

Preface

For some reason, I have always felt that a preface should really be called a "confession." So here is mine: this is not only a book about genes, proteins, and codes, but a book of philosophy. In itself, this is not much of a confession (unless "doing philosophy" is something to hide). Perhaps what I should really say is that this is a book about how, in biotechnology, ontological questions immediately fold onto questions that are social, economic, and cultural.

For example, take three "objects." The first is your DNA in a test tube. Actually it is very easy—using supplies from your local grocery, you can extract your own DNA; all you need is a toothpick, detergent, salt, and alcohol. Your DNA does not look particularly "high tech" or sexy; it is more like stringy, semitransparent goo. So that is our first object. The second object is a computer file of a DNA sequence from a database. Anyone with an Internet connection can access GenBank, the main public repository for genome data. You can search for a particular sequence you are after, and the file will display all sorts of information, from research publications to the actual sequence of As, Ts, Cs, and Gs. Now take a third object, a computer file of the patent for the DNA sequence file I just mentioned. Again, this is easily accessible via the U.S. Patent and Trademark Office Web site. This file is a bit different, containing not only scientific information, but technical, economic, and legal information as well. So we have three kinds of DNA: "wet" DNA in a test tube, "dry" DNA from a computer database, and valuable DNA as part of a patent.

This book is about the relationship between these three entities. Between the test tube DNA, the GenBank file, and the patent record, there are a number of relationships that have to do with how the concept of "life itself" is being fundamentally transformed in the era of biotechnology. The argument I make is that these changes are not merely additive changes to already-existing notions of life, labor, and property, but that, in their very existence, these unique entities—genome databases, DNA synthesizers, regenerative tissues—are ontologically redefining the notion of biological "life itself," a notion that has always been at the center of biological thought.

But, for all this talk about ontology, there is little talk of the niceties of ontological categories or philosophical logic. Instead, many of the pages are filled with discussions on genome databases, drug discovery informatics, lab-grown tissues, and plasmid libraries. Not only that, but there is also talk of international genome sequencing organizations, national biobank initiatives, and, of course, the private sector emphasis on fields such as bioinformatics and pharmacogenomics.

So, if this is a book of philosophy, then it is a strange one, one that talks as much about reprogrammed stem cells as it does about Aristotelian biology or Marxian "species being." My hope is that between this triangulated relationship of "real" biology (test tube DNA), computer codes (the GenBank file), and biological property (the patent record), we can develop a more complex awareness of the ways in which "life itself" is deployed in a range of areas, from the creation of new medicines to the transformations in food production, national security, and the cultural understanding of biological life.