1968/1998: rethinking a systems aesthetic
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The thirtieth anniversary of Cybernetic Serendipity presents us with an appealingly neat timespan, a tiny temporal bubble containing a history of high-tech art as practice, institutional category, critical entity. As a marker it tempts us to write a history. We could follow a stereotypical mode and describe a history of techno-progress and development, on track for the new millennium, where Cybernetic Serendipity acts as a quaint, slightly humorous reminder of the humble origins of the field: daggy plotter graphics, clunky lights and sounds, crude sensing "robots". Leafing through the catalogue, this seems to fit; the writing is often stuffy and scientistic, the projects seem as dry and technical as the Leonardo-esque layout. It's got those cool old flowcharts with different shaped boxes. It can be successfully retrofied, homogenised into a caricature of late-sixties science-dag. But that would be neglecting the details:

On closer examination two rough groups of works emerge. The first are generative, exploring aesthetics of permutation: harmonographs, painting machines, pattern or poetry generators, plastic explorations of a machine aesthetic. The others are dynamic, processual, interactive, or kinetic; "non-object" or "post-object". They are concerned with processes of interaction and response, translation across sensory-kinetic modes (sound into light, light into motion). Like exhibits in a slightly odd science fair, these works have an openness or transparency, electromechanical guts on display, eagerly drawing the attention of the viewer to the process under way. Above all they define themselves in terms of cybernetics, as cybernetic systems.

Jack Burnham's writing traces "systems thinking" in art of the late sixties and early seventies. His 1968 Artforum article "Systems Esthetics", and "Real Time Systems", in the same journal a year later, are detailed, expansive explorations of the implications of a "systems" approach to art. Burnham describes such an approach as reflecting the problems posed by an "emergent 'superscientific culture'" : "maintaining the biological livability of the earth, producing more accurate models of social interaction, understanding the growing symbiosis in man-machine relationships, ... defining alternate [sic] patterns of education, productivity, and leisure." He continues: "A systems viewpoint is focused on the creation of stable, on-going relationships between organic and non-organic systems...". The works he chooses to exemplify a "systems esthetic" are equally expansive, and hardly ever high-tech: he cites Robert Morris, Alan Kaprow and the early Hans Haacke. In his book "Beyond Modern Sculpture" Burnham includes Haacke's work in a discussion of cybernetic sculpture, clearly expanding his "systems esthetic" to include work such as that of Gordon Pask and James Seawright in Cybernetic Serendipity.

From the perspective of contemporary techno-arts, Burnham's writing is striking for two reasons. The first is its apparent currency, its anticipation of contemporary concerns. In 1968 he discusses the history of the "cybernetic organism" as artwork, and the philosophy of self-organising systems in relation to sculpture. Twenty-five years before the inception of the Web, he discusses an

art embracing "realtime information processing" . But along with this conjunction comes a disjunction. History reasserts itself, through the language and the style: a gap opens up, thirty years have passed. Where has it been since then?

"Postmodernism" provides a one-word answer. Its deconstruction of the great progress stories of Modernism, Science and Technology seems to zero in on this techno-art. Burnham himself, in an essay from 1980, attempts to account for the apparent failure of the major art and technology projects of the late sixties. More interesting than his explanation is the language he uses to make it; it's semiology rather than cybernetics, and Barthes' mythology rather than Bertalanffy's systems theory.

Skip ahead to the present, and consider the critical and cultural language of our times. The deconstructive and discursive foci of postmodernism seem to be weakening, though not without leaving theory with a well-developed critical sense of the cultural. The real, swamped in electronic simulacra only a few years ago, seems to be resurfacing in parallel with concerns about embodiment, subjectivity and the social; Hal Foster's recent work pursues this sense. More specifically, notions from the sciences, including cybernetics, systems and communication theory, and more recent work in complex systems, are appearing in cultural discourse more and more frequently.

The systems work explored in Burnham's early writing begins to look particularly relevant in the light of these recent theoretical turns. What emerges is a sense of a moment in history when artists, working with and without high technology, were engaged in a post-representational, post-object practice concerned with provoking an awareness of the real as an extensive, relational, dynamic network of processes. And unlike most recent systems approaches, (and most recent tech-art, descendants of those early experiments) these tend to be engaged in very concrete ways in those processes. Burnham quotes Hans Haacke's 1966 plans for a work: "I would like to lure 1000 sea gulls to a certain spot (in the air) by some delicious food so as to construct an air sculpture from their combined mass." This has to be the definitive flocking work, next to which Reynolds' Boids and their many tech-art derivatives look decidedly lame. Rather than meticulously constructing a simulated ecosystem, Les Levine opens a restaurant: "Levine's Restaurant ... is refractory, plastic and the ultimate real time art work devised to date. ... On the art level, it has to be accepted for what it is: a self-organising, data generating system."

The technological revolution which has delivered to our desks more "computing power" than an entire late sixties tech-art show, has also delivered us into the high-level interface of consumer computing. Burnham uses "post-object" as a refrain; instead, we have "virtual object". Consumer computing, the production environment for the vast majority of techno-artists, is anything but post-object in metaphorical construction. Rather than a node in a wider system, a throughput device, the computer constructs itself internally as a little object-world, a mechanism four pixels deep which we use to produce more objects: documents, images, sounds. When we use it as a real-time device or part of an open system, we negotiate with its serial protocols, hardware channels; unlike Levine's, the computer interacts with its environment in very meagre ways. This

is reflected in the hermeticism of the hype around virtuality and cyberspace, and consequently in that large slice of tech-art concerned with these "spaces". Uncritically pursued, virtuality amounts to a kind of anti-systems practice: above all it's about forgetting the system, the concrete infrastructure, for a frantically overproduced internal space. Its acceptance is fed by a broader feeling in culture currently, a sense of retreat and defensiveness, an armouring of the subject and a desire for a safe haven, a turning inwards.

A systems approach demands a turn outwards, attention to the multiplicitous intersecting "outsides" of transverse systems more than the projected "insides" of the subject or the machine. It raises uncomfortable questions about the intervention of art in the world: arguing the value of a systems aesthetic is to implicitly argue for the possibility of some kind of agency, whether as concrete intervention or "consciousness shift", and this may be difficult to accept. It also implies questions about the boundedness of art practice itself, not to mention the persistent compartmentalising within art; a systems practice threatens to spill out into everyday life, beyond culturally sanctioned and government-funded forms, and so to evaporate completely, or rather to become imperceptible. (As the art world and all its substrata continue to frantically overproduce themselves, this idea seems quite attractive.) But on the way to this limit, which will always be being reached and retreated from, there might be an art practice which has some of the expansiveness and embodiment of the systems experiments of thirty years ago, with an equal amount of late-nineties critical hip. For all the intervening theoretical moves, "the creation of stable, on-going relationships between organic and non-organic systems" remains a vital concern - if anything, more clearly urgent than thirty years ago.