## 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 XX 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 re-contextualize 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 on-line databases, audio-browsers and musical queries may open the way to overthrowing, re-organising 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.

### 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-centered 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, on-line 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.

# **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 non-existent. They are in fact two worlds, which develop

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 on-line 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).

# 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 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 .92experience and never ennerdo

musical experience, they also realise that many others are possible. The more chances offered by a on-line collaborative environment, the more negotiation processes will be started, regarding different levels of awareness, and differently oriented skills.

# 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 gives individual scope for their creative areas, and to consider the artistic results obtained independently of the method adopted. By such methods on-line 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 web sites, 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 on-line experience? It has in some artists' works, like "Shock in the ear", a listening environment created by Norie Neumarks: "Shock in the Ear disrupts the aesthetics and kinaesthetics of CDROM interactives and challenges the usual hierarchy of vision over sound. It expresses the shocking 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". Timothy 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

## **Audio browsing**

The mushrooming of digital libraries available via 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 indexes 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

Besides, the continuous representation of musical structures suggests anchoring their narrative paths in some kind of certainty. While the on-line negotiational 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 criticizing the social practices of meaning. Of course, as R. Middleton demonstrates, the recurrences are present in on-line 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 digitalized 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'ètre, what can really be done is - as usual - let meanings emerge by asking the right questions.

### References

Ascott, R. 1998. MASS '98 keynote: strategies of media art *Leonardo Electronic Almanac*, Volume 7, number 1, ISAST. <a href="http://mitpress.mit.edu/e-journals/LEA/SAMPLE/masskey.html">http://mitpress.mit.edu/e-journals/LEA/SAMPLE/masskey.html</a>

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

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

Bodei, R. 2000. Le logiche del delirio - Ragione, affetti, follia, Edizioni Laterza, Bari.

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

Duckworth, W. 1999. Making music on the Web, *Leonardo Music Journal*, Vol. 9, 13-17, Cambridge MA: MIT Press. <a href="http://www.monroestreet.com/Cathedral/main.html">http://www.monroestreet.com/Cathedral/main.html</a>

Flanagan, M. 1997. *Developing virtual performance spaces*, Department of Media Study, Buffalo, N.Y., <a href="http://www.maryflanagan.com/paperperf.htm">http://www.maryflanagan.com/paperperf.htm</a>

Machover, T. 1997. *The Brain Opera and Active Music*, excerpt, MIT Media Lab, 1996-1998, <a href="http://brainop.media.mit.edu/libretto/todarticle.html">http://brainop.media.mit.edu/libretto/todarticle.html</a>

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

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

Neumark, N. 1997. Shock in the ear, <a href="http://sysx.org/shock\_in\_the\_ear/">http://sysx.org/shock\_in\_the\_ear/</a>

Selfridge-Field, E. 2000. What motivates a musical query, *Music IR 2000, International Symposium on Music Information Retrieval*, Plymouth MA, October 23-25. <a href="http://ciir.cs.umass.edu/music2000/papers.html">http://ciir.cs.umass.edu/music2000/papers.html</a>

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 (Editor) *Art, Technology, Consciousness*, Intellect Books, Bristol UK and Portland OR, pp. 108 - 112. Also in: *Proceedings of the Third International CaiiA Research Conference*, University of Wales College, Newport. U.K., August 23-26 <a href="http://www.caiia-star.net/production/conref-99/Abstracts/abs2000.html">http://www.caiia-star.net/production/conref-99/Abstracts/abs2000.html</a>

Whalley, I. 1999. Towards a new aesthetic in electroacoustic practice in New Zealand universities,