

Autopoiesis: MA Report November 2007

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1. Introduction

I began this MA research project with the aim of creating audiovisual artworks that behave like autopoietic systems and exhibit emergent properties. As I pass the project's half way point I believe I can justifiably claim to have made demonstrable progress towards this goal both in my conceptual understanding of how to create such artworks and my practical construction of a number of prototype systems. This report documents the progress that has been made, describes the various prototype systems that have been constructed and presents my plan for the remainder of the MA.

2. Progress

2.1 Conceptual Progress

As someone whose creative practice is already fairly well-established I have been in the lucky position of not having to focus a great deal of my research time to learning new practical digital arts skills. Instead, I have been able to focus my effort on the more 'conceptual' aspects of my work.

Much of this effort has involved reading and thinking about elements of "systems theory" and how I might create "art systems" that embody this way of looking at the world. Having started with a broad approach to the subject (reading material by authors such as Fritjof Capra and James Lovelock) I have now narrowed down the systems-theoretic basis to my work to the theories of Chilean biologists Francisco Varela and Humberto Maturana.

In some ways this is not surprising since Varela and Maturana first coined the term "autopoiesis" to describe the self-creating systems I am interested in. However, I continue to be impressed and inspired by the depth and breadth of their writings. What's more, I am finding that whilst their subject of study may have been biological and cognitive systems, their theories and models apply well to the analysis and development of interactive art systems.

Elements of their theories that remain important to me are their definition of a "unity", which acknowledges that in any complex environment the identification of "system components" is a subjective act. Secondly, there is "structural coupling", which shows how interacting unities change each other and their environment through their processes interaction. Finally, there is "autopoiesis" itself which presents a model of a system locked in to a constant process of self-creation.

In terms of my artwork, this is now enabling me to think about interactive artworks in terms of their system dynamics and to think much more clearly about their structural coupling and potential for autopoietic organisation.

2.2 Practical Progress

Practical progress towards my MA goal have taken place on a number of fronts. Firstly, there is the production of the multimedia materials that will be used in my art system installation. As identified in earlier reports, I am producing materials based around three real-life systems: 1) people moving in the city; 2) the interaction of micro-organisms; and 3) the flow of clouds. This material interests me in the differing scales it represents, as well as the potential for the interesting aesthetic combinations as my installation 'remixes' the material in the presence of a viewer or viewers. Currently I have produced video material in all three areas (see my YouTube page for video and Flickr page for stills).

Secondly there is the Max/MSP programming that I will use to create my interactive work. I have written a number of "patches" that analyse video camera input and remix video material in response to it. The most significant of these is the 'I See You' patch that is described in the prototype section below.

Finally, I have been testing and purchasing the hardware I will need for the final gallery installation. I have two Mac mini computers, one of which will be dedicated to processing the "input" from the video camera and microphone in the space. If I make the analogy between my artwork and a living organism, then this represents the organism's "senses". The second computer will be dedicated to remixing video material in response to the presence of the users and displaying the "body" of the artwork. This configuration may change, but evidence so far is that I may need to split the functions over two computers. I also have purchased two high-resolution Web cameras and am looking at a small lighting rig to provide environmental effects for the artwork.

3. Prototypes

I have seized a number of opportunities to present elements of my MA work and to discuss my ideas. This has led to some quite early prototyping and, recently, the exhibition of a piece of work very much based around my MA research:

- I was invited to remix my "People Moving" video footage to go with a track by Leicester band The Buoys. This was shown in the "Nanoplex" mobile cinema at the Summer Sundae festival in August 2007. I also used the People Moving and Micro-organisms footage as part of a couple of VJ sets at the same festival.
- I exhibited an image composed of stills from the People Moving video at the Artober exhibition at The Depot in Leicester in October 2007;
- I remixed elements of all of my MA video footage at a live improvised audio-visual event called "Free Lab Rats" in Leicester on the 27th November 2007. This provided an opportunity for me to evaluate how the video footage looked when re-mixed and projected on a number of large screens. I was broadly happy with the results (see my YouTube page for video).
- I had a major opportunity to test a complete interactive system as part of the 10 year anniversary of the "Trampoline" organisation in Nottingham on the 29th August 2007. I submitted a proposal to the organisation earlier in the month which was accepted and led to a somewhat frantic, but successful, period of construction. The resultant work was entitled "I See You" and used face-recognition to produce a dynamic collage of the faces of people who interacted with the work. The piece was specifically constructed to operate as a dynamic system, with faces of previous viewers being used to attract new viewers, who are in turn used to attract new viewers and so on. An analysis of this work

from a systems-theoretic perspective has been done as part of my PG research essay (see my YouTube page for video).

- I have submitted 'I See You' to a digital arts exhibition in Leicester for the new year and, if accepted, will use this opportunity to update the piece following my reflection of the first exhibition.

4. Planning

As I work towards the end of my project I have to integrate three strands of work; 1) my conceptual framework; 2) my multimedia materials; 3) my Max/MSP programming. All three are progressing well and I am confident that the final piece of work will come together as planned.

My conceptual framework requires continual refinement through reading and discussion. I have three or four books to read, including a new book by Francisco Varela and a book entitled "Art as a Social System" by Niklas Luhmann which I believe applies systems theory to art and aesthetics on a more "macro" scale.

I may re-visit and re-record some of my multimedia materials. In particular the clouds footage, which I think lacks the contrast and interest of the other two sequences. I also need to consider the audio aspects of the final work.

The development of 'I See You', whilst done under pressure, is a major step forward in the programming sides of the work. In this piece I have a functional interactive work based on my research.

I would like to see all three strands coming together by February 2008, which a true prototype of the final work being up and running in my studio by the end of the month.

5. Resources

Sean Clark's Home Page

<http://www.cuttlefish.org>

Sean Clark's Blog

<http://www.cuttlefish.org/blog.html>

Note that this is now the best address to use.

MA Progress Report

<http://www.cuttlefish.org/blogentry.html?itemid=87351&listingid=9098&feedid=37396>

Sean Clark's Flickr Page

<http://www.flickr.com/photos/seancuttlefish/>

Including multimedia materials from project, "Free Lab Rats" footage and "I See You Footage".

Sean Clark's YouTube Page

<http://www.youtube.com/profile?user=seancuttlefish>

Including documentation of recent work.