Far from the Main Stream

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Abstract

This paper proposes that today's computational and generative arts are the legitimate inheritors of the 20th century traditions of constructivism, systems, conceptual and process art.[1] Often formed from close collaborations between art, science and technology this field of work also exhibits important aspects of contemporary culture and thought, including emergence, non-linearity, hyper-mediation, interaction, networking, self-similarity, self regulation and so on. They are also one historical root of the contemporary science of artificial life.[2]

The Golden Age

Artists and other creatives began to use some of the earliest computer systems. In 1951 Geoff Hill wrote a simple music generator to run on CSIRAC — Australia's first computer. A year later Christopher Strachey wrote *Loveletters*, a generative text work which ran on the Ferranti Mark 1, the UK's first commercially produced computer system, at Manchester University.

By the early 1960's visual artists including Michael Noll, Bill Fetter, Freider Nake and Chuck Csuri had begun to employ digital computers and pen plotters to make their work. In 1965 Max Bense curated the first exhibition of computer art featuring the work of Georg Nees at the *Studiengalerie der Techischen Hochschule* in Stuttgart. A few months later Nees and Nake showed their work at Stuttgart's *Galerie Wendelin Niedlich*. By 1968 Jasia Reichardt could curate *Cybernetic Serendipity*[3] at London's then-new ICA Gallery as the first historical survey of the field. The same year Jack Burnham wrote *Beyond Modern Sculpture* where he suggested that the future of the discipline was autonomous, reactive and interactive "life-simulation systems".[4]

Burnham's own show *Software — Information Technology: Its New Meaning for Art* was held at The Jewish Museum in New York in 1970. It was intended to draw parallels between conceptual art and theories of information such as cybernetics, systems theory and formal languages. Across town at the MoMA Kynaston

McShine's *Information* show was an eclectic and idiosyncratic mix of conceptual formalism, linguistic and information theories and socio-political activism. Although some artists participated in both shows their ethos was distinctly different. Burnham proposed a revolutionary new direction for art along with the adoption of methodologies that would have closely aligned it with science and technology. McShine adopted a more traditionalist concept of the arts and *Information* included aspects of science and technology within an appropriative framework that proposed a different revolution and arguable one that was more acceptable for the conservative artworld.

The humanities educated graduates who led the artworld into the 1980s identified more with the eclecticism of McShine than with the analytical vision of Burnham and adopted the emerging theories of postmodernism. This was before the era of personal computing and this new generation had no experience with digital systems and felt challenged by them. They distrusted information technology which they associated with military agendas and what they later called the military-industrial-entertainment complex.

So, for a brief time in the 1960s this new computational genre — a new mutation of the arts — had the potential of becoming a central feature of the mainstream artworld. However by the early 1970s the golden age was over. Burnham's revolutionary vision had been too challenging and was rejected and sadly, and in my opinion incorrectly, identified with the "old world" of modernism, as was the work of many of the artists he had championed.

Meanwhile, in Academe

Just as the mainstream turned away from the digital arts the education sector got on board. In the UK the Polytechnics were formed by amalgamating independent colleges of art, engineering, etc… and created an opportunity for artists to learn about computers.[5] Leading graduate schools like the Slade School of Fine Art at University College London acquired their own

powerful (for the day!) computer systems.[6] The Slade postgraduate school was influenced by both systems and conceptual art and scientific concepts like cybernetics, artificial intelligence, generative systems, emergence, non-linearity, automata, etc… Visitors included Harold Cohen who was then working on an early revision of his "expert" system *AARON* and Edward Ihnatowicz the pioneer of artificial life in the arts who had recently completed *The Senster*. The Slade's Experimental Department existed from 1974 to 1982 and attracted artists from around the world and the discourse was intense. It was here that the major contemporary dialogues of the computational arts emerged. It has also been recognised for its pioneering work into what a decade later became known as artificial life or alife — an interesting and rare example of an art movement providing a foundation for a new scientific discipline.

The mainstream artworld remained unconvinced and reluctant to engage with work of this kind despite its strong heritage and roots in artistic tradition and practice. Instead they perpetuated the conservatism of *The Shock of the New* and promoted works based on ideas of novelty for its own sake that had been established in the late 1950's and 60's. This has led to a contemporary artworld that is little more than a division of the fashion industry where leading practitioners model the latest couturier and a curator of the Saatchi Gallery can describe works from their collection as disposable "one liners". In recent decades the artworld — which sadly includes the educational institutions — has rejected tradition, denied history and discarded skill. Even more sadly this modus operandi has migrated from its home in Europe and the USA and has been exported to developing cultures. They now produce works that would have looked at home in the London and New York galleries of the 1960s and which often have little to do with the traditions that sustained those cultures for centuries. In hindsight we can perceive this as a perhaps unwitting, but nevertheless victorious, act of cultural imperialism.

Past and Future

The computational and generative arts have survived this hostile and unsympathetic artworld for four decades in a marginalised but self-sustaining form. They have been maintained by what I have referred to elsewhere as "an international salon des refusés"[7]. It's a global underground whose emergence was aligned with events like the founding of *Leonardo* in 1967 by Frank Malina,

the New Tendencies colloquy *Computers and Visual Research* in Zagreb and *Cybernetic Serendipity* (both in 1968). Later it was sustained by organisations like the *Computer Arts Society* (1969-), *Ars Electronica* (1979-), the *SIGGRAPH Art Show* (1981-) and *ISEA* (1990-).

This work sits comfortably in the broader field of art, science and technology and often involves interdisciplinary collaboration. As such it can be framed in the context of the 20th century constructivist tradition. Unlike that early constructivist work, which can be placed within the idealistic narratives of modernism, this new post-constructivism employs inherent and relativistic concepts of process, emergence, non-linearity, hyper-mediation, interaction, networking, self-similarity and self-regulation. As such it can be identified with the mainstream dialogues of post-modern culture. However its strong ties to its past suggest that it is not a part of the mutually exclusive dialogues of modernism versus postmodernism that inundate the mainstream artworld.

Instead it invokes a new synthesis, a new bridge between the past and the future that can enable us to recognise novel tokens of value and identify original meaning in our world.

1   Brown, Paul. 2008 (a) to appear. "The Mechanisation of Art." In *The Mechanisation of Mind in History*, Husbands, P and O Holland (Eds.). Cambridge, Massachussetts: MIT Press.

2   Brown, Paul. 2008 (b) to appear. "From Systems Art to Artificial Life: Early Generative Art at the Slade School of Fine Art." In *White Heat Cold Logic: British Computer Art 1960 – 1980*, Gere, C., P. Brown, N. Lambert & C. Mason (Eds.). Cambridge, Massachusetts: MIT Press, Leonardo Imprint.

3   Reichardt, Jasia. 2008 to appear. *In the Beginning, White Heat Cold Logic: British Computer Art 1960 – 1980*, Gere, C., P. Brown, N. Lambert & C. Mason (Eds.). MIT Press, Leonardo Imprint.

4   Burnham, Jack. 1968. *Beyond Modern Sculpture.* New York: Braziller.

5   Mason, Catherine. 2008 to appear. *A Computer in the Art Room: the origins of British computer arts 1950-1980*. JJG: Norfolk.

6   Brown, Paul. 2008 (b). op cit.

7   Malina, Roger F. 1990. "Digital Image: Digital Cinema: The Work of Art in the Age of Post-Mechanical Reproduction." In *Leonardo*, Supplemental Issue 3, *Digital Image, Digital Cinema: SIGGRAPH '90 Art Show Catalog*. Cambridge Massachussetts: MIT Press, pp. 33-38.