Chapter 18
Getting Closer to Nature:
Artists in the Lab

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ABSTRACT

The term bio art has emerged in the past few years to cover the kind of art that seems to come from the biology lab, with simulations of life forms through generative processes, with data taken from organisms, or even through organisms themselves. This is often at the micro level, invisible to the naked eye, where seeing requires some degree of computer modeling. This could be a hybrid form, serving the interests of both art and science, but recent exhibitions have prompted some debate about the divergent roles of art and science. Rob Kesseler and Andrew Carnie are artists who have worked alongside biologists to produce visual works of extraordinary quality, in both their decorative and intellectual aspects. They follow in a long tradition of artists who have been fascinated by the close-up detail. Drawing manuals of a hundred years ago advocated the study of plant forms, sometimes as the basis for pattern design. The author describes his own use of scientific sources, arguing that there is also a place for art that evokes the wonders of nature without being tied to the visible facts.

INTRODUCTION

What happens when artists take images from the laboratory to the art gallery? Can the mesmerizing patterns seen through the lens of the microscope be looked at as art? Do they need to be modified in some way? Aren't they better if left just as they are? Or are these misleading questions? Artists have always been fascinated by the natural world. Science, nature and art have long been intertwined. Through botanical illustration, anatomical studies, visions of the cosmos, abstract analogies, artists have revealed nature's secrets – from Leonardo da Vinci, Albrecht Dürer, William Blake, John Ruskin, Ernst Haeckel, Paul Klee, and so on. Some are close-up, some speculative, some wide-screen. Some are blazingly mystical, some are romantic, and some are just plain and factual.

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But 'bio art' is strikingly different: it appears to be a new hybrid form. As the term implies, the imagery is normally neither wholly natural, nor wholly synthetic; if based on 'data', this is presented in an aesthetic context. Sometimes this plays on our curiosity about the sheer weirdness of a magnified worm accessed through deep-sea photography; or the uncanny lifelike 'creatures' created in 3D animations from generative algorithms by artists such as William Latham and Yoichiro Kawaguchi. These examples blur the distinction between natural and artificial life. As non-specialists we cannot be sure what a living cell looks like, nor tell a simulation from the 'real thing'. Our ideas of DNA, or of black holes, rely on visualizations derived from reams of numbers, be they fuzzy bands of colour, or high fidelity animations. A printout of the methane on Titan does not convey the awesome distances and strangeness of that environment. We need another mode of imagery to move our souls. Our knowledge may have evolved far from the thinking of a hundred years ago, but artistically we haven't yet caught up, at least in representing what we know to be 'out there'. Bio Art resonates with Green politics, with anxieties about global warming, about ecosystems, about genetic engineering. It parallels the growth of 'info-tainment' in science museums, of wildlife features on TV that blend footage with computer simulation. In our ordinary lives we have shifted from paper-based information – newspapers, maps – to smart phones and car navigation systems. It should not come as a surprise that artists have been exploring how 'nature' might be represented. There are alternatives to drawings and photos. Add all this together and, yes, there is something in the air at the moment about art and science, a sense that we might be able to bring the visual games of contemporary art together with the Big Ideas of science, and provide approachable images for the non-specialist.

In this essay I shall first consider two projects where the collaboration between an artist and a biologist has produced images that are unmistakably – to use an overworked term – beautiful. Do these artists simply 'translate' data into art? That is putting it too simply, because whatever we now mean by data, it is not necessarily anything accessible to the naked eye. Being 'true to nature' is not as simple as it once seemed to be. We rely on 'visualization' to get close to a tiny cell, or to the planets of a neighbouring galaxy. A hundred years ago the natural world could be studied with little knowledge of these unreachable objects. Yet at that time 'nature walks' might have been more common in primary schools. In British art schools the detailed studies of plants - botanical drawing – had the practical purpose of providing a sound basis for the decorative arts, following on from the teachings of Ruskin and Morris.

Today, we can acquire images of unreachably small and exquisite patterns, and through abstract painting we have a rich vocabulary of forms. We can 'borrow' these glimpses of otherwise invisible worlds, compose some sort of picture, and perhaps for a moment bridge the gap between science and art. Visual art can explore the complexity of nature without adhering to the evidence. Artists invent, they improvise. In the final section I describe my own working method.

1. COMING TOGETHER

We have art/science exhibitions, collaborations between artists and scientists, organizations such as the Wellcome Trust. Some ventures are entirely positive about the science; others like the Arts Catalyst in the UK[1] are ambivalent, sometimes sceptical, presenting parodies of scientific endeavour. There is a growing list of publications, following the pioneering work of Stephen Wilson's (2002) 'Information Arts', featuring artists in the labs. This book is part of the same trend. 'Visualization' has become a discipline in its own right. NASA images, MRI images, movies of living cells[2], all are available as downloads. Artists do not have to pack up an easel and head out into