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## Rethinking Cybernetics and Electronic/New Media Art History

Oliver Grau has recently argued that “it is important that we continue to take media art into the mainstream of art history” (8). This paper will argue that media art must also be viewed through the discipline of science history in order to “consider other models for relationships to technology” (Murray 39). This is particularly important in the case of the cybernetic art of the 1960s. Science historians have insisted that cybernetics is “essential to the history of our present” (Johnson 25); but grasping the massive impact of cybernetics on scientific thinking in its heyday requires an imaginative effort because cybernetics has all but disappeared from the contemporary scientific discourse. Cybernetics was the theory of the control technologies which unleashed the Information Revolution and was a fundamental challenge to the methodology and disciplinary hierarchies of contemporary science. Emerging from wartime research into artillery control; signal transmission; and brain physiology, cybernetics asserted an “essential unity of the set of problems centering about communication, control, and statistical mechanics, whether in the machine or living tissue” (Wiener 1961, 11). The unity of these problems was explored in a series of interdisciplinary Macy conferences held in New York between 1946 and 1953. The conferences unleashed a new organization of the physical, biological and social sciences based on the shared universal language of cybernetics (Bowker 117) and a methodology that returned teleology to science. Cybernetics has been accused of having established “a field of meanings grounded explicitly in the experiences of war” (Galison 263); but the kind of interdisciplinary co-operation exemplified in the conferences was itself a product of the wartime research

environment. A distinguishing feature of the Macy conferences was the commitment of the participants to apply cybernetic concepts to the challenges of post-war society in non-military fields.

Artists were conspicuously absent from the Macy conferences. This absence was particularly striking because cybernetics seemed to have much to offer artists with an interest in technology and the social. Most importantly, by reintroducing teleology into the analytic chain, cybernetics broke with traditional science. This is exemplified by the status ascribed to purposeful models in cybernetic thinking. According to science philosopher, Andrew Pickering, these models demonstrate that “cybernetics is an ontological project, aimed [...] at displaying [...] and exploring the liveliness of the world.” (431)

The notion of an ontological project is, I would suggest, much closer to artistic practice than the traditional science model of knowledge production. The British artist and arts educator, Roy Ascott, was one who recognized this (Shanken 26). In 1964 he stated that cybernetics “is concerned with what things do and how they do them, and with the process within which they behave. It takes a dynamic view of life, not unlike the artist.” (Ascott 101) He also recognized that the traditional sciences, with their specialized fields of inquiry, only allowed casual consultation by the artist; whereas cybernetics was “integrative” and is the “co-ordinator of science, as art is the co-ordinator of experience.” (101) Two years later, and writing for a readership familiar with cybernetics, he attempted to situate “the cybernetic vision” within a history of western art. Ascott identified a quality in contemporary art that he called the “behavioral tendency”, in essence a concern with open-ended process and event, which he believed had the potential to assist a broader social transformation from “the old deterministic culture to a future shaped by a cybernetic vision.” (111) A conspicuous aspect of Ascott’s engagement with cybernetics is his overwhelmingly optimistic view of the cybernated society of the future. By contrast, cyberneticists such as Wiener were deeply concerned about the future consequences of cybernetics for humanity, warning that “the new industrial revolution is a two-edged sword” (1954, 162) with the potential to unleash devastating unemployment and destructive wars. As David Porush has shown, this concern was shared by many of the creative writers of the time, who he groups under the label of cybernetic fiction. Writers such as William Burroughs and Thomas Pynchon recognized the potential of cybernetic control to stifle human possibilities while responding to the technological insights in new forms of literary production. In contrast to Ascott’s optimism and cybernetic fiction’s pessimism, the Korean artist Nam June Paik presents a different approach to the new science. His 1966 manifesto, although not as developed as Ascott’s engagement, outlines a role for cybernated art within a cybernated society. Paik recognizes the need for an artistic practice directly informed by cybernetics; but instead of presenting this art as the handmaiden of social change, Paik sees it as performing a homeopathic function: using cybernetic techniques the artist will treat the “specific frustrations caused by cybernated life” with “cyber-

nated shock and catharsis" (229). In their writings from the 1960s both Paik and Ascott present different models of the relationship between engaged art practice and the new science of cybernetics. These relationships cannot be understood without reference to current work in the history of science.

#### References

- Ascott, Roy (1964 & 1966) "The Construction of Change" & "Behaviourist Art and Cybernetic Vision" In: Edward Shanken, ed., *Telematic Embrace*, Los Angeles & London, University of California Press, 97-157.
- Bowker, Geof (1993) "How to be Universal: Some Cybernetic Strategies" *Social Studies of Science* 23: 107-27.
- Gallison, Peter (1994) "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision" *Critical Inquiry* 21: 228-266.
- Grau, Oliver (2007) Introduction In: Oliver Gau, ed., *MediaArtHistories*. Cambridge, Mss and London: The MIT Press, 1-14.
- Johnson, John (2008) *The Allure of Machinic Life: Cybernetics, Artificial Life and the New AI*. Cambridge, Mss & London, The MIT Press.
- Murray, Soraya (2008) "Cybernated Aesthetics: Lee Bul and the Body Transfigured" *PAJ* 89: 38-50.
- Paik, Nam June (1966) "Cybernated Art" In: Noah Wardrip-Fruin and Nick Montfort, eds., *The New Media Reader*, 2003, Cambridge, Mss & London, The MIT Press, 227-228.
- Pickering, Andrew (2002) "Cybernetics and the Mangle: Ashby, Beer and Pask" *Social Studies of Science* 32,3: 413-437.
- Porush, David (1985) *The Soft Machine: Cybernetic Fiction*. New York: Methuen.
- Shanken, Edward A (2007) "From Cybernetics to Telematics: The Art, Pedagogy, and Theory of Roy Ascott" In: Edward Shanken, ed., *Telematic Embrace*, Los Angeles & London, University of California Press, 1-95.
- Wiener, Norbert (1961) *Cybernetics or control and communication in the animal and the machine*. New York: The MIT Press.
- Wiener, Norbert (1954) *The Human Use of Human Beings: Cybernetics and Society*. Boston: Houghton Mifflin.