

EUKARYOTIC VIRTUAL REALITY

THE EMERGENT ART OF ARTIFICIAL LIFE

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In this paper I discuss an approach to the science of artificial life, from the viewpoint of an artist using techniques from this field to create images, animations, and interactive microworlds, via computer programming. As a point of departure, I consider current popular forms of virtual reality—in which the human subject is immersed in a simulated three-dimensional space, usually represented visually via established computergraphic rendering techniques. These spaces have been described as “lonely”, because they often lack the element of life we encounter continuously in *real* reality.

I would like take a more ecosystems approach to inventing a virtual reality, where experience is characterized by interactions with adapting artificial life forms, rather than an approach where experience is characterized by moving through perspective space as a virtual eye-self. The information-dynamism of artificial life does not always depend on rendering of visual surfaces in 3D spaces, and instead emphasizes the inner process, growth, adaptations, and interactions of various autonomous agents, possibly including a human participant. It emphasizes *behavior*.

Artificial life has been primarily a scientific discipline, aimed at complementing traditional biology (largely an analytic science - the study of carbon-based earth-life), with synthesis—a form of theoretical biology. Artificial life research abstracts the functions of life away from one particular physical manifestation and attempts to understand it in terms of information dynamics. For this reason, many artificial life artifacts take the form of computer programs which exhibit emergent properties reminiscent of life.

Some artists and computer graphics researchers have begun to adopt artificial life principles and techniques in developing visual works and mechanical automata. When artificial life is viewed as a new experimental artform, a different set of issues may arise, issues concerned with representation, cultural implications, questions of authorship, and the creative process. In this paper, I trace the discoveries in my personal journey as an artist inspired by biology, who became a self-taught computer programmer. I also cite a few key thinkers and makers who are starting to bring artificial life into the realm of a visual and cultural study.

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