

From Digital ‘Echos’ to virtual ‘ethos’: Ethical aspects of Music Technology

George Kosteletos

Department of Philosophy, School of Philosophy,
University of Athens
kosteletosgeorge@gmail.com

Anastasia Georgaki

Music Department, School of Philosophy, University of
Athens
georgaki@music.uoa.gr

ABSTRACT

In the present paper we aim to examine Music Technology through the lens of the ethical issues typically raised in the field of Philosophy of Technology regarding technological practices other than music composition, performance, reproduction and distribution. With this analysis we will try not only to highlight several ethical facts about the practice of developing and using digital tools for music but also to stress on the fact that Music Technology can be a platform for vigorous philosophical meditation.

1. INTRODUCTION: WHY ETHICS OF MUSIC TECHNOLOGY?

Revealing ‘ethos’ in aspects of Music Technology¹ can help both the society of composers, researchers and developers in the field of Music Technology and the society of philosophers. The former will realize the power-thus the impact-of the tools that they have been producing and using. The latter will have the chance to test their theories in a field which bridges Technology with Art, in other words in a field that comes quite close to the womb from which Technology and Art were both born: *Technē* (Τέχνη)².

¹ With the term ‘Music Technology’ we refer to a broad domain of research and development which deals with the production of innovative tools for music creation, performance, education, perception and distribution. Many research groups, in collaboration with composers and performers, experiment on sound analysis and synthesis methods, on interactive systems and gestural control, on music representation systems, reaching up to the investigation and modeling of human improvisation.

² The term *technē* (Τέχνη) is often used in philosophical discourse to distinguish from *poiesis* (ποίησις). Many questions have been raised regarding its meaning. Does it mean Art or Craft? Is the activity of *Technē* an operation based on both the cognitive skills employed for

With the famous CERN experiment regarding ‘Higgs boson’, the physicists are trying to come as close as possible to the original conditions of the Universe. They are trying to reproduce-at least in micro-scale- the conditions existing some nano-seconds after the ‘Big Bang’. Similarly, by examining Music Technology, the philosophers could come as close as possible to conditions simulating the birth of Technology and Art from *Technē*. Heidegger has pointed out this common source of Technology and Art. He even supported their reunion [25]. But in his times Music Technology was not so developed, spread and popular as it is today. Moreover, it was still some years away from taking its present digital shape. Although younger than Heidegger’s theories, Music Technology is the oldest and by far most developed of all the fields of artistic applications of Technology. So from all these fields, it has to be Music Technology the one that is going to guide the philosopher’s eye back to *Technē*. Even in a less ‘romantic’ mood we still see that the developments in the field of modern Music Technology bring forth a great deal of potentialities which ask for continuous philosophical examination.

Moreover, one would say that by tracking down some of the traditional problems of the Philosophy of Technology, in the context of Music Technology, not only do we validate these problems by proving their existence in one more instance of technological use, but also we contribute to what Mario Bunge has visualized as the building of an “alternative ethical code” regarding Technology.

According to Bunge “there is nothing unavoidable about the evils of technology” [6]. On the other hand we could reach for a Technology that would be “all good” instead of “half-saintly” and “half-devilish”. It depends on the policy-makers and the technologists to accordingly design and obey to the proper rules for Technology. But until now we have been employing maxims that we have come to distrust or reject since we have realized that these maxims overlook the true

negative sides of Technology. Thus: “It is high time we attempted to build alternative ethics of technology...If we wish to keep most of modern technology while minimizing its evil components and negative side effects, we must design and enforce an ethical code for technology that covers *every technological process* and its repercussions at both the individual and social level”[6].

Music Technology is of course part of “every technological process” and examining its ethical aspects will be part of the overall trend of moving away from ethical reflection on Technology in general and turning to an ethical reflection of specific technologies and phases of technological development. Peter Kroes and Anthonie Meijers have remarked similarly that modern philosophical reflection has to be based on empirically sufficient descriptions reflecting the richness and the complexity of nowadays Technology [29]. Thus our meditating regarding the ethical dimension of Music Technology moves towards the direction of modern and highly recommended philosophical analysis of Technology. In this sense, Music Technology, apart from being an organized practice dealing with the production of tools for the creation, performance, pedagogy, analysis and distribution of Music, becomes a ‘laboratory’ for the modern philosophers, a field offered for a ‘hands on’ philosophical reflection of some of the most interesting and innovative formulations of the technological phenomenon.

We would like to mention the fact that the technological formulations taking place in the field of Music Technology possess a special character due to the fact that are formulations of artifacts which serve an ‘as if’ purposiveness. Immanuel Kant stressed on the fact that aesthetical judgment is characterized by a purposive character although it actually aims at nothing tangible [28]. We hold that in a similar way artifacts that serve the creation of Art possess an analogous ‘as if’ purposiveness. If all technological artifacts are made to serve a certain purpose, then music technology artifacts are made to serve the purpose of Art. But if objects of Art do not serve a practical, explicitly tangible purpose, then one could say that music technology tools are artifacts that serve the purpose of making non purposive artifacts. In other words, Music Technology is the incarnation of a purposiveness headed to non purposiveness. Since aesthetical judgment is characterized by an ‘as if purposiveness’, an ‘intimateness without a purpose’, Kant faces aesthetical judgment as the absolute abstraction of man’s purposive thinking. In the logical structure of aesthetic judgment one finds the dominant (‘eidetic’, as Husserl would have put it) features of the logical structure of purposive thinking in general. In similar fashion, we think that Music Technology is the absolute abstraction of the engineer’s purposive thinking in general. Making artifacts that will lead to the making of artifacts which have no tangible purpose is already a duplication of purpose which leads to an abstract level needed for someone who is interested in examining how the engineer’s intentions are first born and then are materialized to artifacts. In this sense, Music Technology seems to be the right technological field form which the

philosophers should start rethinking about Technology and its ethical aspects.

2. FROM THE ETHOS OF MUSIC TO THE ETHOS OF TECHNOLOGY

According to Aristotle, the world ‘ethos’ refers to one’s settled disposition regarding to one’s way of life³. So ‘ethos’ refers to something broader than just a set of rules or a theory for the regulation of our actions. Apart from this, ‘ethos’ refers to a general attitude towards life and the others; an attitude which draws its generality from the fact that it derives from one’s nature and the most prominent features of one’s character. ‘Ethos’ has a more holistic and practical character than ‘ethics’. This is why we’ve decided to re-introduce this term in the discussion regarding Technology, starting from the occasion of Music Technology. In most of the traditional views of Philosophy of Technology, morality and the ethical codes of men, of a society or of a civilization as a whole, are imprinted in the technology which this society or civilization designs and uses [3], [30], [31]. In our view the same holds for ethos. Technology is a medium through which ‘ethos’ is incarnated to practices, objects and institutions. On the other hand, one might observe several occasions in which Technology formulates ethos, gives birth to conditions and habits that produce alternations of the already consisting ethos or even lead to the birth of a new ethos, a new way of realizing the world and our place and role in it. We would finally say that the relationship of ‘ethos’ and Technology can be conceived in a bidirectional way since it works both ways: the one influences the other forming an infinite loop of a morphogenetic interaction. What is the form of this loop in the specific case of ‘ethos’ and Music Technology?

2.1 Ethos in Music

When someone refers to ‘ethos’ regarding Music Technology, has to be aware of the philosophical tradition linking ‘ethos’ with Music. Long before Philosophy of Technology started to be a discrete field of philosophical thinking, even long before philosophers thought of dealing with Technology as a discrete phenomenon, or entity (or even subject of discussion), Music attracted the interest of some of the most prominent thinkers the world has ever known. Apart from ontological matters that linked Music with Kosmos and universal order, Music was faced as a vessel of ethos and finally as an instrument for the formulation of ‘ethos’. In the terminology of a philosopher of Technology, Music was a ‘technology of ethos’, a technical practice which possessed high educating powers; powers for the cultivation of one’s spirit and soul. But its powers were not purely positive. The influence of Music on man’s character was a potentiality open to any outcome, depending on the kind of music employed.

The Ancient Greek doctrine of ethos which attributed ethical powers to Music and claimed that Music could affect character was purely related to the

³ *Nicomachean Ethics*, beginning of Book II.

mathematical structure of the scales (modes) and the rhythm. Similar notions of ethos related to the general and the mathematical structure of the modes (named 'Echoi') can be found later in the Byzantine music.

The mathematical theory on sound was developed by the Pythagoriciens in the 6th century B.C.. According to this theory, the nature of the sound and the scales has a double impulse on the ethos of music: as moral qualities and affects of Music as microcosm⁴ and a force that affects the universe and the will and character of human beings.

The character or ethos of a mode, according to Philolaus, originated from the proper ordering of the intervals. Other followers of Pythagorean doctrine, presumably using number ratios, supposedly classified and used music according to the different effects, such as rousing or calming, that it produced [42]. This doctrine regarding ethos and its mathematical power was then taken up by Plato and Aristotle⁵ who developed their own specific theories about the effects of music and its proper forms and uses. Nevertheless, Damon is the one that has developed a complete theory of ethos and it is very strange that he was ostracised.⁶ [41]. Plato studied Damon's theories and expanded some ideas, but disagreed with others. Plato thought that the rhythm and melody of a song were what grasped the inner soul. This penetration of the soul occurred because the imitation in music is similar to the imitation in the soul, much like what Philolaus of Tarantum theorized about the similar combinations of soul and music.

A notion of ethos related to the mathematical structure of Music in a broader sense than that of the Ancient Greeks, is found many centuries later in the Meyer's *Emotion and meaning in music* (1956). In this book Meyer uses very often the term 'ethos' and demonstrates that emotions emerge through the cognitive processing of the musical formal patterns. In our days Juslin goes a step further with a parameterization of ethos in his new experiments on music performances [27].

So, what is the relation of Music Technology to the origins of a musical ethos? How can Technology participate to the formulation of ethos through the practice of Music? Does this ethos have only positive sides?

2.2 Ethos in Technology

Carl Mitcham [34] distinguishes six major categories of ethical problems regarding Technology: 1) The problem of fair and equal distribution of Technology. This problem is also expressed as a problem of equal spread of technological knowledge and finally power. According to

Mitcham, this is the problem of 'Technology as a political issue' 2) The problem of alienation. This problem can take the form of a discussion regarding the workers' alienation from their own work and the artifacts that they produce⁷. The problem of alienation through Technology can also take the form of a discussion regarding ecological issues and the way in which man is alienated from nature 3) The problem of the alternation- or even destruction-of cultures. This destruction can take place directly (e.g. through the use of weapons of mass distraction) or indirectly through the influence and finally imposition of the cultural characteristics and values implied by the use of a certain technology 4) The problem of Democratization and public consensus regarding the design and use of technologies 5) The problem of pollution and especially the problem of polluting the environment with chemical and nuclear waste and 6) The problem responsibility. In what ways should man reply ethically to the powers and potentialities that are born by modern Technology⁸ [34].

In another classification, the agenda of the ethical problems concerning Technology depends on how Technology is perceived. Until now philosophers have perceived Technology as a political phenomenon (Winner, Feenberg, Sclove), as a social activity (Latour, Callon, Bijker), as a professional activity (Davies) or as a cognitive activity (Bunge, Vincenti). Respectively the ethical aspects raised with regards to Technology are issues of politics, socio-cultural issues, issues of engineering ethics etc. [38].

In the following section we are going to focus more on the ethical aspects that hold a rather political and socio-cultural character. Our attempt is going to be that of making a similar analysis in the field of Music Technology. Of course both the ethical questions concerning Technology and the artifacts of Music Technology which ask for a careful ethical examination are quite numerous. Given the limited space available in a conference paper we focus mainly on aspects dealing with Democracy and equal chances. It is not only the occasion of participating in a conference in Athens, the place in which Democracy was born but also the present social circumstances in Greece and Europe that push us to deal with exactly this kind of issues.

3. ETHOS IN MUSIC TECHNOLOGY

Modern Music Technology is mainly digital and digital Technology, in its present form, seems to present various potentialities regarding the issue of Democracy and more general regarding the issue of Participation. As we are going to see digital Technology can be equally used as a

⁴ A system of sound and rhythm ruled by the same mathematical laws that operate in the whole of visible and invisible creation,

⁵ Aristotle's beliefs about the effect of the music on the character of the listener and the influence of the modes (which have a certain mathematical structure) on the Logos (rational) and Pathos (emotional)⁵ can be found in *Politics*.

⁶ Given the centrality of *mousike* in Athenian society of the 5th-century, it is entirely plausible that a theorist who emphasized music's potential to change or disturb the social order might be perceived as a threat.

⁷ In this context, many philosophers-even since the times of William Morris-have stressed the fact that technological means, especially in an era of extended 'fordism' tend to deprive the workers from the joy of participation in the creation of 'something as a whole'. The restricted participation to the overall project leads to their having a fragmented view of their role.

⁸ We would like to add that a quite important aspect of the problem of responsibility has also to do with the attribution of responsibility in reference to technological hazards or acts performed by mechanic entities (this is a central problem in the field of Roboethics).

means of social inclusion or exclusion. It can either be a platform for Democracy or for the worst kind of elitism.

3.1 Accessibility

In his recent critique regarding Transhumanism, Jürgen Habermas pointed out the possibility of a ‘naturalization of hierarchy’ [20]. At first glance, developing a technology that would enhance our bodies and minds seems to be a great development for humanity. But this possibility brings forth the following question: Who is going to have access to this technology? Who is going to be benefited with the gift of a strong mind and an eternally healthy body? Inside a question regarding accessibility there is always hidden a question regarding exclusion. According to Habermas, it is quite possible that only those belonging to the higher levels of the social hierarchy will have access to the technology that will bring man to the transhuman era. This will ensure that those in the higher levels of hierarchy will remain in the higher levels of hierarchy not by virtue of social origins, luck or wealth but by virtue of a higher nature offered to them by the new bio-technology. In this sense the social inequalities will become a matter of biological inequalities thus obtaining a permanent character. This is why Habermas refers to the possibility of a ‘naturalization of hierarchy’.

Quite similarly we could raise an issue of accessibility in digital technology and especially in digital Technology concerning Music since in the case of Music Technology, exclusion comes not only because of the prizes of the artifacts but also because of the specialized knowledge needed for the use of most of the Music Technology software and hardware. For instance highly effective musical software like MAX-MSP are taught in special seminars, usually in Universities and Technological Institutes. This is a practice which quite often poses a certain financial issue for those interested to attend the seminars. On the other hand it is a practice unavoidable given that MAX-MSP asks for its users to be quite familiar with programming. Here we see that the specialization of knowledge usually-if not always-leads to a certain financial burden. In this way we observe a pattern similar to that of the transhumanist Technology. Using high-level musical software becomes a practice accessible only to those who belong to an academic and financial elite. In this case we could probably speak for a ‘digitization of hierarchy’. The social hierarchy is depicted in the use of digital Technology in terms of wide/restricted access to this technology as well as in terms of efficiency in using digital Technology. Moreover, in the era of computers, an effective and extended use of digital Technology can bring multiple profits to the digital Technology effective user. In contrast, a limited use of digital Technology leads to exclusion from many opportunities. Can we imagine someone trying to become a computer music composer without possessing the proper knowledge and equipment? So there comes the same question: Who has access to this special knowledge and equipment? Only the members of a social and academic elit. Art-in this case Computer Music-and all its social and psychological profits

becomes an issue for the few and privileged. Digital Technology not only depicts social hierarchy in a level of digital practice but also reinforces this hierarchy (for instance by means of artistic and academic recognition) in the overall social net (artistic and academic recognition can bring money, social credibility and other benefits which are very helpful in our life in general and not only inside the specific context of Computer Music society). Specialized knowledge as such entails one of the hardest kinds of exclusion and Technology is all about specialized knowledge. Music Technology couldn’t be an exception⁹.

But do all instantiations of digital Music Technology lead to social exclusion and preservation of hierarchy? Open source coding and open platform systems seem to enhance participation, offering easy and direct access to a much wider public than this working with highly sophisticated academic software. The numerous potentialities of digital Technology are not all negative. This is due to the fact that digital Technology presents an interesting ‘plasticity’ and in the hands of designers and engineers who share the interest for a more democratic and inclusive society can be transformed to a vehicle of social inclusion.

3.2 Democratization of Design

It seems that the democratic character of Technology lies on whether the people who design Technology are interested in Democracy and social justice. Many philosophers have turned their attention to the phase of design. One of the reasons for this is probably the fact that until the design phase the features of an artifact can change and their consequences are reversible.

In political level the democratic function is presented as the most suitable for the regulation of the design phase. Philosophers like Andrew Feenberg [15], Jürgen Habermas [21] and Langdon Winner [44] have stressed the need for a democratization of technical design, a process which is going to enable wider parts of the public to participate in the formulation of Technology, thus in the formulation of their life¹⁰. Especially Habermas offers an account of democratization which also attacks views that favor specialization as the only way of treating Technology¹¹: “This challenge of technology cannot be met with technology alone....The fact that this is a matter for reflection means that it does not belong to the professional competence of specialists. The substance of

⁹ The fact that Technology is all about specialized knowledge and exclusion is depicted in view expressed by Kristin Shrader-Frechette regarding a benefit-risk and benefit-cost analysis of Technology. According to Shrader-Frechette “knowledge of economics is essential for informed discussions of technology and ethics” [37]. At this point we see that not only access and use of but also the ethical evaluation of Technology asks for a specialization of knowledge. Therefore, we could say that specialization is one of the characteristic features of Technology.

¹⁰ Feenberg’s ‘critique of Technology’ and ‘subversive rationalization’ have informed the work of researchers that have already dealt with such issues regarding Music Technology and especially experimental music composition. For instance see A. Discipio [11], [12], [13], M. Hamman [22], [23], [24], and O.Greene [19].

¹¹ For instance views like Shrader-Frechette’s (see note 9)

domination [characterizing technology as such] is not dissolved by the power of technical control. To the contrary the former can simply hide behind the latter” [21].

As a result of the interest regarding the design phase certain design procedures have been developed aiming at the integration of ethical values into technological artifacts. ‘Value-Sensitive Design’ (VSD) is one of the most popular processes of this kind [18]. ‘Design for X’ is a similar process which focuses on the integration of instrumental values (i.e. reliability, maintainability etc.) but also deals with the notion of ‘inclusive design’ aiming in designs which are accessible to the widest possible population, as well as persons with special needs and elderly people [14], [26].

At this point we would like to stress the fact that inclusive design should be extended to people belonging to different cultures and different educational level. Especially the issue of different cultures should be of great interest for the Music-technologists. Music Technology artifacts reflect mostly Western aesthetics of Music. Therefore a question of a colonization of foreign musical cultures through Music Technology is raised. Music Technology seems to work as a means which imposes the aesthetical values of western music on its users. At the same time it is not open to a formulation that would make its artifacts culture-sensitive (i.e. capable of capturing and reproducing the aesthetics of different cultures). After all digital technology is based on quantization and not all the cultures are perceiving things through digits. So there is a question of ‘openness’ to other cultures and generally to other aesthetic views¹². At which level musicians from ‘exotic’-non western cultures-have the chance to influence the design of musical software or digital musical hardware? Who are the ones that decide the direction that this design is going to follow? Which are the platforms of communication between the designers and the end-users (i.e. the musicians)?

If the design of musical software and hardware is left to a technical or financial elite then Music Technology artifacts will be nothing more than incarnations of this elite’s aesthetical values. Philosophers of Technology have pointed that values are unavoidably in our artifacts [30]. Therefore the use of digital Music Technology artifacts will be a practical validation of the values of few people dealing with the design and production of these artifacts. In this way we end up with what Kant called ‘heteronomy of the will’. The artistic (or aesthetic) will of the users retreats and is substituted by the artistic (or aesthetic) will of the developers. In other words, every time they use a Music Technology artifact the users comply not with their own will but with the will of the developers and they do so without even realizing it. Thus we might reach to a point of non-morality, since the users are not guided by their

own will, so they are not responsible for what seems to be their aesthetical choices. One would observe that morality has little to do with aesthetical choices, so at best we could probably talk about a heteronomy of artistic copyright (By setting the aesthetic features of the music technology artifacts, the developers have actually set the aesthetic context in which the users are going to perform. This gives us the right to ask whether the artistic objects produced belong to the users or the developers). But we have to see that aesthetical products participate in the formulation of people’s ethos (The first views to be expressed ever on this issue were presented in paragraph 2.1). So this heteronomy of the users’ will influences more than the copyright of the artistic products¹³.

The possibility of a heteronomy of the users’ will brings forth Michel Foucault’s analysis on ‘parrhesia’. ‘Parrhesia’ is a Greek word which means speaking freely with frankness and-in some definitions-with wisdom. According to Foucault, parrhesia played a prominent role in ancient Greek Philosophy, Politics, social life and generally in the formulation of ancient Greek thought [17]. One can easily understand that parrhesia was closely related with the democratic function of the society. Therefore, investigating the possibility of a heteronomy of the will through the design of Music Technology artifacts, brings us to the question regarding the protection of what we could call as ‘artistic –or aesthetical-parrhesia’ and finally ‘democratic aesthetics’. So ‘openness’ is all about responsibility and Democracy.

It is interesting, though, that the question regarding the ‘aesthetical openness’ of Music Technology shows the way for a similar question for an ‘openness’ to different kinds of ethos. How open are our artifacts to different moral values? According to which kind of ‘ethos’ are we going to design the systems of Music technology? Apart from the question of aesthetical preferences of different cultures, there is always the question of different morals with respect to musical practice. How moral is the recording and reproduction of Music? How accepted is such a practice in an ‘exotic’ (i.e. non-Western culture)? This is a typical question which shows that the artistic act can be set not only in a different aesthetical but also in a different ethical context¹⁴.

3.3 Focal Things

Democracy was born and performed in a place of gathering and public communication. Gathering was one of the presuppositions of Democracy. Does modern technology leave space for gathering? The question of Democracy brings as to the notion of gathering and in its turn this notion brings us to Albert Borgmann’s notion of

¹² Moreover, as Peter Manuel has stressed, importing a foreign technology into a certain culture (like the one of North India) might cause to this culture unforeseen alterations leading up to the rise of several forms of cultural corrosion, even to the enhancement of various forms of fanaticism [32].

¹³ Of course there is always the ‘market’ and its supposed laws. But, at the end of the day, the consumer has to choose from a *given* set of products (i.e. from a set of artifacts produced for consumer without the consumer’s participation).

¹⁴ Such questions bring forth the issue of a cooperation between technologists and ethno-musicologists. If we want for Music Technology to be democratic, we need to inform its design with the need and values of different cultures.

'focal things'. According to Borgmann, a 'focal thing' is a thing or a practice which has ultimate importance for our lives in the sense that it organizes our life and our conception of our self and the world in a crucially positive way. Finally 'focal things' are things and practices that enable what we call 'good life'. Most of Borgmann's examples of 'Focal things' have the characteristic of a meaningful gathering. Probably Borgmann's most elaborate example is this of the family lunch or dinner. A gathering around the table-i.e. at a settled space and time-with the occasion of a certain practice; a practice which does not just serve the practical purpose of feeding ourselves but also organizes our life and our relationships with the people around us through a net of seemingly 'small' but meaningful gestures and tasks like cooking, serving the food or bringing home the needed materials [4], [5]. These 'focal things' which are characterized by the feature of gathering usually serve also the purpose of our communication with the people that are most important to our lives (family, good friends etc.). According to Borgmann Technology destroys 'focal things' not only by providing alternatives but also by setting our lives and thought in a mode in which these alternatives seem easier, handier and more updated than 'focal things'. Sometimes they also seem like new 'focal things'. For Borgmann, the only way of realizing the disguise of the 'device paradigm' into a 'focal thing' is for people to understand the pervasiveness and consistency of the technological pattern in order to be able to track down its instantiations. Borgmann points out that Technology breaks things into means and ends. On the other hand 'focal things' relate to goods that are achieved "only by engagement in some particular practice", in other words to "goods internal to a practice". For Borgmann "to make the technological universe hospitable to focal things turns out to be the heart of the reform of Technology".

So the question we would like to pose goes as follows: Is Music a 'focal thing'? If it is, does Music Technology destroy the 'focal character of Music'? Knowing the history of Music we all understand that music was born being bounded together with Religion and Science in the form of pre-historic tribal rituals [16]. Thus Music was born by a 'focal practice'. Even after its liberation from the ancient rituals Music continued to have the character of a ritual. People still gather to auditoria to listen to music (i.e. they gather at a certain space and time) and before that people (the musicians) gather to rehearse. So on many occasions Music is a practice which organizes us in certain times and places. Of course in most of the times we listen to Music in our house or in our car being completely alone. But isn't this condition provided by Music Technology? And isn't this a distraction from the old 'focal character' of Music in which people gathered together to listen to Music? How long has it been since the last time that you sat down in your living room together with friends to just listen to Music? From the point of view of the musician, isn't the technology of 'home studio' a means that destroys the good old rehearsal gathering of the musicians?

At first glance these observations seem reasonable. But one could easily refer to the case of

parties in which many people gather in our living room to listen and to dance to Music played by our sound reproduction Hi-Fi system. Modern musicians might be on most of the occasions-isolated in their home studios, but thanks to the Internet Technology they can even 'jam' together in the Web. At the same time their fans can watch them 'jamming' on line. Thus we have the formulation of a virtual auditorium, a virtual gathering. Could this be also the formulation of a 'virtual focal thing', a virtual copy of our old practices and ethos or is it just another case of what Borgmann has called 'disguise of the device paradigm'?

In trying to answer such questions regarding Music Technology one might find himself in trouble with an old philosophical problem: The conflict of values. This is a problem first pointed out by the Stoics but since then is met by almost anyone who has tried to deal with ethical issues. It is a common place for philosophers of Ethics. Any time you are trying to defend an ethical value you find yourself harming another. Unfortunately it seems that this is going to be the case also with those who will try to deal with the ethical issues of Music Technology. The above discussion on 'focal things' and Music Technology provides us with an example of such a conflict of values. Specifically, one could claim that Internet programming (for the creation of Internet-based musical tools) could help us to preserve the 'focal character' of Music since it would enable the virtual gathering of musicians being quite far away from each other, thus saving them time and money (e.g. for the airplane tickets). On the other hand, knowing to program and use these forms of Technology might demand a certain kind of specialized knowledge and equipment which is not accessible to everyone. So here we have a conflict between 'focality'¹⁵ and accessibility. Another possible conflict is the one between two instantiations of the same value. For instance, open source coding gives the musicians the chance to participate actively in the design and formulation of their tools (a case of involvement that Feenberg would welcome as a step towards the democratization of Technology). On the other hand this kind of practices asks again for a specialized knowledge, thus for a specialized education, that not everyone has access to. So at the same time that we are trying to increase the 'plasticity' and accessibility of Music Technology we might end up setting the demands higher and higher, therefore moving toward the opposite direction from that of increased accessibility. In this case we have a conflict between two instantiations of accessibility, specifically a conflict between the accessibility demand on behalf of musicians already trained in programming and the accessibility demand on behalf of musicians who hadn't had the chance to be trained in programming (This is why an increase of opportunities in education must be an integral part of any effort of making Music Technology more inclusive). Such a conflict can also occur in the context of 'focal things'; a conflict between two different 'focal things'. This is another example of conflict between two different instantiations of the same value (in this case of

¹⁵ This is a term of ours.

‘focality’). In the example presented above regarding the musicians’ ‘virtual gathering’ via the Internet, one could observe that one ‘focal thing’ is preserved (i.e. the gathering of the musicians) at least in a virtual form but this happens in expense of another more traditional ‘focal thing’ like lunch. Being miles away and having the chance to collaborate musically through the Internet, the musicians might hardly decide to actual visit each other to get together for lunch or dinner. The easiness and directness of communicating musically through the Internet might postpone an occasion of getting together in a ‘focal practice’ related not to the making of music but to a broader social context.

At first glance, such an ‘equipollence of arguments’ (as the advocates of Pyrrhonism would have put it) might be quite disturbing for the engineers, though not completely void of epistemological interest. Realizing that such conflicts exist necessarily as an eternal pattern of man’s thought, engineers might become more careful and receptive, instead of being self-absorbed in developing a Technology which ends up being ‘self-contained’ (being in its own right as if it had nothing to share with its users).

In their turn, philosophers dealing with Music Technology might find not only another field of applying and questioning their theories but also a passage to the society, a way to contribute to the birth of a new ethos characterized by a balance between personal initiative and collectiveness, parrhesia and consensus.

4. EPILOGUE

In the present paper we posed questions that ask for a careful examination and analysis, thus for a space much wider than the one offered by a conference paper. Nevertheless, through these questions we didn’t try to reach to a final resolution of the issues stressed (whether there can be such a final resolution is after all quite doubtful) but to set a paradigm of how the developers of Music Technology and philosophers could cooperate in designing the best possible future for us. Such a project presupposes that technological design will be informed by the philosophers’ worries but also that philosophical reasoning will find a solid ground for experimental verification. Music Technology could be such a ground, given its vigorousness, its close relation to the newest possible techniques and its special role of being a practice that produces artifacts that produce Art.

5. REFERENCES

- [1] Aristotle, *Nicomachian Ethics*
- [2] Aristotle, *Politics*
- [3] Akrich, M, “The description of technical objects”. In Bijker, W and Law, J (eds.), *Shaping technology/building society: studies in sociotechnical change*. Cambridge, MA: MIT Press, pp. 205–224, 1992.
- [4] Borgmann, A, “Focal Things and Practises”, in Borgmann, A, *Technology and the Character of Everyday Life*. Chicago: University of Chicago Press, 1984.
- [5] Borgmann, A, “Wealth and the Good Life”, in Borgmann, A, *Technology and the Character of Everyday Life*. Chicago: University of Chicago Press, 1984, pp. 285-289.
- [6] Bunge, M, “Philosophical Inputs and Outputs of Technology”, in Schariff, R.C. and Dusek, V (eds.), *Philosophy of Technology: The Technological Condition*. Oxford: Blackwell, 2003, pp.172-181.
- [7] Bunge, M., “Technology as applied science”, *Technology and Culture*, vol. 7, pp. 329–347, 1996.
- [8] Davis, M, ““Ain’t no one here but us social forces”: Constructing the professional responsibility of engineers”, *Science and Engineering Ethics*, vol. 18, pp. 13–34, 2012.
- [9] Davis, M, *Engineering ethics*. Aldershot/Burlington, VT: Ashgate, 2005.
- [10] Davis, M, *Thinking like an engineer: studies in the ethics of a profession*. New York/Oxford: Oxford University Press, 1998.
- [11] Di Scipio, A, “Interpreting Music Technology: From Heidegger to Subversive Rationalization”, *Sonus: A Journal of Investigations into Global Musical Possibilities*, vol. 18, Is. 1, pp. 63-80, 1997a.
- [12] Di Scipio, A, “Questions Concerning music Technology”, *Angelaki: Journal of the Theoretical Humanities*, vol. 3, no. 2, pp. 31-40, 1998.
- [13] Di Scipio, A, “Towards a Critical Theory of (music) Technology. Computer Music and Subversive Rationalization”, in *Proceedings of the International Computer Music Conference 1997*, Thessaloniki, Greece, 1997b, pp. 62-65.
- [14] Erlandson, R. F., *Universal and accessible design for products, services, and processes*. Boca Raton: CRC Press, 2008.
- [15] Feenberg, A, *Questioning technology*. London/New York: Routledge, 1999.
- [16] Fisher, E, *The Necessity of Art: A Marxist Approach*. Bostock, A, (trans.), Penguin 1971, re-printed Verso, 2010.
- [17] Foucault, M, “The Practice of Parrhesia”, in *Discourse and Truth: the Problematization of Parrhesia*, edited by Koseph Pearson, Digital Archive: Foucault.info, 1999. In <http://foucault.info/documents/parrhesia/foucault.dt4.practiceparrhesia.en.html>, retrieved on 10/04/14.
- [18] Friedman, B., and P. H. Kahn, Jr. “Human values, ethics and design”, in Jacko, J and Sears, A. Mahwah (eds.), *Handbook of human-computer interaction*. NJ: Lawrence Erlbaum, 2003, pp. 1177–1201.
- [19] Greene, O, “More than ‘Just a Hammer’: Critical Techniques in electroacoustic Practice”, in *Sound and Art Conference*, Aberdeen, 2006.

- [20] Habermas, J, *The Future of Human Nature*. Hella Beister and William Rehg (trans.), Polity Press, 2003.
- [21] Habermas, J, *Toward a Rational Society: Student Protest, Science and Politics*. Shapiro, J.J. (trans.), Boston: Beacon Press, 1970.
- [22] Hamman, M, "From technical to Technological: The imperative of Technology in experimental music composition", *Perspectives on New Music*, vol.40, no.1, pp. 92-120, 2002.
- [23] Hamman, M, "On Technology and Art: Xenakis at work", *Journal of New music Research*, vol. 33, Is, 2, pp. 115-123, 2004.
- [24] Hamman, M, "The Technical as Aesthetic: Technology, Composition, Interpretation", in Solomos, M (ed.), *Pour Une Approche Critique*. 2002.
- [25] Heidegger, M, "The Question Concerning Technology", in *The Question Concerning Technology and Other Essays*, trans. William Lovitt, New York: Harper Torchbooks, 1977.
- [26] Holt, R., and C. Barnes, C. "Towards an integrated approach to 'Design for X': an agenda for decision-based DFX research", *Research in Engineering Design*, vol. 21, pp. 123–136, 2010.
- [27] Juslin, P, "Communicating Emotion in Music Performance: A Review and a Theoretical Framework", in Juslin, P and Sloboda, J (eds.), *Music and Emotion: Theory and Research. Series in Affective Science*. New York: Oxford University Press, 2001, pp. 309-337.
- [28] Kant, I, *Critique of Judgment*, 1790.
- [29] Kroes, P and Meijers, A, *The Empirical Turn in the Philosophy of Technology*, in Mitcham, C (ed.) *Research in Philosophy and Technology*, vol. 20, Amsterdam: Eseevier, 2000
- [30] Latour, B, *We have never been modern*, New York: Harvester Wheatsheaf, 1993.
- [31] Latour, B, "Where are the missing masses?", in Bijker, W and Law, J (eds.), *Shaping technology/building society: studies in sociotechnical change*. Cambridge, MA: MIT Press, 1992, pp. 225–258.
- [32] Manuel, P, *Cassette Culture: Popular Music and Technology in North India*, Chicago Studies in Ethnomusicology. Chicago: The University of Chicago Press, 1993.
- [33] Meyer, L, *Emotion and Meaning in Music*. Chicago: University of Chicago Press, 1956.
- [34] Mitcham, C, *Thinking through Technology: The path between Engineering and Philosophy*. Chicago: The University of Chicago Press, 1994.
- [35] Rutsky, R.L., *High Technè: Art and Technology form the Machine Aesthetic to the Posthuman*. Minneapolis/London: University of Minnesota Press, 1999.
- [36] Sclove, R. E., *Democracy and Technology*. New York: The Guilford Press, 1995.
- [37] Schrader-Frechette, K, "Technology". in Becker, L.C. & Becker, C.B. (eds.), *Encyclopedia of Ethics*, vol. 2, New York: Garland Publishing, 1992, pp. 1231-1234.
- [38] Stanford Encyclopedia of Philosophy, "Philosophy of Technology". In <http://plato.stanford.edu/entries/technology/>, First published Fri Feb 20, 2009; substantive revision Fri Dec 13, 2013, retrieved on 12/04/14.
- [39] Tabachnick, D, "Techne, Technology and Tragedy", in *Technè: Research in Philosophy and Technology*, vol. 7, Is. 3, pp. 90-111, 2004.
- [40] Vincenti, W. A., *What engineers know and how they know it: analytical studies from aeronautical history*. Baltimore, MD/London: Johns Hopkins University Press, 1990.
- [41] Wallace. R. W., "Damon of Oa: A Music Theorist Ostracized?", in Murray, P and Wilson, P (eds.), *Music and the Muses*. Oxford scholarship online, 2004.
- [42] West, M.L., *Ancient Greek Music*, Oxford: Oxford University Press, 1992.
- [43] Winner, L, "Do artifacts have politics?", *Daedalus* vol. 109, pp. 121–136, 1980.
- [44] Winner, L, "Technè and politeia: the technical constitution of society", in Durbin, P.T. & Rapp, F, (eds.), *Philosophy and Technology* (Boston studies in the philosophy of science vol. 80), Dordrecht/Boston/Lancaster: D. Reidel, 1983, pp. 97–111, 1983.