

ment media authoring system, which will aid in the design of computer games¹⁷.

Post-human Ecosystems

Perhaps the newest and most fascinating arena for the propagation of artificial life is the internet. In a virtual chat, I may be engaged in a text-conversation with another person, whose physical coordinates are unknown, and unimportant (“the net negates geometry”—Mitchell¹⁸), and even whose gender (in real life) is unknown, and whose “posed” identity may be artificial. “Robots”, programmed to pose as humans, populate some text-based virtual realities, too.

Primordial soups, like Tom Ray’s “Tierra”¹⁹, may begin to penetrate fertile pockets in the net, and work overnight in computers on the sleeping side of Earth, while the other side works in the daylight. These soups will be designed to evolve software functions which could never be designed by humans, to do complex tasks. Perhaps anti-viral systems will have to be bred in this way. Perhaps the neuromuscular systems for the dinosaurs in Jurassic Park sequels will be evolved in this way.

Imagine breeding images or animations or populations of virtual characters in the dark corners of computer memory at night, letting them interact and grow more complex as you sleep. As far as the future of evolutionary art and artificial life over the net is concerned, the possibilities seem quite large, and the “medium” is very new and formless.

CONCLUSIONS

These are my thoughts and musings on artificial life, and what it signifies in terms of a new visual language and cultural phenomenon. The art of artificial life, it seems to me, is inherently computational, dynamic, and emergent. And it is also resonant with such trends as: the institutionalized obsession with genomes; the mutability of life; cyborgs; Michael Jacksonian morphing; and the view of humanity as intimately entwined in the web of Earth’s ecosystem. The tools of artificial life are not so good for rendering the domain of “Man”, nor the projected spaces of a human view on a human world, as Renaissance Perspective was. The art of artificial life renders the dynamics and emergence of earth-life, from which humanity emerged—as well as many other possible (and impossible) forms of life. And in addition to this emergent method of rendering reality, artificial life is also becoming a reality in itself, as the post-human cortex envelops the earth.

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Footnotes

1. Lynn Margulus’ idea is mentioned in Dawkins’ *The Blind Watchmaker*, Norton 1987, p 176
2. Hans Moravec’s paper - *Human Culture: A Genetic Takeover Underway*, in the first *Artificial Life* proceedings - editor Chris Langton. Addison-Wesley 1991 p. 167
3. Chris Langton suggested this in a speech at the Fourth Workshop on Artificial Life at MIT.
4. from Bill Mitchell’s book, *City of Bits*.
5. from the beginning of Kevin Kelley’s book, *Out of Control*, Addison-Wesley 1994
6. The “Game of Life” was invented by John Conway, and is explained nicely in William Poundstone’s book, *The Recursive Universe*, 1985, William Poundstone
7. Animated behavior of physically-based figures in virtual worlds were demonstrated at Artificial Life IV by Sims, Terzopoulos, and Ventrella.
8. Richard Dawkins’ excitement upon creating his biomorphs is described in his book, *The Blind Watchmaker*, and also mentioned by Kevin Kelley in *Out of Control*, and *Wired*, July 1995, p. 122.
9. Ed Zajec, professor of Computer Graphics at Syracuse University’s Art Media Studies Dept. (personal communication)
10. *Genotype* and *phenotype* are terms derived from biology, used in the computer science optimizing technique of *genetic algorithms*.
11. Karl Sims’ paper, *Interactive Evolution for Computer Graphics*, in *Computer Graphics*, vol 25, number 4, July, 1991
12. Ventrella - *Explorations in the Emergence of Morphology and Locomotion Behavior in Animated Figures*, Artificial Life IV proceedings, MIT Press 1994.
13. Sims’ technique is explained in his Artificial Life IV proceedings paper, *Evolving 3D Morphology and Behavior by Competition*, MIT Press, 1994
14. Ventrella - *Disney Meets Darwin*, MIT Media Lab thesis document, 1994.
15. Cohen’s work is described in McCorduck’s book, *Aaron’s Code*, W. H. Freeman and Co. 1990
16. This idea of *memes* appears in Dawkins’ book, *The Selfish Gene*, Oxford Univ. Press 1976
17. A project underway at Silicon Studio, SGI, Mountain View, CA, to develop an authoring system for entertainment media and game design.
18. From the book, *City of Bits*, by William Mitchell.
19. Tom Ray’s Tierra program is explained in *Artificial Life II*, edited by Chris Langton, Addison-Wesley, 1992, page 371.