Music negotiation: routes in user-based description of music

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This paper will deal with the changes that have come about in the description of musical knowledge and with the ensuing needs in this field in the era of decentralisation. Throughout almost all the twentieth century, musical practices continued to be expressed by a system of cultural mediations that proved to be a practical impediment to the emergence of non-conventional cultures. Electronic music in particular and its corrosive tendencies, though spread and supported by remarkable composers, has ended up being devoured by academic immune systems. Now that the diffusion of Net computing has induced people to intervene in musical material, a poetics based on interference is spreading. By gaining ground on grammatical and self-referenced poetics, this trend has gradually become a palpable fact and music perceives itself as both individual writing and a production of social meaning. At present, a globe-net-transfer of sound material passes through different contexts and spaces, and seems to be adapting itself to different social speeds. Through the Net we can, on the one hand, replace, manipulate and recontextualise musical parameters until a different significance emerges; at the same time, randomising and hybridising musical objects can partially change our perception of the same musical events. On the other hand, music online databases, audio browsers and musical queries may open the way to overthrowing, reorganising and personalising music description. This could occur at different levels and to different degrees of complexity, both as a social event and as an active, user-based combination of musical structures.

1. INTRODUCTION

The interpretation of discontinuous information flows and the control of different time structures constitute the core and the communicative specificity of music. But by its very nature, music produces forms of change within the intertwining of various narratives. As the philosopher Remo Bodei explains, in music 'time flows, and at the same time it remains, with a static play of torsions and articulations, since the past is not released in surrounding the present, but reformulated' (Bodei 2000). Nevertheless, digital technologies have encouraged further, more refined control on temporal structures and on timbre, considered to be the result of the evolution of different relationships between acoustic parameters. This explains the putting aside of composition techniques based on the invariance of particular functions of musical language. New orientations rely upon a vision which considers musical events as objects or processes within a system of mobile references and roles, where meanings and structures could be reshaped many times. The use of digital devices in social relations and the ensuing change in dialogue-centred instances of communication have allowed further possibilities, linked both to the plurality and to the simultaneity of subjective expressions. By increasing the communication between the one and the many, online communication proposes new articulations within the processes of the formation of meaning, and at the same time compels us to reconsider many cultural practices based on *separateness*. Besides their visibility, the co-existence of different descriptions of the same kind of event requires cultural processes capable of simplifying the routes of the social validation of fields of knowledge, perhaps hitherto separate, and capable of reducing existing asymmetries between producers and consumers, artistic and technological experimentation, aesthetics research and processes of knowledge diffusion.

2. MELTING MUSICAL CULTURES

Concluding a lucid article, Jos Smolders points out that over the last fifteen years people have become less and less dependent on institutions to achieve knowledge and to make intellectual and/or creative statements. Smolders maintains also that, as a genre, electronic music goes beyond any cultural division, even though the actual working relationship of the academic composers with non-academic composers is almost nonexistent. They are in fact two worlds, which develop separately: 'The non-academic sees the academic world as a castle, which has no relation to the "real world". The inhabitants speak a different language, and indeed a lot of what is actually said in academic publications has very little to do with sound, but much more with technicalities.' Nevertheless Smolders adds that all composers are equal in a time 'when every prescription of structure and content has vanished, every composer is about to jump (or be pushed) into a vast ocean' (Smolders 1992). From similar premises, Ian Whalley writes that using a wide-range

medium for distribution would result in greater common ground for communication, somewhere between the language with which the audience is familiar and the expressive requirements of an individual style. Whalley especially refers to an encounter between academic and popular traditions, which could be facilitated by raising the problem of accessibility of musical languages and their hierarchy: 'The meeting ground between academic and popular voice is based on the view that profound experience can be expressed in accessible musical language, and, conversely, that language which is inaccessible does not of itself mean that the meaning expressed necessarily is profound. In short, familiarity of language should not be confused with vulgarity of message.' (Whalley 1999) The realisation of instruments oriented towards the manipulation of musical structures is actually received very differently, depending on where the novelties play their role, whether in theoretical components or in the relational potentials. On the other hand, as R. Arias remarks, the return of composer-performer in the technology-inclined sectors of so-called 'serious music' and the influence exerted by some popular genres point toward a more communal, less clearly hierarchical relationship among musicians. Furthermore, since technology exposes realms detached from any *a priori* musical paradigms, interference, translation, deconstruction, recycling, reinvention, subversion, exorcism and demystification may result from any suitable approach strategies (Arias 1999). Even if technological innovations do not condition the formation of musical meaning (seen as a construction of shared frameworks), the paradigms (simultaneity and visibility) proposed by online communication and techniques highlight the immediacy of the diffusion of different forms of knowledge. By encouraging, above all, a meeting ground between communications of research and communication *tout court*, they promote the creation of audiences capable both of receiving and updating the novelties contained in the proposals, hopefully according to new declensions of music making (Tanzi 2000).

3. THE ONLINE MUSICAL EMERGENCE

Often the emergence of new meanings expresses itself within a relationship of co-determination with technological tools: but the ensuing novelties have the chance of being discovered only if suitable instances placed at the origin of the communication paths do exist. Often, in an online context, the typology of communication pairings cannot be established beforehand. Moreover, the messages (and the contents) are put at risk by the difficulty of managing interactive sessions in a multiple-channel environment. Thus it is plausible that, on the Net, the recognition of *musical messages*, mainly due to subjective inclinations and capabilities, may differ from the norm. Such differentiation may condition the structural organisation as well as the form of sound objects, both

on the imaginative and perceptual plane. Besides, the very notion of the author is brought into question. As a consequence, musical communication now comes up against hypotheses that no longer focus on the idea of either subject or of discourse. In 'The Brain Opera', for example, based on Marvin Minsky's agents metaphor, human personality is not controlled by a centralised 'conductor' in the brain, but rather emerges from seemingly unintelligent and unconnected mental processes, or 'agents' (Machover 1997). Experiences like this deserve attention, since they introduce the question of multiple-source listening sessions, where the musical results may be difficult to identify, either as a single temporal chain, or as coming from one author alone. In these conditions, the musical codes may be jeopardised by the impact of different frames. On the other hand, interruptions in convergence of time and sound gradually compel net-listeners to become skilful in recognising parallel processes (if there are any), in combining musical patterns or singling them out from different materials, sources and intentions. They could find the way to replace meanings in given musical materials, and to extract codes from them. For the moment, merely combining musical objects may be the first stage in online extended music manipulation: 'Listeners become musicians when the combination of the tools they use and the playfulness they exhibit allows for distinguished, surprising or new composition in sound, whether the final product is good or bad, interesting or kitschy.' (Bosma 2000)

4. WEB AND MUSIC-SHAPING

Among the numerous examples on the Net, Cathedral is excellent as a web-based interactive environment for music-making. It illustrates the basis of a project whose aim is building a virtual instrument capable of allowing listeners to play along in real time through the site. After a technical description, W. Duckworth explains the interactive features of two virtual instruments. In the case of the first, called 'Sound Pool', the lines of hidden MIDI files are triggered individually by the user accidentally or randomly clicking on one of these nodes, located within a web of multicoloured geometric patterns. Successive clicks both alter the visual pattern and build up a mosaic of sound. Since the lines of music change location randomly among the nodes, each user creates his or her own unique experience and never encounters the same Sound Pool twice. Users can play a second instrument called 'PitchWeb' with varying degrees of musical ability, by selecting and manipulating shapes (circles, squares, triangles and diamonds) that are mapped to individual sound samples. But 'users can also select or manipulate individual sounds from a sound palette; produce sounds by entering words or predetermined combinations of characters in any language, which are automatically converted into musical passages

through an auto-play function'. The goal is to bring traditionally passive audiences closer to the actual creation and performance of music (Duckworth 1999). What is important to outline here is the dialogue processes between users and Cathedral creators: apart from any judgement about the musical results, new relationships are constructed, based on habits which are not casual, but related to suitable paths. Web music is seen by Duckworth as a 'group-responsibility' between the creators and the listeners, who have to be up to date with the plug-ins required to hear the music and view the site. Says Duckworth: 'Our goal is to make web music accessible to everyone, not just those fluent in the latest Internet technology'. Such accessibility, however, is mainly based on the growth of abilities, which are built step by step, during a constant dialogue. What appears as a novelty here, as in some other Web-based music applications, is the attempt to theorise the creation by users of their own space for expression, which springs from their attempts to combine sounds through graphical and alphanumerical maps. While users try to do something, they are actually learning to do it. By learning one way to map their musical experience, they also realise that many others are possible. The more chances offered by an online collaborative environment, the more negotiation processes will be started, regarding different levels of awareness, and differently oriented skills.

5. MUSICAL INTERFERENCES, DIGITAL DISPLACEMENTS

Through digital coding, any configuration used to declare a certain content may be separated from the original referent, and transferred into different domains. Ambiguities which may be generated in this way can condition the expectations of meaning and reveal unpredictable solutions. Apart from acquiring knowledge by single or multi-linear, circular or feedback-based paths, choosing to be catapulted out of a given context allows individuals to give individual scope for their creative areas, and to consider the artistic results obtained independently of the method adopted. By such methods, online technologies are going to make more explicit what Walter Benjamin meant when he mentioned shock as 'a prevailing form of sensitivity in the great industrial age' (Benjamin 1991). It is no accident that many Websites, which have become linguistic and expressive laboratories, propose sudden changes in perceptive frames, in order to experiment with new emotional connections. The question is: Has the shock due to displacement already become a substantial part of the sensorial online experience? Timothy Murray answers it has, in some artists' works like 'Shock in the ear', a listening environment created by Norie Neumarks, which 'disrupts the aesthetics and kinaesthetics of CD-ROM interactives, through nonlinear and poetic movement' and challenges the usual hierarchy of vision over sound

(Neumark 1998). It also expresses the concept that sound is the medium most appropriate to interactivity, as a new and engaging artistic form, because sound goes beyond the interface, into time, into the body, and into the imagination. Murray explains, in this regard, how the shock due to displacement works: 'while time stands still, fragments of narratives pass from ear to ear, between person and person, self and self's other in a radiophonic type of space. Enunciation and the vicissitudes of radiophonic interpellation are staged as foundational ground of shock, a quacking ground whose uncanny affability is likely to disarm and unsettle even its most callous users.' (Murray 2000) As a consequence of the loss of a topological notion of meaning, shock expresses a condition of communicative tension. Despite the aforementioned affability, this tension is nevertheless based on users' hypothetical capability of successfully reducing the ambiguity of objects in the course of their continuous transformation. This task, and above all the way it is ascribed to users, is what constitutes the real novelty. What is this novelty due to? A shock due to a frame change is presumably still based on something, which contradicts the assumption that, elsewhere, a message code does exist, which has to be stable to be reproducible. It is highly probable, thus, that new responsibilities in users' action are provoked by the gradual disappearance of that assumption, due to digital technologies. In fact, the same 'reproduction' category 'becomes unreliable when the numerical *copies* are embodied in media contexts which modify their function, aura and meaning' (Costa 1999): this, in turn, fatally affects the 'copies of codes' as well. Besides intercepting something, the new tasks expected from users seem to be based on their capability of sharing and forming something which no longer seems to be given: the meaning. This activity would be very similar to a conversation, or a musical improvisation. In both cases, the individuals negotiate the rules of 'turn taking', the complexity of grammar structures, the directionality of dialogues and their perceptive and emotional impact. Sometimes such a communication assumes the form of well-controlled randomness; sometimes it produces an endless repetition of micro-changes. In both cases, individuals can play an active role, or can be silent. All the same, by online exchanges, and with suitable tools, users can direct the formation and the formal punctuation of musical meaning.

6. AUDIO BROWSING

The mushrooming of digital libraries available via the Internet justified the creation of tools that work as browsers within the audio signals, and the use of systems able to manage similarity measures. These systems are quite simple and well known in the case of literal texts, but are more complex in that of audio. A retrieval

system aimed at discovering and highlighting the relationships between audio and score for any musical signal whatsoever in input, for every note of the score, has to link up with the right place within the audio signal. Besides, the complete temporal audio-score relationships also need tracing, and their reference indices require filing in a textual format. Thus, each query about the position of notes within audio could be made as a textual query. Certainly, the efficacy of retrieval methods depends on the setting of the parameters and on the threshold definition, which in a certain sense could be considered the real 'shapers' of any 'found' musical object. If such a category did exist, we could say that defining a 'query-based musical field' would be the same as creating a virtual object, whose structures gradually take form depending on users' assumptions, both in musical theory and in measures of similarity. On the one hand, both could be recognised as shape functions reflected in every retrieval-based construction of musical fields, processes and objects, because both operate with given levels of abstraction and given degrees of input definition (Haus and Pollastri 2000). On the other hand, the degrees of coherence between the query profiles and the results obtained seem to constitute a critical area, which often extends to the blurred boundary between structure and style (Selfridge-Field 2000). Parameters, procedures and steps aimed at 'identifying' both musical objects and styles imply (and perhaps require) a certain degree of manipulative capability, linked to users' assessment of how given thresholds could be adjusted, modified or left fluctuating. Certainly, all those variable fields will play both an objective and a subjective role. Their importance may be reduced, when users definitively accept the compatibility between the coherence of queries and the coherence of results obtained. Seen as an 'expected' result, such compatibility represents a function of musical shaping, based on an explicit negotiation between two fields. One represented by a fact – the amount of musical, structured data – and the other represented by the action of delimiting the inquiry areas. Besides reformulating consecutive queries, this means defining strategies which depend on what criteria of formalisation of musical knowledge are mainly used. Seen as an 'unexpected' result, the same compatibility could play a different role, by tracing a route of negotiation between different structural orders and their semantic consistency. After recognising their incompatibility, some activation of communicative channels between them could be attempted. In other words the musical results, instead of being considered merely wrong, could be interpreted as hybrid objects, whose characteristics derive from the intermingling of different constructive principles.

7. BETWEEN NEGOTIATION AND REPRESENTATION

Being linked to the forms of human awareness, online exchange induces users to negotiate the type and the grain of description of musical processes, while it requires them to look at the emerging properties (Ascott 1998) brought about by hybridisation among the properties of media objects. Besides, using intelligent software agents is going to drive ideas of action and participation towards mutations which will condition the stability of socially constructed meanings (Flanagan 1997). In this regard, since it is part of a communicative process, music will probably accept the modification of some paradigmatic indices. The definition of levels of knowledge, by which music can be described and practised, and the very organisation of musical space have both changed. Since becoming an online shared experience, the latter has become a dimension capable of receiving the peculiarity of music and of delivering it to a sociality made up of endless subjective shades. At the same time, online exchanges encourage all sorts of blends, which are temporal, but also cognitive and symbolic. Besides, the continuous *re-presentation* of musical structures suggests anchoring their narrative paths in some kind of certainty. While the online processes establish conversational frames, using the recurring structures can create the illusion of closed time, a 'becoming-space of time'. That is a place where the destructive effects of the irreversibility seem to be erased, but it is also a means which is seminal to every language. After all, the periods, in form of irony and parody, constitute stylistic means for criticising the social practices of meaning. Of course, as R. Middleton demonstrates, the recurrences are present in online exchanges as both inherited and produced circumstances. The musical repetitions themselves emerged through digital technology, after being often subjected to mutation: 'The rise to prominence of digitalised sampling and looping techniques – "borrowing" as multi-faceted principle – can be regarded as a symptom of a new paradigm, marked by an increasing blurring of distinction between musical work and musical field.' (Middleton 1996) Perhaps something more than a symptom, since the principles of musical construction (very often based on the functions of linearity, parallelism, symmetry and reversibility), will end up being part of the more indeterminate (and more eventful) paradigms of representation and of hybridisation. But, and what is more important, the loss of distinctions between musical work and musical field seems to permit the planning of musical fields *as if* they were musical works. Thus, it involves the necessity of using cognitive strategies which should have a confrontation with patterns, or fields, rather than singular objects or entities. From the user-based point of view, it is as if the descriptions of an object were replaced by the use of mobile grids of characteristics, or by the launch of statistical functions whose results require it to be 'transformed' in order to be assessed. In other words, it is like recognising the degrees of intelligibility of 'digital essences' as musical, while contributing to the definition of the order of these degrees. But, if methods which emphasise such

an active role of users seem to have found their theoretical *raison d'être*, what can really be done is – as usual – let meanings emerge by asking the right questions.

REFERENCES

Arias, R. 1999. From the margins of the periphery: music and technology at the outskirts of the West – A personal view. *Leonardo Music Journal* **9**: 49–53. Cambridge, MA: MIT Press.

Ascott, R. 1998. MASS '98 keynote: strategies of media art. *Leonardo Electronic Almanac* **7**(1), ISAST. http://mitpress.mit.edu/e-journals/LEA/SAMPLE/masskey.html

Benjamin, W. 1991. *Ecrits francais*. Paris: Gallimard.

Bodei, R. 2000. *Le logiche del delirio – Ragione, affetti, follia*. Bari: Edizioni Laterza.

Bosma, J. 2000. *Musaic: the merging of all sound spaces*. http://laudanum.net/cgi-bin/media.cgi?action=display&id=971775030

Costa, M. 1999. *Estetica dei media. Avanguardie e tecnologia*. Rome: Castelvecchi.

Duckworth, W. 1999. Making music on the Web. *Leonardo Music Journal* **9**: 13–17. Cambridge, MA: MIT Press. http://www.monroestreet.com/Cathedral/main.html

Flanagan, M. 1997. *Developing virtual performance spaces*. Department of Media Study, Buffalo, NY. http://www.maryflanagan.com/paperperf.htm

Haus, G., Pollastri, E. 2000. A multi-modal framework for music inputs. *ACM SIGMM Electronic Proc*. Los Angeles, CA, 30 October – 4 November. http://www1.acm.org/sigs/sigmm/MM2000/ep/haus/index.html

Machover, T. 1997. *The Brain Opera and active music*. Excerpt, MIT Media Lab, 1996–8. http://brainop.media.mit.edu/libretto/todarticle.html

Middleton, R. 1996. Over and over, notes towards a politics of repetition. *Beitrag zur Konferenz Grounding Music*. http://www2.hu-berlin.de/fpm/texte/middle.htm

Murray, T. 2000. Digital incompossibility: cruising the aesthetic haze of the new media. In A. Kroker and M. Kroker (eds.) *CTHEORY*, article 78. http://www.ctheory.com/a78.html

Neumark, N. 1998. *Shock in the ear*. http://sysx.org/shock_in_the_ear/

Selfridge-Field, E. 2000. What motivates a musical query. *Music IR 2000, Int. Symp. on Music Information Retrieval*. Plymouth, MA, 23–5 October. http://ciir.cs.umass.edu/music2000/papers.html

Smolders, J. 1992. *Removing a wedge*. http://www.earlabs.org/theory/remove.html#19a

Tanzi, D. 2000. Paradigms of change in music and in digital communication. In R. Ascott (ed.) *Art, technology, consciousness*, pp. 108–12. Bristol, UK and Portland, OR: Intellect Books. Also in *Proc. of the Third Int. CaiiA Research Conf*. University of Wales College, Newport, UK. 23–6 August. http://www.caiia-star.net/production/conref-99/Abstracts/abs2000.html

Whalley, I. 1999. Towards a new aesthetic in electroacoustic practice in New Zealand universities. *Enculturation* **2**(2), Spring issue. http://www.uta.edu/huma/enculturation/2_2/whalley.html