

model/metonym: notes on *boom* mitchell whitelaw

published in *Aminima* 17 (Summer 2006) 44-55

model / metonym

boom began during the 2005 Third Iteration conference on generative art, held in Melbourne. After two days of technical and artistic papers, one speaker mentioned the Australian government's then-current proposal to introduce sedition laws, making some anti-government expression or "incitement" illegal. The mention triggered a circuit of responses that is probably familiar: anger, frustration, disgust. But more striking was the contrast between the conference content, and this glimpse of the political "outside"; generative art seemed oblivious - as James Tindall has said, "solipsistic" [1].

A related ambivalence about generative art drives my recent writing [2]. I use the idea of the model or ontology as a critical platform, because what we experience in generative art is fundamentally the dynamics of a process played out in a model world - a construction of entities and relations. This model is pragmatic - generative - but also meaningful, even narrative. The natures of the entities and their dynamic relations are communicated, literally played out, in the generative process. Generative art often uses models that are simplistic at best; but it has the potential to create models that connect in a more sophisticated way with their outsides. Its particular strength is its ability to explore complex, dynamic systems, and the potential of those systems in turn to address real (lived) complex dynamics.

In part *boom* was a conscious attempt to realise some of these arguments, or at least feel them out from the other side, pragmatically. Of course it fails to bear them out, but hopefully makes a limited move in their general direction. It also complicates those arguments; some of that complication is elaborated here.

The unavoidable ground is the model. Here it is a crude physical simulation of a cloud of points and an instantaneous, localised force which acts on them: an explosion. Not a complex or sophisticated ontology; not a platform for modelling a transformed social sphere; not organic; not embodied (the particles don't even collide). But satisfying something else, providing first of all a visceral gesture of reaction to a social and political situation; then ambivalence about the relation of reality to model; then a generative formal structure. It evoked, even as it drastically oversimplified, something outside itself. But instead of modelling some "real" this figure is second-hand; it models a simple image or thought, which stands in place of something more nebulous. After the fact, it seems to work as a model of a metonym.

generation / visualisation

boom began with a focus on the structure of the model: the early stages of the work consisted of simply constructing the simulation, transcribing basic physics and geometry into code. Yet

the model rapidly becomes a generative machine, more than a representation; the interactive, iterative process of coding / running / observing / altering gathers momentum. It is propelled by the promise, and occasional surprise, of the "press play" moment when formal (code) structure unfolds into visual sensation. As the code stabilises and that process slows, the balance shifts back from machine to model, or rather, it seems that the relation between those aspects comes into focus. The contingent, emergent residues of the machine, fold back and are overlaid on the model and the metonym.

Because the three processes here use the same underlying formal structure, the work is partly a demonstration of the varieties of that contingency, with respect to the model. The notion of visualisation offers a useful explanation; instead of simply "showing" the data or structure, we construct a view of it. As in scientific visualisation, that construction is not blank or neutral, but specific, motivated, and selective. It chooses what to show, and what to hide. This in turn complicates any simple notion of "the data itself" - how can we tell the data from its interpretation?

boom relies heavily on what might be called derived or relational visualisations. These are inspired in part by the work of Casey Reas, in particular the *Software {Structures}* project, where Reas and collaborators demonstrate how rich visual structures can be extracted from a simple underlying model by displaying properties of the relations in that model, rather than its "objects" [3]. There is a quality of immanence here which is striking - the relations are not invented or added, but are always present in the underlying system. In Reas' *Structure 003A*, the points of intersection of all the circles are always present; so are the lines drawn between the points of intersection of two overlapping circles. The relations are easy to imagine; their properties and dynamics less so, until computation makes them transparent. Something extra seems to materialise, but the process of visualisation also demonstrates that it was always there, immanent but imperceptible. It feeds forwards or peels away, too, as the visualisation throws up effects and emergent structures which seem unaccountable - something else again - except again, they can't be.

This kind of visualisation is not only selective, but constructive. *boom* visualises relationships among particles using their proximity to each other; particles are grouped into overlapping triplets (each one and its two nearest neighbours). The visualisation is not only a view of the cloud, but almost an extra element in the model; certainly another element in the semiotic cloud. Neighbourliness displays the interplay of local connections in a globally determined domain. It shows different speeds, convergences, temporary links, disturbance and persistence; but it doesn't change the overall shape of things. Another layer of derivation occurs when the triplets are interpreted for drawing. (*untitled*) is the most literal, drawing lines between the points. (*socket*) finds the circle that passes through all three points; this algorithm transforms the linear dynamics of the triplets into (literally) nonlinear patterns: radial vectors swerve and twist; expansion flips over into contraction; scale and position are uncoupled from the predetermined expansion of the cloud, and become contingent on momentary patterns of neighbours; elements accelerate and slow down. The often-used technique of additive drawing - overlaying translucent elements to create varying densities - works here to visualise changes in speed and overlap. (*bloom*) uses the same algorithm but "pins" one point at the origin of the explosion. This was conceived as an aesthetic strategy, but here too the nonlinearity of the three-point algorithm threw up surprises in the twists and pleats created by pivoting circle elements.

interaction / performance

The model and its visualisations can't be experienced in themselves, but only inferred from specific manifestations or instances; the model is dynamically performed, played out in real time. In *boom* interactivity is used to stage that performance in a way that again inflects or filters the model. This interaction is partly exploratory - altering the positions of cloud and detonation creates subtle variations in the results. Ultimately it's a device for implicating the user in the process: the user is (pulls) the trigger.

The question of ending, to end with. It seems to be unusual for a generative artwork to end; the systems are often eternal - which is almost the same as static - or they end arbitrarily, at the whim of the user or the artist. I'm struck by the elegance of works that end themselves, that determine their own ending; Mauro Annunziato's *Artificial Societies* drawings come to mind [4]. The model in this work has a very simple ending - it slows to a stop - which raises another question, of how to continue. The fade out is an "old media" trick that is code for continuity, an ending that's not an ending at all; here it also seemed useful as a way to avoid stasis, and invite interaction; again, again. This goes back to the model and its metonym; what it alludes to is not a momentary event but a state, an ongoing situation.

references

1. James Tindall, "Connecting Code Art to the Real World" blog post, 1 June 2005; available: <http://atomless.blogspot.com/2005/06/3-art-theory-02-connecting-code-art-to.html>
2. Mitchell Whitelaw, "System Stories and Model Worlds: A Critical Approach to Generative Art," in *Readme 100: Temporary Software Art Factory* (Norderstedt: Books on Demand, 2005) 135-154. Available online: <http://www.runme.org/project/+systemstories/>
3. See Casey Reas et al, *Software {Structures}*, <http://artport.whitney.org/commissions/softwarestructures/map.html>
4. See Mauro Annunziato, "Emergent Structures in Artificial Societies," <http://www.plancton.com/artsoc/artsoc.htm>