SELECTED PROCEEDINGS FROM THE SYMPOSIUM FOR PERFORMANCE OF ELECTRONIC AND EXPERIMENTAL COMPOSITION (SPEEC20012)

Routledge
Taylor & Francis Group

Music *Technology*, *Music* Technology or *Music Technology*?

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The goal in the text below is to offer food for thought regarding the underestimated role of aesthetics, in terms of both contemporary electroacoustic music practice and its field of studies, as well as how this role relates to applications of technology. It is based on the request that the author discuss 'issues of aesthetics as well as technical challenges experienced in his creative and scholarly work'. Therefore, this article includes remarks related to the author's holistic approach to artistic practice and research illustrating the main argument.

Keywords: Music Technology; Contemporary Composition; Organised Sound

This text is split into three main sections. Section 1 below focuses on the tension that at times exists in the field of music technology between its two words. Other pairs of words related to the field that present similar tensions, such as technique and performance, are introduced. Section 2 consists of a discussion of the importance of aesthetics. Through a greater understanding of aesthetics in terms of innovative music making, suggestions are made regarding how to resolve the tensions indicated in Section 1. The key issues that arise in these two sections are then discussed in terms of practice in Section 3.

1. A Question of Capital Letters

The field of music technology is by definition interdisciplinary, not least through the implications of the name, one word of which is related more to the arts and the other more to the sciences. In consequence, some specialists involved in the field are natural 'interdisciplinarians'. For example, Trevor Wishart, an interview with whom appears later in this issue, elegantly exemplifies an interdisciplinarian. He is someone whose technology, in his case software, serves his music, and whose music demonstrates a virtuosic understanding of his technology.

However, Wishart is, in a sense, an exception, not the rule. He is responsible for a good deal of the technology that he uses towards artistic goals. Lazier musicians, like this author, are more dependent on the technological developments of others. For some, this dependence is normally not an issue; for others, this implies artistic compromise due to inadequate or simply the wrong technological support.

On the other side, there is a substantial number of technological developments annually that are shared with the world at conferences, such as the ICMC (International Computer Music Conference) and NIME (New Interfaces for Musical Expression), and in publications before they have been applied artistically. Some might be considered to be avant-garde in the sense that their successful application is discovered years later. Other developments even find their application serendipitously. But these cases are also exceptions. For example, a significant number of developers have created new controllers for musical use. Some of these have been used effectively for musical purposes, and in many of these cases the developer was also the musician. Several others are there for the taking but without an immediate or clearly articulated musical application; they are not necessarily taken up and successfully demonstrated within musical practice. Another example is an interesting one. When John Chowning developed FM synthesis, his goal was to make sound synthesis more efficient, as most other forms of generation were slow. Therefore his goal was a practical one. Nonetheless, he was able, as were others, to use FM synthesis convincingly in his own works. Of course FM synthesis went on to be used on a number of digital synthesisers. The majority of its users never developed their own sounds and relied on presets, not the ideal means of achieving musical success. Therefore, the combination of technological development and virtuosic use of the technology comes to mind. Some achieve this; many do not. It is not just about technological development on its own.

Is not the field largely based on interdependence? In his investigations related to this subject, Marc Battier borrowed the term, 'faktura', from the Russian Constructivists (Battier, 2003) and applied it to electroacoustic music composition and its scholarly field of studies. It is his belief that when investigating a given electroacoustic work, technology, technique and musical style should all be considered. In other words, the relationship between the building of a work and its technological environment is of interest. How, for example, might virtuosity be defined in a digital music production

The SPEEC coordinators were aware of this notion of *faktura* when they offered a number of foci for the January 2012 event. One of these foci was the request to participants in the conference announcement to describe their 'overcoming technological and technical challenges to compositional aims'. (It must be said that the event did take place in the Faculty of Music and there was the assumption that musicians and musicologists would form the majority of attendees.) This phrase has been cleverly worded to suggest that there can be a tension between musical goals and technological opportunities. In other words the interdependence is by no means certain.

This can be illustrated quickly by querying the aesthetics of a technology-driven piece. The question is, of course, ambiguous. What is the nature of aesthetics in terms of such a musical work (see discussion in Section 2 below)? It can be discussed in terms of a work itself, or similarly, what went into a work's creation. It can also have to do with the listening experience of a work. Yet to what extent is the reliance on technology or technique a guarantee or even a significant factor in terms of the success of a creative work? Again, this question is ambiguous. A work may be seen to be successful in that it has pursued certain challenges and achieved them. However, this does not necessarily mean that there is any connection for the listener between those challenges and the listener's reception of the work, with the exception of the learned, who may be able to follow the technology or technique in certain cases and value that experience at least as much as the musical result. Success may also have to do with experiential value. In fact, the view is proposed that experiential value is the basis of any aesthetic experience.

The specialist public referred to here may, in fact, be the key audience for a given work. In this case, there is a common ground of experience and understanding and expectations linked to approaches to music composition and performance. Most composers and musicians are interested in a public that is broader than this, and it is here where the issue of capital letters becomes highly important. It is my view that works are often valued, that is, from the listener's point of view, when connections with lived experience can be made. (Experience here may have to do with musical content and structure, or with aspects related to emotion and meaning.) Works reliant, say, on genetic algorithms do not necessarily offer links unless the musical materials and the structures involved are connected to listeners' experience bases. In contemporary music in general, and electroacoustic music in particular, experiential links for unseasoned listeners are not a given. In technology-driven works, listeners can easily get lost unless there is some connection with lived experience and/or something to hold onto aurally is on offer in a given work.

The use of a computer game platform controller as a means to trigger or influence musical events is no guarantee of an interesting work. A strong musical idea behind it is, however. It is for this reason that the first of the three combinations, 'music Technology', is normally more of interest in terms of potentially relevant technical developments than as a foundation for successful art works. As suggested above, some people working in the field find synergies between their musical and technological abilities and vision (i.e. with a capital M and a capital T). Other musicians optimise[1] what they would like to achieve artistically with the available technology—or collaborate to develop technology—as they do with their techniques, to achieve more successful musical results. Success here has to do with reception as well as the above-mentioned interdependence.

This tension between innovative *poiesis* and reception is not new. Although there were few leaps in music, at least in terms of Western music history, as extreme as those leading towards atonality, the infinite choice of structures, of sonic material, of techniques and technological tools for musical practice, of spatialisation and so

on, has often led to change accompanied by controversy. The difference between the public's outrage at, say, Stravinky's *Le sacre du printemps* and much post-World War II music is that Stravinsky's links to music's past were not as weak as his audience believed a century ago. Many experiments of the 1950s and 1960s, and more recent technological ones in music, represent such extreme departures that the public, beyond those who found a work successful primarily because it was different (e.g. that small specialist segment of the public mentioned with regard to those able to hear the technology and/or technique of a work), became confused or lost. In many cases, within the world of radical musical experimentation, the establishing of an experience base that might support the listening experience of a new audience was to take many years, if it occurred at all. It is for this reason that this article proposes that at least some connection is made between technical or technological innovation and reception.

The music vs. technology and *poiesis* vs. *aesthesis* pairs are not the only ones for which such tensions exist. Having introduced the word, *faktura*, above, another pair comes to mind, namely between technique (or skill) and performance. This pair, suggested by Evelyn Jamieson, was offered whilst discussing dance. Her claim is that a high level of technique is by no means a guarantee of a successful performance. In fact, it is her belief that someone with perhaps less skill but one who possesses the ability to embody dramaturgic content, is more likely to provide a more credible and successful performance in terms of presentation and reception. In contrast, technique on its own is restricted to enactment, that is, a level below embodiment (Jamieson, 2012).

Does this mean that performative ability replaces technique? Clearly that would be absurd. The question here, as in the case of the capital letters as well as regarding the choice between the 'workness' of a work and its experience of reception, is one related to holism, not to mention aesthetic result. In other words, if such confrontations are viewed as a difficult balancing act, then the tension is too great. If seen in terms of optimising, the potential for holistic success is enormous.

One moral to the story thus far is to do with experiential links. The modernist urge to achieve uniqueness in art has led to many works void of experiential links. Reactions to this have been significant. Just think of repetitive or minimalist works, a huge swing with regards to the previous experimental traditions. Within electroacoustic music, clusters of activity have developed. For example, a gestural language has evolved that is now one with often-included sonic clichés. One might consider this tension to be between innovation and 'new traditions'. As electroacoustic music remains, one hopes, an innovative art form, either end of this spectrum seems an undesirable place to be. Finding a place in which the combination of the uniqueness of a work and its experiential links with its public is optimised makes infinitely more sense. Therefore, experimentalism need not be discarded or see its role diminished, whilst some form of communication with a given public is being given considerable importance. This leads us neatly to the subject of aesthetics.

2.   Music Is about Communication, Isn't It?

Everything discussed in Section 1 had to do with aesthetics and it is for this reason that the following discussion is intended to demonstrate how central aethetics is to the innovative arts today. To start, a simple but obvious assumption deserves attention. Aesthetics can only play an important role in musical discourse when it is clearly defined. Section 2 therefore commences with an attempt to do just this.

The word aesthetics has had a peculiar history, at least over the last two centuries. The following overview[2] takes us on a journey from beauty via form to 'workness' (some authors also use the term, 'arthood') to … well, that is the question. To let the cat out of the bag as it were, it is suggested that we allow ourselves to apply Hegel's thesis/antithesis/synthesis triad and suggest that today's aesthetics just might include both beauty and identity.

Before/Thesis Aesthetics was the reflection of the aim of the arts, namely that of the enrichment and intensification of experience, not least pleasure (Hamilton, 2007, pp. 3, 5). It is clear, given the remarks above related to people's experiential knowledge, that words such as 'value' and 'meaning' form part of the intensification of experience. One might guess that the majority of people today who have not studied aesthetics are of the belief that this definition is still current.

Interim/Antithesis In the early nineteenth century, the notion of art for art's sake was born, although its full impact would start to be felt towards the end of the century. This was quite a leap from the original art for humanity's (or, as the Landy put it in 2011, art for goodness') sake. Along with this expression, the term 'absolute music' also came into existence.

Part of the art for art's sake credo was that one could 'feel theory' as it were (Hamilton, 2007, p. 70), thus emphasising the inherent language-like quality of the art form. Kant was known to speak against 'charms' (such as musical textures); he was more interested in the 'pure' (such as form, Hamilton, 2007, p. 72) and Hegel, the spokesperson of antithesis in our survey, held that the principal aim of art was not to give pleasure but to enhance understanding (Hamilton, 2007, p. 73). The person who represents this view most famously in the twentieth century, Adorno, was of the belief that: '[w]hoever concretely enjoys artworks is a philistine' (Hamilton, 2007, p. 162) and, taking a stance against function and the arts, suggests that art should have 'no use what-soever' (Hamilton, 2007, p. 86), thus avoiding any sense of referentiality (and thus link with personal experience), but instead focus on form and formalism. The consequence of this, according to Hamilton (citing Schopenhauer), is that one 'ceases to consider the where, the when, the why, and whither of things, and looks simply and solely at the *what*' (Hamilton, 2007, p. 77, his emphasis). One of Adorno's key examples of the successful twentieth century composer, Schönberg, exemplifies this with his view (1941, cited in Hamilton, 2007, p. 156) that his rows and dissonance are all comprehensible to listeners.

One wonders whether the aesthetics of the absolute music well-known composers of the time can only be discussed in such terms. Is the intensification of such music only to do with the pure and nothing to do with charm? What about a bit of both?

After/Synthesis(?) This author has spent the better part of two decades investigating marginalisation issues related to various forms of twentieth- and twenty-first-century music, seeking means to open up innovative musics to a broader public. It therefore should come as no surprise that this article calls for the synthesis of the two aspects of aesthetics introduced above. As Giuseppe di Giugnio (amongst other things, the developer of IRCAM's 4X sound processor) once told the author, his view of a successful contemporary music work would be one that touches the heart and the intellect in similar measure. In other words, there is room for the formal when combined with some form of human communication. This Section 2 suggests in its title that music *is* about communication. The title infers a partial rejection of art for art's sake in the sense that aesthetics is not solely to do with workness. The title instead suggests the recognition of process leading towards enriched experience, thus including notions such as beauty, whilst welcoming the enhancement of music due to the intellectual vision behind absolute music as a means of further intensifying human experience. We thus come full circle: charm and purity (or similar terms) can indeed be combined when evaluating the aesthetics of the musical experience and this combination is exactly what is being proposed here.

What are the ramifications of this 'after' picture? We have reached the point in this article where a proposal has been offered and what follows is dependent on its acceptance. Clearly there are many musicians and music scholars today who are completely comfortable with the notion of art for art's sake and all that it entails. The hope is that many readers will see the value of the proposed view of aesthetics as the synthesis of the 'before' and the 'interim', thus the more emotional and intellectual interpretations of the word.

It is proposed that music Technology, as well as technique, *poiesis* and innovation on their own are largely analogous with the interim interpretation. The synthesis interpretation, on the other hand, seeks optimisation between music and technology, technique and performance, *poiesis* and *aesthesis*, and innovation and 'new traditions'.

The acceptance of the 'after' destination of the odd journey of aesthetics should theoretically combat the (elitist) marginalisation of some forms of contemporary music. It implicitly demands that music reflects people's experience base allowing for something more profound than individual serendipitous emotional or intellectual reactions. In fact, debates regarding value, meaning, emotion and other socio-cultural factors may resume, largely avoided by musicians and scholars alike for as long as I can remember when it came to innovative contemporary musical practices.

A consequence of the acceptance of the synthesis definition and thus the regaining of importance of aesthetics in new musical practice is a repositioning of the 'why' and 'for whom' a musician creates or performs a work in a certain manner with regard to the 'what' and 'how' issues relevant to any form of music. Not all music is equally meaningful for everyone. Therefore, the conscious recognition of one's main audience can be valuable in terms of its dissemination. Furthermore, dramaturgy offers a musician's view regarding potential experiential links. Combining the musical experience with a

clearly articulated intention can enhance discussions related to reception in particular when new audience development is of relevance (see, for example, Weale, 2006).

In the world of electroacoustic music, another form of optimisation is worthy of mention that was of particular relevance to the SPEEC event. This art form is indeed an important subarea of music technology. It is an interdisciplinary field as already suggested. However, electroacoustic music is not only reliant on these two; it is also reliant on its field of studies, whether you call it musicology or electroacoustic music studies, an area that falls mainly within the humanities and, to a lesser, but by no means unimportant extent, the social sciences.

Part of the reason why there is too little discourse about the aesthetics of electroacoustic music has to do with what might be called 'holes in the market' in terms of electroacoustic music scholarship. The ElectroAcoustic Resource Site (www.ears. dmu.ac.uk), a project launched by the author, indicates the wealth of scholarship that is on offer. It also demonstrates that in some areas, scholarly publications are lacking. These include, to state the obvious, *faktura* and aesthetics. Furthermore, there are relatively few important methodological discussions regarding, for example, structural and parametric analysis, classification of sounds and socio-cultural aspects related to the field (Oxford's Georgina Born representing an important exception). To make matters worse, specialists seem to have difficulties in terms of coming to grips with relevant genres and categories, not to mention terminology. The aesthetics of electroacoustic music based on this article's definition is therefore in need of more foundational literature.

Why is this so? Just as with every pair of terms presented above where tensions have been discovered, this triad of arts/technology/humanities is interdependent, in search of optimisation. To gain an understanding of its aesthetics, holistic approaches are needed.

Let's pursue an example taken from the second chapter of the author's 'Understanding the Art of Sound Organization' (Landy, 2007). This chapter, after opting for a new term, sound-based music, as a more accurate representation of the field, investigates whether a paradigm exists for this music and comes to a positive conclusion. In other words, the body of knowledge related to musical production (music and technology) and its understanding (humanities and social sciences) demonstrates paradigmatic behaviour in the sense of an abstract basic structure, of some tenure, in which knowledge is related within a given realm. Instead of repeating published arguments, one of the key implications discovered was that much sound-based music is not dependent on current means of musical classification, not least, the division between art and popular music. Much of this music transcends it or simply ignores it. This was an exciting discovery. Its relevance to the current discussion has to do with the shared knowledge regarding sound-based music in terms of its production, content and reception. The acknowledgement of this paradigm allows for studies to be undertaken in any and all of its aspects. In this way a knowledge base evolves that contributes to aesthetics in terms of its meaningful experience, meaningful related to understanding as well as value and meaning. If one speaks of holes in the market in electroacoustic

music studies, this is without doubt the most urgent. It brings together all of the ident-ified separate areas that are modestly documented and seeks greater clarification of ter-minology, classification systems, theoretical understandings and, last but by no means least, knowledge related to reception. Reception is to do with a dialogue amongst all involved with this music: musicians, developers, scholars, music promoters and the public. This knowledge can be applied in terms of the music's and music scholarship's own dynamic. It can also be applied to widen interest and participation, the author's idée fixe in terms of his own research and artistic practice. This forms the subject of Section 3.

3.   Translating These Views into Practice

As someone who is a thinking musician, involved equally with theory and practice, it comes as no surprise that I have discovered that each informs and is informed by the other. As someone who has described himself as 'lazy' above, technology is used towards musical and musicological ends. It is developed only when a project or work leads to the realisation that the needed technology is missing and must be devel-oped. When technology is used artistically, it is not put on show, but instead serves musical purposes, ideally hidden.

How does this notion of optimising the combinations serve artistic goals? I do not consider the responses, 'that was interesting' or 'that was clever' rewarding after a per-formance. They do not clearly suggest enrichment or intensification of experience. They do suggest that the intellect has been put to work somehow. One box has been ticked, but the other (di Giugnio's referring to the heart) has been left untouched. Therefore I personally prefer to create theatrical sonic works that are both meaningful and valuable to listeners. The word theatrical is not necessarily used in its literal sense here in the sense of staged physical performance, but also in terms of the theatrical nature of sound itself. The link with dramaturgy, therefore, is obvious. Musical content, structural devices and dramaturgy all serve towards the creation of works that combine accessibility to a variety of audiences with innovation, taking people's lived experiences into account, works in which aesthetics inform each and every aspect.

When media are mixed or when live performance is involved in my music, the eyes are provided with information directly related to the work's dramaturgy. In other words, live presentations are not just sound, not just technique, but indeed a combi-nation of intention, virtuosity and audio-visual performance.

Increasingly often I create something called 'flexible works', that is, works that can be altered from performance to performance to take a given audience or venue into account. In this way works can be made for an audience beyond one consisting of specialists who understand the minutiae of my music, that is, the sole audience of many experimental musicians. One interesting reason to consider flexible works is to investigate whether intention and reception are meeting with people of different levels and types of experience and, when this is not the case, think about altering pieces to heighten the connection.

In my journey a number of people or musical movements have informed my think-ing. To support the goals of this article two pairs of examples will be strategically chosen.

As a student, I studied at a university where the post-World War II serial movement served as a major focus. I was in New York City and experienced its uptown (serial) academic side and its downtown (experimental) side as well. The antithesis rep-resented by the former, serial music, left a profound impression on me, but was never to become part of my musical vision for two reasons: it was not representative of my taste (value); it was, in my experience, closer to the intellect than to the heart. John Cage and others influenced by him downtown represented the second antithesis. Cage's well-known search for 'no rules' offered a sort of utopian ideal that, for me at least, was in harmony with the Woodstock generation and their search for alternatives. During my early career, I opted for Cage and his radical philosophy, but was always worried about how I could combine this vision with the communicative aspects of music. It would take years to discover the fact that Cage had opened up a vast space, perhaps too vast, allowing me, and so many others, a free choice of things to assimilate with my strengths and my vision. Instead of 'no rules', my approach to music was to do with the combination of the infinite choices towards a cohesive, com-municative end.

Two very different collaborations informed this discovery in important ways. The first, a lengthy collaboration with the French video (now new media) artist, Michel Jaf-frennou centred on works[3] involving audio and visual technologies that were at once experimental and humorous. Working at several levels, similar to a children's film, accessible works were created reaching fairly significant audiences not least through televised broadcasts around the globe. Following this period, I started a period of col-laboration with the, then East German playwright, Heiner Müller[4]. His works were perhaps less innovative than Cage's, but instead fulfilled an important artistic function, namely placing contemporary culture in question in a tangible manner[5]. It was fasci-nating to see his works performed in Western and Eastern Europe. The reason for this had to do with the experience, the reading of the work by these different audiences. In the West, reactions were related to the craft, intellect and power of his works. In the East, it also had to do with the fact that Müller was able to get these critical works staged at all. Many viewers perceived the viewing of a work by Müller as watching the Berlin Wall being shoved a tiny bit. This was due to the fact that he, overtly or cov-ertly, celebrated, but also challenged, the established order of the day, whether refer-ring to society in general, socialism, Germany or, more specifically, the German Democratic Republic. Please note that, at the time, this was no easy accomplishment in East European nations. People from all corners of society shared the experience of the power of art. Perhaps there was little to laugh about, in contrast to the works made with Jaffrennou, but the shared experience of cultural criticism reached deep into the soul, something that I had not experienced as profoundly previously.

Both artists never let abstraction evolve to the point of an audience's losing connec-tions with a work. Jaffrennou's are located closer to the heart; the intellectual side is

neatly embedded in something that entertains and challenges simultaneously. Müller's work was symmetrically at the other side of this divide, although his ability to touch people occurred at more levels than Jaffrennou.

It is through these collaborations that I made the above-mentioned discovery that Cage's freedom was, in fact, too great. It nonetheless informed my work with these two artists and in all other artistic ventures, as the ability to be surprised through experimentation remains a personal artistic need. Still, the collaborations demonstrated to me beyond any doubt that strong artistic work combined with strong dramaturgy lead towards heightened aesthetic experiences, *both* in terms of enriched experience as well as in terms of the understanding of the artwork. I cannot see working in any other way.

Does this imply that employing a dramaturgy restricts the music experience? The short answer is: absolutely not. At SPEEC, I told the story of an early work I made, one often associated with the rock opera, *Tommy* by The Who. My piece, *What's Left* was composed in 1980 (for stereo recording, 18'). During this time there were many pinball halls, equipped with other gambling machines, scattered around Europe and elsewhere around the globe. I found electroacoustic music laborious at the time. Analogue techniques were complex and often unrewarding. Pieces often took ages to compose. Digital technologies were rapidly evolving, but were by no means as user friendly as they are today. Pinball machines, with their dynamic sounds and algorithmic compositions—each ball created a different piece after all—offered a form of instant electroacoustic music. Most people did not really think of the sounds that pinball machines produce as music and many fewer still as electroacoustic music. But that is indeed what the sonic output of a modern pinball machine is. Not only this, they were, of course, ubiquitous and many people paid to play with them regularly. So the music I was involved with was both unknown—a broad sector of the public was unaware of electroacoustic music—yet it was universally available. The curious combination described here offered sufficient food for thought and an ideal dramaturgic basis from which to create a piece.

I organised with a pinball hall in the centre of Amsterdam to record single machines for an hour before it opened one day and continue to record them along with ambient sounds after the hour. In fact, shortly after the hall opened a very young pinball wizard came in and started playing. He allowed me to record one of his games (at my expense, of course). In this way source material was produced for the work.

The title was chosen after I decided upon a musical structure that was a variation on Ravel's *Boléro*. The piece starts calmly and simply builds up. The young man's solo, a Turkish 'guest worker's' son, was used fairly late on in the piece. The work commences with an old-fashioned mechanical pinball machine that stays on throughout and remains after the final electronic sound unravels towards the end. It is what's left and most listeners discover that they had forgotten about it as the technology-driven equivalents had smothered it. There is also a political association in the title related to the addictive nature of pinball and related gambling machines. Why do

governments allow people, many of them without means, to spend a fortune keeping themselves occupied hooked on these machines?

I composed the piece in the studio at the university where I worked at the time, normally during evenings when staff had left and only the cleaner, again from Turkey, remained. We would buy each other a cup of tea once in awhile, but he was normally quite shy. One day, he gathered his courage and asked me: 'Could you please tell me what you are doing?' I replied: 'Making a piece of music' at which point he left rapidly leaving me behind wondering whether he thought that I was out of my mind.

A few weeks later, I made the final mix of the piece and, although concentrated, noticed that he had stopped working and stood in the corridor outside of the studio. Once finished, he quietly came in and said: 'You're right'. I replied, mildly astonished by the remark: 'Right about what?' He then responded with one of the greatest non-sequiturs that I had ever heard. He asked: 'Do you know my cousin?' I replied cautiously that I did not think so. He persisted and asked: 'Do you know what he does for a living?' Again I replied that I had not a clue. He stated: 'He has a butcher's shop in Hilversum'. I waited for more. He continued: 'Do you know what he plans to do with his earnings?' I again stated that I did not know. 'He plans to return to our country and open a hotel that should provide earnings for him and for our extended family,' he said. I replied that I found it a great idea as his services to The Netherlands would be rewarded and everyone would benefit.

At this point his expression changed. He asked: 'Do you know how much money he has saved?' I had no response for a change. 'Virtually none. It's all gone on those machines in those halls, through gambling and playing.' He went on:

> What you've composed is of vital importance to me and my people here. Please provide me with a recording so that I can distribute it to community centres. Your music will remind them of how trapped we all are by these addictive machines.

The dramaturgy of the piece that I had created for it did not hold a candle to the dramaturgy for this man. Nonetheless, my intention and his reception of *What's Left* were by no means incompatible. We were dealing with the same issues. They simply had a more profound resonance with my first listener than they had for me, the composer.

The work was highly experimental. The concept of a solely sample-based work was new. The equipment used, for example, special contact microphones from studio for electro-instrumental music in Amsterdam, was of particular value. Technology served music that was about technology … and society. The simple, long recordings were carefully chopped up and moulded into a single work. *Faktura* had to do with, amongst other things, using the tape devices efficiently to minimise quality loss, spatialise and balance the work within the parameters of the work's structure and dramaturgy. The known was combined with the unknown. In fact, it illustrates what I call 'the 1% tilt' (see, for example, Landy & Jamieson, 2000, p. 9): take something known, change it slightly and present it as an artwork. The innovative aspects of the work and the links with experience are both guaranteed.

This work predates my notion of a flexible work. More recently, I have made cultu-rally determined works, including a cycle of works based on samples from a nation's radio stations[6], allowing for multi-level understanding: at the level of organised sound, of textual understanding, of identification with samples and their sources and any combination of the three. Each composition works best in its own country, but can be used at other levels elsewhere and performed with their sister works ensuring a multi-level performance combination.

Relating artistic work to scholarship How do such artistic experiences influence scho-larship and vice-versa? The link is, for me at least, clear and straightforward. My artistic work is informed by my research and my research reflects interests and needs ident-ified in my artistic work. Both support each other. The aesthetics of the music, one very much based on the synthesis definition proposed, is at the forefront of my mind whilst making works. The intensification of experience is valid in equal ratio for the heart and the mind. At least that is my intention.

4.   Closing Words

The intention of this article has been to define the word aesthetics for today's world and to attempt to demonstrate its urgent importance within electroacoustic music and its associated field of studies. The aesthetics of electroacoustic music, combined with today's technical advances, will assist its lot: in terms of appreciation and under-standing as well as in terms of its dissemination.

The internet is achieving something our broadcasters have always found difficult. Through the multiplicity of outlets of dissemination, we no longer need to tune into 'stations' that have a very broad repertoire. Instead, communities of interest are forming and thus groups are able to hear and share music together. Such groups are dynamic; the curious seek more than one thus catalysing today's form of acculturation.

As we learn to optimise the pairs of terms presented in Section 2 of this article, as people from music, humanities and technology work together to optimise the balance between the two capital letters, the music of sounds looks ahead to a healthy future of greater interest and participation due to the maturing of this new music's aesthetic.

Acknowledgements

Notes

[1]   The author has chosen the word, optimise, carefully. In his early studies of Operations Research, he learned to seek optimal solutions to complex problems, some of which had no unique solution, similar to any initiative in the arts.

[2]   Although many books and articles were reviewed for this publication, Andy Hamilton's *Aesthetics & Music* (2007) seems to follow the most similar trajectory as the one proposed here and is therefore this section's key source.

[3]   Collaborative works, of which there were many, include *Les Totologiques* and *Electronique Vidéo Circus*, both dating from the early 1980s, made in France and toured internationally.

[4]   Our collaboration included productions of *Kwartet* (Cologne), *Philoktet* (Basel) and the world première of *Bildbeschreibung* (Graz) spanning the 1980s in which he was involved in one way or another. Other music compositions were made using a number of Müller's texts.

[5]   Clearly Cage's work challenged social norms as well, e.g. though his interest in anarchism, but the alternative posed was a radical distance from day-to-day life in stark contrast to Müller's works.

[6]   They are: *Oh là la radio* (2007), *To BBC or Not* (2009) and *Radio-aktiv* (2011), all 8-channel works although the German piece exists in a 24-channel version as well for the ZKM Kubus and similar well-equipped venues.

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