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A (Cybernetic) Musing: Thinking the New Millennium

Ranulph Glanville[1]

Introduction: Inventing the New Millennium

One of the more endearing quirks of Cybernetics and Human Knowing has been the way the editor has always made explicit room for the arts, finding a new artist for each issue. So I consider it appropriate in this column to write about creativity and generosity, the internet and electronic arts, especially after the publication of Peter Bøgh's article on the internet as a self-organising system (Bøgh Andersen 1998) which shows us (should any of us have doubted it) that the internet is indeed a system that is thoroughly cybernetic. It seems to me that cybernetics is one of the areas of endeavour that offers us the greatest novelty of insight as well as the greatest insight into novelty. That's a reason I am so attached to it. In a cybernetic world, even precise repetition is statement anew. When I remember this, I find both the repetitive world of boredom, and the (contrasting) ever-changing world, easier to live in. Risking sounding like a homegrown philosopher, the boredom comes about through my inability to keep in mind the precision of the new. The ever-changing world is difficult because I expect the world to be unchanging (i.e., I anticipate being bored!).

The inclusion of art—in various forms—within Cybernetics and Human Knowing I also take to indicate that cyberneticians, at least, understand that the world we experience is not simply a matter of reporting and argumentation. It is also a matter of that experience, and of types of knowing not necessarily limited to the conventions of scientific knowledge. Problems that may have been considered unscientific are not excluded from our debate, and subject areas often counterpoised (as in CP Snow's Two Cultures) may be brought together. The great idea is inclusion (adumbration, as my professor would have it), meaning that cyberneticians try to welcome richness, and to realise when and how they edit it. And if this sounds over-realist in position, it is not because I have forgotten I am a constructivist, but because I'm trying not to make further verbal mountains out of introductory molehills.

This is the background against which, in this issue, I wish to bring together certain concepts that seem central to the working of second order cybernetics:

[1] CybernEthics Research, 52 Lawrence Road, Southsea, Hants PO5 1NY, UK; Faculty of the Constructed Environment, Royal Melbourne Institute of Technology University, GPO Box 2476V, Melbourne, Victoria 3001, Australia. email: ranulph@glanville.co.uk

sometimes not so much as part of the field, but of the environment in which the field exists, including who we are. In this I include generosity and creativity, about which I have written before but which I have not put into a framework showing their necessity, and significance, for us.

What occasions this is my attendance at the conference "Invençao" (Invention) in Sao Paulo, Brazil in late August.[2] I have always believed that this column might reflect experiences and current concerns, as well as more thematic commentaries: so I'm glad here to report on a very intriguing conference. The conference was intended to bring together scientists and artists, through the use of digital media, to start "Thinking the New Millennium". The conference failed in this aim, attracting few scientists but many artists, who were apt to claim that they were the only people who could lead us to the (assumed) new consciousness that would be based in digital media and electronic communication, a claim which seemed to me to be both excessive and counter to the intention of the conference. But I will not dwell on this claim. What I did notice, however, was that, behind all the examples and theorising, the artists who were presenting were talking in a very cybernetic manner. They were interested in sharing, in new possibilities and so on: which notions relate closely to the arguments I have made in this column about creativity.

How to Innovate

Cybernetics is necessarily deeply involved with the concept of innovation: which, in our western culture, we also see as an indicator of progress. I do not wish to discuss at length the hoary old question of progress any more than I do that of what is really new, merely to point to a feeling that innovation is an important human act. It does not matter whether or not we agree this is good. And this is where the theme of the "Invençao" conference comes into the argument!

This is not just because it is the subject that provides an adequate description of the design process (Glanville 1997, 1999). It is also because, to make cybernetic systems work, we need generosity of spirit and of interpretation. In, for instance, a conversation (in both the colloquial and Pask's technical senses), we cannot hope to progress and reach an agreement, or even to build understandings of each other—respecting our individual differences—unless we are prepared to look well on what our conversational partner offers us. I have discussed generosity and creativity in earlier columns and will not repeat myself. (But for an extended argument concerning generosity and novelty see Glanville, forthcoming.)

What happened at Invençao was that many of those people society considers the most creative, who are licensed to be creative with all that that may entail,

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[2] "Invençao—Thinking the New Millennium" was held in at Itau Central, Sao Paulo, Brazil, August 25 to 29 1999. My attendance was partially funded by a grant from the Innovation Unit of the British Government's Department of Trade and Industry (DTI).

presented reflections on and examples of their creativity.[3] I found that I could group what was presented into three categories. These categories show us some ways in which, being involved in a cybernetic world where innovation is inevitable, we might harness our potential for creativity so that we are not so confined by our own limitations as we might otherwise be: in other words, they are strategies, based in a cybernetic understanding, that may facilitate, encourage and enhance the innovative creation of novelty. And it is these categorisations that I will now present.[4]

For while the arguments about creativity may by now be familiar, ways of improving our ability to benefit from these arguments may not be so clear—so these categories of how some artists act may be of real help to those of us interested in constructive innovation.

Category 1: Disembodiment

The first category is DISEMBODIMENT. Many participants speculated about the values of disembodiment within the internet, especially of the mind. The notion of removing mind from the restrictions (especially temporal and spatial) of the body and its location in a physical world is not new, but the technology to achieve this is. There was a fascination with this technology of the distributed mind. Freeing the mind from the restrictions of the body was held to open new worlds for us, which, in turn, means that we will inevitably find the new and can thus transcend conventions. We are removed from the tyranny of the physical. In a certain sense, space travel becomes possible. I was reminded of William Bricken, former research director of the Human Interface Technology Lab in Seattle, who held that the only decent use for Virtual Reality was not in modelling (exploring) realities we already have, but in finding new realities we could not have dreamt of before that technology—and I am in compete agreement with him (Bricken 1993).

Gregory Bateson warned us of some of the dangers in the concept of disembodiment. He argued that body and mind (1979) form a unity and it is absurd to talk of one in precedence over, or without the other. We have seen the development of a sort of dumb intelligence in computers where at least part of the problem is that they are disembodied and disconnected (no one left a computer free to get on with relating to the world 24 hours a day, 365 days a year, for 20 years, as we allow our children to do). The notions of agents roving the internet with their own agendas and abilities to observe and take part in net events (in contrast to Negroponte's servile butlers), and of intelligence embodied in electronic space, are not so much disembodiments as new embodiments, or old embodiments transferred. From such trans-embodiment we should expect change. In the terms we usually use to discuss the physical world, we consider ourselves

[3] There is a website for the conference, where the abstracts of the accepted papers are currently being replaced by the finalised papers presented. Visit www.itaucultural.org.br/Invencao.

[4] I extract the material on categories from a report I wrote for the Design Research Society, at therequest of the DTI.

defined, released, restricted and finally realised by our interaction through our embodiments.

In effect, the proponents of disembodiment are interested in a quality of mind in different bodies and different environments than the ones we currently own and/or inhabit. Such trans-embodiments can indeed show us ways to live with new (computational-)electronic space, possibilities we cannot pre-envisage, so long as we don't restrict them to what we can think of. Letting them (or, rather, our imagination in interaction with them) run loose, we can indeed foresee an era in which we will find extraordinary novelty, though what it will be like is, naturally, quite unclear. It may be a novelty that only makes sense in a world that is different from the one we normally consider we inhabit.

Category 2: Sharing

The second category, SHARING, is somewhat less abstract than disembodiment. Workers in Computer Supported Co-operative Work (CSCW) have long understood that the delocalisation of proximity we achieve through electronic communication means that we need to look at a technology of/for sharing. CSCW recognises that the simple, linear and serial channels of communication that we have so far made, do not always encourage co-operation (sharing) and omit much information that we currently use including our intentions; while perhaps not always making available to us new forms of information that are specific to the technologies.

The internet offers us in the first place a way of having a voice, thus supporting the multiplicity of view that so characterises our current understandings of our world. (It also brings to the fore the problem of what we do with so many voices clamouring to be heard: the difficulty we have in listening, and the inappropriateness of how we so often average out the differences between these voices[5].) Several artists were involved in the internet as more than a site to host their own voice, providing an arena for shared art working and for extensive borrowing, on the principle that two heads are—or should be—better than one, providing they can and will co-operate. That is, of course, often a big practical problem of the individual psyche, but willingness and generosity of spirit can make a vast difference. One crucial element is the ability to share in interaction: this is how what was discussed differs from the more familiar "Virtual Studio" sharing projects which essentially consist of a series of exchanges (for instance, Wojtowicz, 1995)).

The more public problems of the internet as an arena for co-operative art working are considerable but also equally surmountable (they are mostly to do with conventional ways of possessing art, such as hard (and signed) output and gallery display). It seems that artists have the same problems as the rest of us,

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[5] This is a really central problem. I cannot dwell on it here, but I have been working on it recently. We badly need to acquire a technology of listening.

being caught up in antiquated commercial structures and notions of ownership. If copyright is dead (as I believe), what provides body-and-soul income for these workers? For internet art to flourish (for CSCW to operate in the arts) a different way of looking at ownership is called for. Perhaps artists are better at considering such notions than those of us who are, conventionally, more materially inclined. Certainly, reconsidering the conditions in which we produce objects, in the age of the internet, seems to be crucial to its continuing to be beneficent, and for innovation to thrive. Sharing and borrowing presume a generosity that the pernickety chasing of ownership denies: the only people who will benefit from a continuing belief in such ownership will be the programmers and, of course, the lawyers (who else!).

There were works shown that benefited from exploiting the ability to share which electronic communication brings us. For instance, art "users" (what a word!) can "customise" art objects through interaction with their generating art processes. With CAD driven CAM,[6] the parallel possibilities in design innovation are apparent. There were works shown that benefited from the ability to send instructions into operation within the internet (as agents), thus harvesting the completely unexpected and forming that into art. The question, as always, remains whether the result is any good. I don't think it matters whether we have an answer to that question for the moment, because we don't know what good might mean, and we are absolute beginners. But, to continue asking it seems an obligation too easily forgotten in the thrill of the white light/white heat of this technology.

Category 3: Transference

Finally, there is the category of TRANSFERENCE. The abstract and non-specific nature of digital information (any thing may stand for any—and almost every—other thing) makes it an ideal medium for transference. This transference permits the consideration of mapping in the manner that is so fashionable at the moment: taking some sort of marks (for instance paths) that represent one sort of material and using these marks in another material. A familiar example is the use of music to form architecture. The German romantic poet, Schiller, advised us that architecture is frozen music, and Le Corbusier (or more precisely his engineer/composer partner, Yannis Xenakis) famously took this literally in the 1957 Brussels Philips Pavilion (a transference from the score of Xenakis's string orchestra piece "Metastasis"). I play with a commercial program (MetaSynth) which translates picture files into sound, and there were of course sound artists creating sound pieces from visual images at the conference. Clearly, the ability to abstract information from one medium and re-present it in another offers us new insights: into the information, into the medium and into our pre-conceptions.

But the different understandings that electronic media give us for such experiential commonplaces as location, distance and time are also a source of new

[6] Computer Aided Design and Computer Aided Manufacture

insight and experience. When we can recreate the past (or, in the hyperbolic language of today, the future), when we can transfer a distant place or person to where we are—and bring the two together in a sort of surreal dialogue—we have new realities which also act as commentaries on the realities we already (thought we) had. It is not just the new realities that allow us insights and can open our imagination, it is the commentary of juxtaposition. Never before has it been so clear how the surreal can help us innovate: to bring together and contrast what has not previously been together is a familiar way of finding novelty which even biology uses, but to do it with the immediate presence and actuality we can nowadays does indeed present us with the "shock of the new".

A different sort of transference (mapping) much in evidence at Invençao was the extensive use of metaphor. In particular, and in strange contrast to the interest in disembodiment, the human body seemed to offer many metaphors for the handling of unfamiliar material. It was valuable to be reminded, amongst all the abstractions, of the centrality to our experience of our bodies, and of the way that, when lost, we can always look to these. There was a fascination with prostheses (more in the whimsical manner of Richard Goodwin than the brutalism of Stelarc), and with the notion of the extension of the human that first the computer and then the internet can be seen as being. The interest in prosthetics is that they literally and metaphorically extend the human range. In a sense, therefore, the prosthetic provides the unifying model for all the ways of relating to and using new media to enhance human experience and creativity.

Conclusion: Thinking the New Millennium

I have often claimed, in this column and elsewhere, that cybernetics provides what I might describe as a theoretical companion for the activity of design (1997, 1999). Design is also concerned with generosity and all that goes with that. For example, when I am asked why someone should employ an architect, one of my stock responses is that architects give back more than they take away. To have a building (even one that more or less satisfies your requirements), to place it on a site, you may not need an architect.[7] To do so in such a way that you get more than the simple satisfaction of your requirements, and such that the placing of your building on the site adds to the landscape, and the building offer you wondrous and unsuspected opportunities, you need an architect.

There is a very real way in which cybernetics runs against the stream of almost all we have recently been taught about how humans act, and almost all the understandings we have published, in the last twenty or so years, which are also the last years of this millennium. If we were to build an image of human life and understanding based on sampling the views of the post-Thatcherite world, we would believe that the world was mechanism, that dog eats dog and that survival

[7] Although many would argue that you need an architect even to reasonably satisfy these basic requirements.

of the fittest does not mean the most appropriate but the meanest, a sort of impoverishing manifesto for the macho.

Yet, novelty is something humans look for, enjoy, and value highly. One has only to consider one of the big drives at the end of this millennium, to find means that support innovation. What I want to suggest is that cybernetics also provides mechanisms that, effectively, insist on novelty. The conversation (and by implication circular systems in general)[8], and the recognition of unmanageability can lead to each of us constructing new ideas from, with, by, and for our environment (including our conversational partners), so long as we act with generosity and open-mindedness, and all that goes with these. What I further suggest is that, in the categories through which I have arranged the work of the artists presenting at the Invençao conference, we have strategies for harvesting both the variety around us and what our conversational partners have to offer. Thus, if I am right, cybernetics and art come together to assist our understanding of both the need for novelty and means by which we may innovate. Of course, I do not insist this is necessarily the only path to enhanced creativity and innovation: but it is, at least, one.

We do not need to live with an impoverished and impoverishing view of the world. Cybernetics gives us the option of recognising and celebrating the richness we can make: in part through innovation. I believe that we can think the new millennium by persevering with these understandings. If we do not, we will allow the paucity of our imaginations and our descriptions acquired from the views so visibly and catastrophically embodied in post-Thatcherite thinking to downgrade the quality of our being alive. The challenge for us is to move the debate so that this impoverishment is seen for what it is, and no longer blinds us into seeing no possibility other than an ever-increasing impoverishment. That is a challenge, of course, for all us authors in Cybernetics and Human Knowing. But it is also, equally (but less obviously), a challenge for all us readers.

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[8] I should differentiate between informationally open and informationally closed circular systems. But this adds a layer of complexity to what I’m writing that I wish to avoid. For novelty to enter, at least in the manners described in this paper, a circular (i.e. organisationally closed) system must be informationally open.