

# **Philosophical Basics of Ecology and Economy**

**Malte Faber and Reiner Manstetten**  
**Translated by Dale Adams**



Routledge Studies in Ecological Economics

# Philosophical Basics of Ecology and Economy

In today's world – despite the dramatic anthropogenic environmental changes – a proper understanding of the relationship between humanity and nature requires a certain detachment. The pressing problems in their whole extent will only be fully understood and solved with comprehensive and patient analysis. Accordingly, this book develops new perspectives on fundamental questions of biology, ecology and the economy, integrated within a framework of a terminology specially devised by the authors.

By illuminating the epistemological backgrounds of ecological–economic research, the authors lay foundations for interdisciplinary environmental research and offer guidelines for practical action. On the basis of the findings of contemporary biological as well as economic literature, they demonstrate the fruitfulness as well as the shortcomings of modern science for the understanding of the proper place of humankind in nature. Frequently, current problems in the fields of economics, ecology, politics, philosophy and biology are discussed in a kind of 'dialogue' with thinkers and poets like Bacon, Quesnay, Kant, Goethe and Novalis. The book also offers traits of the Anglo-Saxon tradition of thought: a precise, analytical approach to theory and a pragmatic approach to action. Both approaches are used by the authors complementarily.

Thus the authors lay the foundations for an ecological, economical and political practice that is able to tackle concrete environmental problems on an encompassing and long-term basis. This translated volume will be of great use and interest to students of ecology, economics and in particular environmental education, sustainable development and environmental ethics.

**Malte Faber** is emeritus professor at the University of Heidelberg and since 2007 he has been a consultant for the Central, Province and Local governments of the People's Republic of China. **Reiner Manstetten** is an assistant professor at the University of Heidelberg and, since 2004, has been working at the Helmholtz Centre for Environmental Research – UFZ in Leipzig.

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**To John Proops,  
longstanding friend and co-author**



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# Biographical notes

**Malte Faber** was born in 1938 in Düsseldorf, Germany. He studied economics, mathematics and statistics at the Free University of Berlin. He then took his MA in mathematical economics at the University of Minnesota, USA. His PhD was on stochastic programming from the Technical University of Berlin, where he also became assistant professor (*Privatdozent*) in economics. Since 1973 he has been professor in economic theory at the University of Heidelberg. He was director of the Interdisciplinary Institute for Environmental Economics from 1998 to 2004. Since 2004 he has been emeritus professor at the University of Heidelberg. He has published widely on capital theory, public choice, the role of the entropy concept in environmental economics, foundations of ecological economics, input–output analysis application to the management of water, waste and carbon-dioxide emissions. He has served as an adviser on environmental matters – for example, in the field of legislation concerning liquid and solid waste – to the Environmental Protection Agency (EPA) of the government of the USA, as well as to the Federal and State governments of the Federal Republic of Germany. Since 2007 he has been a consultant for the Central, Province and Local governments of the People’s Republic of China.

**Reiner Manstetten** was born in 1953 in Würselen, Germany. He studied philosophy, German philology and music at the universities of Cologne, Freiburg and Heidelberg. He took his MA and his PhD on metaphysics and mysticism in the work of Meister Eckhart at the Department of Philosophy and his habilitation in economics and philosophy at the Department of Economics at the University of Heidelberg. From 1985 to 1998 he was Assistant at the Department of Economics in Heidelberg. Since 1998 he has been assistant professor (*Privatdozent*) in Heidelberg, and since 2004 he has worked at the Helmholtz Centre for Environmental Research – UFZ in Leipzig. He has published widely on the philosophical foundations of ecology and economics, ecological economics, history of economic thought, business ethics, and the philosophy of mysticism. In 2003 he received the Ernst-Bloch Award from the city of Ludwigshafen.

**Malte Faber and Reiner Manstetten** have cooperated for over a quarter of a century. They have written numerous papers and several books together. In particular they published, jointly with John Proops, the books *Evolution, Time, Production and the Environment* (1993/1998) and *Ecological Economics: Concepts and Methods* (1996/1998).

# Foreword

## On the methodology and content of this book

In debates on environmental and sustainability problems, the call for immediate action is frequently heard with the rationale that ‘time is running out’. This implies, however, that an appropriate reflection on complex issues is scarcely possible. In contrast, we aim to demonstrate that in today’s world – despite the dramatic anthropogenic environmental changes – a proper understanding of the relationship between humanity and the environment is absolutely necessary. This, in turn, requires a certain detachment. The pressing problems will only be fully understood and solved with painstaking, comprehensive and patient analysis. Accordingly, we develop new perspectives on fundamental questions of biology, ecology and the economy. To this end, we have elaborated our own specially devised terminology that enables us to work scientifically but does not restrict us by the unavoidable narrowness of scientific discourses. Our termini, newly coined, do not belong to any particular science, but they permit us to connect them to the basic notions of ecology and economy. In particular, they are devised in such a way that they enable us to integrate experiences of everyday life. This is important in order to check whether our scientific analysis is really relevant for the environmental problem to be solved.

In particular, we seek to illuminate the epistemological backgrounds of ecological–economic research (Chapters 4 to 6). We aim to develop foundations for interdisciplinary environmental research and, at the same time, offer guidelines for practical action. Our ultimate goal is to delineate a *studium fundamentale* that allows readers to participate in a synopsis of knowledge concerning humankind and nature, integrating natural, philosophical, political and ethical perspectives. A comprehensive presentation of the goals and methods of this book is given in Chapter 1.

The chapters of this book build on one another so an understanding of new concepts as they are progressively developed over several chapters is a prerequisite for grasping the content of later chapters. At certain points it may be advisable to turn back to earlier to be reminded of the precise meaning of the terminology being used. For readers who wish to gain an initial impression of our approach without needing to delve fully into our argumentation and

terminology, we recommend Chapter 7. Here we draw parallels between the vision of Francis Bacon with regard to the synthesis of science, technology and the common good and Goethe's representation of the character Faust in the second part of his drama *Faust*. Goethe turns Bacon's intentions into a 'practical reality' and demonstrates the consequences of such practices in the lives of human beings and in nature.

## **On the translation into English**

We are pleased to present our book *Philosophical Basics of Ecology and Economy* to an English-speaking audience. The title of the German edition is *Mensch – Natur – Wissen. Grundlagen der Umweltbildung (Humankind – Nature – Knowledge: On the Foundation of Environmental Education)*. The topic of environmental education, however, albeit of no small relevance for our approach, is not its main goal; thus, the English title is more appropriate to our intention.

The translation of this book has been a difficult task. For instance, the English word 'reason' can mean both *Verstand* and *Vernunft* in German. It is precisely these nuances in philosophical thought that are particularly difficult to retain in moving from one language to another. When we entrusted Dale Adams, who had studied economics and philosophy with us, with the translation of our book, we were uncertain about how this very German book would read in English. The translation took place over a three-year period during which the authors and translator remained in frequent contact. We feel that Dale has not only fully understood our sometimes complicated thoughts, but also managed to find corresponding English concepts and formulations, which comprehensively express the content of our thought. In a final revision, we made some minor changes to the text and shifted two more philosophically orientated sections of Chapter 1 of the German edition to an appendix.

## **Some remarks on the background of this book**

That this book has been developed on the basis of lectures given to German-speaking audiences is not the only reason it was originally written in German. Many of the book's central concepts are rooted in a tradition whose origins go back to German philosophy and literature of the period covering the end of the eighteenth and the beginning of the nineteenth century. We frequently discuss current problems in the fields of economics, ecology, politics, philosophy and biology in a kind of 'dialogue' with thinkers and poets like Kant, Goethe and Novalis, because we believe modern scientific theory may learn a lot from Kant's thought, and biologists would sometimes do well to listen to people with the mindset of a Goethe or Novalis.

A deep engagement with the philosophical tradition is a hallmark of continental-European philosophy and, in particular, of hermeneutics. This hermeneutic basic attitude provides perspectives rather than solutions, opens eyes, points in a direction and offers a 'map', rather than marking out a specific course. As an

economist (Malte Faber) and a philosopher (Reiner Manstetten) we have, during our more than twenty-year-old interdisciplinary collaboration, particularly been influenced by Hans-Georg Gadamer's (1900–2002) teaching at the University of Heidelberg, in which modern-day debates pay heed to the words of great thinkers of the past and strive to learn from them. The strong ties to hermeneutics are, in a manner of speaking, what is specifically German (or at least Continental European) about our book.

However, for us, hermeneutics is not an end in itself. It is, rather, a means to realise the ultimate goal of our book: to contribute to concrete problems of our times being better identified, comprehensively understood and tackled on a long-term basis. In this we have been significantly influenced, in particular in our environmental-policy consultancy, by experiences more characteristic of the Anglo-Saxon tradition of thought: a precise, analytical approach to theory and a pragmatic approach to action.

In our view, the hermeneutical, Continental-European tradition and the analytical and pragmatic Anglo-Saxon approach are complementary. During our collaboration over many years with our friend and colleague John Proops, who has been one of the founders of Ecological Economics and served as president of the International Society of Ecological Economics for several years, we have experienced the way these two very different approaches fit together. This experience has contributed greatly to the pleasure that has characterised our association with John. To show our appreciation, we have dedicated this book to him.

# Acknowledgements

The ideas expressed in this book are the product of more than ten years of deliberation. They have been discussed with many students, co-workers and colleagues who helped us to formulate our thoughts more clearly.

We would like to thank the Academy of the Saxonian State Foundation on Nature and the Environment and especially the Director, Hans-Joachim Gericke, for invaluable assistance in the publication of this book. Likewise, our thanks go to the City of Heidelberg Foundation as well as to the Heidelberg University Faculty of Economics. The financial support of both institutions provided the means that allowed us to pursue and develop our ideas. The persistent encouragement and active support of Rudolf Jansche, Honorary Senator of the University of Heidelberg, were significant factors for the lecture manuscripts eventually becoming a book.

We are particularly grateful to Dale Adams for the translation of this book from the German. We thank Christian Becker, Carl Gillingham, Friederike Hofmeister, Rosa Huhn, Johanna Spratte and Christoph Vanberg for comments and corrections. For her kind and constructive supervision of the manuscript on its way to the original German publication, we thank Ulrike Gießmann-Bindewald of Vandenhoeck-Ruprecht Publishers. Finally, we are grateful to Robert Langham of Routledge for his continuous interest and encouragement on the way to this English edition.

# 1 Introduction

## The style and goal of this book

The following deliberations are based on the content of lectures that were held several times at the Faculty of Economics at the University of Heidelberg under the title ‘Philosophical Foundations of Ecology and Economy’ for students of various disciplines: economics, politics, laws, liberal arts, physics, biology. In their current form they correspond largely to a series of talks held at the workshop ‘Foundations of Environmental Education’ in Großbothen near Leipzig, which was organised by the Academy of the Saxonian State Foundation on Nature and the Environment.<sup>1</sup> Although various changes were made on the way to publishing it in book form, the lecture style has been intentionally preserved. As a consequence, the book displays certain characteristics similar to those Sigmund Freud recorded in regard to the publication of his *Introductory Lectures on Psychoanalysis*:

Any particularities of this book which may strike its readers are accounted for by the conditions in which it originated. It was not possible in my presentation to preserve the unruffled calm of a scientific treatise. On the contrary, the lecturer had to make it his business to prevent his audience’s attention from lapsing during a session lasting for almost two hours. The necessities of the moment often made it impossible to avoid repetitions in treating some particular subject [...]. As a result, too, of the way in which the material was arranged, some important topics [...] could not be exhaustively treated at a single point, but had to be taken up repeatedly and then dropped again until a fresh opportunity arose for adding some further information about it.<sup>2</sup>

In this regard the subject matter lends itself to a means of presentation which to a certain extent dissociates itself from that which Freud called ‘the unruffled calm of a scientific treatise’. What we are dealing with here are the foundations of such a kind of environmental education which develops people’s ability to recognise themselves and their world, as well as to encounter nature. This requires a willingness to self-critically reflect on untried beliefs, prejudiced opinions and entrenched behavioural patterns.



## 2 Introduction

Education is never finished or complete – neither for those who impart it, nor for those who receive it. Any call to educate includes the stipulation that the teachers remain learners and persuade their listeners or readers to ‘learn along’. Hence one of the most significant forms in which education takes place is a conversation. In this sense the following deliberations were conceived of as a conversation with the reader, one which picks up the kind of suggestions, thoughts and objections that emerged from the discussions resulting from the oral presentation.

We do not picture our readers solely as researchers or students of science or the humanities, but also as anyone in the fields of politics, management, economics, education or the media who has an interest in ecological questions. We furthermore address all those who find themselves confronted with environmental problems in practice. Those we have in mind are essentially all and any who take an interest in the further development of our society, whereby non-human nature is granted its proper place. In other words we turn to readers who wish to participate in a *studium generale* or *studium fundamentale* with special emphasis on nature and the economy.

Such a wide circle of addressees requires a special approach. Something which seems matter of course to a reader schooled in philosophy may seem new, strange or even alienating for an employee of an environmental administration. Basic elements of science as we present them may well appear trivial or oversimplified by a biologist’s standards, yet, on the other hand, assist, for example, an economist to discover completely new perspectives. We generally attempt to keep the standard of our argumentation accessible for those who might not be proficient in the particular discipline in question. In this manner we naturally subject ourselves to objections which we would like to address in advance: interdisciplinary research is generally viewed with a certain amount of suspicion. It is difficult to imagine that scientists who participate in the most advanced discourse of their individual disciplines can offer substantial contributions in another field. It is even less easy to accept that scientists with average skills in several different disciplines can make significant discoveries. The following deliberations might well meet with such suspicion that the competency of the authors might be restricted to economics, philosophy and literature. What right do they have to expect their thoughts and theses that fall into the province of other disciplines to be given attention?

We can answer this in two different ways. First, besides having published in scientific journals together with experts from natural sciences, we have subjected much of that material relating to fields other than our own to extensive criticism from competent peers in relevant fields such as physics, chemistry and biology etc., as well as those from social science and the humanities. Second, apart from its interdisciplinary aspect, the distinctive characteristic of our approach is a new and comprehensive view on problems pertaining to the relationship between humans and nature, ones which belong as such to no particular discipline: environmental problems are not exclusively physical, biological, economical, political, social or cultural problems. They are all of these and more. One could

perhaps most aptly refer to a perspective that fulfils such criteria as *philosophical* – as long as philosophy is regarded as the struggle to comprehend the foundations of our means of perception and behaviour. Such an endeavour will be undertaken in several of the following chapters, albeit focused on specific questions.

We deem that the term ‘philosophical’ applies in particular to our effort to present causal correlations beyond the limits of individual disciplines in such a manner as to allow a glimpse of the problem in its entirety. Thus the independent accomplishment of the following deliberations does not consist of a presentation of brand new knowledge in any specific field of research. However, we regard the manner in which we accumulate knowledge from separate fields under common terminology and place it in an intelligible theoretical context as something new. The most significant aspiration of our book is to accumulate and terminologically structure the basics of knowledge concerning the interaction between human beings and nature – knowledge currently strewn throughout many separate disciplines – as well as to examine the extent and limitations of the same.

### The structure of the book

The structure of our book can be described as follows. In Chapter 2 we offer an overview of the questions and tasks confronting environmental education, and present categories of possible solutions to dramatic negative developments. We hereby emphasise the role philosophy has to play in facilitating a comprehensive observation and portrayal of environmental problems. In Chapter 3 we turn our attention to the two sciences of ecology and economics. An analysis of both of these, based on the original meanings of the ancient Greek terms *oikos* (house), *nomos* (law, regulation of allotment) and *logos* (word, term, order, meaning) leads us to the questions of which ‘house’ both the economically active human being and other forms of life inhabit, what the present state of this house is and how it must be ordered in the future. Since, as a rule, a crucial role in solving environmental problems is ascribed to science, in Chapters 4 to 7 we analyse the foundations of human knowledge. We differentiate between three basic forms of human knowledge: the *scientific logos*, as characterised by classical physics in particular, is joined by the *essence logos*, the field of the ‘last things’, and the *existence logos*, which we find in our surroundings. We shall see that scorning ‘reason and science’, as denounced as early as in Goethe’s *Faust*, is equally as foolish as assuming that science is the only valid form of knowledge. Inevitable forms of ignorance that lie in the shadow of all forms of knowledge are also examined in depth. How the different forms of knowledge with regard to the present relationship between humans and nature intertwine is described by means of a closer inspection of the utopian vision of Francis Bacon and of Goethe’s *Faust* in Chapter 7.<sup>3</sup> Chapters 8 to 10 lay the philosophical foundations for a new perspective on nature and ecological questions by means of a critical application of the findings of modern evolutionary biology. Special significance

#### 4 *Introduction*

is placed on the teleological terminology of the three rationales of living beings (the three ‘tele’). The common conceptions of self-preservation and self-reproduction are supplemented by the concept of *services*, which living beings perform for other living beings or for natural communities, and which can even go as far as self-denial. The terminology of funds and services offers new possibilities of portraying nature’s household in the dynamics of its interactions with consideration to long-term developments. The concluding chapters, 11 and 12, are devoted to the basics of the human economy. This does not necessarily mean, however, that we go into standard modern economic theory in detail. Instead we deal thematically with problems to which, as a rule, a solution is a precondition to economics: the long-term effectuality of stocks, the greater or lesser valuation or significance of needs, the different weightings of interests in their individual orientations. The individual self-interest that is ascribed to people as their chief orientation in standard economic models is supplemented not only by an interest in the community in its different forms but also by an interest in the whole.

## 2 Environmental education

### Problems and possible solutions

#### Education and training

We mentioned above (see Chapter 1) that our aim is to develop the foundations of a kind of environmental education that enables people to recognise themselves and their world, as well as to encounter nature. Environmental education is, as the name indicates, a form of education. But what is ‘education’? For many, the word may sound a little obsolete. It is more modern to speak of ‘training’, as economics and politics often do. ‘Training’ refers to the imparting of knowledge and skills in a specific field. A person is trained to become a salesperson, a nurse, a computer specialist, etc. But what is one ‘educated’ to become? You occasionally hear that someone is an ‘educated’ person, but that does not necessarily mean that he or she is suitable for a particular and clearly defined useful purpose. Thus one does not apply for a position because one is ‘educated’ but because one’s training matches the profile.

Once again the question: what is one educated to be? The answer should be: a human being. Education is part of a programme that had its climax, at least in the German-speaking world, in the Enlightenment and Classicist period of the eighteenth century. Education in the sense of this programme means the advancement and accompaniment of a development, at the end of which a human being is truly a human being – that is to say, he or she has brought their personal talents to maturity, recognises themselves, understands the world they live in and knows where they have come from, what they are ordained to be and what they are doing.

Training is also part of education. No one is educated who does not possess concrete learning and specific skills in special areas. Yet education is something fundamentally different from training: training is supposed to leave those who are trained basically the way they are, apart from the fact that they receive certain knowledge and skills. Training relates to only certain aspects of a human being. Education, however, relates to the whole human. Contrary to training, it is to change the person who is to be educated. The goal of the process of education is to form the person in such a manner that he or she becomes what he or she is according to the best parts of their potential – in the same way that a block of marble is changed by the sculptor until what is concealed in it, the complete

statue, is revealed. The word 'education' includes the concept of 'taking form'. In the educated human being, the truly human form has materialised, a form which previously existed in potential, but was yet concealed.

Education is not completed until the human being has not only been educated (formed), but has also formed his or her world – that is to say, shaped it until it has become the beautiful thing that lies within its nature. Thus in the eighteenth century the concept existed of an 'educated nature', one which has been shaped according to its own inherent potential into a hospitable habitat for human beings.

### **The overabundance of knowledge and fundamental ignorance**

So, understood in this manner, what does the expression 'education' mean for environmental education? In a certain respect environmental education is training – namely in the respect that it aims to impart information and skills. In its true nature, however, it is education. Why we regard it in this manner will become clear in the course of the following deliberations. We would like to begin by giving a formal description of what environmental education is, or should be.

In most cases, environmental education means that knowledge in regard to certain aspects of humankind's dealings with nature is to be increased and deepened. Furthermore, it is expected to provide suggestions that contribute to solutions to problems caused by humankind's dealings with nature. Both aspects are important. Special emphasis, however, is to be laid on a third. Environmental education is to create in people an awareness for who they are and what they do as beings who live in nature and with nature. Thus it is not only the task of environmental education to present and pass on existing knowledge in regard to the environment in an ordered, systematic form. Rather, those who receive such knowledge are also to become capable of dealing with it independently, developing it creatively and applying it in an appropriate manner. They ought to hereby develop a clearer sense of awareness of themselves and their immersion in their social and natural worlds. The knowledge environmental education imparts, therefore, is not an end in itself: it is, rather, a means of advancing an appropriate self-perception on the one hand, and presenting a foundation for correct behaviour on the other.

Of course, this task could seem impossible. Knowledge about the environment is to be found within a large number of different disciplines. These include those sciences dealing with the processes that take place in nature such as physics, geology, chemistry, biology, ecology, medicine and geography. However, taking into account that the source of environmental problems is almost always the behaviour of humans, then – in order to understand what is taking place in our environment – it is necessary to draw upon those sciences that deal with human behaviour. These would be psychology, sociology, politics and law. These sciences and humanities differ greatly from one another in particular ways, be it in their terminology, or in their methods and approach.