible, functional, and rapid structure was gradually being developed, the very heart of which is formed by digital media.

In most cases, digital media replace pre-existing media, which have become digital by

transforming their typical languages, their forms of expression and the social practices of those who use them. Sounds and images are transformed into digital sounds and images both because, at a certain stage of human progress, this process becomes *unavoidable*, and because it proves *advantageous*. These advantages are apparent at various levels: production, preservation, reproduction, and distribution (see Manovich [2001]). In general, innovations of this kind have changed society in some of its most important aspects, such as «access to information, the formation and circulation of ideas and opinions, the organization of culture, economy and advertising, entertainment and show business. They also bring about specific aesthetic forms, which influence those that prevail» (Menduni [2007]: V).

Within this digital revolution, focusing attention again on the evolution of technological music, the developments in information technology have played a role of supreme importance, together with the creation of MIDI (*Musical Instrument Digital Interface*), a communication protocol for controlling synthesizers which, starting from the early 1980s, triggered a genuine shift in music production.

From the 1980s onwards, the development of MIDI began to be increasingly interlocked with the development of computers, interfaces, and internal processor architectures. The conversion modes from analogic to digital sounds greatly benefited from these developments. Digital reproduction is strictly related to sound recording and to digitalization, which was introduced in recording studios in 1979, a few years before the launch of the first audio-digital support intended for the general public, the compact disc. The CD is the result of lengthy research that had already begun in the 1950s, and had also led to the invention, in 1972, of the videodisc. In the late 1970s, more precisely in 1979, Philips produced and launched the compact disc in agreement with the other giant in that sphere, Sony, in order to impose it as a global standard. In 1983, CDs and laser players made their official appearance in magazines, and soon became a great success, which irreversibly changed the production, circulation and consumption of music.

To conclude this brief but necessary survey of some of the main stages in the relationship between the history of music and the history of technology in the last sixty years, it is necessary to point out another aspect of the production of music. This activity, which in the past was limited to a restricted circle of highly specialized individuals, has now become much more accessible and open. As well as listening, research too has come out of the laboratories and is now on the web.

The creation of new, faster and higher-performing devices for synthesizing and processing

sounds – which in any case can be “adapted” to even more experimental solutions than those for which they were created – is part of the physiological development of digital technologies *tout court*. Likewise, today, research is increasingly focusing on the development at various levels of software designed for the management and control of the procedures of synthesizing and processing of sounds, scores, and sound spatialization in real and delayed time. (Sani [2002]: 45)

Today, it is possible to produce “home-made” digital music. This brings to light what Edward Artemiev defined as «computerization of creativity», thanks to which even people who have not received any musical education but nonetheless have potential for creativity, as well as fancy and imagination, with the use of advanced software, are in a position to enter the (no longer) élitist world of professional musicians (see Artemiev [2002]: 60). However, the production of high-standard digital music continues to be associated with universities and research centres, since it is closely connected with the problem of access to sound synthesizing and processing technologies. Today, more than ever, «sound synthesis technologies must be capable of living side by side with the systems of real-time sound processing in areas acoustically equipped for an interaction between instrumentalists and technologies. Hence, today’s needs have involved a considerable increase in costs at the centres specializing in the production of a musical composition» (Sani [2002]: 47).

On the other hand, a contemporary professional composer who wants to avail her/himself of an IT support is in a clearly privileged position compared with a traditional electronic composer, since he can be aided by programs that can relieve him of a number of limitations, to such an extent that Artemiev maintained that everything now depends on the composer’s imagination and mastery. In fact, the aid provided by these programs has reached extremely high levels of quality. It ranges from sequencers (e.g. *Emagic Logic*, *Performer* or *Cubase*) to special programs focused on synthesis (e.g. *Metasynth*, *Tool Belt* or *C-Sound*), and heuristic programs¹ (such as *Max*, *AudioSculpt* or *M*). In addition to all these supports, it is possible to print music with the use of a computer, and produce either conventional scores or specific scores designed by the user, which can offer sound representations (e.g. through the software *AudioSculpt* or *Acousmographie*). It is also possible to produce “tone maps” showing subjective differentiations by means of multi-dimensional scale programs.

The increasingly close internal relationship between the computerized-electronic

¹ By the term “heuristic software” we mean a program that, rather than proceeding mechanically by analyzing data and comparing them with known data, attempts to simulate their behaviour.

dimension and the musical dimension seems to promise further complex and interesting results, and makes it possible to conjecture the construction of unprecedented and never designed musical architectures. To develop the potentialities offered today by computers is a challenge of paramount importance, which rests on the idea of a computer in the sense not only of a universal processor, but also – as Jean-Claude Risset suggests – as a link, an interface connecting individuals, processes and disciplines. The importance of acquiring this point of view is related to the fact that musical projects often imply multi-disciplinary rather than specifically technical necessities. «The cooperation of artistic and scientific efforts on computers is precious not only for the arts, but also for science and technology» (Risset [2002]: 155).

Regarding the related theme of the circulation of digital music, it must be said that in a phase following the explosion of the compact disc, it coincided with the spreading of the Internet. Software such as *Liquid Audio* and *Real Audio* for the implementation of digital files was created and developed. These two kinds of software were conceived to permit the reproduction of an audio file before it has been completely downloaded (the so-called *streaming* process). As Enrico Menduni writes, people's perception of digital sound has changed in the course of a few years, and will continue to change. In addition, «the circulation of sounds through the web will drastically change the distribution, economy, and culture of music, and of all related social systems, such as the radio and the record industry» (Menduni [2007]: 136-7).

The software packages used in the streaming process represent an attempt to diffuse the sound and overcome the limits that had marked the early years of the web. These limits related to the difficulties in circulating files that took too long to download. However, they expressed at the same time a *social wish* to change the Internet into a «total medium», into a «meta-medium», which by availing itself of sound and audio-visual languages, can reach the highest levels of ability in representation, communication, exchange, and relationship.

2. *Technology and (Non-live) Music Listening*

Developments in sound technologies over the last 50 years have dramatically changed the way that music is produced and consumed. In the 19th century, most music was experienced as live performance. Today most music is listened to individually through technologically mediated devices, such as a personal stereo or a personal computer that enables the downloading of MP3 files over the Internet [...]. (Pinch-Bijsterveld [2004]: 635)

These few lines give an idea of how the digital and IT revolution, together with the

spread of the Internet, have changed our way of conceiving, producing, and experiencing music.

On the one hand, music produced through a computer and listened to in streaming, perhaps without being downloaded, may seem to make our aesthetic experience of listening to music “lighter” and less demanding. On the other, it seems to place on a single and almost unlimited level the historical and musical traditions we use to divide into “serious music” and “pop music”. From an aesthetical point of view, contemporary listening conditions pose enormous theoretical problems that philosophy alone is most likely unable to exhaustively label and interpret, since they may also refer to quite diverse social realities and cultural contexts². What may be defined as *technological listening* can be established starting from dichotomous elements, such as individual/communitarian, private/public, professionalism/amateurism, high definition/low definition, randomness/rigour, saturation/emptiness, nature/artifice, original/reproduced, and so on. This means that a unitary discourse capable of holding together even these few conceptual pairs seems an attempt that is as ambitious as it is unrealistic. Nonetheless, a first step towards understanding the listening practices mediated by technology may be taken by producing some distinctions useful to clarify the elements at stake.

We previously mentioned that audio-technologies have contributed to change the ways we listen, but this is not the real innovation introduced by IT instruments and the Internet. Already at the beginning of the 20th century, the spread of radio had allowed the middle classes to avoid the throng, the pushing, and the unpleasant smells in small theatres, enabling them to enjoy music in the privacy of their homes and in their leisure time (Douglas [1999]: 65). In addition, as we shall see, radio has democratically brought music close to everyday life, acting in some sense as a large emotional container. People approach the music offered on the radio with the aim of finding in it the most appropriate “sound representation” of their personal moods. This is not, then, passive listening (like the kind analyzed by Schafer [1994, 1977]), but rather active listening, by virtue of which a listener looks for particular sound experiences (Pinch-Bijsterveld [2004]: 642-3). Gramophones, radio sets, tape recorders, CD recorders, Walkman players, and iPods have subsequently contributed to make music, as Tia DeNora argues, “a technology of the self” (Pinch-Bijsterveld [2004]: 643; DeNora [1999, 2000]). The «ostensibly “private” sphere of music use is part and parcel of the cultural constitution

² On the aesthetics of electroacoustic music, see Fronzi (2013; 2015).

of subjectivity, part of how individuals are involved in constituting themselves as social agents» (DeNora [2000]: 47). Furthermore, the choice of the technology used also depends on the listener's economic resources. It becomes significant for the theory to such an extent that it has driven some researchers to develop actual "ethno-graphies of listening practices" (Bull [2000]; Perlman [2004]). People listen to music while walking, running, sitting on a bench in a park, waiting for a bus or a train, studying or working. In this way, people try to recreate a different – or even opposite – sound dimension from the sound context in which they find themselves. «They may become absorbed with the flow of their memory, order their thoughts, have a sense of companionship, exercise control over their contact with others ('do not disturb'), make time pass more quickly, and make daily routines bearable» (Pinch- Bijsterveld [2004]: 643). In all these cases (and in many others), everybody can create his/her personal sound landscape, in his/her own ears, mind and soul, and «reimposes control over the environment» (Bull [2000]: 186). The use of audio devices while one is busy with other (more or less demanding) activities can change the listening experience into an experience that is at one and the same time "light" and "heavy": light from the point of view of music comprehension and introjection, and heavy, from the point of view of the public and private reorganization of the surrounding space implied in these listening practices. According to some scholars, this means that musical technologies are instruments of choice and control in the management of everyday life (Bull-Back [2003]).

On the basis of this approach – which relates to philosophy, sociology, and cultural studies³ –, Marc Perlman proposed an interesting *ethnography of audiophiles* (although delimited within an élitist environment mainly formed of white middle-class individuals), distinguishing between "golden-ears" and "meter-readers". These *audiophiles* create their own universe of sense around their equipment, they cultivate their own distinctive and characterizing lexicon, as well as a set of attitudes. However, these music consumers – usually white, affluent, educated males – put themselves in a critical position of rebuttal «against knowledge-claims that would delegitimize that universe» (Perlman [2004]: 784).

The substantial difference between these two groups consists in the fact that "golden-ears" shy away from science and engineering, and foster their ears by investing in equipment which in their opinion increases fidelity and quality. "Meter-readers", in contrast, are obsessed by scientific and technical sound measurement and

³ It is useful to remind, in this connection, that Theodor W. Adorno was one of the first scholars to deal with these issues (1956; 1963; 1968).

comprehension standards (Pinch-Bijsterveld [2004]: 644):

The distrust of engineering measurements in audiophilia is a mark of golden-earism. Golden-earism privileges the audiophile's intimate, embodied, personal, inalienable, charismatic superiority of aural discrimination. It vests authority in individual experience. By contrast, meter-readism privileges the rationalized, public, impersonal procedures dictated by socially certified experts, and relies on scientific authority. (Perlman [2004]: 792)

This is not the place to examine Perlman's analysis in depth. However, it may prove useful in view of an appropriate positioning of the problem we are discussing here, that is to say, the specificity of contemporary listening practices, and their relationship with the listeners' need for greater control over music, over the auditory experience, and the "results" expected of it.

3. *Technology and (Live) Music Listening*

By live listening mediated by technology, I mean that form of experiencing a musical product in which listeners make use of technological mediation due to the very nature of the product. In these cases, listeners find themselves physically and materially experiencing music in that particular context. This situation implies the circulation of musical products not necessarily developed for the listeners' direct enjoyment in the *hic et nunc* (the "here and now", i.e. just in the moment) of a performance (an acousmatic work can be listened to live or in a recording), which, however, is best and most effectively expressed when experienced live. There are at least two cases that clarify the specificity of this kind of musical experience, the first from the context of so-called serious music, the other from so-called popular music. The second case is undoubtedly a very special mode of music reception, the nature of which is degenerative. It is however significant of how, in the "neo-tribal rites" of contemporary societies, the dimension of listening may lead, together with an even self-destructive involvement of the listener's whole corporeality, to a dark zone in which the extremist characteristics of sound introjection produce *de facto* its final dissolution.

3.1. *Acousmatic Music*

In the previous pages I briefly mentioned the innovation introduced in the 1940s and 1950s by composers, who introduced noise caught in its rough, crude, and real aspects, starting in particular from Pierre Schaeffer's *musique concrète*. The interest aroused by Schaeffer's first experimentations infected some prominent figures of that time, above all Pierre Henry and Pierre Boulez. Moreover, Boulez assisted Schaeffer in the creation of

two piano studies included in the famous *Concert de bruits*, the title given to the first five pieces produced by Schaeffer, which were broadcast by the French radio station RTF in October 1948.

At the end of 1950, a series of conflicts arose among these important personalities. Schaeffer and Boulez separated in 1953. Henry, who in the first few years had been Schaeffer's artistic collaborator, distanced himself from his master in 1958. The break between Schaeffer and Boulez was unavoidable, considering the determined, pugnacious personalities of both musicians. In addition, they had different points of view about the concept of music and its relationship with technology. Schaeffer had a concrete idea of composition, while Boulez was more idealistic and abstract. For Schaeffer, technology was continuously evolving and represented a practical dimension with which an artist must confront himself. Whereas, according to Boulez, technology had to remain neutral and follow from an aesthetic and abstract concept. Similar reasons lie behind the other important separation, which occurred in 1958, between Henry and Schaeffer. Schaeffer had given life to the GRM (Groupe de Recherches Musicales), but the austere, rigorous approach Schaeffer had imposed prevented him from comparing himself with the strong personalities of the other members of the GRM. Shortly after, these composers began to open new frontiers for *musique concrète*. Among them, it is worth mentioning figures such as Luc Ferrari, François Bayle, Bernard Parmegiani, Iannis Xenakis, Françoise Barrière and Christian Clozier.

This brief digression aims only at contextualizing one of the most interesting electro-acoustic forms of music, *acousmatic music*, which developed in connection with *musique concrète* and the GRM. Acousmatic works are rigorously conceived and performed in a studio (therefore not live). They are recorded on a support system and reproduced by means of a particular use of the loudspeakers which together form the so-called *acousmonium* (François Bayle was the first to develop this idea). The acousmonium is a rational system consisting of a number (some dozens) of loudspeakers positioned in the hall, through which sound is diffused in a sort of «multiple stereophony». The positioning of the loudspeakers is conceived like the arrangement of the instruments in an orchestra. This means that the loudspeakers are positioned on the basis of frequency differences in order to enhance and improve the differences of timbre. Thus, the performer is free to exploit her/his interpretative possibilities, playing with the positioning of the loudspeakers, with the intensity and diversification of tones and colours, and with the innumerable modes of sound spatialization.

Acousmatic music, which specifically characterizes listening practices, is directly

descended from Schaeffer's notion of «sound object». The sound object, about which Schaeffer writes in particular in his *Traité des objets musicaux*, is all that is considered and adopted in its purely auditory nature (Schaeffer [1966]: 93-4). It is an «acousmatic effect» on which one focuses perceptively, regardless of its source. One of Schaeffer's merits consists in having contributed to the development of a new « art of listening », starting from the emphasis on the sound object and, from the listener's point of view, on the ear. This makes it possible to prove that technological practice is the premise to a new theory of composition, which is fulfilled in relation to a new practice of listening, and not, as traditionally happened, with practice of the performer.

Furthermore, Pierre Schaeffer divides listening practices into four modes, which vary depending on the information acquires, and the qualities lingered on: a) *écouter* (to listen to): the listener intentionally listens to what interests her/him, focusing on the objective qualities of the sound; b) *ouïr* (to hear): it is a merely physiological process, and does not imply any intentionality and interpretative process; c) *entendre* (to hear in order to understand): the listener dwells upon some particular aspects of sound depending on what s/he is interested in; d) *comprendre* (to listen to in order to understand, to comprehend): the listener focuses on the sound and on its external references⁴.

3.2. Rave Music

There are certain listening experiences that, compared to others, are mainly based on two different aspects: the communitarian element and the synaesthetic element. The communitarian element refers to an only partially self-aware “community”, in which a sort of sum of distorted and distorting individualisms emerges. The synaesthetic element involves various senses and the whole body, much more than happens in the case of accompanied dancing or in other “mixed” forms.

⁴ Joanna Demers writes: “The nuances among these four modes may characterize how acousmatic situations affect listening. Schaeffer writes that acousmatic situations normally engage the first and fourth modes; because without benefit of visual cues, we listen to things that interest us and attempt to place them within a context of associations external to sound. Having explained how listeners perceive sound, Schaeffer's next step is to offer a prescription for how to listen better. Schaeffer takes up Husserl's concept of the transcendental-phenomenological reduction or “*epoché*”, a bracketing out of knowledge about the external world in order to focus on the process of perception. Schaeffer calls this bracketing out reduced listening (*écoute réduite*). In order to access the sound object, Schaeffer thus conceives of a two-part reduction: the first acousmatic reduction takes place through the intentional disregard of the perceived sources and origins of a sound” (Demers [2010]: 27).

The communitarian logic of listening, which can also be found in other contexts, such as mass concerts, festivals, and so on, becomes even more heightened in that area of excess, made up of music, lights, and drugs, known by the term “rave party”.

Rave attests to something new, both from the point of view of the reception of music, and from the point of view of its socio-political and anthropological implications. It is the counter-cultural ideal of the 1960s and 1970s taken to the extreme (which can be historically placed in the 1990s), along with metropolitan techno music, from which rave music originates. However, it differs from techno in that it is «perpetually changing, and continuously evolving, like a collision-and-puzzle box that adopts the greatest variety of names and the most unusual shapes» (Pacoda-Stefani [2006]: 722).

In the case of *rave music*, as Lapassade remarks, we have to do with a device that provokes trance, in which there emerges a hypnotic scene and a tendency to cult that implies the subject’s inclination to self-hypnosis. It is a «rite without myth», which nonetheless is deeply rooted in myth. Music and drugs, rhythm and hallucinogenic substances, are elements which fall within a ritual (especially shamanic) dimension and form an inseparable hendiadys in the rave rite. In the rave rite, music and drugs are at the same time neurophysiological and emotional stimuli, but also have a symbolic value that identifies a community, a path, or a deviation. *Rave* can be analyzed (as it has been) in its being a temporary escape from reality, but, as Scott Hutson argues, it is also an important spiritual and therapeutic experience – as ravers themselves speak of it (Hutson [2000]). An important characteristic of rave is the reference to the “spiritual” element, which is present in the ravers’ experience, since they maintain that, through altered states of consciousness, they are able to arrive at a sort of “spiritual healing”, in a continuous osmosis between physiological (dancing, listening, and drug-taking) and symbolic processes.

This practice too, which in some cases presents itself as a degenerated form of aesthetic experience connected with technological listening, poses important theoretical questions. Dance music, especially in its extreme variation as rave music, also places at the centre of the debate a topic that had been almost completely excluded from the studies on musical aesthetics: the body, somatic feeling, as Shusterman defines it. Now, setting aside the physiological reactions resulting from listening to music, dance music simultaneously connects various elements: technological music, listening, body, and mental states. A fundamental question – lately reintroduced by Jerrold Levinson – ensues from this. It is a question that could be extended to the enormously wide area of contemporary listening to music (which, as I have said, is today almost exclusively

technological): is it actually an aesthetic experience or a particular kind of perceptual experience? (Levinson 2015a; 2015b). But the answer to this question (which there is not space to examine here) refers to the very nature of the musical product.

4. *Ontological Oscillations in Musical Works*

John Mowitt has shown that the latest electronic and digital technologies applied to listening to music (CD, DVD, mp3, streaming) have imposed themselves by offering a promise not only to keep high standards of quality, but also to integrate production, reproduction and reception modes in a single technological *continuum* (Mowitt [1987]). Among the various consequences of the revolution brought about by electronics, digital technology, and the Internet in the production of and listening to music is the relationship between production and reproduction, since these functions are today performed by a single machine. This overlap came about after the first revolution that occurred in this area, concerning the impact of technical reproducibility on artistic practice in mass society. An essential point of reference remains Walter Benjamin's 1936 essay *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit* (Benjamin [2013]). This famous work is a participant in the heated debate that in those years involved many intellectuals, a debate focused on the process of homogenization to which the new techniques were being submitted. Later, Benjamin shared with Bertold Brecht, among others, an attitude of positive acceptance of this process, which had at last put an end to an elitist, aristocratic conception of art. Though in some of his earlier works he had particularly stressed the negative aspects of this process, in the essay *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit*, Benjamin openly approved of its positive character, although he still identified in it a number of critical aspects that prevented the resolution of all his doubts and certain perplexities.

As is common knowledge, one of the negative consequences of technical reproduction, however highly perfected, is the failure of the *hic et nunc* of the work of art, as its sole existence is unique in the place in which it is located. This is not mere displacement, but rather displacement that produces the loss of the authenticity of the work of art, the quintessence with which the first, unique sample is endowed. The characteristic that is lost in the age of technical reproduction is the «aura» of the work, since the multiplication brought about by reproduction replaces the uniqueness of the event with a quantitative series of events. On the other hand, reproduction can meet the needs of those who make use of it in their particular situation, by not “re-modernizing the product”, but rather “modernizing what is re-produced”. The decline of the aura, as

Benjamin wrote, is based on two circumstances, which are both connected with the ever-growing importance of the masses in today's life. That is to say: it is an imperative requirement for today's masses to bring things spatially and humanly *closer*, as much as the tendency to overcome the uniqueness of any datum through the reception of its reproduction. The adaptation of reality to the masses, and of the masses to reality, is a process of an unlimited range regarding both thinking and insight (see Benjamin [2013]).

Another especially important element, connected with these premises, concerns the reception of the works of art, which occurs according to different and opposed accents. The first accent falls on the *cultic value*, and the second on the *expository value* of the work of art. At first, starting from the Stone Age man who depicted the moose on the walls of his cave, artistic production was closely connected with the dimension of ritual and worship to the point that, in many cases, sacred sculptures and paintings were exhibited only once a year, or people were allowed to see only a copy of them. In consequence of their liberation from the religious and ritual sphere, the opportunities for exhibiting these products increased. The various modes of technical reproduction of the work of art have further increased and boosted their "exhibitability", and the quantitative discrepancy between these two poles, similarly to what had happened in the primitive ages, changed into a qualitative transformation of their nature (see Benjamin [2013]). If the moose depicted on the walls by the caveman as an instrument of magic was later considered a work of art, today, with the growth of its exhibitiv value, it has become a formation with completely new functions. In particular, the artistic function, of which we are conscious, is presented as a function that may be considered marginal in the future (see Benjamin [2013]).

Disregarding the *Nachwort*, it is useful to underline some conceptual issues that emerge from Benjamin's essay, and relate them to the current listening conditions, focusing our attention on two points.

a) *Relationship between technology and mass society*. In today's mass society, which in our time has witnessed a multiplication of its attributes (becoming globalized, multicultural, etc.), the relationship between the technical dimension and the existential-individual dimension has gradually, but rapidly, become closer. The technification of the world has aimed directly at the electrification and the computerization of every aspect of life, whether ascribable to practice or to theory, up to the computerization of interpersonal relationships. Benjamin compares the spatial approach to which he refers to a human approach, which in contemporary society becomes a virtual human approach. Work models, family life, leisure, free time, and

even the way we perceive ourselves as human beings, are all destined to undergo further important changes. This process of disintegration of traditions and social structures that are currently taken for granted, is so generalized that it induces many people to appeal to the concept of “information society” as an interpretative framework of what is happening (Lyon [1988]). We have come to the extreme of a transition from reality as social construction (Berger-Luckmann [1966]) to virtuality as social construction, where social reality is constructed within the virtual dimension of information and mass-media communication. All this, in the field of music, leads to an ambiguous result. The possibility of technically making use of music, and even freely producing and reproducing it at any time and in any place, on the one hand has overthrown the limits of the musical aesthetic experience – which is no longer enclosed within pre-determined coordinates of space and time. On the other, it has reduced the relational impact of that experience, leaving scope for isolation and disorganic use. It is, however, an ambiguous and ambivalent process, which moves between individualism and communitarianism. Music sharing itself may take different forms. It may be limited to a silent, domestic exchange of musical material drawn from the Internet. The shared use of contemporary music may also be considered the doorway to a new collectivity, «since it situates subjects within an emergent structure of listening which offers experiential confirmation of a social configuration» (Mowitt [1987]: 193).

b) *Aura and updating of re-produced music.* The concept of «aura», which is so weighty and significant, re-emerges pressingly in our time. In a book published a few years ago, Alessandro Dal Lago and Serena Giordano resumed Benjamin’s perspective, arguing that art is a set of worlds in which the “aura” is produced, sold, and bought. In the authors’ opinion, “aura” is not only a mere invention of clever critics, skilful merchants, and cautious investors, but also the profound (though hidden and sometimes bizarre) meaning of capitalistic or market society, even if in new postmodern or intangible forms (Dal Lago-Giordano [2006]). Today, technological music and electronic producibility can offer anybody (including disc jockeys, who produce their creative performance live) the possibility to create a product complete with “aura”.

Furthermore, the *hic et nunc* characteristics, to which its non-repeatability, uniqueness, and authenticity were connected, definitively return, since every product is here and every product is now, in any part of the world and at any moment. Every product, created in a precise place, keeps its aura in any other place, because its reproduction does not differ in any way from the original. In our age, the dialectics between original and copy has irreversibly broken down. In this connection, the issue of

updating a reproduced product should probably be placed within the terms of the perennial newness of a produced and reproduced product.

In conclusion, the drawbacks of technical reproducibility, as regards the dissolution of the essence of art (creativity, originality, enjoyment of the form, etc.), have lost their substance and *raison d'être* in the digital and digitalized world. If, in the past, the conditions of reproducibility could be considered distant from that horizon of creativity that should be a specific and indispensable characteristic of art, today we cannot even talk of reproducibility in the strict sense, inasmuch as there is no longer any real distinction between original and copy, between produced and re-produced (Scaldaferri [1997]: 30-4; Fabbri [2008]: 274-7).

Bibliography

- Adorno, Th.W., 1956: *Über den Fetischcharakter in der Musik und die Regression des Hörens* (1938), in Id., *Dissonanzen. Musik in der verwalteten Welt*, Vandenhoeck & Ruprecht, Göttingen.
- Id., 1963: *Über die musikalische Verwendung des Radios*, in Id., *Der Getreue Korrepetitor. Lehrschriften zur musikalischen Praxis*, S. Fischer, Frankfurt a.M.
- Id., 1968: *Kleine Häresie* (1965), in Id., *Impromptus. Zweite Folge neu gedruckter musikalischer Aufsätze*, Suhrkamp, Frankfurt a.M.
- Artemiev, E., 2002: *Dalla tecnologia della musica concreta alla musica computeristica*, in Favaro R. (ed.), *Musica e tecnologia domani*, pp. 53-61.
- Benjamin, W., 2013: *Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit* (1936), in Id., *Werke und Nachlaß. Kritische Gesamtausgabe*, Bd. 16, Suhrkamp, Frankfurt a.M.
- Berger, P., Luckmann, N., 1966: *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*, Doubleday, Garden City (NY).
- Bull, M., 2000: *Sounding Out the City. Personal Stereos and the Management of Everyday Life*, Berg, Oxford-New York.
- Bull, M., Back, L., 2003: *The Auditory Culture Reader*, Berg, Oxford-New York.
- Chion, M., 1994: *Musiques, médias et technologies*, Flammarion, Paris.
- Cossettini, L., 2013: *Sistemi e autopoiesi nella musica elettronica su nastro magnetico*, "Aisthesis", Special Issue on *Ontologie musicali* (eds. Arbo, A., Bertinetto, A.), pp. 195-213.
- Cox, C., Warner, D., 2006: *Audio Culture. Readings in Modern Music*, The Continuum International Publishing, New York.
- Dal Lago, A., Giordano, S., 2006: *Mercanti d'aura. Logiche dell'arte contemporanea*, il Mulino, Bologna.

- Demers, J., 2010: *Listening Through the Noise. The Aesthetics of Experimental Electronic Music*, Oxford University Press, Oxford-New York.
- DeNora, T., 1999: *Music as a Technology of the Self*, "Poetics", 17/1, pp. 31-56.
- Id., 2000: *Music in Everyday Life*, Cambridge University Press, Cambridge.
- Douglas, S., 1999: *Listening In: Radio and the American Imagination*, Times Books, New York.
- Fabbri, F., 2008: *Il suono in cui viviamo. Saggi sulla popular music*, il Saggiatore, Milano.
- Favaro, R., (ed.), 2002: *Musica e tecnologia domani. Convegno internazionale sulla musica elettroacustica. Teatro alla Scala 20-21 novembre 1999*, Quaderni di "Musica/Realtà", 51, Lim, Lucca.
- Fronzi, G., 2013: *Electrosound. Storia ed estetica della musica elettroacustica*, Edt, Torino.
- Id., 2015: *About the Aesthetics of Electroacoustic Music. A Proposal*, "Studi di estetica", XLIII/1, pp. 185-213.
- Handel, S., 1989: *Listening: An Introduction to the Perception of Auditory Events*, MIT Press, Cambridge Mass.
- Hutson, S.R., 2000: *The Rave: Spiritual Healing in Modern Western Subcultures*, "Anthropological Quarterly", 73/1, pp. 35-49.
- Levinson, J., 2015a: *Musical Concerns: Essay in Philosophy of Music*, Oxford University Press, Oxford.
- Id., 2015b: *Verso una concezione non minimalista dell'esperienza estetica*, "CoSMo", 6/2015, pp. 83-99; original ed. *Toward a Non-Minimalist Conception of Aesthetic Experience*, in Id., *Aesthetic Pursuits: Essays in Philosophy of Art*, Oxford University Press, Oxford (forthcoming).
- Lyon, D., 1988: *The Information Society: Issues and Illusions*, Wiley, London.
- Manovich, L., 2001: *The Language of New Media*, MIT Press, Cambridge (Mass.) -London.
- Matassi, E. 2010: *Filosofia dell'ascolto*, Il Ramo, Rapallo.
- Menduni, E., 2007: *I media digitali. Tecnologie, linguaggi, usi sociali*, Laterza, Roma-Bari.
- Mowitt, J., 1987: *The sound of music in the era of its electronic reproducibility*, in Leppert, R., McClary, S., (eds.), *Music and society: the politics of composition, performance and reception*, Cambridge University Press, Cambridge-London, pp. 173-97.
- Pacoda, P., Stefani, G., 2006: *Rave, techno, trance*, in *Enciclopedia della musica*, 10 voll., *Piaceri e seduzioni nella musica del xx secolo*, IV, Einaudi, Torino, pp. 719-28.
- Perlman, M., 2004: *Golden Ears and Meter Readers: The Contest for Epistemic Authority in Audiophilia*, "Social Studies of Science", 34/5, pp. 783-807.
- Pinch, T., Bijsterveld, K., 2003: *"Should One Applaud?": Breaches and Boundaries in the Reception of New Technology in Music*, "Technology and Culture", 44/3, pp. 536-59.
- Id., 2004: *Sound Studies: New Technologies and Music*, "Social Studies of Science", 34/5,

- Special Issue on *Sound Studies: New Technologies and Music*, pp. 635-48.
- Risset, J.-C., 2002: *Musica con il computer: la composizione all'interno del suono*, in Favaro, R., (ed.), *Musica e tecnologia domani*, pp. 99-119.
- Sani, N., 2002: *Musica digitale nella società contemporanea. Ricerca, produzione, diffusione*, in Favaro, R., (ed.), *Musica e tecnologia domani*, pp. 43-51.
- Scaldaferri, N., 1997: *Musica nel laboratorio elettroacustico. Lo Studio di Fonologia di Milano e la ricerca musicale negli anni Cinquanta*, Quaderni di "Musica/Realtà", Lim, Lucca.
- Schaeffer, P., 1966: *Traité des objets musicaux. Essai interdisciplines*, Éditions du Seuil, Paris.
- Schafer, M., 1994 (1977): *The Soundscape. Our Sonic Environment and the Tuning of the World*, Destiny Books, Rochester VA).
- Serra, C., 2008: *Musica Corpo Espressione*, Quodlibet, Macerata.
- Tavani, E., 2011: *Parole ed estetica dei nuovi media*, Carocci, Roma.