

Power and Responsibility: Converted to Streaming Between Machines

On the occasion of this, *Leonardo Music Journal* (LMJ)'s last CD before millennium festivities start, it is best to keep in mind that the real millennium begins in 2001, which offers a more interesting milestone for art-science-technology enthusiasts.

Our proposal for an anthem would then certainly be Max Mathews's "Bicycle Built for Two," either in the original Illiac computer voice version (1961) or Stanley Kubrick's "human" remake for HAL's death scene in *2001: A Space Odyssey*, based on Arthur C. Clarke's original idea to use the song (1968) [1].

Now that the 1999 CD is out on the street and the submissions for the 2000 CD are building up, let us make a great collaborative anthem for 2001. Deadline: December 2000, all submissions are welcome and will be continuously streaming from the Leonardo servers all around the world, all year round. Upload is starting right now, (e-mail me at <Guy.VanBelle@rug.ac.be> for a login and password) and make sure you have got it all mpeg3 encoded.

Voilà! Gimmie the sound of the century to come. And now back to 1999.

When I was asked to curate the LMJ9 CD Companion, I was puzzled by a myriad of questions. Do I want to be a curator? If so, what kind of curator? And what *is* a curator nowadays?

One fills in the blanks differently when one is part of a museum or an institution. But the last time I checked a CD is just a disk, a piece of plastic on which one stores data. Curating an object that spins around in a machine presents an altogether different challenge. Besides, what can I add to the "print and disk" principle? I am much more drawn towards the Internet these days, so why bother with a disk? Furthermore, after a couple of so-called "open projects" (eg. the dbonanzah! space, accessible at <<http://fly.to/dbonanzah>>) where anybody could contribute without restriction, I became convinced that the CD as we know it now is just a passing metaphor. So, would my involvement in this comprise a retreat to a more traditional setting? Though I certainly believe in digital music and media, I cannot possibly reconcile myself with the mono-disciplinary views of the field. Subsequently, I do believe the naïve promise the Web holds, to provide a free network for multidisciplinary and experimentally minded people of all kinds who appropriate art and communicate through culture. Therefore, the idea of an authoritative hand selecting quality does not seem to do the cause any good. I do not believe in the expression of "genius," so I never went looking for it. Besides, I really adore leftovers . . . and that was my real starting point: this should be the last CD of "companion" status made, after which we should move completely on-line. Whatever alternative for the future we cook up—whether on disk or on the Net—it is the paper journal that should be the companion.

But back to the present task of learning how to fill a CD.

Keeping in mind the crucial rule of making plans—if you start out too big, you will never end up too small—I imagined a CD that could fit anything that can be found in the digital creative domain. Any format, any compression, any interaction was welcome. But then came the inevitable moment of crisis, which always seems to converge with the drawing of deadlines. Suddenly I was left alone out there, puzzled about what a curator should do. How shall we reach the right people and how can we represent them in a paper Journal and on a disc? Help!

Panic is not always your worst enemy. I decided to write a call for submissions and distribute it to various mail lists and user groups in January 1999 (accessible on-line at <<http://mitpress.mit.edu/e-journals/Leonardo/lmj/cd99call.html>>).

Against a backdrop of burgeoning millennial angst—and in the context of a musical landscape in which music and sound converge with various other media via a mélange of freeware and shareware—I asked for a notion of what constitutes the experimental, the new and the alternative in the digital age. I invited composers (especially Internet composers), software developers and numerous communities of multimedia artists to present their ideas as to where music is going tomorrow. In short, I wanted a multifaceted answer to the question of what we have done to music and sound via computers, the Internet and multimedia.

I asked the world to "take the call," and it did. Lots of people sent in CDs and submitted files to our server. End of part one—end of the trouble?

Since the call, the electronic world seems completely changed, and it will have changed again by the time you read this. Of course, that is not new, as Lewis Mumford pointed out in the 1930s:

Have we heard the complete work? Far from it. All that has happened up to now has been little more than a rehearsal, and at last, having recognized the importance of the singers and the chorus, we will have to score the music differently, subduing the insistent brasses and the kettle-drums and giving more prominence to the violins and the voices. But if it turns out to be so, our task is even more difficult: for we will have to re-write the music in the act of playing it, and change the leader and re-group the orchestra at the very moment that we are re-casting the most important passages. Impossible? No: for however far modern science and techniques have fallen short of their inherent possibilities, they have taught mankind at least one lesson: Nothing is impossible. [2]

Nothing indeed. But today, music is a battleground for new file formats and compressions between the main competitors in the computer industry. This is as it always has been, according to Don Norman in his book, *The Invisible Computer*, [3] in which he documents the invention of the phonograph and parallels it with the emergence of the computer. Of course, it goes deeper than this: it is about the user, and the way we perceive and conceptualize technology, and ultimately about how we appropriate and misuse tools for purposes of creativity.

Some months ago, it seemed as if a new kind of audience had taken power and supported technologies like CD rippers and mpeg3 compressors, most of which are freely available on the Net. The whole discussion was dominated by issues of copyright and piracy. But then the tech-industry moved in again, much stronger than before, and propagated new software that allowed users to copy CDs and compress audiofiles in order to advantageously distribute them on-line or via homemade recordable CDs. Exposure was (and is) key: companies had no problem with customer use of their software, as long as they just used it. We are talking about QuickTime 4, Real Jukebox, Windows media technologies, Shoutcast, etc.

Many artists use a lot of different software. Artists involved with new technologies cannot wait on the sidelines until something like a standard prevails. I would even submit that once a tool becomes standardized and its possibilities fully researched, the artist's interest in using that tool diminishes in favor of more unexplored, exciting methods that engender uncertain outcomes. Therefore, creative people's interest in technology seems different to me from that of domestic or corporate users. We all use workarounds to achieve something, but I have been watching many people taking their software to the verge of crashing the computer for the sake of the originally warped sound or image that is created just before the screen freezes. I also believe that artists nowadays who take to scripting, authoring or programming are rather motivated to find something specific and original, rather than create a full featured application, notwithstanding exceptions, of course . . .

In their book *Information Ecologies: Using Technology with Heart*, Bonnie Nardi and Vicky O'Day talk about "affordances," [4] in a way reminiscent of the psychologist J.J. Gibson [5]. It expands on Gibson's original explanation of the tool's intrinsic capabilities within a social context. It hints at the possibilities, however unexpected or improper, that technology offers to users. Again, Donald Norman distinguishes between "real" and "perceived" affordances, relating the latter to reflection and usability [6].

This is the more exciting part of exploring inventions without a history, as the successive changes in new media seem to promise. But there is more to it, as Derrick de Kerckhove sketches in a flamboyant paragraph:

It should come as no surprise that artists vie with military researchers to be the cutting edge of technological investigation in all of this. Both have vested interest in understanding and exploiting the impact of the technology on the human sensorium. And each is involved in his or her own way with issues of aggression—the military for obvious reasons and artists due to their special sensitivity to the destructive potential of new technologies invading the established social order . . . [7]

Along the same lines, we believe that the artist can be a bridge between technology and the application of that technology, anticipating as well as enforcing effects on the individual and social level. Furthermore, an emerging new culture cannot be realized without the involvement of an innovative group of participants pointing to postulated problems and solutions. Therefore, it is only through the active involvement of artists who are aware of possibilities and who demonstrate the creative potentials of crucial technologies that cultural and artistic innovation persists. This process is taking place to a much wider extent than a one-sided look at current accomplishments would suggest.

. . . technological change is not something that occurs in the disembodied stimulus-response way in which it is often depicted in traditional accounts of economic and social history. Traditional narratives often depict an unproblematic process in which technology somehow develops and becomes increasingly important in the life of society while people constantly adapt to it in the workplace, in business, at schools, in the family, in their leisure time, and so on. This yields a linear picture of technological change as an autonomous process, with social impacts appearing as dependent and coming after the fact. [8]

Now, there is every reason to believe that through this process, the reverse is also happening and institutions and organizations are changing. LMJ's expansion into multimedia via the ROM portion of its CD companion and its inclusion of web-only articles marks an expansion of user potential through communication technology. The role of technology-related discussion through e-mail lists proves crucial as well:

... the introduction of new technologies involves not only new modes of organization of social relations but also a triggering of cultural nerves. Through this imagery linked to it in public discourse, be it in debates or through art and literature, a new technology is domesticated ... [9]

We have certainly grown aware that a common debate and a public discourse is necessary to make artistic change through technology possible at all, which leaves us in a different place than in years past.

Apart from the socio-cultural changes in which both musicians and composers are caught nowadays, as a curator I tried to integrate new evolutions and trends. The Net moves in stronger and stronger each year. We can now transfer all kinds of media faster and in more compressed (and more qualitatively optimized) forms. Compare what your browser displayed 5 years ago to what it shows you now and the point becomes clear: we are in the middle of developing a new way of computing. A child who has been playing around with images and sounds on computers since birth should be able to master digital multimedia technology to a large extent by the age of 16. But this is not necessarily so. The development of multimedia authoring programs for the masses, or general visual programming languages for kids, seems to be slowly moving on along the lines of traditional computer tools. Still, it is exciting what kids can do sampler-style with simple visual and audio editors. And as increasingly affordable Internet access results in both the availability of more multimedia freeware and the standardization of real-time data transfer, the world will be in a state of constant flux.

The signs popping up everywhere—netcasting, audio-mails, free MIDI and mpeg3 archives, etc.—reflect not only a new way of creating, but also a different form of consuming. Customers (or “users” if you will) are shifting to another mode of culture consumption. Yet we lack the tools and concepts to describe this new way of behavior, and I am afraid that cultural studies alone—as intangible as they are—will once again prove inappropriate.

On the other hand there will always be “serious” people who process good quality music, mix it with expensive editors and either send it around on high-speed disks to a limited audience or distribute it via general stores or alternative shops. There will also be those who code new programs and invent new ways of making and playing sound, whether at work at an institute, university department or company; in their spare time; or, like whiz-kids, just toying around for fun.

Most curators attempt to create consistency in the bulk of submissions received and select a theme based on common modes of technology, or generational or aesthetical background. But by issuing a call that suggested heterogeneity and contradiction, we chose to live within the bazaar and sell the patchwork that the current musical field offers. But then again, categorization strikes hard. The first problem to deal with was a technical one: what formats would be best represented on the audio and ROM tracks of a CD-extra? For the audio portion, we simply chose a selection of representative materials ranging from traditional analog-to-digital mix-and-master to recordings with real-time computer systems. All explanations of the audio have been relegated to either the sleeve notes or the paper journal. (It is interesting how most “alternative” music CDs come with very little accompanying text information. With few exceptions, the more academic and non-commercial you go, the more words and images are added). On the multimedia side, people sent in programs, source code, digital movies, complete CD-ROMs with interactive elements and accompanying articles and explanations. As curator, I became desperate: how to present all this? What kind of content structure stands least in the way of a user thumbing through it quickly? Is it fit for most of the currently used operating systems and machines? And what to do with the Internet? This great project suddenly resembled that of Gustave Flaubert’s obsessed characters Bouvard and Pécuchet: when all efforts of categorization had failed, the book ends with a simple dictionary of synonyms [10].

As a curator I tried to sample the whole world, and when all other methodologies failed, I just gathered the most intriguing pieces and made an alphabetical playlist.

So here it is, listen to it, and enjoy without worrying about the machines, files or people behind it. Pop the CD into your audio player and computer, skip through the audio and click on the images—and if it does not work out, read this super-cool new paper Journal while a friend fixes the technology. If it still does not work, you can almost certainly blame the millennium bug—try again when the clock reads 1974. See it now?

One can similarly approach our aesthetical perceptions:

... one of the signs of a rational enjoyment of the machine and the machine-made environment is to be concerned with much smaller differences and to react sensitively to them. [11]

Good luck. Reboot. Shift-Reload. Whatever you find there, play it loud, fast and step-by-step, out of control. That is where the fun starts.

References and Notes

1. For an alternative account, see Joseph P. Olive, “The Talking Computer,” in David G. Stork, ed., *Hal’s Legacy: 2001’s Computer as Dream and Reality* (Cambridge, MA: MIT Press, 1997) p. 123.
2. Lewis Mumford, *The Future of Technics and Civilization* (1934; reprinted London: Freedom Press, 1986) pp. 183–184.

3. Don Norman, *The Invisible Computer* (Cambridge, MA: MIT Press, 1998).
4. Bonnie Nardi and Vicky O'Day, *Information Ecologies: Using Technology with Heart* (Cambridge, MA: MIT Press, 1999) p. 28.
5. James J. Gibson, *The Ecological Approach to Visual Perception* (Hillsdale, NJ: Lawrence Erlbaum, 1986).
6. Norman [3] pp. 123–125.
7. Derrick de Kerckhove, *Connected Intelligence: The Arrival of the Web Society* (Toronto, Canada: Somerville House, 1997) p. xxvii.
8. Aant Elzinga, “Theoretical Perspectives: Culture as a Resource for Technological Change” in Mikael Hard and Andrew Jamison, eds. *The Intellectual Appropriation of Technology: Discourses on Modernity, 1900–1939* (Cambridge, MA: MIT Press, 1998) p. 20.
9. Elzinga, in Hard and Jamison, eds. [8] p. 24.
10. Gustave Flaubert, *Bouvard and Pécuchet* (New York: Viking Press, 1985) and *Dictionary of Accepted Ideas* (New York: Norton, 1968).
11. Mumford [2] 107.

GUY VAN BELLE
49 Karel de Stoutestraat
B9000 Ghent
Belgium
E-mail: <Guy.VanBelle@rug.ac.be>.