

Summary of *On the Contrary: A Philosophical Examination of the Environmental Sciences and Their Critics*

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On the Contrary is a book on metaphysical, methodological, and moral dimensions of the environmental sciences. It has become apparent that philosophers can play a special role in understanding and evaluating the aims, methods, and theories of the environmental sciences. Specifically, there has developed a large number of critics of ecology, conservation biology, climatology, and environmental economics. They argue that the science is methodology flawed, based on a left-wing political agenda of environmentalists, and that many of the purported objects of study (like ecosystems for example), do not even exist. Many of their arguments are philosophical in nature and philosophers are in a unique position to respond to many of these objections. Thus, *On the Contrary* is a defense of the environmental sciences against the criticisms of these “brown” critics and a critique of some of these sciences supporters. More positively, this book will provide the general reader a more accurate account of how these complex sciences operate. Here is the Table of Contents¹:

Section I. The Nature of Nature

1. The End of Nature?*
2. Seeing the Forest and the Trees: Realism about Ecological Communities and Ecosystems*
3. Ecosystem Health and Integrity

Section II. Methods and Models

¹ Note that (*) indicates chapters which exist in draft form.

4. Theories as Tools: A Pragmatic Approach to Science
5. Species Extinctions, Ecological Models, and Scientific Uncertainty: A Troubling Triad*
6. A Changing Climate: Computer Simulations and Prediction

Section III. Values in and around the Environmental Sciences

7. What is Wrong with Plastic Tress: The Importance of Ecosystem Services
 8. Value, Advocacy, and Conservation Biology*
 9. Consensus and Politically Informed Science
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Section I examines controversies in environmental history, ecology, and conservation biology over whether there is a non-human nature and whether commonly posited objects like ecological communities and ecosystems exist. Section II considers the ubiquitous role of modeling in the ecology and climatology and whether it is a reliable tool for projecting the future. Section III explores the role of values in science in arguments given for preserving natural systems, the role of scientists as advocates of ethical points of view, and in the role that consensus plays in pure science and policy.

This book furthers research I have previously done in two ways. First, I am taking my work on modeling in ecology to a broader set of disciplines, namely the environmental sciences including ecology, climatology, and environmental economics. Much of my analysis offered in previous articles applies directly to these other areas given the use of models and computers and the inherent uncertainty of their data. For example, climatologists use general circulation models to project increases in average surface temperatures utilizing data from various proxies like ice core samples and tree-rings. However, these models involve serious simplifications concerning both their resolution and “parameterizations”. Likewise, economists use micro-

economical models in their contingent valuation studies along with data on preferences and people's "willingness to pay" for various ecosystem services versus developmental projects. It is well-known that such studies make idealizations concerning both about the economic actors and the connection between say survey data and those actors preferences. Thus, the themes of idealization and uncertainty are writ large over the environmental sciences and many critics have noticed. By providing a pragmatic account of how real science works which explicitly addresses both model idealizations and uncertainties, we can provide a much better understanding of what good science is and how many of the critics go wrong.

Second, in part because of my philosophical pragmatism, I believe that we as philosophers can perform a vital role in society. Philosophy has become an excessively technical field with little social relevance. It seems to me that we cannot sit idly by but must become engaged in these larger issues in whatever capacity we can. This is not to say that philosophy should not pursue its own agenda; however, it does mean that some of us must return to the larger issues that face us and try to use our skills as intellectuals in the service of larger public goals. As John Dewey titled one of his essays, there is "a need for a recovery of philosophy.. Thus, *On the Contrary* will be taking the philosophical work I have been doing and placing in a more "popular" setting. The book is and will be similar to ones like Philip Kitcher's (1982) *Abusing Science* and Sahotra Sarkar's (2007) *Doubting Darwin? Creationist Designs on Evolution* which both are critiques of scientific creationism and intelligent design theory and a defense of evolutionary theory. Their books are written for academics but also the ever-elusive intelligent general reader. My book should be one that is useful for those outside of the academy who are

disturbed and confused by these “brown critics” will provide them with a ready response to those critics.