

## WET PAINT

### Vicky Isley & Paul Smith (boredomresearch)

boredomresearch explore the natural progression from static imagery allowed by recursive technologies which enable data to remain liquid. The artists Vicky Isley and Paul Smith often think of themselves as employing computer gaming technology to create landscape paintings and life studies that move. In this paper the artists will discuss their computational systems which manipulate data chunks to produce a diversity of moving images.



*Lost Calls of Cloud Mountain Whirligigs (detail), 2010, boredomresearch, software artwork, 60 x 49 x 2cm. @boredomresearch, courtesy of [DAM]Berlin/Cologne.*

#### Introduction

Here we will discuss the impact technology has on our practice, breaking the stillness of static image creation as we respond to the unique potentials that computational technologies make possible.

We are artists not technologists and our practice is not situated on the cutting edge of technological innovation – it is however responsive to the new possibilities present in current technologies. We employ computation in our practice to extend the heritage of painting. Computation allows for the creation of artifacts that can remain fluid and open in contrast to the medium of paint that dries; becoming fixed and stable. There is nothing exceptional about our adoption of these technologies as they are now more freely available than the traditional tools and materials used by painters. We accept them as a natural and inevitable progression, but one that may require some new approaches to the creation of art.

Many artworks we make rely on the iterative nature of computing creating each frame of an animation just in time to be seen. This is similar to a game engine where each frame is created in response to the changing state of play. Another aspect of games is their use of AI to provide game play with a synthesized opponent. The artworks we will refer to here include the AI component without user interaction. The entities exist in a closed universe interacting with each other; each frame created as a consequence of these interactions. Like paint that never dries the canvas remains fluid and open, rearranging and re-

composing itself thirty times a second. Film and animation bare more in common with paint, in that despite being animate, each discreet frame remains stable, identical and loyal to the artistic choices of its author. In contrast each frame in our work lasts for a fraction of a second before being discarded.

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## THE RISK AND REWARD

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This ability to break from the stillness of previous media offers us something fresh to explore. We are able to make life studies that incorporate and respond to the processes present in natural systems by modeling aspects of them in code. We first explored this in our computational work 'System 1.6' [1] where the behaviour of the forms bring a sense of life to the work rather than their visual appearance.

'System 1.6' uses artificial life algorithms to construct a live visual and sonic composition that is different each time its played. During production this required different considerations to artworks that remain constant as we were dealing with a composition based on probability and likelihood. There were many emergent properties occurring, not as a direct consequence of the coded instructions but from the complex interactions of a large number of autonomous bodies. Small changes to the code could trigger a cascade of unpredictable events giving results inconsistent with our artistic vision. The only way to be sure our modifications were effective was to observe the work, sometimes for hours or days. It was more a case of nurturing behaviour than creating it directly. The artwork was finished when we felt reasonably confident it would perform well over an extended period of time. 'System 1.6' could run indefinitely without the interactions repeating but the forms themselves remained constant. In nature, life forms gradually shift and change giving rise to the vast diversity that exists.

Our artwork 'Biomes' [2] contains creatures that use a rule based system to form intricate patterns on their bodies. The rules are generated randomly from a vast range of possibilities. During development we were keen to explore these possibilities over an extended time frame. The problem was only a small proportion of rules created patterns, of which even less were rewardingly intricate. To solve this we introduced a virus like component that would move around the world killing off creatures with non-intricate marks. The proportion of creatures with complex patterns increased over time reaching a plateau. From then most creatures exhibit a level of complexity defined by the virus's selective pressure; with the occasional simple one slipping through the net. The cost of limiting the work to only those creatures that have a certain degree of complexity is that some interesting but simple forms are lost; while some complex but unrewarding forms remain. This constraint did not stop the 'Biomes' exploring a huge diversity comparable to that which exists in nature.

We had shifted from making exact choices, describing precise qualities, to creating environments that nurture interesting forms and outcomes. The more freedom we gave the work the greater potential for interesting and surprising results but with increased risk for periods of blandness, or worse, collapse.

The 'Biomes' have natural cycles of activity, not dictated by us, but emerging from their behaviour. Normally this alternates from moderate periods of tranquility to intense action. Very occasionally a 'Biome' can fall quiet for an unusually long period of time. Creatures can develop motion paths bypassing the small part of their world that can be seen. If a number of creatures develop this trait it can prevent others entering the visible area, causing an ice age of inactivity, weeks can pass without a single machine being seen. Whilst interesting, this naturally occurring phenomena, may not make for a rewarding experience in a week long festival context.

One of the greatest potentials of creating artworks that remain fluid and open is their ability to throw up the unexpected – injecting some surprise into work that would dull with familiarity. Surprise is a double edged sword. During the development of our artwork 'Lost Calls of Cloud Mountain Whirligigs' [3] we were surprised to find our flying creatures 'Whirligigs' all in a deep sleep from which they would never wake. The challenge we face is balancing the reward of leaving artworks open to change, without it being terminal. In 'Lost Calls of Cloud Mountain Whirligigs' we have chosen to blend together elements that remain open with those that are fixed; elements that repeat in regular cycles, with behaviours that will never repeat.

The 'Whirligigs' represent a study of a narrow facet of diversity – they live and die with each new family exploring a seemingly infinite range of song, colour, form and pattern. Because their ability to change is constrained, they will always look like 'Whirligigs'. Like the order of insects Lepidoptera which presents a vast amount of diversity whilst maintaining an overall visual consistency. Within this tiny slice of diversity there are more possibilities than anyone could view in a life time, even if they did nothing but sit and watch 'Whirligigs'.

In the artworks we have discussed here we have attempted to employ ubiquitous contemporary technologies to break the stillness of traditional forms of representation, whilst remaining true to a heritage of artistic practice that observes and is inspired by nature, its forms, behaviours and long term ability to change.

The medium of paint has given artists thousands of years of possibility. The comparatively new medium of computation now challenges artists to find meaningful and rewarding ways of incorporating its capacity to remain fluid in their practice. We continue to be excited by these possibilities and proceed to tentatively exploring this, as yet, scantily charted terrain.

### **References and Notes:**

1. *boredomresearch's image documentation of 'System 1.6,' produced in 2001 at the Banff Centre, Alberta Canada, <http://www.flickr.com/photos/boredomresearch/sets/72157626959839503/show/> (accessed Sept 09, 2011).*
2. *boredomresearch's image documentation of the 'Biomes', computational systems produced in 2005, <http://www.flickr.com/photos/boredomresearch/sets/72157627084479926/show/> (accessed Sept 09, 2011).*
3. *boredomresearch's image documentation of the 'Lost Calls of Cloud Mountain Whirligigs', computational systems produced in 2010, <http://www.flickr.com/photos/boredomresearch/sets/72157624031085199/show/> (accessed Sept 09, 2011).*