Open Ended Ensemble
(Competitive Coevolution)

Stephen Kelly

June 18 - August 13, 2016

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Donna Szoke

To be open-ended is to be without an agenda, open to both improvisations and outcomes that are not preconceived from one's present position. Journeys, adventures, and explorations are also open-ended, unknowable from the outset.

> *The arts, science and technology are experiencing a period of profound change. Explosive challenges to the institutions and practices of engineering, art making, and scientific research raise urgent questions of ethics, craft and care for the planet and its inhabitants. Unforeseen forms of beauty and understanding are possible, but so too are unexpected risks and threats. A newly global connectivity creates new arenas for interaction between science, art, and technology but also creates the preconditions for global crises.*[1]

What is media art? Simply put, it is a mix of art, science and technology. It is arguably the art of our contemporary moment, yet it barely exists at the institutional level, which continues to highlight more conventional forms of art. It is infrequently collected, theorized even more infrequently, and has a slippery foothold in art history and other academic disciplines.

Media art offers radically different experiences for the viewer than we may expect from more traditional forms of art. Media art can embody temporal and spatial parameters that can produce specific types of experience. "Image spaces of interactive art can be experienced polysensorially, and these spaces promote processuality, narration, and performance."[2]

Indeed, the live, performative, adaptive soundscape of *Open Ended Ensemble* evolves through an interactive, iterative process that is modeled on evolutionary biology. It creates a distinctly organic experience through using a computational process that we would associate with inorganic technologies. We are witnessing an entity that seemingly is capable of changing "autonomously" and representing a lifelike, visual-auditory-sensory sphere. It is an interactive dynamic between two independent agents that remains oblivious to our presence as viewers.

The active ingredient of the work is its interface. The interface is unusual because it is animate and in that sense is diffuse, occupying a volume of space in durational performance, whereas most interfaces are focused and definite. Though diffuse, the interface is vital and adaptive. It becomes a zone of experience, of multi-dimensional encounter. The installation itself is an evolving feedback loop. The feedback is not simply "negative" or "positive", inhibitory or reinforcing; the loop is subject to constant transformation as the elements change in response to each other. Change and adaptation interpenetrate, so that the notion of control is less important than encounter and involvement.

The performative process of *Open Ended Ensemble* has two fundamental characteristics: first, it is the result of an automatic calculation, therefore, there is no direct relation with "reality"; second, the performance is the product of a calculation that remains largely invisible. As self-propelling automata feign intent, the installation asks questions of autonomy and artificial intelligence.

The interactive "performers" deal not just with information, control and communication, but with self-organization, emergent structures, networks, adaptation and evolution. We perceive a type of autonomy that realizes a high level of self-organization, which emerges from the way the machine thinks.

What is a machine? The idea of a machine is not so much a technical apparatus, but "a cultural disposition that articulates and de-articulates human agency, constructing relationships and cutting ties with multiple natures and multiple cultures."[3] In this sense,

we could view a suburban house as a machine for living. A dense inner city apartment or warehouse is a different type of machine.

We can use the notion of the "machine" as a conceptual tool for analyzing a particular type of aesthetic work, that of machine-based, apparently autonomous processes that can be associated with the notion of the sublime. Furthermore, digital art hinges on nonvisual aspects and is thus more aptly discussed in terms of narrativity, processuality, performativity, generativity, interactivity, or machinic qualities.[4]

In *Open Ended Ensemble* both time-based evolution and transformation of events build on each other in a nonteleological manner—that is, without principle, intent or goal, but rather, as the execution of computer code. The evolving process itself is a main factor of the aesthetic experience of the work. This is familiar to anyone that has been to a club or rave with significant media components where the processual elements integrate and transform with the developing event. Similarly, in *Open Ended Ensemble* lies the possibility of the sublime. The sublime is characterized by a confrontation with unbounded and overwhelming nature, a transgressive experience based on a disturbed sense of amazement about its limitless and uncontrollable force. The paradoxical experience of one's smallness in the limitlessness of life is both uplifting and alienating, but foremost, lies in the viewer's feelings.

1 Sean Cubitt, forward to series, Tactical Biopolitics: Art, Activism and Technoscience, Edited by Beatriz da Costa and Kavita Philip (Cambridge, MA; MIT Press, 2010), p. ix.

2 Oliver Grau, "Immersion and Interaction: From circular frescoes to interactive image spaces" Medien Kunst Netz Website, Accessed May 2016. http://www.medienkunstnetz.de/themes/overview_of_media_art/immersion/scroll/

3 Andreas Broekmann " Image, Process, Performance: Aspects of a Machinic Aesthetics." Media Art History Website. Accessed May 2016. http://www.mediaarthistory.org/wp-content/uploads/2011/05/Andreas_Broeckmann.pdf

4 Luísa Ribas "Audiovisual Dynamics: An approach to Sound and Image Relations in Digital Interactive Systems." Academia.edu Website, Accessed September 2014. https://www.academia.edu/15571275/Foreword_to_the_proceedings_of_the_first_conference_on_Computation_Communication_Aesthetics_and_X_xCoAx_2013_

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Stephen Kelly is an artist, computer programmer, and musician living in Halifax, Nova Scotia. His work incorporates sound, electronics, and other media in the creation of thematically diverse, often complex systems. Stephen has a Bachelor of Fine Arts from the Nova Scotia College of Art & Design and is currently a PhD candidate in the Faculty of Computer Science at Dalhousie University. He plans to continue crossing art and science within public installations and ongoing research projects in Machine Learning.

Donna Szoke is a Canadian artist whose practice includes video, media art, installation, drawing, writing and printmaking. Her work has been exhibited in Canada, USA, France, Germany, Turkey, Hungary, Croatia, Cuba, and Dubai, UAE. She is currently an Associate Professor of Visual Art at Brock University, St. Catharines, ON.

Images: Stephen Kelly, *Open Ended Ensemble (Competitive Coevolution),* 2016. Installation view, Hamilton Artists Inc.
Documentation: Caitlin Sutherland