



POLITICS OF
NATURE

HOW TO BRING THE SCIENCES INTO DEMOCRACY

441

BRUNO LATOUR

POLITICS OF NATURE

POLITICS OF NATURE

*How to Bring the Sciences
into Democracy*



Bruno Latour

*Translated by
Catherine Porter*

HARVARD UNIVERSITY PRESS
Cambridge, Massachusetts
London, England
2004

Copyright © 2004 by the President and Fellows of Harvard College
All rights reserved
Printed in the United States of America

This book was originally published as *Politiques de la nature*, by Editions La Découverte, Paris.

LIBRARY OF CONGRESS CATALOGING-IN-PUBLICATION DATA

Latour, Bruno.
[Politiques de la nature. English]
Politics of nature : how to bring the sciences into
democracy / Bruno Latour ; translated by Catherine Porter.
p. cm.
Includes bibliographical references and index.
ISBN 0-674-01289-5 (cloth) — ISBN 0-674-01347-6 (pbk.)
1. Political ecology. I. Title.

JA75.8.L3813 2004
320.5'8—dc22 2003057134

*For Isabelle Stengers, Vinciane Despret, and David Western,
three true practitioners of cosmopolitics*

Acknowledgments

The French Ministry of the Environment, through its Division of Studies and Research, has generously supported this unconventional basic research project that aimed from the outset at the production of a book (contract no. 96060). It goes without saying that the ministry is in no way responsible for the result. I have benefited throughout from the indispensable support of Claude Gilbert, whose liaison work made it possible to create a French environment conducive to original research on collective risk. I thank the students of the London School of Economics, and especially Noortje Marres, for helping me during two courses I taught there on the politics of nature and for giving this enterprise its definitive form. I am immensely grateful to the experts who first agreed to put my drafts to the test, especially Marie-Angèle Hermitte, Gérard de Vries, and Laurent Thévenot. To name all the others would mean prematurely exposing the extent of my limitations and my debts. Their most important contributions are included in the notes. I also thank Graham Harman for many witty comments on the French edition.

This book could not have progressed without the invaluable work done by Florian Charvolin on the Ministry of the Environment, by Rémi Barbier on waste products, by Patricia Pellegrini on farm animals, by Elizabeth Rémy on high-tension power lines, by Jean-Claude Petit on nuclear reactors, by Yannick Barthe on the burial of radioactive waste, and by Vololona Rabeharisoa and Michel Callon on the French Muscular Dystrophy Association.

I have dedicated this work to Isabelle Stengers and Vinciane

Despret. I shamelessly looted Stengers' *Cosmopolitics*, as well as Callon's research on the anthropology of the market. During the two years I spent writing this book, my constant aim was to do justice to the truly historic experience of my friend David Western, then director of the Kenya Wildlife Service at a critical juncture—although I remained well aware of the immense distance separating the politics of nature that I was drafting in my study among the meditative cows of the Bourbonnais from the politics of nature that he practices every day in the field among elephants, Masai, tourists, international donors, local politicians, and herds of buffalo and gnus—not to mention his “dear colleagues” and other meat-eating species . . . For the English edition, I abstained from making any major modifications, except for deleting the annex to Chapter 1. I edited and updated some of the footnotes, deleted those relevant only for the French, and added a few to address objections made since the original publication. I made very few changes in the body of the text, except for clarification. Those minor deletions and additions are entirely due to me and not to the translator, Catherine Porter, from whose remarkable skill and benevolence I was fortunate enough to profit once again.

Contents

Introduction: What Is to Be Done with Political Ecology?	I
1. Why Political Ecology Has to Let Go of Nature	9
First, Get Out of the Cave	10
Ecological Crisis or Crisis of Objectivity?	18
The End of Nature	25
The Pitfall of “Social Representations” of Nature	32
The Fragile Aid of Comparative Anthropology	42
What Successor for the Bicameral Collective?	49
2. How to Bring the Collective Together	53
Difficulties in Convoking the Collective	57
First Division: Learning to Be Circumspect with Spokespersons	62
Second Division: Associations of Humans and Nonhumans	70
Third Division between Humans and Nonhumans:	
Reality and Recalcitrance	77
A More or Less Articulated Collective	82
The Return to Civil Peace	87
3. A New Separation of Powers	91
Some Disadvantages of the Concepts of Fact and Value	95
The Power to Take into Account and the Power to Put in Order	102
The Collective’s Two Powers of Representation	108

CONTENTS

x

Verifying That the Essential Guarantees Have Been Maintained	116
A New Exteriority	121
4. Skills for the Collective	128
The Third Nature and the Quarrel between the Two “Eco” Sciences	131
Contribution of the Professions to the Procedures of the Houses	136
The Work of the Houses	164
The Common Dwelling, the <i>Oikos</i>	180
5. Exploring Common Worlds	184
Time’s Two Arrows	188
The Learning Curve	194
The Third Power and the Question of the State	200
The Exercise of Diplomacy	209
War and Peace for the Sciences	217
Conclusion: What Is to Be Done? Political Ecology!	221
<i>Summary of the Argument (for Readers in a Hurry . . .)</i>	231
<i>Glossary</i>	237
<i>Notes</i>	251
<i>Bibliography</i>	287
<i>Index</i>	301

POLITICS OF NATURE

Introduction

What Is to Be Done with Political Ecology?

What is to be done with political ecology? Nothing. What is to be done? Political ecology!

All those who have hoped that the politics of nature would bring about a renewal of public life have asked the first question, while noting the stagnation of the so-called “green” movements. They would like very much to know why so promising an endeavor has so often come to naught. Appearances notwithstanding, everyone is bound to answer the second question the same way. We have no choice: politics does not fall neatly on one side of a divide and nature on the other. From the time the term “politics” was invented, every type of politics has been defined by its relation to nature, whose every feature, property, and function depends on the polemical will to limit, reform, establish, short-circuit, or enlighten public life. As a result, we cannot choose whether to engage in political ecology or not; but we can choose whether to engage in it *surreptitiously*, by *distinguishing* between questions of nature and questions of politics, or *explicitly*, by treating those two sets of questions as a single issue that arises for all *collectives*. While the ecology movements tell us that nature is rapidly invading politics, we shall have to imagine—most often aligning ourselves with these movements but sometimes against them—what a politics finally freed from the sword of Damocles we call nature might be like.

Critics will argue that political ecology already exists. They will tell us that it has countless nuances, from the most profound to the most superficial, including all possible utopian, rational, or free-market forms. Whatever reservations we may have about them, these move-

ments have already woven innumerable bonds between nature and politics. Indeed, this is just what they all claim to be doing: finally undertaking a politics of nature; finally modifying public life so that it takes nature into account; finally adapting our system of production to nature's demands; finally preserving nature from human degradation through a sustainable politics. In short, in many often vague and sometimes contradictory guises, concern for nature has already been introduced into political life.

How could I claim that there is a new task here, one that has not yet been taken up? People may argue over its usefulness, they may quibble over its applications, but we cannot behave as if the task has not already been addressed, as if it had not already been to a considerable extent accomplished. If political ecology has turned out to be such a disappointment, it is not because no one has tried to make a place for nature within public life. If political ecology is losing its influence, according to some, this is simply because the interests lined up against it are too powerful; according to others, it is because political ecology has never had enough substance to compete with the age-old practice of politics as usual. In any event, it is too late to reopen the issue yet again. We need either to bury the movement in the already well-stocked cemetery of outdated ideologies, or else we need to fight still more courageously to ensure that the movement will triumph in its present form. In either case, the die is cast, the concepts are identified, the positions are known. You are showing up too late for a debate whose terms are already set in concrete. The time for reflection is past. You should have spoken up ten years ago.

In this book, I should like to propose a different hypothesis that may justify my ill-timed intervention. From a conceptual standpoint, political ecology has *not yet begun to exist*. The words "ecology" and "politics" have simply been juxtaposed without a thoroughgoing rethinking of either term; as a result, we can draw no conclusions from the trials that the ecology movements have gone through up to now, either about their past failures or about their possible successes. The reason for the delay is very simple. People have been much too quick to believe that it sufficed to recycle the old concepts of nature and politics unchanged, in order to establish the rights and manners of a political ecology. Yet *oikos*, *logos*, *phusis*, and *polis* remain real enigmas so long as the four concepts are not put into play *at the same time*. Political ecolo-

gists have supposed that they could dispense with this conceptual work, without noticing that the notions of nature and politics had been developed over centuries in such a way as to make any juxtaposition, any synthesis, any combination of the two terms *impossible*. And, even more seriously, they have claimed, in the enthusiasm of an ecumenical vision, to have “gotten beyond” the old distinction between humans and things, subjects of law and objects of science—without observing that these entities had been shaped, profiled, and sculpted in such a way that they had gradually become incompatible.

Far from “getting beyond” the dichotomies of man and nature, subject and object, modes of production, and the environment, in order to find remedies for the crisis as quickly as possible, what political ecologists should have done was *slow down* the movement, take their time, then burrow down beneath the dichotomies like the proverbial old mole. Such, at least, is my argument. Instead of cutting the Gordian knot, I am going to shake it around in a lot of different ways. I shall untie a few of its strands in order to knot them back together differently. Where the political philosophy of science is concerned, one must take one’s time, in order not to lose it. The ecologists were a little too quick to pat themselves on the back when they put forward their slogan “Think globally, act locally.” Where “global thinking” is concerned, they have come up with nothing better than a nature already composed, already totalized, already instituted to neutralize politics. To think in truly “global” fashion, they needed to begin by discovering the institutions thanks to which globalism is constructed one step at a time. And nature, as we shall see, could hardly lend itself any less effectively to the process.

Yes, in this book we are going to advance like the tortoise in the fable; and like the tortoise, or at least so I hope, we shall end up passing the hare, which has decided, in its great wisdom, that political ecology is an outmoded question, dead and buried, incapable of producing thought, unable to provide a new foundation for morality, epistemology, and democracy—the same hare that has claimed to be “reconciling man and nature” in a couple of great leaps. In order to force ourselves to slow down, we will have to deal *simultaneously* with the sciences, with natures, and with politics, in the plural.

Scientific production: here is the first obstacle we shall encounter along our way. Political ecology is said to have to do with “nature in its

links with society.” Well and good. But this nature becomes knowable through the intermediary of the sciences; it has been formed through networks of instruments; it is defined through the interventions of professions, disciplines, and protocols; it is distributed via data bases; it is provided with arguments through the intermediary of learned societies. *Ecology*, as its name indicates, has no direct access to nature as such; it is a “-logy” like all the scientific disciplines. Under the heading of science, then, we already find a rather complex mix of proofs and proof-workers, a learned community that acts *as a third party* in all relations with society. And yet, too often, the ecological movements have sought to short-circuit this third party, precisely in order to accelerate their militant progress. For them, science remains a mirror of the world, to the extent that one can almost always, in their literature, take the terms “nature” and “science” to be *synonyms*.¹ My hypothesis is, on the contrary, that the enigma of scientific production must be repositioned at the very core of political ecology. This may well slow down the acquisition of the certainties that were supposed to serve as leverage in the political struggle, but between nature and society we shall include this third term, whose role will turn out to be crucial.

Nature is the second speed bump that political ecology is going to encounter along its route. How, some will object, can nature inconvenience a set of militant and scientific disciplines that have to do with the way to protect nature, to defend it, to insert it into the play of politics, to make an aesthetic object of it, a subject of law, or in any case a concern? And yet this is where the difficulty arises. Every time we seek to mix scientific facts with aesthetic, political, economic, and moral values, we find ourselves in a quandary. If we concede too much to facts, the human element in its entirety tilts into objectivity, becomes a countable and calculable thing, a bottom line in terms of energy, one species among others. If we concede too much to values, all of nature tilts into the uncertainty of myth, into poetry or romanticism; everything becomes soul and spirit. If we mix facts and values, we go from bad to worse, for we are depriving ourselves of both autonomous knowledge and independent morality. We shall never know, for example, whether the apocalyptic predictions with which the militant ecologists threaten us mask the power scientists hold over politicians or the domination politicians exercise over poor scientists.

This book sets forth the hypothesis that political ecology has noth-

ing at all to do with “nature”—that blend of Greek politics, French Cartesianism, and American parks. Let me put it bluntly: *political ecology has nothing to do with nature*. To put it even more strongly, at no time in its short history has political ecology ever had anything to do with nature, with its defense or protection. As I shall show in Chapter 1, the belief that political ecology is interested in nature is the childhood illness of the field, keeping it in a state of impotence by preventing it from ever understanding its own practice. My hope is that the weaning process, even if it appears somewhat harsh, will have more favorable effects than the forced maintenance of the notion of nature as the sole object of political ecology.

The third, most troubling, and most controversial obstacle obviously comes from politics. We know the difference between scientific ecology and political ecology, between the student of ecology and the militant in the ecology movement. We also know how much difficulty ecology movements have always had finding a place on the political chessboard. On the right? The left? The far right? The far left? Neither right nor left? Elsewhere, in government? Nowhere, in utopia? Above, in technocracy? Below, in a return to the sources of wisdom? Beyond, in full self-realization? Everywhere, as the lovely Gaia hypothesis suggests, positing an Earth that would bring all ecosystems together in a single integrated organism? There can be a Gaia science, a Gaia cult, but can there be a Gaia politics? If we reach the point of defending Mother Earth, is that a politics? And if our goal is to put a stop to noise pollution, to shut down city dumps, to reduce the fumes of exhaust pipes, it really isn't worth making the effort to move heaven and earth: a cabinet ministry will do. My hypothesis is that the ecology movements have sought to position themselves on the political chessboard without redrawing its squares, without redefining the rules of the game, without redesigning the pawns.

Nothing in fact proves that the division of labor between human politics and the science of things, between the requirements of freedom and the powers of necessity, can be used as such in order to harbor political ecology. It may even be necessary to hypothesize that the political freedom of humans has never been defined except in order to constrain it by applying the laws of natural necessity. If this proved to be the case, democracy would have been made impotent by design. Human beings are born free; everywhere they are in chains; the social

contract claims to emancipate them; political ecology alone can do this, but political ecology itself cannot expect to be saved by free men and women. Obligated to redefine politics and science, freedom and necessity, the human and the inhuman, in order to find a niche for itself, political ecology has lost heart along the way. It thought it could rely on nature to hasten the advent of democracy. Today it lacks both. The task must be taken up again from a different angle, by a longer and more perilous detour.

By what authority can I subject political ecology to the three tests of scientific production, the abandonment of nature, and the redefinition of the political? Are the author and those who have inspired him militant ecologists? No. Recognized ecologists? Not that, either. Influential politicians, then? Certainly not. If I could plead any authority at all, I am well aware that I would save my readers time: they could trust me. But the point is not to save time, to speed up, to synthesize masses of data, to solve urgent problems in a hurry, to ward off dramatic cataclysms by equally dramatic actions. The point is not even to draw upon meticulous erudition in order to do justice to those who think seriously about ecology. In this book, the point is simply to raise a familiar question once again for myself, and perhaps for myself alone: What do nature, science, and politics have to do with one another? Weakness, it seems to me, may lead further than strength.

If I have no authority of my own, I nevertheless benefit from a particular advantage, and this alone is what authorizes me to address my readers: I am interested in political production no more and no less than I am interested in scientific production. Or rather, I *admire* politicians *as much as I admire* scientists. Think about it: this twofold respect is not so common. My absence of authority offers precisely the guarantee that I will not use science to subjugate politics, or politics to subjugate science. My claim is that I can turn this minuscule advantage into a major asset. To the question with which I began—What is to be done with political ecology?—I do not yet have a definitive answer. I only know that if I did not try to modify the terms of the debate by finding a new way to tie the Gordian knot of science and politics, the full-scale experiment in which we are all engaged would prove nothing one way or the other. It would always lack an adapted protocol; I would always reproach myself for missing the opportunity to redefine politics that ecology might have offered.

There is one more constraint to which I have sought to subject myself. Although I have to refashion the three conjoined notions of nature, politics, and science, I have chosen to use neither the denunciatory nor the prophetic tone that often accompanies the works of political ecology. Although I am preparing to work through a series of hypotheses in which each one will be stranger than the one before, it is nevertheless *common sense*² that I seek to reflect above all. As it happens, common sense is opposed for the time being to *good sense*^{*}. To proceed quickly, I shall have to go slowly, and to be simple, I shall have to present a provisional appearance of radicality. My goal is thus not to overturn the established order of concepts but to describe the actual state of affairs: political ecology is already doing in practice everything that I assert it has to do. I am simply betting that the urgencies of action have prevented it from pinpointing the originality of what it was accomplishing in a groping fashion, because it did not understand the reversal in the position of the sciences that these innovations implied. The only service I can render political ecology is to offer it an alternative interpretation of itself, a different common sense, so that it can try to determine whether it finds itself in a more comfortable position or not. Up to now, as I see it, philosophers have offered to clothe political ecology only in ready-to-wear garments. I believe it deserves made-to-order garb: perhaps it will find itself less constricted, and the fit a little more comfortable.³

To keep this book to a reasonable length, I have said little about the field studies on which it is based. Because I could not make the basic argument more accessible by shoring it up with solid empirical proof, I have organized it meticulously in such a way that readers always know what difficulties await them: in addition to the glossary, I have also drawn up a summary at the end that can serve as a crib sheet.⁴

In Chapter 1 we shall rid ourselves of the notion of nature by turning first to the contributions of the sociology of the sciences, then to those of the ecology movements (their practice, as distinct from their philosophy), and finally to those of comparative anthropology. Political ecology, as we shall see, cannot hold on to nature. In Chapter 2, I shall proceed to an exchange of properties between humans and nonhumans^{*}; this will allow us to imagine, under the name of collective^{*}, a successor to the political institutions that have been awkwardly brought together up to now under the aegis of nature and soci-

ety. This new collective will allow us to proceed in Chapter 3 to the transformation of the venerable distinction between facts and values; we shall replace it with a new separation of powers* that will offer us more satisfactory moral guarantees. The distinction between two new assemblies—the first of which will ask, “How many are we?” and the second, “Can we live together?”—will serve political ecology as its Constitution. In Chapter 4, readers will be rewarded for their efforts by a “guided tour” of the new institutions and by a presentation of the new professions contributing to the animation of a political body that has at last become viable. The difficulties will begin again in Chapter 5, where we shall be obliged to find a successor to the ancient split that separated nature (in the singular) from cultures (in the plural), in order to raise once again the question of the number of collectives and the progressive composition of the common world* that the notion of nature, like that of society, had prematurely simplified. Finally, in the conclusion, I shall address questions about the type of Leviathan that allows political ecology to leave the state of nature. In view of the spectacle that has been embraced throughout, readers will perhaps forgive me the aridity of the route.

Before ending this introduction, I need to define the particular use that I am going to make of the key term “political ecology”*. I am well aware that it is customary to distinguish scientific ecology from political ecology, the former being practiced in laboratories and field expeditions, the latter in militant movements and in Parliament. But as I propose to reshape the very distinction between the two terms “science” and “politics” in every particular, it will be clear that we cannot take that distinction at face value, for it is going to become untenable as we progress. After a few pages, at all events, there will be little point in differentiating between those groups of people who want to understand ecosystems, defend the environment, or protect nature, and those who want to revive public life, since we are going to learn instead to distinguish the composition of the common world that is built “according to due process” from that of a world elaborated without rules. For the time being, I shall retain the term “political ecology,” which remains an enigmatic emblem allowing me to designate—without defining it too quickly—the right way to compose a common world, the kind of world the Greeks called a *cosmos**.



Why Political Ecology Has to Let Go of Nature

An interest in nature, we are told, is precisely what is novel about political ecology. In this view, political ecology extends the narrow field of the classic preoccupations of politics to new beings that have previously found themselves underrepresented or badly represented. In this first chapter, I want to challenge the solidity of the link between political ecology and nature. Despite what it often asserts, I am going to show that political ecology, at least in its theories, has to let go of nature. Indeed, nature is the chief obstacle that has always hampered the development of public discourse. This argument—which is only paradoxical in appearance, as we shall see—requires us to bring together three distinct findings, one from the sociology of the sciences, another from the practice of the ecology movements, and the third from comparative anthropology. But this necessity is what makes our present task so difficult: in order to approach the true subject of our work, we need to take for granted demonstrations that would call for several volumes each. I can either waste precious time convincing my readers of this, or else I can move ahead as quickly as possible, while asking readers to judge the tree only by its fruits: that is, to wait until the following chapters to see how the postulates presented here make it possible to renew the exercise of public life.

Let me begin with one small contribution of science studies, without which it would be impossible to cover the necessary ground. In all that follows, I shall ask my readers to agree to dissociate *the sciences*—in the plural and in small letters—from *Science*—in the singular and capitalized. I ask readers to acknowledge that discourse on Science has

no direct relation to the life of the sciences, and that the problem of knowledge is posed quite differently, depending on whether one is brandishing Science or clinging to the twists and turns of the sciences as they are developed. I ask readers finally to grant that if nature—in the singular—is closely linked with Science, the sciences for their part in no way require such unification. If we were trying to approach the question of political ecology as if Science and the sciences were one and the same enterprise, we would end up in radically different positions. In the first section, in fact, I am going to define Science* as *the politicization of the sciences through epistemology in order to render ordinary political life impotent through the threat of an incontestable nature*. I shall of course have to justify this definition, which seems so contrary to good sense. But if the single word “Science” already combines the imbroglia of politics, nature, and knowledge that we must learn to disentangle, it is clear that we cannot set out on our journey without removing the threat that Science has always brought to bear as much on the exercise of politics as on the practices of scientific researchers.¹

First, Get Out of the Cave

If we want to move ahead quickly while remaining precise, nothing is as concise as a myth. As it happens, in the West, through the ages we have become heirs to an allegory that defines the relations between Science and society: the allegory of the Cave*, recounted by Plato in the *Republic*. I have no intention of getting lost in the twists and turns of Greek philosophy. I shall simply focus on two points of rupture, two radical shifts that will help us dramatize all the virtues that might be expected of Science. The Philosopher, and later the Scientist, have to free themselves of the tyranny of the social dimension, public life, politics, subjective feelings, popular agitation—in short, from the dark Cave—if they want to accede to truth. Such is the first shift, according to the allegory. There exists no possible continuity between the world of human beings and access to truths “not made by human hands.”² The allegory of the Cave makes it possible to create in one fell swoop a certain idea of Science and a certain idea of the social world that will serve as a foil for Science. But the myth also proposes a second shift: the Scientist, once equipped with laws not made by human hands that he has just contemplated because he has succeeded in freeing himself

from the prison of the social world, can go back into the Cave so as to bring order to it with incontestable findings that will silence the endless chatter of the ignorant mob. Once again, there is no continuity between the henceforth irrefutable objective law and the human—all too human—logorrhea of the prisoners shackled in the shadows, who never know how to bring their interminable disputes to an end.

The illuminating power of this allegory, the source of its inexhaustible effectiveness, stems from the following peculiarity: neither of these two radical shifts prevents the emergence of its exact contrary, and the contraries turn out to be combined in one and the same heroic figure, that of the Philosopher-Scientist, at once Lawgiver and Savior. Although the world of truth differs absolutely, not relatively, from the social world, the Scientist can go *back and forth* from one world to the other no matter what: the passageway closed to all others is open to him alone. In him and through him, the tyranny of the social world is miraculously interrupted when he leaves, so that he will be able to contemplate the objective world at last; and it is likewise interrupted when he returns, so that like a latter-day Moses he will be able to substitute the legislation of scientific laws, which are not open to question, for the tyranny of ignorance. Without this double interruption there can be no Science, no epistemology, no paralyzed politics, no Western conception of public life.

In the original myth, as we know, the Philosopher managed only with the greatest difficulty to break the chains that attached him to the shadowy world, and when he returned to the Cave after exhausting trials, his former fellow prisoners put the bearer of good news to death. Over the centuries, thank God, the fate of the Philosopher-turned-Scientist has greatly improved. Today, sizable budgets, vast laboratories, huge businesses, and powerful equipment allow researchers to come and go in complete safety between the social world and the world of Ideas, and from Ideas to the dark Cave where they go to bring light. The narrow door has become a broad boulevard. In twenty-five centuries, however, one thing has not changed in the slightest: the double rupture, which the form of the allegory, endlessly repeated, manages to maintain as radically as ever. Such is the obstacle that we shall have to remove if we want to change the very terms by which public life is defined.

However vast the laboratories may be, however attached research-

ers may be to industrialists, however many technicians they may have to employ, however active the instruments for transforming data, however constructive the theories, none of this matters; you will be told straight out that Science can survive only as long as it distinguishes absolutely and not relatively between things “as they are” and the “representation that human beings make of them.” Without this division between “ontological questions” and “epistemological questions,” all moral and social life would be threatened.³ Why? Because, without it, there would be no more reservoir of incontrovertible certainties that could be brought in to put an end to the incessant chatter of obscurantism and ignorance. There would no longer be a sure way to distinguish what is true from what is false. One could no longer break free of social determiners to understand what things themselves are, and, for want of that essential comprehension, one could no longer cherish the hope of pacifying public life, which is always threatened by civil war. Nature and human beliefs about nature would be mixed up in frightful chaos. Public life, having imploded, would lack the transcendence without which no interminable dispute could end.

If you point out politely that the very ease with which scientists pass from the social world to the world of external realities, the facility they demonstrate through this business of importing and exporting scientific laws, the fluency of the discourse in which they convert human and objective elements, prove clearly enough that there is no rupture between the two worlds and that they are dealing rather with a seamless cloth, you will be accused of relativism; you will be told that you are trying to give Science a “social explanation”; your unfortunate tendencies toward immoralism will be denounced; you may be asked publicly if you believe in the reality of the external world or not, or whether you are ready to jump out a fifteenth-story window because you think that the laws of gravity, too, are “socially constructed”!⁴

We have to be able to deflect such sophistry on the part of philosophers of the sciences; it has been used for twenty-five centuries to silence politics as soon as the question of nature comes up. Let us face the facts at the outset: there is no way out of this trap. And yet, at first glance, nothing ought to be more innocent than epistemology*, knowledge about knowledge, meticulous descriptions of scien-

tific practices in all their complexity. Let us not confuse this highly respectable form of epistemology with an entirely different activity that I shall call (political) epistemology*, using parentheses because this discipline claims to be limited to Science, whereas its aim is really just to humiliate politics.⁵ The goal of this form of epistemology is by no means to *describe* the sciences, contrary to what its etymology might suggest, but to *short-circuit* any and all questioning as to the nature of the complex bonds between the sciences and societies, through the invocation of Science as the only salvation from the prison of the social world. The double rupture of the Cave is not based on any empirical investigation or observed phenomena; it is even contrary to common sense, to the daily practice of all scientists; and if it ever did exist, twenty-five centuries of sciences, laboratories, and scholarly institutions have long since done away with it. But it cannot be helped: the epistemology police will always cancel out that ordinary knowledge by creating the double rupture between elements that everything connects, and by depicting those who cast doubt on the double rupture as relativists, sophists, and immoralists who want to ruin any chance we may have to accede to external reality and thus to reform society on the rebound.

For the idea of a double rupture to have resisted all contradictory evidence over the centuries, there must be a powerful reason buttressing its necessity. This reason can only be political—or religious. We have to suppose that (political) epistemology depends on something else that holds it in place and lends it its formidable efficacy. How could we explain, otherwise, the vindictive passion with which science studies are still being greeted? If it were only a matter of describing the practices of laboratories, we would not hear such loud protests, and the epistemologists would be able to mingle unproblematically with their colleagues in anthropology. By becoming so violently indignant, the (political) epistemologists have tipped their hand. Their trap is sprung. It no longer catches any flies.

What is the use of the allegory of the Cave today? It allows a Constitution* that organizes public life *into two houses*.⁶ The first is the obscure room depicted by Plato, in which ignorant people find themselves in chains, unable to look directly at one another, communicating only via fictions projected on a sort of movie screen; the second is located outside, in a world made up not of humans but of nonhumans,

indifferent to our quarrels, our ignorances, and the limits of our representations and fictions. The genius of the model stems from the role played by a very small number of persons, the only ones capable of going back and forth between the two assemblies and converting the authority of the one into that of the other. Despite the fascination exercised by Ideas (even upon those who claim to be denouncing the idealism of the Platonic solution), it is not at all a question of opposing the shadow world to the real world, but of *redistributing powers* by inventing both a certain definition of Science and a certain definition of politics. Appearances notwithstanding, idealism is not what is at issue here. The myth of the Cave makes it possible to render all democracy impossible by neutralizing it; that is its only trump card.

In this Constitution dispensed by (political) epistemology, how are the powers in fact distributed? The first house brings together the totality of speaking humans, who find themselves with no power at all save that of being ignorant in common, or of agreeing by convention to create fictions devoid of any external reality. The second house is constituted exclusively of real objects that have the property of defining what exists but that lack the gift of speech. On the one hand, we have the chattering of fictions; on the other, the silence of reality. The subtlety of this organization rests entirely on the power given to *those who can move back and forth between the houses*. The small number of handpicked experts, for their part, presumably have the ability to speak (since they are humans), the ability to tell the truth (since they escape the social world, thanks to the asceticism of knowledge), and, finally, the ability to bring order to the assembly of humans by keeping its members quiet (since the experts can return to the lower house in order to reform the slaves who lie chained in the room). In short, these few elect, as they themselves see it, are endowed with the most fabulous political capacity ever invented: *They can make the mute world speak, tell the truth without being challenged, put an end to the interminable arguments through an incontestable form of authority that would stem from things themselves.*

And yet, at first glance, such a separation of powers seems impossible to maintain. It requires too many implausible hypotheses, too many undue privileges. People would never agree to define themselves as a collection of prisoners with life sentences who can neither speak directly to one another nor touch what they are talking about, and

who find themselves reduced to chattering without saying anything at all. Moreover, no one would ever agree to give so many powers to a ferry-load of experts whom no one had elected. Even if we were to grant this first series of absurdities, how could we imagine that Scientists and only Scientists could accede to inaccessible things themselves? More outrageous still, by what miracle would mute things suddenly become capable of speaking? By what fourth or fifth conjuring trick would real things, once granted speech through the mouths of philosopher-kings, have the unheard-of property of becoming immediately unchallengeable and of shutting up the other humans? How can we imagine that these nonhuman objects can be mobilized to solve the problems of the prisoners, whereas the human condition has already been defined by a break with all reality? No, there is no question about it: we cannot pass this fairy tale off as a political philosophy like any other—and even less as superior to all others.

Alas, to do so would be to forget the tiny but indispensable contribution of (political) epistemology: thanks to the parentheses, we can name one of the two assemblies “Science” and the other “politics.” We are going to turn this eminently *political* question of the distribution of power between two houses into a matter of distinguishing between a huge, purely epistemological question about the nature of Ideas and the external world as well as about the limits of our knowledge, *on the one hand*, and an exclusively political and sociological question about the nature of the social world, *on the other hand*. It has happened: political philosophy is becoming irremediably one-eyed, a monstrous and barbaric Cyclops. The indispensable work of political epistemology turns out to be buried forever beneath the apparent confusion that the epistemology police go about creating between politics (in the sense of what distinguishes Science from the Ideas of the Cave world) and politics (in the sense of the passions and interests of those who lie in the Cave).

Whereas it is a question of a constitutional theory that has humans deprived of all reality and nonhumans holding all the power sitting in separate houses, we shall be told calmly that one must be very careful “not to mix the sublime epistemological questions”—on the nature of things—“with the lowly political questions”—on values and the difficulty of living together. It’s really so simple! If you try to loosen the trap by shaking it, it will close more tightly still, since you will be ac-

cused of seeking to “confuse” political questions with cognitive ones! People will claim that you are politicizing Science, that you seek to reduce the external world to what the chained Helots put into their world of fancies! That you are abandoning all criteria for judging what is true and what is false! The more you argue, the more you will be challenged. Those who have politicized the sciences* in order to make political life impossible even find themselves in a position to accuse you—you!—of polluting the purity of the sciences by introducing base social considerations. Those who have split public life into Science and society through a sophism are going to accuse you of sophistry! You will die of hunger or suffocation before you have gnawed through the bars of the prison in which you freely locked yourself up.

It would be too easy to see the political intent behind the epistemological pretensions if we had not swallowed, thanks to the allegory of the Cave, a modest supplementary hypothesis: the entire machine has functioned only if people have found themselves plunged into the darkness of the cave in advance, every individual cut off from every other, chained to his or her bench, without contact with reality, prey to rumors and prejudices, already prepared to go for the jugular of those who come in to reform things. In short, without a certain definition of sociology, the epistemology police is unthinkable. Is this how people really live? It hardly matters. The myth requires first of all that we humans descend into the Cave, cut our countless ties with reality, lose all contact with our fellows, abandon the work of the sciences, and begin to become uncultivated, hate-filled, paralyzed, and gorged with fiction. Then and only then will Science come to save us. Weaker in this respect than the biblical story of the fall, the myth begins with a state of abjection whose origin it carefully refrains from revealing. Now, no original sin requires public life to begin with the age of the Caves. (Political) epistemology has somewhat overestimated its capabilities: it can amuse us for a moment in a darkened room with its own shadow theater that contrasts the forces of Good with those of Evil, Right with Might, but it cannot require us to buy a ticket to watch its edifying spectacle forever. Since Enlightenment can blind us only if (political) epistemology makes us go down into the Cave in the first place, there exists a much simpler means than Plato’s to get out of the Cave: we need not climb down into it to begin with!

Any hesitation over the externality of Science was supposed to

thrust us willy-nilly into “mere social construction.” I maintain that it is fairly easy to escape the menacing choice between the reality of the external world and the prison of the social world. A trap like that can hold up only as long as no one simultaneously examines the idea of Science and the idea of society, as long as no one entertains *simultaneous* doubts about epistemology and sociology. Those who study Science have to believe what the sociologists say about politics, and, conversely, the sociologists have to believe what the (political) epistemologists say about Science. In other words, there must not be any sociologists *of the sciences*, for then the alternatives would be too obvious, the contrast would be weakened, it would be understood that nothing in Science resembles the sciences, and that nothing in the collective resembles the prison of the social world. Salvation through Science comes only in a world deprived in advance of any means to become moral, reasonable, and learned. But in order for this theory of Science to take the place of an explanation about the work of the sciences, a no less absurd theory of the social world has to take the place of analysis of public life.⁸

It is hard to believe that epistemological questions have been taken seriously, viewed as though they were indeed distinct from the organization of the social body. Once it has been deflected, the ruse loses all its effectiveness. Henceforth, when we hear censors ask “big” questions on the existence of an objective reality, we shall no longer make a huge effort to respond by trying to prove that we are “realists” no matter what. It will suffice to retort with another question: “Hmm, how curious: So you are trying to organize civic life *with two houses*, one of which would have authority and not speak, while the other would have speech but no authority; do you really think this is reasonable?” Against the epistemology police, one must engage in politics, and certainly not epistemology. And yet Western political thought has been paralyzed for a long time by this threat from elsewhere that could at any moment leave the essential part of its deliberations devoid of all substance: the unchallengeable nature of inhuman laws, Science confused with the sciences, politics reduced to the prison of the Cave.

By discarding the allegory of the Cave, we have made considerable progress, for we now know how to avoid the trap of the politicization of the sciences.⁹ The object of the present work is not to prove this small point from science studies, but to spell out its consequences for

political philosophy. How can we conceive of a democracy that does not live under the constant threat of help that would come from Science? What would the public life of those who refuse to go into the Cave look like? What form would the sciences take if they were freed from the obligation to be of political service to Science? What properties would nature have if it no longer had the capacity to suspend public discussion? Such are the questions that we can begin to raise once we have left the Cave en masse, at the end of a session of (political) epistemology that we notice retrospectively has never been anything but a *distraction* on the road that ought to have led us to political philosophy. Just as we have distinguished Science from the sciences, we are going to contrast power politics*, inherited from the Cave, with politics*, conceived as *the progressive composition of the common world*.

Ecological Crisis or Crisis of Objectivity?

Some observers will object that science studies are not very widespread and that it seems difficult to use this discipline to reinvent shared forms of public life. How can such an esoteric field help us define a future common sense? It can, if we combine it with the immense social movement of political ecology, which it will unexpectedly clarify. From now on, whenever people talk to us about nature, whether to defend it, control it, attack it, protect it, or ignore it, we will know that they are thereby designating *the second house of a public life that they wish to paralyze*. Thus, if the issue is a problem of political Constitution and not at all the designation of a part of the universe, two questions arise: Why do those who are addressing us want two distinct houses, of which only one would bear the name politics? What power is available to those who shuttle back and forth between the two? Now that we have left the myth of the Cave behind and are no longer intimidated by the appeal to nature, we are going to be able to sort out what is traditional in political ecology and what is new, what extends the lowly epistemology police and what invents the political epistemology* of the future.

We need not wait to find out. The literature on political ecology, read from this perspective, remains very disappointing. Indeed, most of the time it changes nothing at all; it merely rehashes the modern* Constitution of a *two-house* politics in which one house is called poli-

tics and the other, under the name of nature, renders the first one powerless.¹⁰ These revisitings or “remakes” even become entertaining when their authors claim to be passing from the anthropocentrism of the moderns—sometimes called “Cartesian”—to the nature-centrism of the ecologists, as if, from the very beginning of Western culture, starting with the original myth of the fall into the Cave, no one had ever thought about anything but forming public life around *two* centers, of which nature was one. If political ecology poses a problem, it is not because it *finally* introduces nature into political preoccupations that had earlier been too exclusively oriented toward humans, it is because it *continues, alas, to use nature to abort politics*. For the cold, gray nature of the ancient (political) epistemologists, the ecologists have simply substituted a greener, warmer nature. For the rest, these two natures dictate moral conduct in the place of ethics: apolitical, they decide on policy in place of politics.¹¹

Why take an interest in political ecology, then, if its literature only manages to plunge us back into the Cave? Because, as we are going to show in this second section, political ecology has nothing to do, or rather, *finally no longer* has anything to do with nature, still less with its conservation, protection, or defense.¹² To follow this delicate operation, after distinguishing the sciences from Science, readers have to agree to introduce a distinction between the *practice* of ecology movements over thirty years or so, and the *theory* of that militant practice. I shall call the first militant ecology* and the second the philosophy of ecology* or *Naturpolitik* (an expression modeled on Realpolitik). If I often appear unfair to the latter, it is because I am so passionately interested in the former.¹³

There is always danger, as I am well aware, in distinguishing between theory and practice: I run the risk of implying that the militants do not really know what they are doing, and that they have succumbed to an illusion that the philosopher takes it upon himself to denounce. If I resort nevertheless to this perilous distinction, it is because the “green” movements, by seeking to restore a political dimension to nature, have touched the heart of what I call the modern* Constitution.¹⁴ Now, through a strategic oddity that is the object of this chapter, *under the pretext of protecting nature, the ecology movements have also retained the conception of nature that makes their political struggle hopeless*. Because “nature” is made, as we shall see throughout, precisely to evis-

cerate politics, one cannot claim to retain it even while tossing it into the public debate. Thus we have every right, in the curious case of political ecology, to speak of a growing divorce between its burgeoning practice and its theory about that practice.¹⁵

As soon as we begin to turn our attention toward the practice of ecological crises, we notice at once that they are never presented in the form of crises of “nature.” They appear rather as *crises of objectivity*, as if the new objects that we produce collectively have not managed to fit into the Procrustean bed of two-house politics, as if the “smooth” objects of tradition were henceforth contrasted with “fuzzy” or tangled objects that the militant movements disperse in their wake. We need this incongruous metaphor to emphasize to what extent the crisis bears on *all* objects, not just on those on which the label “natural” has been conferred—this label is as contentious, moreover, as those of *appellations d’origine contrôlée*.¹⁶ Political ecology thus does not reveal itself owing to a crisis of ecological objects, but through a generalized constitutional crisis that bears upon *all objects*. Let us try to show this by drawing up a list of the differences that separate what militant ecology thinks it is doing from what it is actually doing in practice.¹⁷

1. Political ecology claims to speak about nature, but it actually speaks of countless imbroglios that always presuppose human participation.

2. It claims to protect nature and shelter it from mankind, but in every case this amounts to including humans increasingly, bringing them in more and more often, in a finer, more intimate fashion and with a still more invasive scientific apparatus.

3. It claims to defend nature for nature’s sake—and not as a substitute for human egotism—but in every instance, the mission it has assigned itself is carried out by humans and is justified by the well-being, the pleasure, or the good conscience of a small number of carefully selected humans—usually American, male, rich, educated, and white.

4. It claims to think in terms of Systems known through the Laws of Science, but whenever it proposes to include everything in a higher cause, it finds itself drawn into a scientific controversy in which the experts are incapable of reaching agreement.

5. It claims to seek its scientific models in hierarchies governed by ordered cybernetic loops, but it always puts forward surprising,

heterarchic assemblages whose reaction times and scales always take by surprise those who think they are speaking of Nature's fragility or its solidity, its vastness or its smallness.

6. Political ecology claims to speak of the Whole, but it succeeds in upsetting opinion and modifying power relations only by focusing on places, biotopes, situations, or particular events—two whales imprisoned on the ice, a hundred elephants in Amboseli, thirty plane trees on the Place du Tertre in Montmartre.

7. It claims to be increasing in power and to embody the political power of the future, but it is reduced everywhere to a tiny portion of electoral strap-hangers. Even in countries where it is a little more powerful, it contributes only a supporting force.

Let us now go back over the list and take as strengths what at first appeared to be weaknesses:

1. Political ecology does not speak about nature and has never sought to do so. It has to do with associations of beings that take complicated forms—rules, apparatuses, consumers, institutions, mores, calves, cows, pigs, broods—and that it is completely superfluous to include in an inhuman and ahistorical nature. Nature is not in question in ecology: on the contrary, ecology dissolves nature's contours and redistributes its agents.

2. Political ecology does not seek to *protect* nature and has never sought to do so. On the contrary, it seeks to take charge, in an even more complete and mixed fashion, of an even greater diversity of entities and destinies. If modernism claimed to be detached from the constraints of the world, ecology for its part gets attached to everything.

3. Political ecology has never claimed to serve nature for nature's own good, for it is absolutely incapable of defining the common good of a dehumanized nature. It does much better than defend nature (either for its own sake or for the good of future humans). It *suspends* our certainties concerning the sovereign good of humans and things, ends and means.¹⁸

4. Political ecology does not know what an Ecologico-Political System is and does not proceed thanks to a complex Science whose model and means would moreover entirely escape poor thinking, searching humanity. This is its great virtue. It *does not know* what does or does not constitute a system. It does not know what is connected to what. The scientific controversies in which it gets embroiled are precisely

what distinguish it from all the other scientifico-political movements of the past. It is the only movement that can benefit from a different politics of science.

5. Neither cybernetics nor hierarchies make it possible to understand the unbalanced, chaotic, Darwinian, sometimes local and sometimes global, sometimes rapid and sometimes slow agents that it brings to light through a multitude of original experimental arrangements, all of which taken together fortunately do not constitute a secure Science.

6. Political ecology is incapable of integrating the entire set of its localized and particular actions into an overall hierarchical program, and it has never sought to do so. This ignorance of the totality is precisely what saves it, because it can never array little humans and great ozone layers, or little elephants and medium-sized ostriches, in a single hierarchy. The smallest can become the largest. "It was the stone rejected by the builders that became the keystone" (Matt. 21:42).

7. Political ecology has fortunately remained *marginal* up to now, for it has not yet grasped either its own politics or its own ecology. It thinks it is speaking of Nature, System, a hierarchical Totality, a world without man, an assured Science, and it is precisely these overly ordered pronouncements that marginalize it, whereas the isolated pronouncements of its practice would perhaps allow it finally to attain political maturity, if we managed to grasp their meaning.

Thus we cannot characterize political ecology by way of a crisis of nature, but by way of a crisis of objectivity. The risk-free objects*, the smooth objects to which we had been accustomed up to now, are giving way to *risky attachments*, tangled objects.¹⁹ Let us try to characterize the difference between the old objects and the new ones, between matters of fact and what could be called *matters of concern**, now that we have gotten ourselves unaccustomed to the notion of nature.

Matters of fact, that is, risk-free objects, had four essential characteristics that made it possible to recognize them at a glance. First of all, the object produced had *clear boundaries*, a well-defined essence*, well-recognized properties. It belonged without any possible question to the world of things, a world made up of persistent, stubborn, nonmental entities defined by strict laws of causality, efficacy, profitability, and truth. Next, the researchers, engineers, entrepreneurs, and technicians who conceived and produced these objects and brought

them to market became *invisible*, once the object was finished. Scientific, technical, and industrial activity remained out of sight. Thirdly, this “risk-free object” brought with it some expected or unexpected consequences, to be sure, but these were always conceived in the form of an impact on a *different* universe, composed of entities less easy to delimit, and which were designated by vague names such as “social factors,” “political dimensions,” or “irrational aspects.” In conformity with the myth of the Cave, the risk-free object of the old constitutional order gave the impression of falling like a meteor to bombard from outside a social world that served as its target. Finally, sometimes years later, certain of these objects could entail senseless risks, even cataclysms. Still, these unexpected consequences, even the catastrophic ones, *never had an impact on* the initial definition of the object, with its boundaries and its essence, since they always belonged to a world lacking any common measure with that of objects: the world of unpredictable history. Contrary to the impacts that one could retrace no matter what, the cataclysmic consequences had no retroactive effects on the objects’ responsibilities or their definitions; they could never serve as lessons to their authors so that the latter might modify the properties of their objects. Matters of fact were just that: matters of fact.

The case of asbestos can serve as a model, since it is probably one of the last objects that can be called modernist. It was a perfect substance (was it not called a magic material?), at once inert, effective, and profitable. It took decades before the public health consequences of its diffusion were finally attributed to it, before asbestos and its inventors, manufacturers, proponents, and inspectors were called into question; it took dozens of alerts and scandals before work-related illnesses, cancers, and the difficulties of asbestos removal ended up being traced back to their cause and counted among the properties of asbestos, whose status shifted gradually: once an ideal inert material, it became a nightmarish imbroglio of law, hygiene, and risk. This type of matters of fact still constitutes a large part of the population of the ordinary world in which we live. Yet like weeds in a French garden, other objects with more extravagant forms are beginning to blur the landscape by superimposing their own branchings on those of modernist objects.²⁰

As we see it, the best way to characterize ecological crises is to rec-

ognize, in addition to smooth objects, the proliferation of matters of concern*.²¹ They are of an entirely different character from the earlier ones; this explains why we talk about a *crisis* every time they emerge. Unlike their predecessors, they have no clear boundaries, no well-defined essences, no sharp separation between their own hard kernel and their environment. It is because of this feature that they take on the aspect of tangled beings, forming rhizomes and networks. In the second place, their producers are no longer invisible, out of sight; they appear in broad daylight, embarrassed, controversial, complicated, implicated, with all their instruments, laboratories, workshops, and factories. Scientific, technological, and industrial production has been an integral part of their definition from the beginning. In the third place, these quasi objects have no impact, properly speaking; they do not behave as if they had fallen from elsewhere onto a world different from themselves. They have numerous connections, tentacles, and pseudopods that link them in many different ways to beings as ill assured as themselves and that consequently *no longer* constitute *another universe, independent of the first*. To deal with them, we do not have the social or political world on one side and the world of objectivity and profitability on the other. Finally, and this may be the strangest thing of all, they can no longer be detached from the unexpected consequences that they may trigger in the very long run, very far away, in an incommensurable world. On the contrary, everyone paradoxically expects the unexpected consequences that they will not fail to produce—consequences that properly belong to them, for which they accept responsibility, from which they draw lessons, according to a quite visible process of apprenticeship that rebounds onto their definition and that unfolds in the same universe as they do.

The famous prions, probably responsible for the so-called mad cow disease, symbolize these new matters of concern as much as asbestos symbolizes the old risk-free matters of fact.²² We argue that the growth of political ecology can be traced through the multiplication of these new beings that henceforth blend their existence with that of classic objects, which always form the background of the common landscape.²³ It seems to me that this difference between risk-free matters of fact and risky matters of concern is much more telling than the impossible distinction between the crises that call nature into question and those that call society into question. We are not witnessing

the emergence of questions about nature in political debates, but the progressive transformation of all matters of facts into disputed states of affair, which nothing can limit any longer to the natural world alone—which nothing, precisely, can *naturalize* any longer.

By translating the notion of ecological crisis in this way, we are going to be able to account for the strangest feature of political ecology, one that runs entirely contrary to what political ecology claims to be doing. Far from *globalizing* all that is at stake under the auspices of nature, the practice of political ecology can be recognized precisely by the *ignorance* it turns out to manifest about the respective importance of the actors.²⁴ Political ecology does not shift attention from the human pole to the pole of nature; it shifts from *certainty* about the production of risk-free objects (with their clear separation between things and people) to *uncertainty* about the relations whose unintended consequences threaten to disrupt all orderings, all plans, all impacts. What it calls back into question with such remarkable effectiveness is precisely the possibility of *collecting* the hierarchy of actors and values, according to an order fixed once and for all.²⁵ An infinitesimal cause can have vast effects; an insignificant actor becomes central; an immense cataclysm disappears as if by magic; a miracle product turns out to have nefarious consequences; a monstrous being is tamed without difficulty.²⁶ With political ecology, one is always caught off-guard, struck sometimes by the robustness of systems, sometimes by their fragility.²⁷ It may well be time to take certain ecologists' apocalyptic predictions about the "end of nature" seriously.

The End of Nature

We understand now why political ecology has to let go of nature: *if "nature" is what makes it possible to recapitulate the hierarchy of beings in a single ordered series, political ecology is always manifested, in practice, by the destruction of the idea of nature.* A snail can block a dam; the Gulf Stream can turn up missing; a slag heap can become a biological preserve; an earthworm can transform the land in the Amazon region into concrete. Nothing can line up beings any longer by order of importance. When the most frenetic of the ecologists cry out, quaking: "Nature is going to die," they do not know how right they are. Thank God, nature is going to die. Yes, the great Pan is dead. After the death

of God and the death of man, nature, too, had to give up the ghost. It was time: we were about to be unable to engage in politics any more at all.

Readers may protest that this is a paradox. If they do, it is because they have the popularized version of deep ecology in mind: a movement with vague contours that claims to be reforming the politics of humans in the name of the “higher equilibria of nature.” Now, deep ecology, in my interpretation, is situated as far as possible from political ecology; moreover, the confusion between these two approaches is what constantly disrupts the strategy of the “green” movements. The latter, persuaded that they could organize themselves along a spectrum ranging from the most radical to the most reformist, have in effect agreed to put deep ecology at the far end of the spectrum. By a parallelism that is not accidental, deep ecology fascinates political ecology, as communism fascinated socialism—and as the serpent fascinates its prey. But deep ecology is not an extreme form of political ecology; *it is not a form of political ecology at all*, since the hierarchy of beings to which it lays claim is entirely composed of those modern, smooth, risk-free stratified objects in successive gradations from the cosmos to microbes by way of Mother Earth, human societies, monkeys, and so on. The producers of this disputed knowledge remain completely invisible, as do the sources of uncertainty; the distinction between these objects and the political world they bombard remains so complete that it seems as though political ecology has no goal but to humiliate politics still further by reducing its power, to the profit of the much greater and much more hidden power of nature—and to the profit of the invisible experts who have decided what nature wanted, what it could do, and what it ought to do.²⁸ By claiming to free us from anthropocentrism, political ecology thrusts us back into the Cave, since it belongs entirely to the *classic* definition of politics rendered powerless by nature, a conception from which political ecology, at least in its practice, is just beginning to pull us away.²⁹

Now we can see the problem that obliges us to distinguish between what the ecological militants do and what they say they do. If we define political ecology as something that multiplies matters of concern, we give it a different sorting principle from the question of whether it is concerned or not with nature, a question that is going to become not only superfluous but politically dangerous as well. In its practice, po-

litical ecology disrupts the ordering of classes of beings by multiplying unforeseen connections and by brutally varying their relative importance. Still, if political ecology—because of the modernist theory that it thinks it cannot get along without—believes that it is obliged to “protect nature,” it is going to focus on the wrong objective as often as on the right one. Even more perversely, it is going to let itself be intimidated by deep ecology, which, because it defends the largest beings arranged in the most rigid and incontrovertible fashion possible, will always seem to have the high ground, appropriating the power invented by the myth of the Cave for its own benefit. Whenever political ecology encounters beings with uncertain, unpredictable connections, it is thus going to *doubt itself*, believe it has been weakened, despair over its own impotence, be ashamed of its weakness. As soon as a situation shows arrangements that are different from the ones it had predicted (that is, always!), political ecology is going to think it is mistaken, since in its respect for nature it thought it had at last found the right way to classify the respective importance of all the beings it purported to be linking together. Now, it is precisely *in its failures*, when it deploys matters of concern with unanticipated forms that make the use of any notion of nature radically impossible, that political ecology is finally doing its own job, finally innovating politically, finally bringing us out of modernism, finally preventing the proliferation of smooth, risk-free matters of fact, with their improbable cortege of incontestable knowledge, invisible scientists, predictable impacts, calculated risks, and unanticipated consequences.

We see the confusion into which we are plunged if we mistake political ecology’s theory for practice: the opponents of deep or superficial ecology reproach it most often with conflating humans with nature and thus forgetting that humanity is defined precisely by its “removal” from the constraints of nature, from what is “given,” from “simple causality,” from “pure immediacy,” from the “prereflexive.”³⁰ They basically accuse ecology of reducing humans to objects and thus seeking to make us walk on all fours, as Voltaire said ironically about Rousseau. “It is because we are free subjects forever irreducible to the constraints of nature,” they say, “that we deserve to be called human beings.” Now, what best fulfills this condition of removal from nature? Why, political ecology, of course, since it finally brings the public debate out of its age-old association with nature! Political ecology alone

is finally bringing the intrinsically political quality of the *natural order* into the foreground.

We understand without difficulty that political ecology can no longer be presented as a new concern that arose in Western consciousness around the middle of the twentieth century, as if since the 1950s—or 1960s or 1970s, it hardly matters—politicians have finally become aware that the question of natural resources had to be included on the list of their usual preoccupations. Never, since the Greeks' earliest discussions on the excellence of public life, have people spoken about politics without speaking of nature;³¹ or rather, never has anyone appealed to nature except to teach a political lesson. Not a single line has been written—at least in the Western tradition³²—in which the terms “nature,” “natural order,” “natural law,” “natural right,” “inflexible causality,” or “imprescriptible laws,” have not been followed, a few lines, paragraphs, or pages later, by an affirmation concerning the way to reform public life. Certainly, the direction of the lesson can be reversed; the natural order is sometimes used to critique the social order, and the human sometimes used to critique the natural; people can even seek to put an end to the link between the two. But no one can claim under any circumstances to be dealing with two distinct preoccupations that had always evolved in parallel until they finally crossed paths thirty or forty years ago. Conceptions of politics and conceptions of nature have always formed a pair as firmly united as the two seats on a seesaw, where one goes down when the other goes up, and vice versa. There has never been any other politics than the politics *of* nature, and there has never been any other nature than the nature *of* politics. Epistemology and politics, as we now understand very well, are one and the same thing, conjoined in (political) epistemology to make both the practice of the sciences and the very object of public life incomprehensible.

Thanks to these double findings of science studies and of practical ecology, we are going to be able to define the key notion of *collective**, whose meaning we are thus gradually specifying. In fact, the importance of the term “nature” does not stem from the particular character of the beings that it is supposed to have assembled and that are thought to belong to a particular domain of reality. The whole power of this term comes from the fact that it is always used in the singular,

as “nature in general.” When one appeals to the notion of nature, *the assemblage that it authorizes counts for infinitely more than the ontological quality of “naturalness,” whose origin it would guarantee.* With nature, two birds are killed with one stone: a being is classified by its belonging to a certain domain of reality, and it is classified in a unified hierarchy extending from the largest being to the smallest.³³

The test is easy to administer. Replace the singular with the plural everywhere. Suddenly we have *natures*, and it is impossible to make natures play any political role whatsoever. “Natural *rights*” in the plural? It would be difficult to dictate positive laws by relying on such a multiplicity. How could we inflame minds for the classic debate over the respective roles of genetics and the environment if we set out to compare the influence of “natures” and cultures? How could we curb the enthusiasm of an industry if we said that it must protect “natures”? How could we use the force of Science for leverage if we were talking about sciences of “natures”? If we said that “the laws of natures” must curb the pride of human laws? No, the plural is decidedly unsuited to the political notion of nature. One multiplicity plus another multiplicity always make a multiplicity. Starting with the myth of the Cave, it has been the *unity* of nature that produces its entire political benefit, since only this assembling, this ordering, can serve as a direct rival to *the other form* of assembling, composing, unifying, the entirely traditional form that has always been called *politics*, in the singular. The debate over nature and politics is like the great debate that opposed the pope and the emperor throughout the entire Middle Ages, when two loyalties toward two totalities of equal legitimacy divided Christian consciences into two camps. If the term “multiculturalism*” can be used with reckless abandon, the term “multinaturalism*” appears—and will continue to appear for quite some time—shocking or devoid of meaning.³⁴

What is the effect of political ecology on this traditional debate? The very expression makes the point clearly enough. Instead of *two* distinct arenas in which one would try to totalize the hierarchy of beings and would then have to try to choose among them (without ever being able to succeed), political ecology proposes to convoke *a single* collective whose role is precisely to debate the said hierarchy—and to arrive at an acceptable solution. Political ecology proposes to move

the role of unifier of the respective ranks of all beings out of the dual arena of nature and politics and into *the single arena* of the collective. That is at least what it does *in practice*, when it jointly forbids both the natural order and the social order to categorize in a definitive and separate way what counts and what does not, what is connected and what must remain detached, what is inside and what is outside. Multiplication of objects that put the classic constitutional order in crisis: such is the means that political ecology has found, with all the astuteness of a burgeoning practice, to simultaneously confuse the political tradition and what has to be called the natural tradition, *Naturpolitik**.

The philosophy of ecology, however, takes great pains not to do in theory what it does in practice (what I propose to say that it does). Even when it challenges nature, it never calls the unity of nature into question.³⁵ The reason for the gap ought to be clearer now, even though we shall need the entire length of this book for it to bear fruit. As long as (political) epistemology is taken seriously, that is, as long as the practice of the sciences and the practice of politics are not treated with equal interest, nature appears precisely *not* as a power of assembling equal or superior to that of politics. At least not yet. But then how does it appear? How can it justify the use of the singular “nature in general”? Why does it not present itself as multiplicity? Why does it put off measuring itself against politics and thus letting us see quite clearly that we are dealing with two powers that can be criticized in a single thrust? Because of a fabulous invention that political ecology has already dismantled in practice but cannot dismantle in theory without a slow and painful supplementary effort. Because of *the distinction between facts and values* that we shall have to sort out in Chapter 3. One could readily grant that there indeed exists a strong unifying power in nature, but this power concerns *only* facts. Everyone also agrees, of course, that there is also a power of assembling, ranking, and ordering in politics as well, but this power concerns values, and values alone. The two orders are not only different, they are incommensurable. Will we be reminded that that is just what the pope’s supporters and the emperor’s claimed in the Middle Ages? Yes, but we see them now as two commensurable powers, simply enemies, because we have converted them both into secular figures. This is precisely my hypothesis: *we have not yet secularized the two conjoined powers of nature*

and politics. Thus they continue to be seen as two completely unrelated sets, the first of which does not even warrant the name of power. We are still living under the influence of the myth of the Cave.³⁶ We are still expecting our salvation to come from a double assembly, only one of whose houses is called politics, while the other one simply and modestly declares its determination to define matters of facts; we have no inkling that this hope of salvation is precisely what threatens our public life, just as the fall of heavens, according to Caesar, threatened my ancestors the Gauls. Such is the trap laid by (political) epistemology, the trap that has up to now prevented the various ecology movements from supplying themselves with a made-to-order political philosophy.

I do not hope to convince the reader of this crucial point right away; it may well be the most difficult one in our common apprenticeship. It will take all of Chapter 2 to restore coherence to the notion of a collective of humans and nonhumans, all of Chapter 3 to rid ourselves of the opposition between facts and values, and then all of Chapter 4 to redifferentiate the collective using procedures taken either from scientific assemblies or from political assemblies. But readers may be ready to acknowledge even now that political ecology can no longer be fairly described as what caused concerns about nature to break into political consciousness. This would be an error of perspective with incalculable consequences, for it would reverse the direction of history and would leave nature, a body invented to render politics impotent, at the very heart of the movement that is proposing to digest it. It seems much more fruitful to consider the recent emergence of political ecology as what has *put an end*, on the contrary, to the domination of the ancient infernal pairing of nature and politics, in order to substitute for it, through countless innovations, many of which remain to be introduced, the public life of a single collective.³⁷ In any event, to say that political ecology is finally removing us from nature or that it attests to the “end of nature” should no longer be taken as a provocation. The expression may be subject to criticism, because it may not do justice to the strange practice of ecologists, but it no longer has—or at least so I hope—the futile aspect of a paradox. When it seemed to have that aspect, we were simply at the crossroads between two immense movements whose contrary influence has for some time made the interpre-

tation of ecology difficult: the emergence of nature as a new concern in politics, and the disappearance of nature as a mode of political organization.

The Pitfall of “Social Representations” of Nature

In the first section of this chapter, we distinguished the sciences from Science, and in the second, political ecology from *Naturpolitik*. We are now going to have to carry out a third displacement if we want to draw the maximum benefit from this favorable conjunction between science studies and the ecology movement. It seems to be the case that the most sophisticated of the human sciences have also long since abandoned the notion of nature, by showing that we never have immediate access to “nature in general”; humans only gain access, according to the historians, the psychologists, the sociologists, and the anthropologists, through the mediation of history, of culture—which are specifically social and mental categories. By also asserting for my part that the expression “nature in general” has no meaning, I seem to be reconnecting with the good sense of the human sciences. In short, from this vantage point it is simply a matter of asking the militant ecologists to stop being so naive as to believe that they are defending, under cover of nature, something other than a particular viewpoint, that of Westerners. When they speak of putting an end to anthropocentrism, they manifest their own ethnocentrism.³⁸ Unfortunately, if one believes that my argument based on political epistemology amounts to saying that “no one is capable of evading social representations of nature,” then my effort is doomed. In other words, I now have to worry not that my readers will reject my argument, but that they will seize it too hastily, confusing my critique of the philosophy of ecology with the theme of the “social construction” of nature!

At first glance, though, it seems difficult to get along without the help that is offered by works on the history of attitudes toward nature. Excellent historians have demonstrated this quite convincingly: the way fourth-century Greeks conceived of nature has nothing to do with the way nineteenth-century Englishmen did, or eighteenth-century Frenchmen, not to mention the Chinese, the Malay, or the Sioux.³⁹ “If you are trying to tell us that these changing conceptions of nature reflect the political conceptions of the societies that developed them,

there is nothing astonishing in that.” To take one example in a thousand, we are all familiar with the ravages of social Darwinism, which borrowed its metaphors from politics, projected them onto nature itself, and then reimported them into politics in order to add the seal of an irrefragable natural order to the domination of the wealthy. Feminists have shown often enough how the assimilation of women to nature had the effect of depriving women of all political rights for a very long time. The examples of ties between conceptions of nature and conceptions of politics are so numerous that we can claim, with good reason, that every epistemological question is also unmistakably a political question.

And yet, if this were true, my project would collapse at once. In fact, to reason in this way amounts to retaining a two-house politics by transposing it into the academic realm. The idea that “nature does not exist,” since it is a matter of “social construction,” only reinforces the division between the Cave and the Heaven of Ideas by superimposing this division onto the one that distinguishes the human sciences from the natural sciences. When one speaks as a historian, a psychologist, an anthropologist, a geographer, a sociologist, or an epistemologist about “human representations of nature,” about their changes, about the material, economic, and political conditions that explain them, one is implying, “quite obviously,” that nature itself, during this time, has not changed a bit. The more the social construction of nature is calmly asserted, the more what is really happening in nature—the nature that is being abandoned to Science and scientists—is left aside. Multiculturalism acquires its rights to multiplicity only because it is solidly propped up by *mononaturalism**. No other position has any meaning at all; otherwise we would revert to the olden days of idealism and believe that the changing opinions of humans modify the position of moons, planets, suns, galaxies, trees that fall in the forest, stones, animals—in short, everything that exists *apart from ourselves*. Those who are proud of being social scientists because they are not naive enough to believe in the existence of an “immediate access” to nature always recognize that there is the human history of nature on the one hand, and on the other, the natural nonhistory of nature, made up of electrons, particles, raw, causal, objective things, completely indifferent to the first list.⁴⁰ Even if, through work, knowledge, and ecological transformations, human history can modify nature in a lasting

way, can disturb, transform, and perform it, the fact remains that there are two histories, or rather one history full of sound and fury that unfolds *within a framework* that itself has no history, or creates no history. Now, this good-sense conception is precisely what we are going to have to abandon in order to give political ecology its proper place.

The critical sophistication of the social sciences is unfortunately of no use in drawing the lesson of political ecology, which does not even straddle the divide between nature and society, natural sciences and social sciences, science and politics, but is located in an entirely different region, since it refuses to establish public life on the basis of two collectors, two catchments, two houses. If one accepted the notion of social representations of nature, one would fall back on the inexhaustible argument about external reality, and we would be obliged to answer the either-or question: “Do you have access to the externality of nature, or are you still lying down at the bottom of the gutter in the Cave?” Or, more politely: “Are you talking about things, or about symbolic representations of things?”⁴¹ The challenge is not to take a position in the debate that is going to make it possible to measure the respective shares of nature and society in the representations we have of them, but to modify the conception of the social and political world that serves as evidence for the social and natural sciences.

In the two preceding sections, I was seeking to speak of nature itself—or rather natures themselves—and not at all of the many human representations of a single nature. But how can anyone speak of nature itself? This would seem to have no meaning. And yet it is exactly what I mean to say. When we add the discoveries made by militant ecology to the discovery made by political epistemology, we can detach nature into several of these ingredients, without falling necessarily into the representations that humans make of it. The belief that there are only two positions, realism and idealism, nature and society, is in effect the essential source of the power that is symbolized by the myth of the Cave and that political ecology must now secularize.⁴² This is one of the thorniest points in our argument; I must therefore proceed with caution, the way one goes about removing a splinter stuck in one’s foot.

The initial operation that detaches us from fascination with nature seems risky, at first glance, since it amounts—according to the commitment I made in the Introduction—to distinguishing the sciences

from Science, by making visible once again the apparatuses that make it possible to say something about nature, apparatuses that are generally called scientific disciplines. As soon as we add to dinosaurs their paleontologists, to particles their accelerators, to ecosystems their monitoring instruments, to energy systems their standards and the hypothesis on the basis of which calculations are made, to the ozone holes their meteorologists and their chemists, we have already ceased entirely to speak of nature; instead, we are speaking of what is produced, constructed, decided, defined, in a learned City whose ecology is almost as complex as that of the world it is coming to know. By proceeding in this way, we add the history of the sciences, shorter but even more eventful, to the infinitely long history of the planet, the solar system, and the evolution of life. The billions of years since the Big Bang date from the 1950s; the pre-Cambrian era dates from the mid-nineteenth century; as for the particles that make up the universe, they were all born in the twentieth century. Instead of finding ourselves facing a nature without history and a society with a history, we find ourselves thus already facing a joint history of the sciences and nature.⁴³ Each time one risks falling into fascination with nature, one has only, in order to sober up, to add the network of the scientific discipline that allows us to know nature.

At first, such an operation does no more than drive the splinter that was to be extracted even deeper into the flesh, since we seem to have added the nightmare of the “social construction of the sciences” to the cultural representations of nature. So far, the pain has increased . . . Everything depends on whether we want to add the history of the sciences provisionally or definitively to the history of nature. In the first case, the infection is going to get worse, since the wound of epistemological relativism will be added to the wound of cultural relativism; in the second case, we fall from one difficulty into another, larger one, but at least a cure is possible. “Of course,” our objector will say, “if you insist, you may add the history of the sciences to the long list of human efforts to conceptualize nature, to make it comprehensible and knowable, but it remains true nonetheless that *once* knowledge has been acquired, there will always be two blocs: nature as it is, and the variable representations we make of it.” The history of the sciences belongs indeed to the same list as the history of mentalities and representations. It just so happens that this portion of human representa-

tions, when it is accurate, passes wholesale over to the side of nature. In other words, the fact of adding the history of the sciences does not modify the distinction between nature and representations of nature in a lasting way: it blurs it only *temporarily*, during the brief period when the scientists are wandering around in the dark. As soon as they find something, what they attest to belongs clearly to nature and no longer in any way, shape, or form to representations. During all this time, anyway, nature has remained safely out of play, out of range, impenetrable, as little involved in the human history of the sciences as in the human history of attitudes toward nature—unless we wish to reduce the history of the sciences to history, period, and forever bar scientists from discovering truth, by locking them up forever in the narrow cell of social representations.

We should not be surprised by this objection: we are well aware that the double rupture between history and nature does not stem from lessons drawn from empirical studies but has the goal of cutting observation short, so that no example can ever blur the politically necessary distinction between ontological questions and epistemological questions by threatening to bring together, under the single gaze of a single discipline, the two assemblies of humans and things. The goal of (political) epistemology as a whole is to prevent political epistemology* by limiting the history of the sciences to the messy process of discovery, without this latter's having any effect whatsoever on the lasting solidity of knowledge. I maintain, on the contrary, that by making the history and sociology of the learned City visible, I am aiming at blurring the distinction between nature and society *durably*, so that we shall never have to go back to two distinct sets, with nature on one side and the representations that humans make of it on the other.

“Ah, I knew it—here the social constructivist is showing the tip of his donkey's ear! Here are the sophists who proliferate in the obscurity of the Cave. You want to reduce all the exact sciences to simple social representations. Extend multiculturalism* to politics. Deprive politics of the only transcendence capable of decisively putting an end to its interminable squabbles.”⁴⁴ And yet it is precisely on this point that science studies, in combination with militant ecology, allows us to break with the deceptive self-evidence of the social sciences by completely abandoning the theme of social constructivism. If the objectors continue to be suspicious, it is because they do not understand

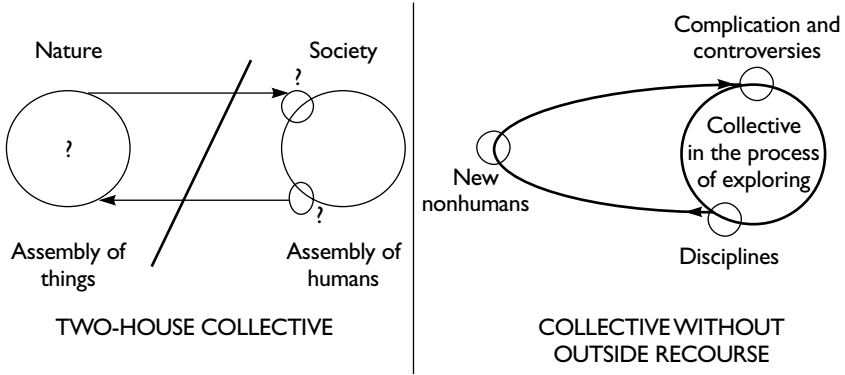


Figure 1.1 The political model with two houses, nature and society, is based on a double split. The model of the collective is based, conversely, on a simple extension of the human and nonhuman members.

that political ecology, in combination with science studies, allows a movement that had always been forbidden before. By emphasizing the mediation of the sciences, one can of course tilt toward sociology and return to the perennial question of the human representations of nature, but one can also make visible the distinction between the multiple presence of nonhumans* and the political work that collected them previously in the form of a unified nature. For this it suffices to change the notion of the social, which we have inherited, like the rest, from the age of the Caves.

We are going to distinguish between two conceptions of the social world: the first, which can be called the social world as prison*, and the second, which I shall call the *social world* as *association**. When we compare the two positions—the one derived from the myth of the Cave and the one to which I would like readers to become accustomed little by little—at first they appear quite similar, as is evident from Figure 1.1.

In the left-hand version, the collective is bisected in an absolute cleavage that separates the assembly of things from the assembly of humans. In a triple mystery (indicated by question marks), despite the gulf between the two worlds, scientists nevertheless remain capable of breaking with society to achieve objectivity, of rendering mute things assimilable by human language, and, finally, of coming back “to earth”

to organize society according to the ideal models supplied by reason. The right-hand model differs from the left-hand one by virtue of three small features, as decisive as they are infinitesimal; these will become clearer in the next two chapters. In the first place, we are not dealing with a society “threatened” by recourse to an objective nature, but with a collective *in the process of expanding*: the properties of human beings and nonhumans with which it has to come to terms are in no way assured. Next, we do not need a dramatic and mysterious “conversion” to search for new nonhumans: the small transformations carried out by scientific disciplines in laboratories are entirely sufficient. Yes, there is indeed an objective external reality, but this particular externality is not definitive: it simply indicates that new nonhumans, entities that have never before been included in the work of the collective, find themselves mobilized, recruited, socialized, domesticated. This new type of externality, essential to the respiration of the collective, is not there to nourish some great drama of rupture and conversion. There is indeed an external reality, but there is really no need to make a big fuss about it. Finally, and this is the third “small” difference, when the newly recruited nonhumans show up to enrich the demography of the collective, they are quite incapable of interrupting discussions, short-circuiting procedures, canceling out deliberations: they are there, on the contrary, to complicate and open up these processes.⁴⁵ The return of the scientists in charge of nonhumans is of passionate interest to the other members of the collective, but it in no way resolves the question of the common world that they are in the process of developing: it only complicates the issue.

In place of the three mysteries of the left-hand version, we find in the right-hand version three entirely describable operational sets, none of which presents a brutal rupture, and, even more important, none of which *simplifies the collective’s work of collection by resorting decisively to an incontestable transcendence*.⁴⁶ The entire genius of the old allegory of the Cave, now empty of its venom, consisted in making its audience believe that the right-hand schema was the same as the left-hand one, that there existed no other version of society than the infernal social world (the social world as prison depicted in the left-hand schema), as if one could not speak about society without at once losing contact with external reality. The trap set by the epistemology police consisted in denying to anyone who challenged the radical ex-

ternality of Science* the right to continue to talk about any external reality at all: those who had doubts about Science were supposed to content themselves with the gruel of social conventions and symbolism. They could never have gotten out of the prison of the Cave on their own. Yet we can now see that precisely the opposite is true. In the appeal to external reality, two elements that are now clearly separate were deliberately confused: on the one hand, the *multiplicity* of the new beings for which room must be made from now on so that we can live in common; on the other hand, the *interruption* of all discussion by recourse to a brutally and prematurely unified external reality. Such recourse is effective only because it short-circuits the work proper to politics, thanks to a nonpolitical supplement called Science* that is supposed to have already unified all beings under the auspices of an illegally convoked assembly called nature. In the left-hand schema, one could not appeal to the reality of the external world without leaving the social world or silencing it; in the right-hand schema, one can appeal to the external worlds, but the multiplicity that is being mobilized in this way *does not bring definitive resolution to any of the essential questions of the collective*. In place of the social world as prison that sociology has inherited without ever inquiring into its original flaws, there appears another sense of the social, closer to the etymology of the term, as association and collection.⁴⁷ On the left in Figure 1.1, Science was part of the solution to the political problem that it was also rendering insoluble by the continual threat of disqualification hanging over the human assemblies; on the right, the sciences are part of the solution only because they are part of the problem as well.

When the mediation of the scientific disciplines is added, when the work of scientists is shown, when the importance of the history of the sciences is stressed, it seems at first glance that we have no choice but to *distance ourselves* even further from nature in order to move closer toward humans. The temptation is great; we need only let ourselves go; the highway is open and toll-free; the entire landscape of good sense has been fashioned for this effortless slippage, this glide down a slide. But thanks to the argument of the collective, one can also move toward a different position, one less well marked, more twisted, and more costly, a position toward which the entire future common sense of political ecology nevertheless pushes us. By making the mediation

of the sciences visible, we can start from nature, not in order to move toward the human element, but—by making a ninety-degree turn—to move *toward the multiplicity of nature*, redistributed by the sciences—something that might be called the *pluriverse**⁴⁸ to mark the distinction between the notion of external reality and the properly political work of unification. In other words, political ecology allied to science studies traces a new branching on the map: instead of going back and forth between nature and the human, between realism and constructivism, we can now go from the multiplicity *that no collective yet collects*, the pluriverse, to the collective which up to now was gathering that multiplicity under the combined names of politics and nature. Only political ecology makes it possible to profit from the formidable potential of science studies, for political ecology manages at last to pry apart multiplicity and what collects multiplicity in a single unified whole. As for the question whether this collecting, this gathering, this unifying, is carried out by the political instrument of nature or by the political instrument of politics, from this point on it hardly matters—but see Chapter 4. From now on, instead of opposing reality and representation, we will oppose the representation of multiplicity and the unification, through due process, of this multiplicity.

There is, then, a path other than idealism that we can follow to leave nature behind, a path other than subjects that we can take to leave objects behind, a path other than dialectics that was supposed to enable us to “get beyond” the contradiction between subject and object. To put it more bluntly still, thanks to political ecology, Science no longer kidnaps external reality to transform it into an appellate court of last resort, threatening public life with a promise of salvation worse than the evil against which it offers protection. Everything the human sciences had imagined about the social world to construct their disciplines at a remove from the natural sciences was borrowed from the prison of the Cave. Intimidated by Science, they accepted from it the most menacing of diktats: “Yes, we readily admit it,” they confess in chorus, “the more we talk about social construction, the further away we actually move from the real unified things in themselves.” Whereas what they should have done was reject the diktat and move closer—despite the threat of Science—to the realities produced by the *sciences* in order to be able to take a fresh look at the question of how the common world is composed.

Have we pulled out the splinter that made walking painful? The wound is still there; it will still hurt for a while, but it is now a scar and no longer an oozing sore. We have removed the principal source of infection, the traditional notion of representation that poisoned everything it touched—the impossible distinction, contradicted every day, between ontological and epistemological questions. It was this distinction, in fact, that imposed the exclusive path that led from nature to society and back, owing to the intermediary of two miraculous conversions. It was this distinction that obliged us either to move closer to things, while distancing ourselves from the impressions humans had of them, or to move closer to the human categories, while progressively distancing ourselves from things themselves. It was this distinction that imposed the impossible choice between realism and constructivism. We shall no longer speak of “representation of nature,” designating by that term the categories of human understanding, while, on the other hand, “nature” in the singular remains even more remote. And yet we shall retain the crucial word “representation,” but we shall make it play again, explicitly, its ancient political role. If there are no more representations of nature in the sense of the two-house politics we have criticized, it will still be necessary to *represent* the associations of humans and nonhumans through an explicit procedure, in order to decide what collects them and what unifies them in one future common world.

In fact, by abandoning the notion of nature, we are leaving intact the two elements that matter the most to us: the multiplicity of nonhumans and the enigma of their association. In the following chapters we are going to use the word “representation” to designate the new task of political ecology, but I hope to have removed the ambiguity that has weighed too long on a term that has been so closely associated with the destiny of the social sciences. We may suppose that the tasks of these sciences will be more inspiring than to prove that there exist “cultural and social filters through which” humans must necessarily pass “to apprehend objects out there, while always missing things in themselves.” By refusing the support that the social sciences claimed to be offering it, political ecology frees these sciences to do other jobs and directs them toward other infinitely more fruitful research paths.⁴⁹ It is of the pluriverse that they should speak, of the *cosmos* to be built, not of the shadows projected on the wall of the Cave.

The Fragile Aid of Comparative Anthropology

Political ecology has finally taken the drama out of the perennial conflict between nature and the social order. If the lesson political ecology has to teach is not obvious, this is not, as its theoreticians still sometimes believe, because political ecology has invented exotic new forms of fusion or harmony or love between man and nature, but because it has definitively secularized the dual political question, the dual conflict of loyalty between the power of nature and the power of society. We have no idea at all what things themselves would look like if they had not always been engaged in the battle of naturalization. What would the entities we have called *nonhumans** look like if they were not wearing the uniform of matters of fact marching in step in the conquest of subjectivities? What would humans look like if they no longer wore the uniform of partisans bravely resisting the tyranny of objectivity? If we are going to attempt to redraw the new institutions of democracy in the remainder of this work, from here on we need to have access to the multiplicity of associations of humans and non-humans that the collective is precisely charged with *collecting*. In the absence of conceptual institutions or forms of life that could serve as alternatives to the modern Constitution, we run the risk of remaining engaged in spite of ourselves in wars between realism and social constructivism that do not concern us in the least, forgetting in the process the entire novelty of the political ecology that we were seeking to deploy.

Fortunately, the anthropology of non-Western cultures is generous enough to offer us an alternative. To understand this offer, alas, we must detour by way of another seeming paradox and disappoint those who imagine that other cultures will have a “richer” vision of nature than our own Western version. It is impossible to blame those who share such illusions. Countless words have been written ridiculing the miserable whites who are guilty of wanting to master, mistreat, dominate, possess, reject, violate, and rape nature. No book of theoretical ecology fails to shame them by contrasting the wretched objectivity of Westerners with the timeless wisdom of “savages,” who for their part are said to “respect nature,” “live in harmony with her,” and plumb her most intimate secrets, fusing their souls with those of things, speaking with animals, marrying plants, engaging in discussions on an

equal footing with the planets.⁵⁰ Ah, those feathered savages, children of Mother Earth, how nice it would be to be like them! Witnessing their weddings with nature, how puny one feels to be nothing but an engineer, a researcher, a white, a modern, incapable of rediscovering that lost paradise, that Eden toward which deep ecology would like to redirect our steps.

Now, if comparative anthropology offers a helping hand to political ecology, it is once again for a reason that is precisely the opposite of the one advanced by popular ecology. Non-Western cultures *have never been interested* in nature; they have never adopted it as a category; they have never found a use for it.⁵¹ On the contrary, Westerners were the ones who turned nature into a big deal, an immense political diorama, a formidable moral gigantomachy, and who constantly brought nature into the definition of their social order. Unfortunately, the theoreticians of ecology make no more use of anthropology than of the sociology of the sciences. Deep ecology means shallow anthropology.⁵²

If comparative anthropology is indispensable, it is thus not because it offers a reservoir of exoticism thanks to which whites might succeed in exiting from their uniquely secular and material conception of the objects of nature, but, on the contrary, because it makes it possible *to extricate Westerners from exoticism they have imposed on themselves*—and, by projection, on others—by thrusting themselves into the impossible imbroglia of an entirely politicized nature. We do not mean to suggest that non-Western cultures correspond point for point to the political ecology whose protocol we propose to draw up. On the contrary, as we shall see in Chapter 4, all the institutions of the collective remain contemporary inventions, unprecedented in history. We mean only that the other cultures (to keep on using a quite ill-conceived term), precisely because they have never lived in nature, have preserved the conceptual institutions, the reflexes and routines that we Westerners need in order to rid ourselves of the intoxicating idea of nature. If we learn the lesson of comparative anthropology, these cultures offer us indispensable alternatives to the nature-politics opposition, by proposing ways of collecting associations of humans and nonhumans using a single collective clearly identified as political. More accurately, they *refuse to use only two collectors*, just one of which, the social world, would be seen as political, while the other, nature, would remain outside of power, outside public speech, outside institutions, outside humanity,

outside politics. If they do not form the lovely unities imposed on them by exoticism, at least the other cultures are not blind in one eye.

As a discipline, anthropology has always hesitated on this point: it has only quite recently succeeded in becoming indispensable to political ecology⁵³—this is one reason we cannot hold a grudge against common sense for having so badly resisted the exotic baubles that deep ecology sought to foist off on it, on the pretext that barbarians respect Mother Earth more than the civilized peoples do. From its earliest contacts at the dawn of modern times, anthropology has understood that something was amiss between what it called “the savages” and nature, that there was in Westerners’ nature something that other peoples found unassimilable. But it has taken a very long time—three centuries, let us say—to understand that the nature *of* the anthropologists was too politicized for them to grasp the lesson of the “noble savages.”⁵⁴

Let us quickly go back over the path that made it possible to transform this very particular politics of nature. The first reflex was to view “primitives” as “children of nature,” something intermediate between animals, humans, and Westerners. This move was not friendly toward animals, savages, or Westerners, the latter never having lived “in” nature in any form. The second, more agreeable stage entailed a judgment that natives, while as different from nature as whites, nevertheless lived “in harmony” with nature, respecting and protecting it. This hypothesis did not hold up under the scrutiny of ethnology, prehistory, or ecology; these disciplines rapidly produced multiple examples of pitiless destruction of ecosystems, massive disharmony, countless instances of disequilibrium, even fierce hatred for the environment. In fact, under the name of harmony, the anthropologists gradually noticed that they should not look for particularly sympathetic relationships with nature, but for the presence of a categorization, a classification, an ordering of beings that did not seem to make any sharp distinction between things and people. The difference no longer lay in the savages’ not treating nature well, but rather in their not treating it at all.

The third, more sophisticated stage thus involved viewing natives (rebaptized non-Western peoples in the meantime) as having formed complex cultures whose categories established *correspondences* between the order of nature and the social order. Among these peoples,

it was said, nothing happens to the order of the world that does not happen to humans, and vice versa. There is no classification of animals or plants that cannot be observed in the social order, and no social classification that cannot be observed in the divisions between natural beings. But the increasingly subtle anthropologists quickly noticed that they were still demonstrating an intolerable ethnocentrism, since they were insisting on the abolition of a difference that was of no interest whatsoever to the people they were studying. By asserting that other cultures brought the natural order and the social order into “correspondence,” the anthropologists were still taking this division for granted, maintaining that it was in some sense in the nature of things. Now, the other cultures under consideration did not blend the social order and the natural order at all; *they were unconcerned by the distinction*. To be unaware of a dichotomy is not at all the same thing as combining two sets into one—still less “getting beyond” the distinction between the two.

Viewed through the lens of an anthropology that has finally become symmetrical or pluralist, the other cultures appear much more troubling today: they marshal categorizing principles that regroup within a single order—in a single collective, let us say—beings that we Westerners insist on keeping separate, or rather, while we think it is indispensable to have two houses to hold our collective, most of the other cultures insist on *not* having *two*. From this point on they can no longer be defined as different cultures having distinct points of view toward a single nature—to which “we” alone would have access; it of course becomes impossible to define them as cultures among other cultures against a background of universal nature. There are only nature-cultures, or rather collectives that seek to know, as we shall see in Chapter 5, what they may have in common. We see now the reversal of perspective: the savages are not the ones who appear strange because they mix what should in no case be mixed, “things” and “persons”; we Westerners are the odd ones, we who have been living up to now in the strange belief that we had to separate “things” on the one hand and “persons” on the other into two distinct collectives, according to two incommensurable forms of collection.⁵⁵

The feeling of strangeness that another culture provokes is of interest only if it leads one to reflect on the strangeness of one’s own; otherwise it degenerates into exoticism, Orientalism, Occidentalism. In

order not to fall into a perverse fascination with differences, it is necessary to move quickly to create a common ground that replaces surprise with the deep complicity of solutions. By joining the recent discoveries of comparative anthropology with those of political ecology and the sociology of the sciences, we should be able to get along entirely without the *two symmetrical exoticisms*: the one that makes Westerners believe that they are detached from nature because they have forgotten the lessons of other cultures and live in a world of pure, efficient, profitable, and objective things; and the one that made other cultures believe that they had lived too long in the fusion between the natural order and the social order, and that they needed finally, in order to accede to modernity, to take into account the nature of things “as they are.”

The modern world—to which Westerners sometimes regret belonging, even as they insist on bringing other cultures in to join them!—does not have the characteristics commonly attributed to it because it lacks nature entirely. *Nature plays no role in either world.* Among Westerners, because their world is political through and through; among non-Westerners, because they have never used nature as a place to set aside half of their collective! Whites are neither close to nature because they and they alone finally know how it works, thanks to Science, nor distant from nature because they have lost the ancestral secret of intimate life with nature. The “others” are neither close to nature because they have never separated it from their collective nor distant from the nature of things because they have always mistakenly confused it with the requirements of their social order. Neither group is either distant from or close to nature. Nature has played only a provisional role in the political relations of Westerners among themselves and with others. It will play no further role, thanks to political ecology as it has finally been rethought so it could catch up with militant ecology. Moreover, if we take nature away, we have no more “others,” no more “us.” The poison of exoticism suddenly dissipates. Once we have exited from the great political diorama of “nature in general,” we are left with only the banality of multiple associations of humans and nonhumans waiting for their unity to be provided by work carried out by the collective, which has to be specified through the use of the resources, concepts, and institutions of all peoples who may be called upon to live in common on an earth that might become, through a long work of collection, the same earth for all.

Everything now thus depends on the way we are going to characterize this work of collection. One of two things must be true: either the work has already been carried out, or else it remains to be done. All (political) epistemology and the *Naturpolitik* that follows affirm that, under the auspices of nature, this work has been, for the most part, *completed*; political ecology affirms, according to us, that the work *is just beginning*. To participate in the development of political institutions adapted to the exploration of the common world and the “same earth,” anthropology must become *experimental**. What political choice does it actually face? Must it always retain multiculturalism against a background of unified nature that serves as its involuntary philosophy?

Since the seventeenth century, it has been common to distinguish between what things are in themselves independently of our knowledge of them, independently of the way they are experienced by a consciousness, and what are called *secondary qualities**. When we speak of atoms, particles, photons, or genes, we are designating primary qualities. When we speak of colors, odors, or lights, we are designating secondary qualities. Nothing is more innocuous than this distinction, at first glance. Yet we need only modify it very slightly to bring fully to light the political arrangement that it surreptitiously authorizes. The primary qualities in fact make up the *common world that we all share*. “We are all,” we like to say, “equally made up of genes and neurons, proteins and hormones, in a universe of atoms, void, and energy.” On the other hand, the secondary qualities divide us, because they refer to the specifics of our psyche, our languages, our cultures, or our paradigms. As a result, if we define politics*, as I have done, not as the conquest of power inside the Cave alone, but as the progressive composition of a common world* to share, we notice that the division between primary and secondary qualities has already done *the bulk of the political work*. When we enter a universe whose furnishings have been already defined, we know from the outset what we all have in common, what keeps us together. There remains what divides us, the secondary qualities, but this is not an essential division, because their inaccessible essences are located elsewhere, in the form of primary qualities that are, moreover, invisible.⁵⁶

Now we can see that if the anthropology of earlier times paid so much attention to the multiplicity of cultures, it is because it took universal nature as a given. If it could collect so many diversities, it is be-

cause anthropology could grab hold of them by getting them to detach themselves from a common background that had been unified in advance. There are thus two equally unstable solutions to this problem of unity: mononaturalism* and multiculturalism*. Mononaturalism is not at all self-evident; it is simply one of the possible solutions to an aborted experiment in constructing a common world: *one* nature, *a multiplicity* of cultures; unity in the hands of the exact sciences, multiplicity in the hands of the human sciences. Multiculturalism*, if it is more than a bogeyman conjured up to frighten small children, offers a different but equally premature solution to the exploration of the common world: not only are cultures diverse, but all can make equal claims to define reality in their own terms; they no longer stand out against a background of unified nature; each is incommensurable with the others; there is no longer any common world at all. On the one hand, an invisible world, but one that is visible to the eyes of scientists whose work remains hidden; on the other hand, a visible and perceptible world, but one that is inessential because it has been emptied of its essences. On the one hand, a world without value, since it corresponds to nothing experienced, but a world that alone is essential because it has to do with the real nature of phenomena; on the other hand, a world of values, but a world which is also worthless because it has access to no durable reality, even though it is the only world we experience subjectively. The solution of mononaturalism stabilizes nature at the risk of emptying the notion of culture of all substance and reducing it to mere representations; the solution of multiculturalism stabilizes the notion of culture at the risk of endangering the universality of nature and reducing it to an illusion. And it is this cockeyed arrangement that passes for good sense! To get the experimentation with a common world (which has been prematurely shut down by these two calamitous solutions) started up again, we shall have to avoid *both the notion of culture and the notion of nature*. This is what makes political ecology's use of the findings of anthropology so delicate, and may explain why it has refrained up to now from using them more fully.

A comparison will enable us to provide a better understanding of the instability into which we must not be afraid to enter in order to restore full meaning to what could be called politics *without* nature. Before feminism, the word "man" had the character of an unmarked cat-

egory, while “woman” was marked. By saying “man,” one designated the totality of thinking beings without even thinking about it; by saying “woman,” one marked the “female” as apart from thinking beings. No Westerner today would take the word “man” to be unmarked. “Male/female,” “man/woman,” “he/she”: these terms have slowly taken the place of what was formerly self-evident. The two labels are both marked, coded, embodied. Neither can claim any longer to designate effortlessly and incontestably the universal on the basis of which the other remained an “other” eternally apart. Thanks to the immense work of the feminists, we now have access to conceptual institutions that allow us to mark the difference not between man and woman but between, on the one hand, the former pair made up of man, an unmarked category, and woman, a single marked category, and on the other hand the new and infinitely more problematic pair⁵⁷ made up of the two equally marked categories of man and woman. We can foresee without difficulty that the same thing will very soon hold true for the categories of nature and culture. For the moment, “nature” still has the resonance that “man” had twenty or forty years ago, as the unchallengeable, blinding, universal category against the background of which “culture” stands out clearly and distinctly, eternally particular. “Nature” is thus an unmarked category, while “culture” is marked. Now, however, through a movement just as vast in scope, political ecology proposes to do for nature what feminism undertook to do and is still undertaking to do for man: wipe out the ancient self-evidence with which it was taken a bit too hastily as if it were all there is.⁵⁸

What Successor for the Bicameral Collective?

With this first chapter, we have covered both the easiest and the most difficult ground. The easiest, because it was still only a matter of clearing away false problems before addressing the truly arduous questions of the new public institutions to be built. The most difficult, because we now know what concerns these new institutions have to address. If we have made a forced march across landscapes that merited a more leisurely pace, at least we have reached our base camp. The combined findings of science studies, political ecology, social sciences, and comparative anthropology, which we have sketched out in turn (and each of which, as I am well aware, would have warranted a much more ex-

tensive treatment), come together to raise one single question: *What collective can we convoke, now that we no longer have two houses, only one of which acknowledged its political character?* What new Constitution can replace the old one? As for the question “Must we have a politics that is oriented toward humans or one that also takes nature into account?” we now know that this is a false dichotomy, since, at least in the Western version of public life, the laws of nature and those of humans have always coexisted, each under threat from the other. We know, too, that today for the first time there is a credible alternative to this bicameral politics, since it is as implausible to assimilate the work of the sciences to Science as it is to reduce politics*—as the progressive composition of a common world—to the Cave politics of power and interests. Contrary to the cries of horror that the defenders of the old Constitution continue to emit (though with less and less effect), it is perfectly possible to speak of external reality without immediately confusing it with its hasty unification by a power that dares not bear that name and that still displays itself under the less and less protective cover of the epistemology police. Thus, for the first time we can remove the parentheses from that particular form of (political) philosophy born in the ages of the Cave and imagine its *successor* by speaking openly of political epistemology*, provided that we bring the sciences—and not Science—together with the question of the collective—and not with the social world understood as a prison.

Like all the results that we shall try to obtain, this one is extravagant only in appearance. Only its banality makes it difficult. More precisely, we have so little experience in *not* dramatizing the question of nature, *not* turning it into a gigantomachy, that we have trouble recognizing how simple it is to gain access to a not yet gathered multiplicity. The new distinction toward which we are being led, as we see it, by political ecology no longer divides nature from society, ecology from politics; instead, it separates two operations that we are going to learn to characterize in Chapter 3. One bears upon the multiplication of entities and the other on their composition, their arrangement. In other words, as we can see more clearly now, nonhumans are no longer objects at all, and no longer social constructions, either. Objects are not innocent inhabitants of the world: *the object was the nonhuman plus the polemic of nature imparting a lesson to the politics of subjects*. Once freed from this polemic, from this bifurcation of nature,⁵⁹ nonhumans are going to occupy an entirely different position.

All the canonical “big problems” of epistemology will appear henceforth only as mere martial arts demonstrations. There is a big difference between the isolated nonhuman tree that falls in the forest, and the object tree that falls in the forest to smash in the head of the idealist confronting the realist in a pub across from King’s College! What can we say about the former? That it falls, and falls by itself. Nothing more, nothing less. It is the second that responds, polemically, to a *conflict of power* over the respective rights of nature and politics. Only the object finds itself engaged in the conflict of loyalty between the new pope and the new emperor— not the nonhuman. Nonhumans deserve much better than to play indefinitely the rather unworthy, somewhat vulgar role of object on the great stage of nature. Gravity, for example: sublime gravity, an admirable rhizome that transformed Europe and all heavy bodies starting in 1650, deserves much better than to serve as an irrefutable objection to the social constructivist who is supposed to claim he can jump out of the proverbial fifteenth-story window without getting hurt because he believes—or so his adversaries believe—in relativism! When will we grow up and stop frightening ourselves with such bugaboos? When will we finally be able to secularize nonhumans by ceasing to objectify them? When will we be able not to reduce matters of concern* to matters of fact? When will we manage at last to be faithful to the promises of empiricism?

By freeing nonhumans from the polemic of nature, we do not claim to be leaving them to themselves, unattainable, impregnable, unqualifiable, as if they occupied the quite unenviable position of “things in themselves.” If we have to free them, we have to do so completely, and in particular from the blockade to which Kantianism sought to condemn them by depriving them of any possible relations with human assemblies. The social world is no more made up of subjects than nature is made up of objects. Since, thanks to political ecology, we can distinguish objects from nonhumans, we are going to be able, also thanks to political ecology, to distinguish humans from subjects: *the subject was the human caught up in the polemic of nature and courageously resisting objectivization by Science*. Subjects were supposed either to free themselves from nature in order to exercise their freedom or else to put their freedom in chains in order to reduce themselves finally to objects of nature.⁶⁰ But humans no longer have to make this choice that is imposed upon subjects. Once freed of what has been a veritable cold war, humans are going to take on a very different aspect, and, in-

stead of existing by themselves, they are going to be able to unroll the long chain of nonhumans, without which freedom would be out of the question.

As for the scientific disciplines, once they have been made visible, present, active, and agitated, while ceasing to be threatening, they are going to be able to deploy the formidable potential of the pluriverse that they have never had the opportunity to develop up to now, since they have been constantly crushed under the obligation to produce objects “of nature” as rapidly as possible, while avoiding “social constructions,” in order to return to society as quickly as possible and reform it by means of unchallengeable reason. By loosening the mortal grip of epistemology and sociology, political ecology allows the scientific disciplines, freed of their task of (political) epistemology, to multiply the enclosures, the arenas, the laboratories by means of which humans and nonhumans—both newly liberated—associate. Science is dead; long live research and long live the sciences!

Everything remains to be done, but at least we have emerged from the Cave era! Public speech no longer lives under the permanent threat of salvation from on high that would invoke laws not made by human hands to short-circuit the procedures that allow us to define the common world. Surprise: when we abandon that ancient figure of reason, we are not abandoning either external reality or the sciences or even the future of reason. The old opposition between scientists and politicians, between Socrates and Callicles, between reason and power, yields from now on to a different and more fruitful opposition between the perennial quarrel opposing epistemologists to sophists, on the one hand, and the issue of the collective on the other hand. The old Constitution, invented to keep the prisoners of the Cave in captivity, has had ample time to roll out its effects; it is time now to make an effort to imagine a political philosophy for assemblages of humans and nonhumans. As we shall see in the following chapters, since Westerners have always governed, under cover of nature, with a two-house collective, we may as well do it right this time, explicitly, in the full light of day and *according to due process*.



How to Bring the Collective Together

The lengthy chapter preceding this one sought to make it clear that the terms “nature” and “society” do not designate domains of reality; instead, they refer to a quite specific form of public organization. Not everything is political, perhaps, but politics gathers everything together, so long as we agree to redefine politics as *the entire set of tasks* that allow the progressive composition of a common world*. Now, professional politicians are not the only ones who have taken on these tasks: for a long time, in the West, scientists have occupied a preponderant place, thanks to the kingly power they have held by natural right. Political philosophy, in spite of Hobbes, has never really understood the Gospel text according to which “every kingdom divided against itself is headed for ruin” (Matt. 12:25), for political philosophy has gone on focusing exclusively on the world of human politics, as if there were nothing the matter, leaving most questions to be sorted out elsewhere, in secret, out of court, in an assembly of nonhuman objects that were undertaking mysterious operations to decide what nature was made of and what sort of unity we humans formed with nature.

By dividing public life into two incommensurable houses, the old Constitution led only to paralysis, since it achieved only premature unity for nature and endless dispersion for cultures. The old Constitution thus finally resulted in the formation of *two equally illicit assemblies*: the first, brought together under the auspices of Science, was illegal, because it defined the common world without recourse to due process; the second was illegitimate by birth, since it lacked the reality of the things that had been given over to the other house and had to

settle for “power relations,” for a multiplicity of irreconcilable viewpoints, for Machiavellian cleverness alone. The first had reality but no politics; the second had politics and mere “social construction.” Both had in reserve a quick shortcut that could bring discussion to an end: irrefutable reason, indisputable force, right and might, knowledge and power. Each house threatened to exterminate the other. Only the Third Estate, the collective, suffered from this long cold war, for it was forever deprived of a scientific and political competence by the shortcuts of power or those of reason.

Still, the lessons of Chapter 1 are exclusively negative: if we have understood that nature cannot serve as a model for politics, we still do not know how to find a better one than nature. This is the considerably more difficult question that we must now confront: how can we draw up a Constitution that will allow us to achieve a common world through due process? But first of all, what term should we use to describe what will replace this kingdom divided against itself? The venerable word “Republic*” is admirably suited to our task, if we agree to bring out the overtones of the underlying Latin word *res*, “thing.”¹ As has been frequently noted, it is as if political ecology found again in the *res publica*, the “public thing,” the ancient etymology that has linked the word for thing and the word for judicial assembly since the dawn of time: *Ding* and *thing*, *res* and *reus*.²

The empire of the modernist Constitution, now on the decline, had made us tend to forget that a thing* emerges before anything else as *a scandal at the heart of an assembly that carries on a discussion requiring a judgment brought in common*. This way of looking at things does not entail an anthropomorphism that would take us back to the premodern past—a past that is only exoticism on the part of the moderns, of course—but rather the end of a ruinous anthropomorphism through which objects, indifferent to the fate of humans, were in the habit of intervening from the outside and acting without due process to sweep away the work of political assemblies. Indeed, appearances notwithstanding, the famous “indifference of the cosmos to human passions” offers the oddest of anthropomorphisms, since it claims to *give form* to humans, while silencing them through the incontestable power of objectivity devoid of all passion! The nonhumans had been kidnapped and turned into stones that could be thrown at the assembled *demos*.

By using objectivity to short-circuit political procedures, people had dared to confuse the sciences with this shortcut authorized by violence—and to do so in the name of the highest morality and the most delicate of virtues! With nature people sought to reason—that is, to force—their way through. Yes, a genuine intellectual imposture, but one that has fortunately lost its effect.

The only innovation our project offers is that it seeks a successor for this “kingdom divided against itself” by drawing upon the resources of the Third Estate, resources that prejudice alone confused with the gathering of slaves held in chains in the Cave, prisoners of the social world. Now that the emergence of nature no longer comes into play to paralyze the progressive composition of the common world, we have to become capable of convoking the collective* that will be charged from now on, as its name indicates, with “collecting” the multiplicity of associations of humans and nonhumans, without resorting to the brutal segregation between primary qualities* and secondary qualities* that has made it possible up to now to exercise the kingly functions in secret. This competency on the part of the Third Estate does exist, but it lies hidden in the form of a double problem of representation* that the old Constitution required us to treat separately: epistemology seeking to know on what condition an *exact* representation of external reality is possible; political philosophy seeking to know on what condition a representative can represent his fellows *faithfully*. No one can recognize what these two questions have in common, now, since the radical distinction between them has become the very sign of the highest moral virtue: we must take every precaution, they say, not to “mix” questions of nature with questions of politics, not to confuse being with what ought to be!³ It is by the absence of mixing, we are told, that we have always recognized, and continue to recognize, the virtue of a moral philosophy. History, during all this time, full of sound and fury, fortunately took on the responsibility of doing just the opposite: mixing natures and politics in all possible forms, and over the last several decades finally imposing the necessity of an explicit political epistemology* in place of the old epistemology police.

An anecdote will allow us to illustrate the passage from a divided kingdom to the Republic of things. The philosophy of the sciences has always used the Galileo affair to its advantage. Assembled in a room, a

conclave of princes and cardinals is discussing how to lead the world and what their flock must believe in order to go to Heaven; in another room, isolated at the far end of the palace, in his study turned into a laboratory, Galileo is deciphering the laws that govern the world and make the heavens go round. Between the two rooms, there is no possible overlap, because the concern in the first one is with multiple beliefs and in the second with a single reality. On the one hand, there is the multiplicity of secondary qualities that maintain all human beings in a state of illusion; on the other, there is one human being dealing with truth, alone with nature, defining the primary qualities that are invisible to everyone else. Here indeed we have the two-house collective of the old Constitution.

In the fall of 1997, in Kyoto, there was just one conclave to welcome the great figures of this world, princes, lobbyists, heads of state, captains of industry, scientists and researchers from every discipline, and to decide in common how the planet was faring and how we should all behave toward it from now on to preserve the quality of our sky.⁴ Yet the Kyoto conference did not settle for bringing together the two ancient assemblies, one for politicians and one for scientists, in a third house that would be bigger, broader, more organic, more synthetic, more holistic, and more complex. No, politicians and scientists, industrialists and militants found themselves on the benches of the *same assembly* without being able to count any longer on the ancient advantages of salvation from the outside by Science, or to murmur with a shrug of the shoulders: "What do these arguments matter to us? The Earth will keep on turning without us, whatever we may say!" We have gone from two houses to a single collective. Politics has to get back to work *without* the transcendence of nature: here is the historical phenomenon that we are forcing ourselves to comprehend.⁵

The end of nature is not the end of our difficulties. On the contrary, as we discover the precipices over which we risk falling at every step, we come to understand the advantages that the immoderate use of the notion of nature gave our predecessors: by using this notion to short-circuit both politics and the sciences, they simplified all obstacles as if by magic. But we who are no longer either enchanted or fascinated by nature, after the forced march of approach in the previous chapter, find ourselves up against the wall—that is, ready to get down to

work—provided that our readers, like the Hebrews in the desert, do not start to miss the bitter sweetness of the onions of Egypt.

Difficulties in Convoking the Collective

How are we going to manage to convoke the collective on new grounds? There is no shortage of ecological thinkers who clamor to “get beyond” a disastrous opposition between “man and his environment.” Why not conceive of the convocation quite simply as the reunification of things and people, objects and subjects? At first glance, it seems that, if we were to bring the two terms together, the set and its complement, we would achieve the sought-for unity very quickly, and without any shots being fired, we would find ourselves in a unified kingdom upon which the division into two houses would no longer impose a state of apartheid. Political ecology would then be defined as the conjunction of ecology and politics, things and people, nature and society. It would suffice to join the two assemblies together to solve the problem of the composition of the common world and thus have an excellent Constitution at our disposal. Unfortunately, “the” collective, appearances notwithstanding, cannot be achieved by a simple *adding together* of nature and society. This is the first difficulty.

If it were enough to bring “man and nature” together in order to resolve ecological crises, the constitutional crisis that ecological crises have unleashed would have been resolved long ago—whereas in fact it is just beginning. If crises manifest themselves in the disappearance of nature, they manifest themselves even more clearly in the disappearance of the traditional means for convoking the two assemblies of nature and society. To bring the two together would be to commit a crime against knowledge, morality, and politics simultaneously.⁶ We now know why: nature used to make it possible to subject the human assembly to a permanent threat of salvation by Science that paralyzed it in advance; conversely, the prison of the social world made it possible to subject the assembly of nature to a permanent threat of pollution by violence. The two houses that were constituted for their mutual paralysis thus clearly cannot be brought together without further ado: the procedure for convoking them has first to be redefined from top to bottom. For the time being, there is nothing in political philoso-

phy, in the conception of the social world devised by the human sciences, that allows us to replace nature. It is thus useless to hope that a “natural contract” will intervene to repair the limitations of the old social contract, as if one could simply bring together in one great whole the subjects and objects constituted over the years in order to wage the most pitiless of cold wars against one another.⁷ No matter how long its digestive process takes, the boa constrictor of politics cannot swallow the elephant of nature. A body produced to be foreign to the social body will never be socialized; or else the chemistry of digestion will have to be altered. Political ecology is doing just this; but it is still unaware of what lessons it can draw from this process.

The temptation of globalization appears all the more irresistible in that ecological crises are translated most often by the disappearance of everything external to the human world, every reserve for human action, every discharge by means of which one could, up to now, in the delicious euphemism invented by the economists, *externalize** actions. This paradox has been noted often: the concern for the environment* begins at the moment when there is *no more environment*, no zone of reality in which we could casually rid ourselves of the consequences of human political, industrial, and economic life.⁸ The historical importance of ecological crises stems not from a new concern with nature but, on the contrary, from the impossibility of continuing to imagine politics on one side and, on the other, a nature that would serve politics simultaneously as a standard, a foil, a reserve, a resource, and a public dumping ground. Political philosophy abruptly finds itself confronted with the obligation to *internalize** the environment that it had viewed up to now as another world, a realm as distinct as the sublunary physics of the ancient Greeks could be, before Galileo, from the physics of the heavens. As human politics notices that it no longer has any reserve or dumping ground, what we begin to see clearly is not that we must at last concern ourselves seriously with nature as such, but, on the contrary, that we can no longer leave the entire set of nonhumans captive under the exclusive auspices of nature as such. In a few short decades, the assembly of humans is finding itself obliged to reconsider the initial division, and it is asking the other assembly, which has been meeting in secret for centuries and whose political work has always been hidden up to now, to contribute its share. Everyone wants to find out in the name of what Constitution humans and

nonhumans are required to meet separately, the former protected by the politics of power and the latter by the epistemology police. And if no written articles of law can be found, then people begin to clamor loud and long for a change in the form of our public life through the rewriting of a Constitution better adapted to the new concerns.

If we use the word “collective*” in the singular, it is thus not in order to signal the same type of unity as the one implied by the term “nature,” and still less to designate a utopian “reconciliation between man and nature.” Nature “in general,” as we are well aware, was in fact never stable, but always in the process of serving as a pendant to the irremediable breakup of the social and human world. Now, in the word “collective,” it is precisely the *work* of collecting into a whole that I want to stress. The word should remind us of sewage systems where networks of small, medium, and large “collectors” make it possible to evacuate waste water as well as to absorb the rain that falls on a large city. This metaphor of the *cloaca maxima* suits our needs perfectly, along with all the paraphernalia of adduction, sizing, purifying stations, observation points, and manholes necessary to its upkeep. The more we associate materialities, institutions, technologies, skills, procedures, and slowdowns with the word “collective,” the better its use will be: the hard labor necessary for the progressive and public composition of the future unity will be all the more visible.

By the word “collective” in the singular, I therefore mean not the solution to the problem of the number of collectives (which I shall address only in Chapter 5), but simply the reactivation of a problem of progressive composition of the common world—a problem that the division into two houses of the old Constitution did not allow us even to begin to raise, since nature, prematurely unified, appeared to have resolved the problem once and for all. I have no idea whether there is just one collective or whether there are three, several, sixty-five, or an infinite number. I use the word only to mark a political philosophy in which *there are no longer two* major poles of attraction, one that would produce unity in the form of nature and another that would maintain multiplicity in the form of societies. *The* collective signifies “everything but not two separated.” By taking an interest in the collective, we are going back to square one in considering how to recruit an assembly, without continuing to worry about the ancient titles that sent some to sit in nature’s ranks and others on society’s benches. In the

present chapter, I shall try to define the equipment of “citizens,” as it were, who are called to sit in a single assembly, whereas they had always before, to extend the metaphor, lived in a society of Orders known as the Nobility, the Clergy, and the Third Estate: I am convinced that when these two houses are brought together, the effects for the future Republic will be the same as those produced when, in Versailles, in 1789, the Third Estate, the Nobility, and the Clergy refused to sit separately and to vote by Order.

While the revolutionary examples have their charm, still, the constitutional upheavals of the past concerned humans alone! Now, today’s counterrevolutionary upheavals also concern nonhumans. What, then, for the associations of humans and nonhumans, is the equivalent of the one-man-one-vote principle invented by my French ancestors when they refused to hold their sessions according to the divisions of the Old Regime*? Here is the second difficulty that we shall have to resolve if we are going to learn how to convoke the collective.

Will we have to go so far as to give nonhumans voting rights?⁹ I need only invoke this sort of difficulty to bring a dreadful specter into view: the obligation to engage in metaphysics, that is, to define in turn how the pluriverse is furnished and with what properties the members of the Republic must be endowed. I then fall into a painful contradiction: it is as if I had to define a metaphysics common to humans and nonhumans, whereas I have rejected the nature-society distinction precisely because it imposed a particular metaphysics without due process, a *metaphysics of nature**, to choose a deliberately paradoxical expression. If, as so many ecological thinkers have invited us to do, we have to extricate ourselves from traditional metaphysics in order to embrace a different, less dualistic, more generous, warmer metaphysics, we shall never manage to draft the new Constitution, for any metaphysics has the disagreeable characteristic of leading to interminable disputes. I am quite willing to reopen a public discussion that has long been prohibited, but I cannot expect the debate to depend on *prior agreement* about the furnishing of the pluriverse—which is just what the kingly power that parceled out the primary qualities we all share and the secondary qualities that divide us sought to obtain on the cheap and without discussion. I want this common world to be achieved *after* the new Constitution has been drafted, not before. So we find ourselves confronting a classic problem of *bootstrapping*: if we

are going to be able to substitute the *experimental metaphysics** we are talking about for the arbitrariness—or the arbitrage—of nature, we shall have to begin by defining a sort of vital minimum, a kind of metaphysical “minimum wage” that will allow us to make possible the convocation of the collective. Why would my readers want to abandon their own metaphysics to accept mine or those of ecological thinkers, whether deep or superficial? Why should they deprive themselves of the solid anchor they have in the “metaphysics of physics”?

Fortunately, I do not need to erect one metaphysics to challenge another and thereby prolong the interminable quarrel over the foundations of the universe! To reopen public discussion about the distribution of the primary and secondary qualities, we have simply to move from a warlike version of public life *to a civil version*. Political ecology does not bear “at once” on things and people. Indeed, what does “bear” mean? What does “at once” mean? And “things”? And “people”? All these little words reach us on the move, trained, equipped, ready to go up to the front in past battles that are no longer our own. In order to have them work for us, we have to “convert” them, as it is said in the weapons industry when an entire sector of military production is to be shifted to civilian purposes.

We are going to show how humans and nonhumans, provided that they are no longer in a situation of civil war, can *exchange properties*, in order to compose in common the raw material of the collective. Whereas the subject-object opposition had the goal of *prohibiting* any exchange of properties, the human-nonhuman pairing makes such an exchange not only desirable but necessary. This pairing is what will make it possible to fill up the collective with beings endowed with will, freedom, speech, and real existence. The common destiny of such beings will explain why political ecology cannot be developed through a simple juxtaposition of ecology and politics. Instead of a science of objects and a politics of subjects, by the end of the chapter we should have at our disposal a political ecology of collectives consisting of humans and nonhumans.

Less difficult than the previous chapter and much less so than the following one, this chapter requires only that readers not let themselves be shocked too quickly by the curious exchanges of properties in which we are going to indulge. If our peaceful restructuring still appears surprising, it has to be compared to the contradictory roles

that militarized objects were made to play under the old Constitution. Mute, they nevertheless had the capacity to speak by themselves; amoral, they nevertheless dictated the most important of moralities to humans, the one that forces us to bow to the undeniable evidence of matters of fact; external to all human enterprise, they were nevertheless merged without the least difficulty, through the intermediary of laboratories and industry, into daily life; inanimate, they nevertheless formed the animation, not to say the souls, of all our bodies; they were invisible, yet scientists never lost sight of them; they were inessential, because they lacked speech and values, yet they formed the very essence of reality, in defining the common world; they were indifferent to our passions, yet they made all the difference in the conflicts waged by humans over passions; they were devoid of all will, yet their surreptitious action was what led poor human wretches to act. If the exchanges of competencies between humans and nonhumans to which we are about to turn appear surprising, I have to ask my readers to be kind enough to keep on comparing their simplicity to the monstrous bric-a-brac that we have gotten into the habit of calling, a bit too hastily, reasonable and self-evident; I must ask them to recall that we are leaving the soldiers in their barracks, and that we are speaking only of the civil life of humans and nonhumans.

First Division: Learning to Be Circumspect with Spokespersons

Since the composition of the common world, now that it is no longer a given from the outset, *has to be the object of a debate*, the only way to recognize the “citizenry” within the collective that may be relevant for public life is to define the collective as an assembly of beings *capable of speaking*. Political philosophy traditionally required discussion to take the place of violence; now, it also has to be able to replace *both* silence and the nondiscussable. Why might this vague word “discussion,” borrowed from the fracas of human assembly, serve to redefine political ecology, which bears precisely on beings that do not speak, that belong to the nature of mute things?¹⁰ Politics talks and palavers; nature does not, except in ancient myths, fables, and fairy tales. Yet a slight displacement of our attention suffices to show that nonhumans, too,

are implicated in a great number of *speech impedimenta**.¹¹ This observation will allow us to modify the meaning of the word “discussion,” shifting it away from the political tradition toward what will become the future ecological tradition, even as the word retains for speech, for the *logos*, the central place it has always held in political philosophy.

The first speech impediment is manifested by the multiplication of controversies: the end of nature is also the end of a certain type of scientific certainty about nature. As has often been noted, every ecological crisis opens up a controversy among experts, and these controversies generally preclude the establishment of a common front of indubitable matters of fact that politicians could subsequently use in support of their decisions.¹² In the face of this familiar situation, which can be found in the argument over global warming as well as in the role of Amazonian earthworms, the disappearance of the batrachians, and the contaminated blood scandal, two attitudes are possible: we can wait for the sciences to come up with additional proofs that will put an end to the uncertainties, or we can consider uncertainty as the inevitable ingredient of crises in the environment and in public health.¹³ The second attitude has the advantage of replacing something that is not open to discussion with something that can be debated, and of binding together the two notions of objective science and controversy: the more realities there are, the more arguments there are. Matters of concern have replaced matters of fact.

Here, too, we cannot renew political ecology without benefiting from the contribution of science studies. The irruption of scientific controversies on the public stage does not prove that we have moved from established facts to baseless fictions, but that the distinction between what is internal to scientific disciplines and what is external has to some extent disappeared. Today as before, arguments take place among researchers inside laboratories.¹⁴ Let us note right away that the meaning of the words “discussion” and “argument” is modified as soon as we evoke scientists in lab coats. It is surely no longer possible to oppose the scientific world of indubitable facts to the political world of endless discussion. There are more and more common arenas in which discussion is nourished both by controversies among researchers and by squabbling in assemblies.¹⁵ Scientists argue among themselves about things that they cause to speak, and they add their own debates to those of the politicians. If this addition has rarely been

visible, it is because it has taken place—and still takes place—elsewhere, inside the laboratory, behind closed doors, before the researchers intervene as experts in the public debate by reading in one voice the unanimous text of a resolution on the state of the art. There are, then, within the sciences themselves, certain procedures that suspend, distinguish, and resume the course of the discussion, procedures that allocate the stages of the discussion to separate houses. It would thus be wrong to see people who do not discuss because they demonstrate—scientists—as opposed to people who discuss without ever being able to reach agreement on the basis of a definitive demonstration—politicians.

Where are we going to find the means of buttressing, provisionally, this capacity of speech that is intermediary between “I am speaking” and “the facts are speaking,” between the art of persuasion and the art of demonstration, before localizing it definitively, in Chapters 3 and 4, within the future Constitution? In politics, there is a very useful term for designating the whole gamut of intermediaries between someone who speaks and someone else who speaks in that person’s place, between doubt and uncertainty: “spokesperson*.” If I speak in the name of another, I am not speaking in my own name. Conversely, if I were to affirm without further ado that another is speaking through me, I would be demonstrating great naiveté, a naiveté that certain epistemological myths manifest (“facts speak for themselves”) but political traditions prohibit. To describe intermediary states, we can use the notions of translation, betrayal, falsification, invention, synthesis, or transposition. In short, with the notion of spokesperson, we are designating not the transparency of the speech in question, but the *entire gamut* running from complete doubt (I may be a spokesperson, but I am speaking in my own name and not in the name of those I represent) to total confidence (when I speak, it is really those I represent who speak through my mouth).

We have to acknowledge that the notion of spokesperson lends itself admirably to the definition of the work done by scientists in lab coats. It took a really powerful prejudice to make the laboratory and the assemblies so incommensurable for us that we had to deprive ourselves of such a useful term: the lab coats are the spokespersons of the nonhumans, and, as is the case with all spokespersons, *we have to entertain serious but not definitive doubts* about their capacity to speak in

the name of those they represent. The violence of scientific controversies covers as wide a gamut of positions as the violence of political assemblies: it goes from the charge of treason (“it is not the objective fact that is speaking, but you and your own subjectivity”) to recognition of the utmost fidelity: “What you are saying about the facts is what they would say themselves if only they could speak, and moreover they do speak, and if they speak, it is precisely thanks to you, who are speaking not in your own name but in theirs . . .” Thanks to the notion of spokesperson, a process of assembling can now begin, one that no longer divides up the types of representatives in advance according to whether they demonstrate what things are or declare what humans want. In the single Kyoto forum, each of the interested parties can, at a minimum, agree to consider the other as a spokesperson, without finding it relevant to decide whether the other represents humans, landscapes, chemical-industry lobbies, South Sea plankton, Indonesian forests, the United States economy, nongovernmental organizations, or elected governments.

“Discussion,” a key term of political philosophy that has been mistakenly understood as a well-formed notion, available off the shelf, as it were, has now been quite profoundly modified: speech is no longer a specifically human property, or at least humans are no longer its sole masters.¹⁶ One of the simplest ways to describe ecological crises is to acknowledge that they most often arise from a process of inscription by the sciences, a process in which the only disciplines capable of alerting us to the problems put them into words, sentences, and graphs—but to acknowledge as well that these same sciences no longer suffice to reassure us about the solutions. No one can continue to find respite from the violence of assemblies by entering the austere precincts of laboratories. Readers who may still be doubtful need only glance at newspapers and magazines, where there are traces of this profound change everywhere: far from suspending discussion over matters of fact, every piece of scientific news, on the contrary, throws oil on the fire of public passions.¹⁷ Some people still expect to see the day come soon when we have become so knowledgeable that we shall return to the gentle past of mute nature and experts speaking of indisputable facts and putting an end, through their knowledge, to all political discussion. Human beings live on hope. For me, this regime of speech corresponds to the modernist nightmare into which people

sought to plunge public life and from which political ecology can finally extricate it. From now on, we discuss together before we decide.¹⁸ By using the word “controversy” in a positive sense, I have suppressed not the certainties of the sciences but one of the old barriers set up between the visible assembly of humans discussing and arguing among themselves and the scientific assembly that did of course discuss and argue a good deal, but in secret, and that in the end produced only indubitable matters of fact.¹⁹

Nothing is resolved, however, by this first liberation of speech, because immediately people will object, in spite of everything, that the proof-workers who conduct experiments in laboratories, who record their inscriptions with instruments, who publish findings in journals, who argue over implications in professional meetings, who summarize conclusions in reports, who incorporate the resulting laws in other instruments, other rules, other teachings, other habits, are all humans. Humans and humans alone are the ones who speak, discuss, and argue. How can there be any doubt about this self-evident fact? And yet, let us not rush to agree. Where political ecology is concerned, nothing can be achieved in a hurry, as I have often pointed out, for good sense is almost as unreliable a counselor as anger.

We can go much further in the redistribution of roles between politicians and scientists if we agree to take seriously the little suffixes “-logies” and “-graphies” that all scientific disciplines, hard or soft, rich or poor, famous or obscure, hot or cold, have added to their enterprises. Each discipline can define itself as a complex mechanism for giving *worlds the capacity to write or to speak*, as a general way of making mute entities literate. It is odd, then, that political philosophy, so obsessed with its own logocentrism, did not see that the greatest share of the *logos* was to be found in laboratories. Let us remember that non-humans are not in themselves objects, and still less are they matters of fact. They first appear as matters of concern, as new entities that provoke perplexity and thus speech in those who gather around them, discuss them, and argue over them. Such is the form in which, in the previous chapter, we recognized external reality, once it had been liberated from the obligation imposed on objects to silence humans.

Who speaks, actually, in laboratories, through instruments, thanks to equipment that has been set up, at the heart of the scientific assembly? Surely not the scientist herself. If you want to heap scorn upon an ac-

knowledgeable fact, you will say precisely that it is she, the scientist, who is speaking on her own, that it is her own speech, her prejudices, her thirst for power, her ideologies, her preconceived ideas, and not . . . not what? Not the actual thing, quite obviously, not the thing itself, not reality. The most common of all clichés in the City of Science is that “the facts speak for themselves.” But what does it mean for a fact to speak “for itself”? The lab coats are not so deranged as to believe that particles, fossils, economies, or black holes speak on their own, without intermediaries, without any investigation, and without instruments, in short, without a fabulously complex and extremely fragile *speech prosthesis*. If no one is crazy enough to declare that the facts speak for themselves, no one says, either, that lab coats speak *on their own* about *mute things*. Or, when someone does make this accusation, it is in merciless criticism of an utterance which then loses all claim to fidelity, which becomes no longer objective but subjective, no longer a *fact* but an *artifact*. We shall say, then, that lab coats have invented *speech prostheses that allow nonhumans to participate in the discussions of humans, when humans become perplexed about the participation of new entities in collective life*. The formula is long, to be sure; it is clumsy and turgid; but we find ourselves in a situation where a speech impediment is preferable to an analytic clarity that would slice off mute things from speaking humans in a single stroke. Better to have marbles in one’s mouth, when speaking about scientists, than to slip absent-mindedly from mute things to the indisputable word of the expert, without understanding the first thing about the metamorphosis that would then look like vulgar sleight of hand. Whereas the myth of the Cave obliged us to undergo a miraculous conversion, what is at stake here is only a simple translation, thanks to which *things become, in the laboratory, by means of instruments, relevant to what we say about them*.²⁰ Instead of an absolute distinction, imposed by Science, between epistemological questions and social representations, we find in the sciences, on the contrary, a highly intense fusion of two forms of speech that were previously foreign to one another.

Before my readers begin to get the disquieting impression that they are being pulled into a fable where animals, viruses, stars, and magic wands are going to start chattering away like magpies or princesses, let me emphasize that we are in no way dealing with a novelty that would be shocking to common sense. On the contrary, it is good sense that

uses the epistemological myth of a nature “that imposes itself of its own accord”; it is good sense that speaks of “striking self-evidence” and “gripping facts.” To give political ecology a new foundation, we do not have to choose between a reasonable theory that presupposes a mute nature and speaking humans, on the one hand, and a far-fetched theory that turns lab coats into the speech prosthesis of nonhumans, on the other. We find ourselves faced with an old wives’ tale that presupposes in the same breath mute things and speaking facts, things that speak on their own and indisputable experts. And I am proposing, very reasonably, to make this mythic contradiction comprehensible by *restoring all the difficulties* that a human encounters in speaking to humans about nonhumans *with* their participation.

In other words, while the new myth may already exist, the conceptual institution that would make it fruitful does not yet exist. This institution is what we have to invent. Like all modernist myths, the aberrant opposition between mute nature and speaking facts was aimed at making the speech of scientists *indisputable*; thus, this speech passed through a mysterious operation resembling ventriloquism, from “I speak” to “the facts speak for themselves” to “all you have to do is shut up”! We can say what we like about the allegory of the Cave, but we can associate it neither with reason nor with simplicity. There can be nothing more archaic, more magical, even if the myth of the Cave also serves as the primal scene for the monstrous marriage of the epistemology police with political philosophy blessed by sociology.

I do not claim that things speak “on their own,” since no beings, not even humans, speak on their own, but always *through something or someone else*. I have not required human subjects to share the right of speech of which they are so justly proud with galaxies, neurons, cells, viruses, plants, and glaciers. I have only called attention to a phenomenon that precedes the *distribution* of forms of speech, which is called a Constitution. I have simply recalled what ought to be taken as self-evident from now on: between the speaking subject of the political tradition and the mute things of the epistemological tradition, there always was a third term, *indisputable speech*, a previously invisible form of political and scientific life that made it possible sometimes to transform mute things into “speaking facts,” and sometimes to make speaking subjects mute by requiring them to bow down before nondiscussable matters of fact.

As I said in the Introduction, we do not have a choice between en-

gaging in political ecology and not engaging in it. By refusing to engage in it, we would be accepting the strangest of all possible distributions: the speaking subject could see himself silenced at any moment by a more authoritarian speech that would never appear as such, since it would remain indisputable and no one could cut it off. *By defending the rights of the human subject to speak and to be the sole speaker, one does not establish democracy; one makes it increasingly more impracticable every day.*²¹ Conversely, everything becomes clear if one agrees to situate the Republic *before* the distribution of forms, genres, and speaking times, and if one allows the unfolding of the whole gamut of speech impedimenta that preclude over-hasty pronouncements about who is speaking and with what authority. I am not replacing the old metaphysics of objects and subjects by a “richer” vision of the universe in which humans and things would speak as poets; I am only keeping open once again the problem of the assertion of the right to speak, a right that is necessary to the new assembly of humans and nonhumans. One can refuse to raise the question of who is speaking, but then one should not expect the collective to come together democratically.

Democracy can only be conceived if it can freely traverse the now-dismantled border between science and politics, in order to add a series of new voices to the discussion, voices that have been inaudible up to now, although their clamor pretended to override all debate: *the voices of nonhumans*. To limit the discussion to humans, their interests, their subjectivities, and their rights, will appear as strange a few years from now as having denied the right to vote of slaves, poor people, or women. To use the notion of discussion while limiting it to humans alone, without noticing that there are millions of subtle mechanisms capable of adding new voices to the chorus, would be to allow prejudice to deprive us of the formidable power of the sciences. Half of public life is found in laboratories; that is where we have to look for it. Forgetting laboratories had only disadvantages: political discussion was deprived of the multiplicity of voices that can make themselves heard and thus modify the future composition of the collective; the lab coats were obliged to become experts, to intervene with authority, forgetting their own perplexity, their skills, and their instruments, to intervene and short-circuit the debate time after time with indisputable facts and laws cast in bronze.²² On the one hand, then, humans were deprived of the immense reservoir of democracy constituted by nonhumans; on the other, the lab coats were deprived of the opportu-

nity to contend, rather roughly and as equals, with the great reservoir of speech impedimenta—that is, of democracy—constituted by humans.

We cannot allow ourselves to merge controversy with discussion, and then simply add nonhumans to the debate. With the notion of spokesperson, we are going much further: we are *extending doubt* about the fidelity of the representation to nonhumans. Speech is not a self-evident phenomenon that properly belongs to humans and that could be offered only metaphorically to nonhumans. The speech of *all* spokespersons, those of the old science and those of the old politics, becomes an *enigma*, a gamut of positions running from the most complete doubt—which is called artifact or treason, subjectivity or betrayal—to the most total confidence—which is called accuracy or faithfulness, objectivity or unity. Thus, I have not “politicized” nature. The representation of human spokespersons remains as profound an enigma as that of laboratories. That a human should speak in the name of several others is as great a mystery as the one in which a human speaks in such a way that he is no longer speaking at all; instead, the facts are speaking for themselves through him. Someone who says, “I am the State,” or “France has decided . . .,” is no easier to decipher than someone who knows what the earth’s mass is, or can quote Avogadro’s number in an article.

At this stage in our learning process, I do not claim to have the solution to the problem of the spokesperson; I seek simply to emphasize once again that there are not *two* problems, one on the side of scientific representation and the other on the side of political representation, but a single problem: How can we go about *getting those in whose name we speak to speak for themselves*? By refusing to collaborate, political philosophy and the philosophy of the sciences had deprived us of any opportunity to understand this question. Political ecology is determining clearly for the first time the problem that we are going to have to solve. It belongs neither to politics nor to epistemology nor to a blend of the two: it is situated elsewhere, at three removes.

Second Division: Associations of Humans and Nonhumans

It is easy to object that, despite all the contortions to which we have just subjected ourselves, the scientist is still the one doing the talking.

If we are ready to mix scientific controversy and political discussion together in a single arena, we can only be suspicious of a wild extension of speech to things. Humans are still the ones who blather on. Here we have an asymmetry that is not only insurmountable in practice but insurmountable in theory, if we want to maintain the eminent place of humans and retain the admirable definition of the “political animal” that has always served as a basis for public life: it is because he spoke freely on the agora that man—at least the male citizen—had the right of citizenship. Fine; who is saying anything different? Who wants to question this definition? Who wants to undermine its foundation? I am indeed situating myself in the concatenation of these principles, in the long and venerable tradition that has constantly *extended* what was called humanity, freedom, and the right of citizenship. The story is not over. But it just so happens that the Greeks, who invented both Science and democracy, bequeathed us a problem that no one has yet been able to solve. Seeking to forbid the exploration of new speech prostheses in order to take into account all the nonhumans whom, *in any event, we already cause to speak in countless ways* would amount, on the contrary, to abandoning the old tradition and becoming savage for real. The barbarian is indeed, as Aristotle claimed, someone who is ignorant of representative assemblies or who acts, out of prejudice, to limit their importance and scope; someone who claims indisputable power through which he short-circuits the slow work of representation. Far from calling this acquisition into question, I claim on the contrary to be extending it, naming the extension of speech to nonhumans Civilization*, and finally solving the problem of representation that rendered democracy powerless as soon as it was invented, because of the counterinvention of Science*.

Still, we have to remain sensitive to the problem: by redistributing speech impedimenta*, we have taken an initial opposition between mute entities and speaking subjects and made it undramatic. Restored to civil life, demobilized humans and nonhumans can shed the old garments that marked them as subjects and objects, in order to participate jointly in the Republic. We are nevertheless not at the end of our troubles, for we have to convert many other features of this war industry before we can have more or less presentable citizens. In addition to being endowed with speech, they have to be made capable of acting and grouping themselves together in associations—and there will still

be the problem, in the following section, of finding a proper body for them.

To understand the nature of the beings to be collected, we must completely do away with the opposition between two types of assembly. This is the only way to define the job that ecology and politics have in common. It will be objected that “things” and “people” still remain, and that we are still using the expressions “humans” and “nonhumans”: even if we displace our attention toward the speech prostheses they have in common, even if, to convoke them, we fuse procedures that come both from the laboratory and from representative assemblies, the fact remains that our gaze, as if we were watching a tennis match, turns now toward objects, now toward subjects. Thus, the sciences and the politics do not yet have any common population. Let everyone take care of his own side, and the cows will be well looked after—at least as long as they are not mad. It will never be possible to believe that these two terms have to be fused to consider a mix, which would be nothing but a frightful melting pot, a monster even stranger than the nonhuman speech brought into play in the previous section. What is the common matter on which the scientist’s calling and the politician’s both come to bear?

The image of a tennis match is not a bad one. Far from referring to isolated spheres that have to be brought together by a higher consciousness, or “surpassed” by a dialectical movement, the notions of object and subject have just one goal: to return the ball to the other side, while keeping the adversary in a constant state of alert. We can say nothing about subjects that does not entail humiliating objects; we can say nothing about objects that does not entail shaming subjects. If political ecology used these notions as its point of departure, it would succumb at once to the polemic they carry within themselves. If it claimed to “get beyond their contradiction” through a miraculous fusion, it would die even faster, poisoned by a violence that runs counter to its physiology.²³ To put it still another way, subjects and objects do not belong to the pluriverse whose experimental metaphysics we need to reconstruct: “subject” and “object” are the names given to forms of representative assemblies, so that they can never bring themselves together in the same space and proceed together to take the same solemn oath. I am not responsible for thrusting these notions into the political discussion. They are already there; they have always been there.

They have been created to instill mutual horror. The only question thus becomes whether one can bring this reciprocal disgust to an end in order to form a different public life around them.

Here is the turning point where we are going to grasp the enormous difference between the civil war of the subject-object opposition and the civil collaboration between the human-nonhuman pair. Just as the notion of speech, in the preceding section, designated not someone who was speaking about a mute thing, but an impediment, a difficulty, a gamut of possible positions, a profound uncertainty, so too the human-nonhuman pair does not refer us to a distribution of the beings of the pluriverse, but to an uncertainty, to a *profound doubt about the nature of action*, to a whole gamut of positions regarding the trials that make it possible to define an *actor**.

Let us begin with the good-sense evidence from which we are going to seek to distance ourselves little by little. According to tradition, the social actor endowed with consciousness, speech, will, and intention, on the one hand, has to be distinguished from the thing that obeys causal determinations, on the other. Although they are often conditioned, even determined, human actors can nevertheless be said to be defined by their freedom, whereas things obey only chains of causality. A thing cannot be said to be an actor, in any case not a social actor, since it does not *act*, in the proper sense of the verb; it only behaves.²⁴

It is easy to see how these definitions paralyze political ecology. They oblige it in effect to choose too soon between two catastrophic solutions, each of which returns to the vocabulary of two illicit assemblies: naturalization on the one hand, socialization on the other. Either it takes the model of the object and extends it to the entire biosphere, humans included, in order to solve the problems of the planet—but then it no longer has at its disposal human actors endowed with the freedom and will to do the triage and decide what must be done and what must not be done—or else, conversely, it extends the model of will to everything, including the planet—but then it no longer has the raw, unattackable nonhuman matters of fact that allow it to silence the multiplicity of subjective viewpoints, each of which expresses itself in the name of its own interests. Let us not imagine that political ecology has a middle way at its disposal, an intermediate solution that would combine a bit of naturalization and a bit of socialization, for then it would have to draw the line between

the ineluctable necessity of objects on the one hand and the subjects' freedom on the other. This would presuppose that the problem has been solved, for political ecology *would know* what actors are, what they want, what they can do, and also what things and their bundles of causality are. By what miracle would it master the dichotomy between freedom and necessity? Where would it get this absolute knowledge? Either from nature or from society. But to produce the absolute knowledge that draws the line between "things" and "people," political ecology would have *already* had to choose between naturalization and socialization, between ecology and politics. It cannot do both at once without contradiction. This is what has made it so unstable since its emergence; this is what makes it shift brutally between total power and equally total impotence. Now, as I see it, political ecology is no longer self-contradictory if it ceases to believe that it bears either on "things," or on "people," or on "both at once."

Fortunately for us, this venerable distinction does not have the solidity that the patina of centuries seems to lend it. To tell the truth, it is somewhat worm-eaten, and it holds together only through the polemics to which it lends itself and will keep lending itself for some time to come. Detached from their claim to describe domains of reality, the terms "object" and "subject" are reduced to polemical roles that make it possible to resist *the supposed monstrosity of their confrontation*. What is a subject, actually? That which resists naturalization. What is an object? That which resists subjectivization. Like the warring twins of mythology, they are heirs of the division into two powerless assemblies that we abandoned above. By changing Constitutions, we are thus also going to find out how we can get rid of the tiresome polemics of objects and subjects.

If you assert your freedom, and someone tells you rather arrogantly that you are in fact only a sack of amino acids and proteins, you will of course react with indignation against this reduction, by flaunting the imprescriptible rights of the subject. "Human beings are not things!" you will say, pounding on the table with your fist. And you will be quite right. If you assert the indisputable presence of a fact and someone explains to you rather arrogantly that you have created this fact out of your own prejudices and that you are dealing with a "mere social construction," you will resist this reduction violently, loudly reasserting the autonomy of Science against all the pressures of subjectiv-

ity. “These are the facts!” you will say, pounding the table with your fist.²⁵ And you will still be right. To avoid one monster, we are ready to defend another. For people to plunge into such battles and wear out their fists by striking the table over and over, there must no longer be a civil life; people must already have agreed to go down in chains into the Cave.

Let us suppose now that someone comes to find you with an association of humans and nonhumans, an association whose exact composition is not yet known to anyone, but about which a series of trials makes it possible to say that its members *act*, that is, quite simply, that *they modify other actors through a series of trials that can be listed thanks to some experimental protocol*. This is the minimal, secular, nonpolemical definition of an actor.²⁶

Are we dealing with objects? By no means. Every nonhuman that is a candidate for existence finds itself accompanied by a series of lab coats and many other professionals who point to the instruments, situations, and protocols, without our being able to distinguish yet who is speaking and with what authority. There are indeed actors here, or at least, to rid the word of any trace of anthropomorphism, *actants**, acting agents, interveners. Are we dealing with subjects? Not with subjects either. There are laboratories, sites, situations, tests, and effects that can in no case be reduced to the gamut of actions anticipated up to this point under the notion of subject. Here we recognize the matters of concern* we met in the preceding chapter and whose proliferation, as we have seen, attests to the scope of the ecological crises.²⁷

If, instead of being asked to react to the violent volley of an object or a subject, you are thus offered, *in a civil way*, associations of humans and nonhumans in a state of uncertainty, you need not become indignant and pound on the table, according to the two modalities of realism. No indisputable word comes to reduce you to the state of a thing.²⁸ The speech prostheses are on the contrary quite visible, involved in entirely explicit controversies. It is not a matter of replacing a gamut of actions traditionally associated with the subject by a shorter range of actions that would reduce the first. On the contrary, the associations that are presented to you seek to *add* to the first list *a longer list* of candidates for action. Does making the speech prosthesis visible take away quality from the statements made, by reducing

them to a social construction, to prejudices, passions, or opinions that would force you to be indignant over the domination of subjectivity? Not in the slightest, since, here too, the associations that are presented to you are not there to reduce the list of actions to a list of the prejudices, interests, or social passions that have already been recorded; they are simply and very politely proposing to *extend* the repertory of actions through a *longer* list than the one that had been available up to now.

I maintain that this quite innocent notion of a shorter or longer list of elementary actions suffices to redistribute the cards between humans and nonhumans, and to disengage this pair from the perpetual battle carried on noisily by objects and subjects, the former seeking to come together under the banner of nature and the latter wanting to regroup in society. The notion of a longer or shorter list has, above all, the signal advantage of banality. It leads a modest, common, civil life, far from the great outbursts of the interminable cold war carried on between objects and subjects—and the even more interminable war carried out against all the others by those who claim to be “getting beyond” the object-subject opposition.

It is clearer now: the extension of the collective makes possible a *presentation* of humans and nonhumans that is completely different from the one required by the cold war between objects and subjects.²⁹ The latter were playing a zero-sum game: everything lost by one side was won by the other, and vice versa. Humans and nonhumans for their part can join forces without requiring their counterparts on the other side to disappear. To put it yet another way: *objects and subjects can never associate with one another; humans and nonhumans can*. As soon as we stop taking nonhumans as objects, as soon as we allow them to enter the collective in the form of new entities with uncertain boundaries, entities that hesitate, quake, and induce perplexity, it is not hard to see that we can grant them the designation of actors. And if we take the term “association*” literally, there is no reason, either, not to grant them the designation of *social actors*.³⁰ Tradition refused them this label, in order to reserve it for subjects whose course of action took place in a world—a framework, an environment—of things. But we now understand that this refusal had no cause other than the panicky fear of seeing humans *reduced* to things, or, conversely, of seeing the prejudices of social actors *preclude* access to things. In order to

avoid both this reification and this social construction, the border between social actors and objects had to be carefully patrolled: such was the miserable device to which all the horror films that emerged from the Cave had to resort.

These fears are no longer called for if what comes knocking at the door no longer has the polemical form of a silencing matter of fact, but the ecological form³¹ of a perplexed nonhuman entering into a relationship with the collective and gradually being socialized by the complex equipment of laboratories. Nothing is easier than to lengthen the lists of actants, whereas one could never manage the relationships between objects and social actors, no matter what dialectical pirouettes one thought oneself supple enough to carry out. *Associating* social actors with *other social actors*: here is a task that is already more feasible, one that nothing forbids us to accomplish.

Third Division between Humans and Nonhumans: Reality and Recalcitrance

The entire history of diplomacy is proof: as long as weapons are not checked at the door, peace talks cannot take place in a civil fashion. Our strategy consists in a gradual reduction of dramatic tension that allows the current warriors' swords to be converted into plowshares for future citizens. In this chapter, I am not seeking to define the fundamental metaphysics that would tell us once and for all how the universe is furnished. On the contrary, I would like to reopen the public discussion, in the absence of any form of hidden decision concerning these furnishings. I want simply to find out what equipment has to be available to populations in order for them to assemble into a viable collective, instead of separating into two illicit assemblies that render each other mutually powerless and prohibit the exercise of public life.

For this operation of pacification, I propose an exchange of courtesies, a sort of gentleman's agreement: Why not credit your adversaries with the properties you hold dearest? We have just seen that this was possible for the terms "speech" and "social actor," which had been thought to be anthropomorphic: there is no reason to reserve them for humans, since they are perfectly suited to the nonhumans with which humans share their collective existence increasingly every day, thanks

in large part to the work of laboratories. Now we have to test the reciprocal proposition and look at terms often reserved for the aforementioned objects, for example, “reality.” “Citizens” are equipped for speech; they can act and associate among themselves; we now face the task of procuring a proper body for them.

Retaining the part of the notion of external reality that was associated with the old polemics of the Cave is of course out of the question. But we also know that abandoning that polemics does not deprive us of all contact with reality, does not consign us to the tragic destiny with which we were threatened by the epistemology police. Here, too, we can appreciate the full difference between the work accomplished by the subject-object opposition and what the association of humans and nonhumans allows. No one would ever appeal to subjectivity except to avoid the abomination called reifying, objectifying, or naturalizing. To keep that monster from seizing power, one would do *anything*; one would even maintain that there are such things as subjects “detached” from nature, endowed with consciousness and will, with an imprescriptible right to liberty—in short, subjects that are radically and forever exempt from the cruel necessity of causal chains. And it is indeed a monster that threatens the subject, since, under cover of nature, there emerges the indisputable speech that we have shown, in the second section above, to be so very aberrant.

But why would anyone resort to such an aberration? It takes powerful reasons; otherwise, this indisputable speech would at once appear for what it is: a contradiction in terms. When people make up their minds to use it without remorse, it is in order to struggle against another abomination: the violence of political passions, the vagaries of the opinions, beliefs, values, and interests that threaten to invade the definition of the facts, dissolve objectivity, ruin access to things themselves, and replace the real world with the old refrain of human feelings. To keep this other monster from seizing power, one would do *anything*; one would even maintain that, apart from all human society, there are indisputable, objective, eternal laws that are absolutely exempt from the agitations of the crowd and before which subjects must kneel in humility. At each swing of the pendulum, the range widens: one absurdity is followed by a larger one that has the opposite meaning. This infernal oscillation is what has gradually rendered the notion of external reality useless, over the centuries. There is seemingly noth-

ing more straightforward than this notion; there is actually nothing more diabolically political. Every single aspect of its definition is designed to avoid the power of some monster and to accelerate the access to power of a still more horrible monster that will erect a barrier against the first.

We shall see in the following chapters how to replace the ill-founded externality of the current polemics with a desired exteriorization* that has been discussed and decided on through due process. For the moment, we must simply be sure that when we bring the social actors endowed with speech together in the collective, we are not going to lose all access to external reality in the process, and find ourselves with the usual phantoms of the social sciences: symbols, representations, myths, and other nonexistences of the same stripe that never hold up except by contrast with nature, which is reserved for the natural sciences. If we want the collective to be able to come together, it behooves us to dissociate the notion of external reality from that of indisputable necessity, in order to be able to distribute it equally among all human and nonhuman “citizens.” We are thus going to associate the notion of external reality *with surprises and events*, rather than with the simple “being-there” of the warrior tradition, the stubborn presence of *matters of fact**.

Humans are not specially defined by freedom any more than they are defined by speech: nonhumans are not defined by necessity any more than they are defined by mute objectivity. The only thing that can be said about them is that they *emerge in surprising fashion*, lengthening the list of beings that must be taken into account. It is important to understand here that the solution in question is not fabulous, dialectical, new, exotic, baroque, Oriental, or profound. No, its banality is its best quality. It belongs to the everyday world; it is secular; it is ordinary; it is superficial; it is drab.³² Its very banality makes it an ideal candidate to replace the fuss and bother of the subject-object opposition. What better foundation for common sense than the very self-evidence of these human and nonhuman actors whose association *is sometimes surprising*? Nothing more. Nothing less.

We understand better now the lesson of political ecology that seemed paradoxical when we first encountered it in Chapter 1: ecological and health crises, I said, can be spotted through the ignorance of connections between the actors and through the sudden impossibility

of summoning them up. The real merit of militant ecology is the ever-new surprise that comes when a new actor, human or nonhuman, emerges in the course of action when we least expect it. The definitive form of the human, the ineluctable composition of nature: these are just what militant ecology is most likely to miss. Political ecology cannot distribute either freedom or necessity once and for all; it surely cannot decide in advance that nature will possess all necessity and humanity all freedom. It finds itself *engaged in an experiment* in the course of which the actors, during the trial, try to connect with one another or to do without one another. Yes, the collective is indeed a *melting pot*, but it does not fold in together objects of nature made of matters of fact and subjects endowed with rights; it mixes together actants defined by lists of actions that are never complete. If a maxim had to be stitched onto the flag of political ecology, it would not be, as some of its militants still believe, the lapidary formula "Let us protect nature!" It would be a different one, much better suited to the continual surprises of its practice: "No one knows what an environment can do . . ."

In this situation of ignorance, whereas the emergence of an object or a subject can provoke indignation, the emergence of a new association of humans and nonhumans (other protocols, other trials, other lists of actions) can only give rise to *relief*, since the experimentation is beginning and the repertoire of actions is not closed. While subjects may well find it unbearable to have their speech cut off by an object with an irrefutable word, humans can experience pleasure when they discover that they are in the presence of new nonhumans that can participate in the composition of their collective existence.³³ If objects are scandalized to find themselves cast into doubt by the accusation of social construction, nonhumans find only advantages in being offered new resources allowing them to "land," as it were, in the collective. Neither subjects nor objects could absorb without scandal the modification of the lists of actants to be taken into account. What was given to the one had to be taken from the other. The pairing of humans and nonhumans is designed, on the contrary, for just this purpose: to allow the collective to assemble a greater number of actants in a single world. The terrain is now wide open. The list of nonhumans that participate in the action is expanding, the list of humans who participate in their reception likewise. We no longer have to defend the subject against reification, or to defend the object against social construc-

tion. Things no longer threaten subjects. Social construction no longer weakens objects.

Readers may object that there is still a total difference between human social actors and nonhuman social actors, since the former can never be mastered and the latter must on the contrary obey nothing but brute causality. If such an objection is raised, it is because readers are still using the old model that viewed human subjectivity as something that intervenes to disrupt the objectivity of laws, to pollute the quality of judgment, to suspend the succession of causes and effects. Those readers are still making use of the old distribution of roles between the necessity of things and the liberty of subjects, either to chasten nature and elevate man, or to glorify nature and belittle man. In both cases, they are continuing to use the polemical energy still left in the notions of object and subject and are continuing to function as if we were still living in the old cosmos, with its radical distinction between sublunary and supralunary worlds. Yet it was in order to keep human passions from *disturbing* objects that the need for “strict respect for causality” was endlessly stressed.

For readers to be fully convinced, it seems to me, they need only take seriously the label “actor”* that was introduced in the preceding section. Actors are defined above all as obstacles, scandals, as what suspends mastery, as what gets in the way of domination, as what interrupts the closure and the composition of the collective. To put it crudely, human and nonhuman actors appear first of all as trouble-makers. The notion of *recalcitrance* offers the most appropriate approach to defining their action. Anyone who believes that nonhumans are defined by strict obedience to the laws of causality must never have followed the slow development of a laboratory experiment. Anyone who believes, conversely, that humans are defined at the outset by freedom must never have appreciated the ease with which they keep silent and obey, must have failed to weigh their connivance with the object role to which people seek so often to reduce them.³⁴ To distribute roles from the outset between the controllable and obedient object on the one hand and the free and rebellious human on the other is to preclude searching for the condition under which—the trial through which, the arena in which, the labor at the price of which—one can, one must, make these entities exchange among themselves their formidable capacity to appear on the scene as full-fledged actors, that is,

as those *who forbid any indisputable transfer* (of force or reason), as mediators with whom it is necessary to reckon, as active agents whose potential is still unknown. I am not arguing that the roles of objects and subjects must be fused, but that the self-evident distribution of roles must be replaced—as has been done above for the notions of speech and social actor—by a *range of uncertainties* going from necessity to freedom. Once we recognize, on the side of the old arena of nature, that consequences always slightly exceed their causes, and, on the side of the new arena, that what causes beings to act is still subject to argument, this is sufficient to calm down the discussion and give all associations of humans and nonhumans the minimum reality that is needed to bring them together.

A More or Less Articulated Collective

In sharing the competencies of speech, association, and reality among humans and nonhumans, we have put an end to the anthropomorphism of the object-subject division that mobilized all entities in a fight for control of the common world. I have not proposed an alternative metaphysics, one that would be more generous and more encompassing; instead, I have refrained from taking the metaphysics of nature* as the only political organization possible. We have thus progressed in our convoking of the collective, since we know what procedures the foregoing subjects and objects must go through in order to lay down their arms and rediscover their capacity to come together. Now that speech, association, and recalcitrance have been redistributed among them, they are going to be able to begin to parley again.

Nothing proves, however, that the assembly is going to come off well, that the participants are all going to find themselves in the ecumenical equivalent of some Woodstock festival in honor of Gaia. We still do not have the slightest idea what the consequences of such a reunion, such a resumption of the work of collection, might be. We simply know that what was formerly prohibited by the split into two houses has now become possible. Let there be no misunderstanding: political ecology is not going to be simpler, nicer, more rustic, more bucolic, than the old bicameral politics. It will be both simpler and more complicated: simpler because it will no longer live under the constant threat of a double short-circuit, by Science and by force, but

also much more complicated, for the same reason—for want of short-circuits, it is going to have to start all over and compose the common world bit by bit. In other words, it will have to *engage in politics*, an activity to which we had finally gotten rather unaccustomed, given the extent to which confidence in Science had allowed us to postpone the day of reckoning in the belief that the common world had already been constituted, for the most part, under the auspices of nature.

How should we designate the associations of humans and non-humans of this collective in the process of coming together? The term I have been using up to now is very awkward, for no one imagines addressing a black hole, an elephant, an equation, or a jet engine, with the resounding label “citizen”! We need a new term that has no whiff of the Old Regime about it, one that allows us to recapitulate in a single expression the speech impedimenta, the uncertainty about actions, and also the variable degrees of reality that define civil life from now on. I am offering the term *propositions**: I am going to say that a river, a troop of elephants, a climate, El Niño, a mayor, a town, a park, have to be taken as propositions to the collective. The word has the advantage of being able to pull together the meanings of the four preceding sections. “I have a proposition for you” indicates uncertainty and not arrogance; it is the peace offering that puts an end to war; it belongs to the realm of language now shared by humans and nonhumans alike; it indicates wonderfully that what is in question is a new and unforeseen association, one that is going to become more complicated and more extended; finally, although the word comes from linguistics, nothing limits it to language alone, and it can serve to signal the recalcitrance of the “position-takings” that some adopt and refuse to relinquish, even as it is managing not to give external reality the stubborn form of an indisputable brute matter of fact. I do not seek to claim that the pluriverse is composed of propositions, but simply that in order to begin its civic work of collection, the Republic is going to consider only propositions instead of and in the place of the earlier subjects and objects.

Once again, it is not a matter of ontology, or even of metaphysics, but solely of political ecology.³⁵ The use of the term “proposition” simply allows us *not* to use the old system of *statement**, through which humans used to speak about an external world from which they were separated by a gulf that the slender bridge of reference sought to cross

without ever quite succeeding. I do not expect that the word “proposition” will offer us from the outset an impossible agreement about an alternative philosophy of knowledge. I seek simply to prevent the philosophy of Science from doing half the work of political philosophy on the sly. In order for the *logos* to return to the center of the City, there cannot be language on one side and the world on the other, with reference in between, establishing a more or less exact correspondence between these two incommensurable entities. This seemingly innocent solution would in fact only transpose the myth of the Cave and its division between two irreconcilable universes to the philosophy of language. For political ecology, there are not one world and multiple languages, just as there are not one nature and multiple cultures: there are propositions that insist on being part of the same collective according to a procedure that will be the subject of Chapters 3 and 4.

A very simple example will help us illustrate this crucial point, which we need in order to conclude but which we cannot develop here at length.³⁶ Let us suppose that a cellar in Burgundy invites you to a wine tasting described as “longitudinal,” because it takes the same wine over several years (as opposed to a “transversal” tasting that takes several wines from the same year). Before the vapors of alcohol have definitively dissipated your reasoning ability, in the course of an hour or two you are going to become sensitive, in the process of continually comparing wines, to differences of which you were completely ignorant the day before. The cellar, the arrangement of glasses on the barrel, the notations on the labels, the pedagogy of the cellar master, the progress of the experimental procedure all contribute to forming an instrument that allows you, more or less rapidly, to acquire a nose and a palate, by registering subtler and subtler distinctions that strike you more and more forcibly. Let us suppose that you are then asked to go into the laboratory and discover, in a white-tiled room, a complex instrumentation that is said to allow you to connect the distinctions that you have just sensed on your tongue with other differences, here recorded in the form of peaks or valleys on graph paper or a computer screen. Let us now make a much more extravagant hypothesis and suppose that in comparing these two visits we are no longer using the philosophy of knowledge learned on the benches of the Cave; that we no longer want to say that the first tasting is subjective, since it activates in our minds only secondary qualities*, while

the second is objective, since it reveals only primary qualities* from the standpoint of the lab coats. How could we describe this double tasting in conciliatory terms?

Thanks to the cooper, thanks to the gas chromatographer, we have *become sensitive* to differences that were invisible before, some on our palate, others on logarithmic paper. We have gone beyond connecting sensations, words, and calculations to a pre-existing external thing; thanks to the multiplication of instruments, we have become capable of registering new distinctions. In the production of these differences and in the multiplication of these nuances, we must thus count ourselves and our own noses, ourselves and our instruments. The more devices we have at our disposal, the more time we spend in the cellar or in the laboratory, the more our palate is exercised, the more adept the cellar master, the more sensitive the chromatographer, the more realities abound. In the old tradition, we always had to count the work done to attain reality as a debt owed to realism; we always had to choose: either it was real or it was constructed. Now, this small example makes it quite clear that reality grows to precisely the same extent as the work done to become sensitive to differences. The more instruments proliferate, the more the arrangement is artificial, the more capable we become of registering worlds. Artifice and reality are in the same positive column, whereas something entirely different from work is inscribed on the debit side: what we have there now is *insensitivity*. Thus the dividing line does not pass between speech and reality through the fragile gulf of reference, as in the old polemical model of statements that are simply true or false, but between propositions capable of triggering arrangements that are sensitive to the smallest differences, and those that remain obtuse in the face of the greatest differences.

Language is not cut off from the pluriverse; it is one of the *material* arrangements through which we “charge” the pluriverse in the collective. It really did take a merciless civil war and the resultant cutting off of language from what it talks about, to make us civilians lose sight of something that makes self-evident good sense: we all work constantly to make things relevant to what we say about them. If we stop working, they no longer say anything; but when they do speak, it is indeed they that speak and not we ourselves—otherwise, why the devil would we work night and day to make them speak?³⁷

To designate what becomes of the collective considered as an association of humans and nonhumans defined by longer lists of elementary actions called propositions, we are going to use the lovely word “articulation*.” This term is good because it has never been dragged into the now-obsolete subject-object polemic. Next, it has the advantage of bringing us closer to the apparatuses for speech production that we defined in the first section; it can also be used to designate the insistent reality of material things. We shall say of a collective that it is *more or less articulated*, in every sense of the word: that it “speaks” more, that it is subtler and more astute, that it includes more articles, discrete units, or concerned parties, that it mixes them together with greater degrees of freedom, that it deploys longer lists of actions. We shall say, in contrast, that another collective is more silent, that it has fewer concerned parties, fewer degrees of freedom, and fewer independent articles, that it is more rigid. We can even say of a two-house collective, made up of free subjects and indisputable natures, that it is completely *inarticulate*, totally speechless, since the goal of the subject-object opposition is actually to suppress speech, to suspend debate, to interrupt discussion, to hamper articulation and composition, to short-circuit public life, to replace the progressive composition of the common world with the striking transfer of the indisputable—facts or violence, right or might.

We shall say, on the contrary, that the new procedures proper to political ecology are going to seek articulation by all possible means. Who assembles, who speaks, who decides in political ecology? We now know the answer: neither nature nor humans, but *well-articulated actors*, associations of humans and nonhumans, well-formed propositions. We shall of course have to explain, in Chapter 5, how good and bad articulations are differentiated, but at last we know that the common task is at least thinkable.

We need a final accessory to equip the members of this newly convoked collective. Articulated propositions must have *habits** rather than essences*.³⁸ If the collective were to be invaded by essences with fixed and indisputable boundaries, natural causalities as well as human interests, no negotiation could be concluded, since one could expect nothing from the propositions but perseverance: they would persist until they wore out their adversary. Everything changes if

propositions are presented as having acquired habits. To be sure, habits have the same weight as human interests; but, unlike human interests, habits can be revised during the proceedings if the game is really worth it. We are told, for example, that ethologists specializing in toads transformed the mores of these creatures into indisputable essences, and this in turn obliged highway builders to hollow out costly “toadways” in their embankments, so that the toads could get back to their birthplace to lay their eggs. It seems, however, that, unfaithful to Freud’s interpretations, the toads, unlike humans, were not trying to return to the primal pond. Indeed, ethologists noted that the toads, encountering a pond at the foot of the embankment, believed that they had come back to their point of origin and laid their countless eggs there, instead of taking the costly and dangerous tunnels. After the experiment, the location of the egg-laying site was thus transformed from essence to habit: what was not negotiable became negotiable; the head-on conflict between batrachians and highways had changed form. As we shall see later on, the composition of a common world through experimentation and discussion becomes possible again only at the moment when members agree to pass from a polemic of essences* to a conciliation of habits.

The Return to Civil Peace

“Inanimate objects, do you then have a soul?” Perhaps not; but a politics, surely. By secularizing, by dedramatizing, by civilizing, by demobilizing the quarrels of the tradition, we have replaced certainties about the distribution of beings with three uncertainties. The first has to do with speech impedimenta: Who is speaking? The second has to do with capacities for association: Who is acting? The third and last has to do with the recalcitrance of events: Who is able? Here are a few welcome banalities that take us away from the stupefying depths through which ecological thinkers claimed to be able to “reconcile man and his environment.” They had taken as their starting point a distribution of objects and subjects that did not describe the regions of the pluriverse but that had the goal of circumventing politics. They might as well have tried plowing with tanks. By accusing other cultures of animism, the epistemology police carefully dissimulated the

Box 2.1. The political role of objects differs radically from that of articulated propositions: the first make public life impossible, while the second allow it.

Convocation impossible because of the metaphysics of nature

What objects say they are	What objects do
Indifferent to human passions	Make all the difference
Mute	Speak in indisputable fashion
Amoral	Serve as source of all morality
Essential, since they alone are real	Provide no value, since they are not human
Invisible except to scientists	Form only basis for the visible
Involuntary	Drive all volition
Inanimate	Animate all actions
Not anthropomorphic	Give form to humans
Not anthropocentric	Are oriented toward human politics

Convocation possible because of an experimental metaphysics

Articulated propositions

Spokespersons that are doubted
 sociations of humans and
 nonhumans
 Recalcitrant actants

bizarre character of its own *inanimism**: a politicization of the life of the pluriverse so complete that everything always had to come back to a “unanimism” that was not subject to debate. By indulging in the “narcissistic wounds” that the revolutions of Science were supposed to have inflicted on the poor humans who had discovered with Galileo, then Darwin, then Freud that there was no connection between the world and humanity, they disguised even more imperfectly the emergence of an ever-more-extreme anthropocentrism that gave a new group of scientists the right to institute the reign of the indisputable order of Science.³⁹ Relishing with despair the indifference of the world to our passions, (political) epistemology had sent public life back to the empire of the passions, keeping for itself, with disconsolate modesty, only the empire of stubborn matters of fact. We now know how to begin again quite simply to undertake democratic politics instead

and in place of that imperial politics. Box 2.1 will allow us to sum up both the contradictory roles assigned to objects in that old state of war and the ordinary tasks that we expect articulated propositions to accomplish once peace has been restored.

We have now covered the ground that we set as our objective for this chapter. Nothing has been resolved yet, but the threat of a dramatic simplification of public life has at least been removed. We have indeed secularized the collective, if by the term “secularization” is meant the abandonment of the impossible dream of a higher transcendence that would miraculously simplify the problems of common life. We have also defined in its broad outlines the economy of peace that can henceforth be substituted for the sole economy of war foreseen up to now for the battalions of objects aimed at subjects and of subjects digging their trenches to defend themselves against objectification.

Instead of the great battle between science and politics, parties that divided up realms of reality or defended themselves against encroachment by the other, we have simply proposed to make these parties work *jointly* toward the articulation of a single collective, defined as an ever-growing list of associations between human and nonhuman actors. As I promised, we have defined the raw material of the collective that political ecology affects. The conjunction of the two terms thus has a meaning. Within the collective, there is now a blend of entities, voices, and actors, such that it would have been impossible to deal with it either through ecology alone or through politics alone. The first would have naturalized all the entities: the second would have socialized them all. By refusing to tie politics to humans, subjects, or freedom, and to tie Science to objects, nature, or necessity, we have discovered the work common to politics and to the sciences alike: stirring the entities of the collective together in order to make them articulable and to *make them speak*.

There is nothing more political than this activity, and nothing more scientific; in particular, there is nothing more ordinary. Let us take the most classical, most banal representations of the sciences, and the most canonical, most venerable forms of politics: we shall always find them in conformity with this goal of getting the articulated entities to “speak.” We must ask nothing of common sense except that it join the two tasks and, next, that it refuse to attribute the speech of objects to scientists and the speech of subjects to politicians. Apart from this

“small” modification, we can henceforth take it to be self-evident that the collective is indeed composed of entities sharing enough essential features to participate in a political ecology that *will never again oblige them* to become, *without debate*, either objects belonging to nature or subjects belonging to society.

We do not ask our readers to abandon all desire for ordering, hierarchy, classification, in order to toss everything into the common pot of the collective. We simply ask them not to confuse the legitimate desire for order and norms with the ontological distinction between object and subject that not only did not allow this ordering to be carried out, as we see it, but in addition introduced a horrible mess. Readers can be reassured: they will indeed find in the chapters that follow the differences of which they are so fond, but *at the end* of the process, not at the beginning. Once the institutions of the collective have stabilized these distributions of roles and functions, we shall in fact be able to recognize subjects and objects, an externality, humans, a *cosmos*. Not at the beginning, not once and for all, not outside proper procedures, not like barbarians without an assembly, that is, not like moderns without fire or law. Yes, we have finally left the Cave era behind, along with the cold war, the state of nature, the war of each against each, of “each against all.” The means for articulating propositions well—what our ancestors called the *logos*—is once again located at the center of the agora. *Non nova sed nove*.



A New Separation of Powers

We are beginning to understand how to separate the wheat from the chaff in the notion of nature. It is not the *externality* of nature, by itself, that endangers public life, for it is only thanks to such an externality that public life survives: the expanding collective is constantly nourished through all its pores, all its sensors, all its laboratories, all its industries, all its skills by such a vast exterior. Without the nonhuman, humans would not last a minute. It is not the *unity* of nature, by itself, that threatens public life, either: it is normal, in fact, for public life to seek to collect the world that we hold in common, and it is normal for it to end up obtaining this world in partially unified forms. No, if we have to give up nature, it is neither because of its reality nor because of its unity. It is solely because of the short-circuits that it authorizes when it is used to bring about this unity once and for all, without due process, with no discussion, outside the political arenas, and when something then intervenes from the outside to interrupt—in the name of nature—the task of gradually composing the common world. The breach of what is called the *state of law*, a traditional concept that we are simply extending to the sciences, is what spoils any utilization of nature in politics. The only question for us thus becomes the following: How can we obtain the reality, the externality, and the unity of nature *according to due process*?

We have also understood why (political) epistemology could not be taken as a well-formed procedure, despite its high moral claims. It was gravely lacking in respect for procedures when it drew from the expression “There exists an external reality” the illogical conclusion

“Therefore, just shut up!” That so much virtue has been attached to this faulty reasoning will soon count as one of the strangest anthropological curiosities in recent times. Since there is an external reality, or rather realities, to be internalized and unified, we understand perfectly well that we have to take up the discussion again, and go on discussing for a long time. Nothing must be allowed to interrupt the procedures of assimilation before a solution has been found that will turn these new propositions into full-fledged inhabitants of an extended collective. This requirement of common sense brooks no exceptions. Only the myth of the Cave, with its improbable distinction into two houses, one of which chatters away in ignorance while the other has knowledge but does not speak, the two being connected by a narrow corridor through which, by a miraculous and double conversion, minds that are scientific enough to make things speak and political enough to silence humans go back and forth—only this myth has succeeded in making the separation between the two houses the main plot of our intellectual dramas. To be sure, abandoning the separation would bring about a dreadful catastrophe in the eyes of the epistemology police, since that would prevent Science from separating from the social world in order to accede to nature and then prevent scientists from coming back down to the world of ideas to save the social world from its misery. But this tragedy that unleashes so many passions is a tragedy only for those who have sought to plunge the collective into the Cave to begin with. Whose fault is it if Science is threatened by the rise of the irrational? It is the fault of those who have invented this implausible Constitution that makes the system so fragile that a grain of sand would suffice to block it; it is not the fault of the era, which is spilling out of this ill-conceived system on all sides—in any event, it is not the fault of those of us who have pointed out the irremediable defect in this Constitution.

Finally, the preceding chapters have allowed us to realize to what extent the official philosophies of political ecology were mistaken in their definition of procedures. In order to put an end to the diversity of political passions, they retained the principal failing of the old Constitution by requiring that the world we had in common be defined *at the outset* under the auspices of a nature known by scientists whose work remained hidden by this *Naturpolitik*. Most political ecology, at least in its theories, seeks not to change either its political philosophy

or its epistemology, but rather to offer to nature a power in the management of human affairs that the most arrogant of its older zealots would never have dared give it. The indisputable nature known by Science defined the order of respective importance of entities, an order that was supposed to close off all discussion among humans henceforth about what it was important to do and whom it was important to protect. Political ecologists have been content to give a coat of apple-green paint to the gray of the primary qualities*. Neither Plato nor Descartes nor Marx would have dared to go that far toward emptying public life of its proper forms of discussion, to short-circuit them by the incontestable viewpoint of the very nature of things in themselves, whose obligations are no longer only causal but also moral and political. It has become the disreputable job of ecological thinkers, especially those among them who claim to have broken “radically” with the “Western outlook,” with “capitalism,” with “anthropocentrism,” to bring this culmination of modernism to fruition!

Fortunately, as we have seen, ecological crises bring about more profound innovations in political philosophy than do their theoreticians, who are unable to wean themselves from the advantage offered by the conservation of nature. What might be called the “state of law of nature,” and which we now have to discover, requires quite different sacrifices and a quite different, much slower pace. The old Constitution claimed to unify the common world once and for all, without discussion and without due process, by a metaphysics of nature* that defined the primary qualities, meanwhile abandoning the secondary qualities alone to the plurality of beliefs. It is understandable that people find it hard to give up the conveniences procured by such an arbitrage between the indisputable and the disputable. The Constitution that we seek to draw up affirms, on the contrary, that the only way to compose a common world, and thus to escape later on from a multiplicity of interests and a plurality of beliefs, consists precisely in *not* dividing up at the outset and without due process what is common and what is private, what is objective and what is subjective. Whereas the moral question of the common good was separated from the physical and epistemological question of the common world*, we maintain, on the contrary, that these questions must be brought together so that the question of the *good* common world, of the *best* of possible worlds, of the *cosmos*, can be raised again from scratch.

Although each of these two Constitutions finds the requirements of the other scandalous, one cannot be deemed rational and the other irrational, for each claims to speak in the name of reason, and each defines unreason in its own way. The old form of organization considers that reason can unfurl its effects only on condition that facts be absolutely distinguished from values, the common world from the common good. If we start to confuse the two, the old form asserts, we are defenseless in the face of the irrational, since we can no longer put an end to the indefinite multiplicity of opinions through an indisputable point of view that would be exempt from any point of view. For the new form of organization, conversely, by confusing Science with the sciences and the prison of the social world with politics, that is, by refusing to take the question of the common good and that of the common world, values and facts, as a single, identical goal, one takes the terrible responsibility of prematurely interrupting the composition of the collective, the historic experimentation of reason (see Chapter 5). It is clearly difficult to imagine a more pronounced contrast: whereas the Old Regime needs to set up an opposition between the rational and the irrational in order to make reason triumph, I claim that we can achieve this end by *abstaining* from making a distinction between the rational and the irrational, by rejecting the distinction as a drug that paralyzes politics. I gladly recognize, however, that the irrational does exist: the whole framework of the old Constitution is completely unreasonable.¹

To understand to what extent the two regimes differ, we have to go straight to the heart of the matter as we approach the most difficult chapter in this book. The term “collective” does not mean “one”; rather, as I have said above, it means “all, but not two.” By this term, I designate a set of procedures for exploring and gradually collecting this potential unification. The difference between the collective to be formed and the vague notions about superorganisms, the “union of man with nature,” “going beyond objects and subjects,” on which the philosophies of nature rely heavily, thus depends on our capacity not to rush toward unity. If dualism will not do, monism will not do either. Now, the end of Chapter 2 offered no more than a vast melting pot: the associations of humans and nonhumans that were from then on, as we saw, going to form the propositions* that the new collective has to articulate, one with another. We still have to describe the forms

that the debates must take in order to sort out these propositions, which are no longer unified by anything at all, and especially not by nature. After bringing together the collective and thus fighting the false differentiation mandated by the old Constitution, we still have to divide it up again by discovering the “right” differentiating principle, the one that will allow us to avoid the procedural shortcuts owing to which most of the decisions made according to the old separation of powers* between nature and society were illegitimate.

Some Disadvantages of the Concepts of Fact and Value

The tempting aspect of the distinction between facts and values lies in its seeming modesty, its innocence, even: scientists define facts, only facts; they leave to politicians and moralists the even more daunting task of defining values. Who would not feel the comfort in such a formulation? The bed is still warm; all one has to do is slip in and settle at once into the sleep of the just. It is from this long dogmatic sleep, however, that we have to awaken. For what reason would it be more difficult to declare what things are worth than to declare what they are?²

In order to discover a good successor to the difference between facts and values, let us examine the common use of these notions by setting up a list of specifications containing the essential requirements that its replacements will have to meet.

What is wrong with the way the word “fact” is currently used? It obliges us, in the first place, to omit the work required in order to establish the persistent, stubborn data. In the opposition between facts and values, one is obliged to limit “facts” to the final stage in a long process of elaboration. Now, if facts are fabricated, if “facts are made,” as they are said to be, they pass through many other stages, which the historians, sociologists, psychologists, and economists of the sciences have struggled to inventory and categorize. Apart from the recognized matters of fact, we now know how to identify a whole gamut of stages where facts are uncertain, warm, cold, light, heavy, hard, supple, matters of concern that are defined precisely because they do not conceal the researchers who are in the process of fabricating them, the laboratories necessary for their production, the instruments that ensure their validation, the sometimes heated polemics to which they give

rise—in short, everything that makes it possible to articulate propositions.³ As a result, the use of the term “fact” without further precautions to designate one of the territories outlined by the frontier between facts and values completely obscures the immense diversity of scientific activity and obliges all facts, in every stage of their production, to become fixed, as if they had already reached their definitive state. This freeze makes it necessary to use the same words to designate a multitude of sketches, prototypes, trials, rejects, and waste products, for want of a term that makes it possible to diversify the gamut, rather as if we called all the successive stages of an assembly line “cars,” without noticing that the word designates sometimes isolated doors, sometimes a chassis, sometimes miles of electrical wire, sometimes headlights. No matter what term we choose later on to replace “fact,” it will have to highlight the process of fabrication, a process that alone makes it possible to record the successive stages as well as the variations in quality or finishing touches that depend on it; it will have to encompass matters of concern* as well as matters of fact.

The notion of fact has another, better-known defect: it does not allow us to emphasize the work of theory that is necessary for the establishment of the coherence of the data. The opposition between facts and values, in fact, unfortunately intersects with another difference whose epistemological history is very long, the opposition between theory and the data that are called, in contrast, “raw.” The philosophy of science, as we are well aware, has never been able to put forward a united front on this issue. If the respect for matters of fact appears essential to the deontology of scientists, it is no less true that an isolated fact always remains meaningless as long as one does not know of what theory it is the example, the manifestation, the prototype, or the expression.⁴ In the history of the sciences one finds as much mockery against builders of vain theories that have been overturned by some tiny bit of evidence as one finds jokes at the expense of avaricious “stamp collectors” who accumulate heaps of data that a single astute thought would have sufficed to predict. An effort to shape, form, order, model, and define seems necessary if one wants brute facts, speaking facts, obtuse facts, to be able to stand up forthrightly to those who chatter on about them. Here again, there are too many hesitations between positivism and rationalism for us to take the word “fact” as an adequate description of these multiple tasks. To our set of specifica-

tions, let us thus add that the term we need to replace the word “fact” will have to include, in addition to the stages in its fabrication, the indispensable role of *shaping* data summed up by the word “theory” or “paradigm.”⁵

Let us now move to the other side of the border. The notion of “value” has its own disadvantages. It has the pronounced weakness, first of all, of depending entirely on the *prior* definition of “facts” to mark its territory. Values always come too late, and they always find themselves placed, as it were, ahead of the accomplished fact, the *fait accompli*. If, in order to bring about what ought to be, values require rejecting what is, the retort will be that the stubbornness of the established matters of fact no longer allows anything to be modified: “The facts are there, whether you like it or not.” It is impossible to delimit the second domain before stabilizing the first: that of the facts, the evidence, the indisputable data of Science. Then, but only then, can values express their priorities and their desires. Once the cloning of sheep and mice has become a fact of nature, one can, for example, raise the “grave ethical question” whether or not mammals, including humans, should be cloned. By formulating the historical record of these traces in such a way, we see clearly that values fluctuate in relation to the progress of facts. The scales are thus not weighted evenly between someone who can define the ineluctable and indisputable reality of what simply “is” (the common world) and someone who has to maintain the indisputable and ineluctable necessity of what must be (the common good), come hell or high water.

Even if they reject this position of weakness that obliges them always to wait behind the fluctuating border of facts, values still cannot regroup in a domain that would be properly theirs, in order to define the hierarchy among beings or the order of importance that they should be granted. They would then be obliged to judge *without facts*, without the rich material owing to which facts are defined, stabilized, and judged. The modesty of those who speak “only about facts” leads astray those who must make judgments about values. Seeing the gesture of humility with which scientists define “the simple reality of the facts, without claiming in any way to pass judgment on what is morally desirable,” the moralists believe that they have been left the best part, the noblest, most difficult part! They take at face value the role of humble drudge, zealous servant, unbiased technician played by those

who limit themselves to simple matters of fact and who offer them—the moralists—the gratifying task of master and decision-maker. “Science proposes, morality disposes,” they say by common agreement, patting themselves on the back, scientists and moralists alike, the former with false modesty and the latter with false pride. But by limiting themselves to the facts, the scientists keep on their side of the border the very multiplicity of states of the world that makes it possible to form an opinion and to make judgments at the same time about necessity and possibility, about what is and what ought to be. What is left to the moralists? The appeal to universal and general values, the search for a foundation, ethical principles, the respect for procedures—estimable means, to be sure, but without a direct, detailed grasp of facts, which remain stubbornly subject to those who speak “only” of facts.⁶ The prisoners of the Cave continue to be unable to make decisions, except on hearsay. By accepting the value-fact distinction, moralists agree to seek their own legitimacy very far from the scene of the facts, in another land, that of the universal or formal foundations of ethics. In so doing, they risk abandoning all “objective morality,” whereas we, on the contrary, must connect the question of the common world to the question of the common good. How can we arrange propositions in order of importance, which is after all the goal of values, if we are not capable of knowing the intimate habits of all these propositions? In the set of specifications of the concept that will replace value, let us not forget to include the function that will allow moralists to *come closer* to matters of concern and their controversies in detail, instead of distancing themselves to go in search of foundations.

This increased familiarity will be all the more necessary in that under the current regime, once one has defined something as a matter of fact, the definition of this fact need not be reconsidered; it belongs once and for all to the realm of reality. There will thus be a strong temptation to include in the world of facts one of the values that one hopes to advance. As these little boosts are given one after another, the reality of what *is* gradually comes to include everything that one *would like to see in existence*. The common world and the common good find themselves surreptitiously confused, even while remaining officially distinct (yet without benefiting from the common organizations that we hope to discover). This paradox should no longer astonish us: far from clarifying the question, the fact-value distinction is going to be-

come more and more opaque, by making it impossible to untangle what is from what ought to be. The more one distinguishes between facts and values, the more one ends up with the *bad common world*, the one we might call, with Plato, a *kakosmos*. The concept that aspires to replace the notion of value must thus anticipate a control procedure, in order to avoid the countless little incidents of cheating through which, intentionally or not, the definition of what is possible is confused with that of what is desirable. Let us not forget to add this fourth requirement to our set of specifications.

By exploring in turn both sides of the border laid down by the venerable opposition between facts and values, we are beginning to understand that the notion of fact does not describe the production of knowledge (it neglects both the intermediate stages and the shaping of theories) any better than the notion of value allows us to understand morality (it takes up its functions after the facts have been defined and finds itself with no recourse except the appeal to principles that are as impotent as they are universal). Must we retain this dichotomy in spite of its disadvantages, or must we abandon it in spite of the danger that comes from depriving oneself of the advantages of good sense? In order to make an enlightened decision, it is important to have a grasp of the seemingly inexhaustible usefulness of the distinction between facts and values.

This distinction still has its greatest power and appears most virtuous in the form of a split between ideology and Science. In fact, those who follow the traces of the ideological influences that tarnish the factualness of the disciplines of biology, economy, history, and even physics, are major users of the fact-value distinction, since they need it to prevent the little incidents of cheating noted above, by which an axiological preference is harbored on the sly. If we were to show, for example, that immunology is entirely polluted by war metaphors, that neurobiology consumes principles of business organization in enormous quantities, that genetics conceives of planning in a determinist fashion that no architect would use to speak of his plans, we would be denouncing a number of frauds used by smugglers to conceal debatable values under the umbrella of matters of fact.⁷ Conversely, if we were to denounce the use a political party makes of population genetics, or the use novelists make of fractals and chaos, or the use philosophers make of the quantum uncertainty principle, or the use industri-

alists make of iron-clad economic laws, we would be denouncing the smugglers from the other side who hide under the name of Science and sneak in certain assertions that they dare not express openly, for fear of shocking their public, but that obviously belong to the world of preferences—that is, values.

By seeking to make a clear distinction between Science and ideology, the old Constitution sought to rectify the continually patrolled border, while avoiding two types of frauds: the one in which values are used in secret, to interrupt discussions of facts (the Lyssenko affair remains the classic model); and the one coming from the opposite direction, in which matters of fact are surreptitiously used to impose preferences that the user does not dare admit or discuss frankly (scientific racism is the most typical and best-studied example). The struggle against scientific ideology thus seems to have the advantage of purifying scientists of the political or moral pollution from which they hoped to profit; it calls them back to order and requires them to replace all the amalgams of facts and values with facts alone, nothing but matters of fact. The struggle against the ideological use of Science forbids those who discuss values to hide behind the evidence of nature, while obliging them to disclose their values, nothing but their values, without dragging the sciences into the picture, since, as they say, “What is cannot suffice to define what ought to be.”

It appears truly difficult to do without an arrangement that makes it possible to protect the autonomy of Science and the independence of moral judgments simultaneously. Unfortunately, such arrangements have the weaknesses of the dichotomy that they aim to maintain. Even if an arrangement of this sort were to achieve its aims, the most effective of all border police would succeed only in obtaining pure facts and pure values. Now, we have just demonstrated that facts define the work of the sciences as poorly as values define the task of morality. The source of the impotence of the Science-ideology distinction is thus clear: it has a laudable goal that, were it to be achieved, would not advance us one iota!⁸ The difference between Science and ideology, purity and pollution, even though it has occupied and continues to occupy a great number of intellectuals, thus does not have the efficacy that one might suppose, considering the energy spent on it, as well as the size of the police forces that patrol the border.⁹ The allegory of the

Cave obviously does not aim to separate the two houses *for good*—otherwise, facts would be mute and values would be impotent—but to transform the distinction into an impossible task that must always be started from scratch and that will turn attention away from all the others. If he ever managed to finish his task, Sisyphus would not be any further advanced.

Still, one cannot abandon an indispensable distinction under the pretext that the task in question would be insurmountable: Does not morality pride itself, after all, on maintaining its demands against all the contrary testimony of reality? We have to go further and show that this enterprise is not only impracticable but also deleterious. At first glance, however, doing without it would seem to introduce as frightful a confusion as if one were to conflate the Heaven of Ideas with the simulacrum of the Cave. “So you want to combine facts and values? Confuse scientific work with the search for moral foundations? Pollute the fabrication of facts with the social imaginary? Allow the fantasies of mad scientists to determine daily life?” If we could no longer tell facts from values, could no longer distinguish nature as it is from moral society as it should be in its indisputable search for freedom, don’t we have the distinct feeling that something essential would be lost? All the dangers of relativism where knowledge and morality are concerned would come back full force. We wouldn’t be able to tell Dolly from her clones. No, such an important touchstone certainly cannot be thrown out without good and imperious reasons.

Before exploring these reasons in the following section, let us add one more clause to our set of specifications. As we know perfectly well, it does no good to complain about the ineffectiveness of a partition without understanding that it must actually fulfill a function, just as the Great Wall of China, though it never actually prevented invasions, served the purposes of a whole series of emperors in many different ways.¹⁰ We may well suspect that the purpose of a partition so strongly rooted in good sense is not to describe anything at all. What we see as a weakness in it comes from its principal function: to make incomprehensible *the fabrication of what must be*, the progressive composition of the good common world, of the *cosmos*. Separating facts from values without ever succeeding is the only way to ensure—thanks to the power of “facts, nothing but facts”—the power of nature over

what “ought to” be. If we decide to abandon the notion of a border between facts and values, to give up the distinction between science and ideology, to stop deploying the border police and stop fighting smugglers, then in order to put minds at ease, we shall have to do *at least as well as* and, if possible, better than, the arrangement that we are abandoning. The credibility of our politics of nature is at stake. Quality control has to be maintained over both future facts and future values, whatever new meaning we may give these words—just as the French border police has to continue to maintain its control in the European space covered by the Schengen agreements even though material borders have disappeared.

Dispensing with a dichotomy and with the metaphysics that underlies it does not mean, then, that we can get rid just as easily of the requirements that were attached to this dichotomy and this metaphysics for reasons that were thought to be necessary but that are in reality only contingent. Thus we do not propose to abandon the crucial differences that are awkwardly expressed in the distinction between facts and values, but to *lodge them elsewhere*, in a different opposition between concepts, while proving that they will be better protected there. If he will only agree to modify his job description, Sisyphus will discover that his labor can become productive at last.

The Power to Take into Account and the Power to Put in Order

How can we abandon the confused distinction between facts and values, while still preserving the kernel of truth that it seems to contain, namely, the requirement of a distinction that keeps the collective from combining all propositions in the dark in which all sheep (cloned or not) look alike? In the next three sections we are going to unpack and then repack the fact-value distinction. The solution that we have adopted for this chapter consists in untying the two packets, fact and value, in order to liberate the contradictory requirements that were unduly combined in each, then (in the following section) regrouping them differently and under another name, in much more homogeneous parcels. The operation is not an easy one, but there is no way to proceed quickly or more simply when one is trying to estab-

lish a durable new basis for common sense, while so totally opposing good sense.

*The Two Contradictory Requirements Captured
in the Notion of Fact*

Let us first undo the packet that until now held the concept of fact, as opposed to that of value. We notice that it envelops two very different requirements. We need to know how many new propositions emerge in the discussion, and what is the well-defined essence or the indisputable nature of these propositions. When the focus is on the stubborn, troubling, recalcitrant matter of concern, two features stand out that can and must be distinguished, for they are in complete opposition: the first stresses the importance and uncertainty of discussing; the second stresses the importance of not discussing, of *no longer* discussing.

Let us start with the first one, with which the second finds itself mixed up, if not by mistake then at least by accident. The ambiguous term “fact” refers to the ability of an entity to force the discussion to deviate, to trouble the order of discourse, to interfere with habits, to disturb the definition of the pluriverse that the participants were seeking to retain. In this first sense, to use the expressions from the previous chapter, facts signal the existence of surprising actors that intervene to modify, by a series of unanticipated events, the list of mediators that up to then made up the habits of the members of the collective. That a matter of concern is recalcitrant does not in any way mean that it is objective or certain, or even indisputable. On the contrary, it agitates, it troubles, it complicates, it provokes speech, it may arouse a lively controversy. External reality, as we have seen, means two entirely different things, which we must now not only stop confusing but also file in quite distinct boxes: one referring to *complication* and the other to *unification*. Facts present themselves initially in the first form, in the laboratory, on the research front, in the garb of beings of uncertain status that demand to be taken into account and about whom one cannot say whether they are serious, stable, delimited, present, or whether they may not soon, through another experiment, another trial, scatter into as many artifacts, reducing the number of those whose existence matters. At this stage propositions do no

more, as it were, than propose their *candidacy* for common existence and subject themselves to trials whose outcome is still uncertain.¹¹ Let us say that, under the name of fact, new entities appear in the form of that which leaves those who are discussing them *perplexed**.

When we insist on the stubbornness of facts, we want to be sure that their number cannot be reduced arbitrarily, to make things easier for us and to simplify our agreement by short-circuiting discussion. When we say: "The facts are there, whether we like it or not," it is not a matter of pounding on the table to avoid social constructivism, but of pointing out something much more ordinary, less warlike, less definitive: we are trying to make sure that our interlocutors, by limiting in advance the list of states of the world, do not hide the risks that put our well-regulated existences in danger. Let us formulate this first requirement in the form of a categorical imperative: *Thou shalt not simplify the number of propositions to be taken into account in the discussion.*

What are we going to do now with the other feature that was mixed up by mistake in the same box of "facts"? It obviously does not resemble the first one in any respect, since it emphasizes on the contrary the indubitable aspect of the objective fact that closes off discussion or at least shifts the debate elsewhere, onto other topics—for example, values. Perplexity is not a stable state, nor is controversy. Once the candidacy of the new entities has been recognized, accepted, legitimized, admitted among the older propositions, these entities become states of nature, self-evidences, black boxes, habits, paradigms. No one discusses their rank and their importance any longer. They have been *registered* as full-fledged members of collective life. They are part of the nature of things, of common sense, of the common world. They are no longer discussed. They serve as indisputable premises to countless reasonings and arguments that are prolonged elsewhere. If we still pound our fists on the table, we are no longer doing so as an invitation to perplexity, but as a reminder that the "facts are there, and they are stubborn!" How can we define a matter of concern that has become such an indisputable matter of fact? Let us say that the propositions in question have been *instituted*.¹²

When we insist on the solidity of the facts, we require our interlocutors to stop challenging the states of things that now have clear boundaries, precise definitions, thresholds, fixed habits, in short, essences*. Let us formulate this second requirement in the form of an-

other imperative: *Once propositions have been instituted, thou shalt no longer debate their legitimate presence within collective life.*

The formula may appear strange, but it will become clearer in a moment, once we have dissected the concept of value in its turn. In any case, we already understand why the packet of facts was so badly tied up: under a single wrapper it concealed two entirely different operations, one that got the discussion started and another that brought discussion to an end! It is not surprising that no one has ever understood very well what the expert meant when, in the name of “stubborn facts,” he pounded his fist on the table: his gesture could signify perplexity as well as certainty, the disputable as well as the indisputable, the obligation to do more research as well as the obligation to stop doing research! Insofar as the first operation aims to multiply the number of entities to be taken into account, by maximizing the perplexity of the agents that are dealing with them, to the same extent the second aims to ensure a maximum of durability, solidity, harmony, coherence, and certainty to the assembled propositions, precisely by preventing people from splitting hairs all the time and plunging the debates back into confusion. Such was the miserable ploy of the Cave: as the same word “fact” could designate the weakest and the strongest, the most debatable and the least debatable, external reality in its emergence and external reality in its institution, matters of concern as well as matters of fact, it sufficed to combine the two terms, to jump abruptly from one to the other, in order to short-circuit all procedures and put an end to public life through the threat of a mouth-shutting reality.

The Two Contradictory Requirements Captured in the Notion of Value

Let us now undo the ties that bound together the contradictory requirements that were held captive in the concept of value. What do we mean, finally, when we assert that discussion about values has to continue, even after the facts have been defined? What do we seek to capture by the awkward expression “ought to be” that would add to “what is” its supplement of soul? What essential necessity are we struggling so confusedly to express?

By the appeal to values, we mean first of all that other propositions have not been taken into account, other entities have not been con-

sulted—propositions and entities that seemed to have a right to be heard. Every time the debate over values appears, the number of parties involved, the range of stakeholders in the discussion, is always *extended*. With the expression “But still, there’s an ethical problem here!” we express our indignation, as we affirm that powerful parties have neglected to take into consideration certain associations of humans and nonhumans; we accuse them of having put a *fait accompli* before us by making decisions too quickly, in too small a committee, with too few people; we are indignant that they have omitted, forgotten, forbidden, renounced, or denied certain voices that, had they been consulted, would have considerably modified the definition of the facts under discussion or would have taken the discussion in a different direction.¹³ To appeal to values is to formulate a requirement of prior *consultation**. We do not have on one side those who define facts and on the other those who define values, those who speak of the common world* versus those who speak of the common good*: the only real difference is between the few and the many; there are those who meet in secret to unify prematurely what is and those who demonstrate publicly that they wish to add their grain of salt to the discussion, in order to compose the Republic*. When someone complains about having forgotten a fact or a value, in every instance the complaint can be translated by a single expression: “Some voices are missing from the roll call.”¹⁴

How shall we formulate this third requirement of consultation? By the following imperative: *Thou shalt ensure that the number of voices that participate in the articulation of propositions has not been arbitrarily short-circuited*. Once again, it is in the form of an imperative that has to do with the organization of the discussion that we find the best expression of the first kernel of truth, which the notion of value had wrapped up so badly.

Let us note right away, before drawing all the consequences in the following section, that this third requirement *resembles the first one* on perplexity*, that the two have a most striking family resemblance, even though tradition has placed them in different camps, dressing one in the white coat of “Science,” the other in the white toga of “values.” Both requirements concern the issue of number, for the first stresses the quantity of new beings that propose their candidacy, while

the second emphasizes the importance and quality of those who are to be seated, as it were, on the jury that will accept or reject those beings.

Let us now consider the other requirement that comes to light when one claims to be speaking about values. One cannot simply mean that a greater number of concerned parties, stakeholders, must be taken into account. The requirement of consultation by no means exhausts the content of this second packet, because the concept of value is not put together any more homogeneously than the concept of fact. To stop here would amount to limiting value to the simple requirement of maintaining forms without concern for their content, procedure without substance. There is something else here that is translated by the ever-renewed insistence on what “has” to be done, what one “ought to” be, something about the right order of priorities. This preoccupation is never well understood, because it is never heard *detached* from the one that precedes it, nor *joined* to the second categorical imperative, with which it nevertheless fits very well.

When we raise the question of values, we are not distancing ourselves from matters of concern, as if we were suddenly changing vehicles, shifting from cars to stratospheric airplanes. We are asking a *different* question of the *same* propositions as before: Candidates for entry into the common existence, are you compatible with those which already form our currently defined common world? How are you going to line up in order of importance? Do these propositions that come to complicate the fate of collective life in large numbers form an inhabitable common world, or do they come on the contrary to disturb it, reduce it, crush it, massacre it, render it unlivable? Can they be articulated with those which already exist, or do they demand the abandonment of the old arrangements and combinations? The requirement, as we can see, is to form a *hierarchy** among the new entities and the old, by discovering the relative importance each must be granted. It is within this hierarchy of values, this axiology, that moral aptitude has always been recognized, when it had to be decided, for instance, whether to save the child or the mother in a difficult delivery, or to be determined, as at the Kyoto conference, to what extent the health of the American economy is more or less important than the health of the earth’s climate.

We shall formulate this fourth and last requirement in the following

maxim: *Thou shalt discuss the compatibility of the new propositions with those which are already instituted, in such a way as to maintain them all in the same common world that will give them their legitimate rank.* Contrary to what the presence of this requirement in the slot reserved for values may suggest, it is *with the second* (which belonged, however, to the packet of facts), that of institution*, that it is most appropriately grouped. In order to define assured essences*, we must, before the discussion ends, be quite sure that the entities that are candidates for the establishment of the collective find their rank and place among those which are already established.

To conclude this section, let us try to summarize in tabular form the operation we have just carried out and the one on which we are about to embark. By unpacking the contradictory contents of the two concepts, fact and value, and discovering two pairs of concepts in each case, we are going to be able to regroup the essential requirements in sets that are much better formed. This new arrangement will allow us to respect the commitment we made at the end of the previous section according to which we decided to abandon the fact-value distinction, provided only that we could resituate more comfortably the crucial difference that this distinction did not manage to shelter carefully enough.

What happens if we regroup the first and third requirements under the heading *taking into account*, and if we regroup the second and fourth requirements under the heading *putting in order*? (Now that these requirements have been placed in more coherent packets, I have renumbered the essential requirements, for reasons of logic and dynamics that will become clear only in the last section.)

Instead of the old distribution of facts and values, we maintain that this new, much more logical grouping makes it possible for two new powers to emerge. The first answers the question “How many are we?” and the second answers the question “Can we live together?” (Box 3.1).

The Collective’s Two Powers of Representation

We have just traversed one of the four or five most difficult passages of our itinerary, but there was no way to avoid this effort, since the distinction between facts and values had for a very long time paralyzed

Box 3.1. Recapitulation of the two forms of power and the four requirements that must allow the collective to proceed according to due process to the exploration of the common world.

POWER TO TAKE INTO ACCOUNT: HOW MANY ARE WE?

First requirement (formerly contained in the notion of fact): You shall not simplify the number of propositions to be taken into account in the discussion. Perplexity.

Second requirement (formerly contained in the notion of value): You shall make sure that the number of voices that participate in the articulation of propositions is not arbitrarily short-circuited. Consultation.

POWER TO ARRANGE IN RANK ORDER: CAN WE LIVE TOGETHER?

Third requirement (formerly contained in the notion of value): You shall discuss the compatibility of new propositions with those which are already instituted, in such a way as to maintain them all in the same common world that will give them their legitimate place. Hierarchization.

Fourth requirement (formerly contained in the notion of fact): Once the propositions have been instituted, you shall no longer question their legitimate presence at the heart of collective life. Institution.

all discussion on the relations between science and politics, between nature and society. Now we need to understand the logic of these new aggregates, which have become, in my view, much more comprehensible, homogeneous, and logical, and which we are going to be able to use throughout the rest of this book. To be sure, the terms we are going to adopt in this section will seem a bit strange. This is because they do not have the benefit of long use; they have not become conceptual institutions, forms of life, forms of the new common sense. Just as, for years after the fall of the Berlin Wall, East Germany and West Germany are still recognized even though they are now part of the same nation, in the same way we shall often have the impression that the words we are going to pair up would be more at ease if we separated them once again, or, conversely, that the words we have separated would do better together. Readers will have to accept this strangeness, nevertheless, and judge, one chapter at a time, whether the new separation of powers is not highly preferable to the old.

The four essential requirements form two coherent sets, something

that would have been obvious a long time ago if the fact-value distinction had not been in place to disturb their coupling. The first set answers just one question: *How many new propositions must we take into account in order to articulate a single common world in a coherent way?* Such is the first power that we seek to recognize in the collective.

The power to take into account brings two *essential guarantees*, one coming from the old facts and the other from the old values. First, the number of candidate entities must not be arbitrarily reduced in the interests of facility or convenience. In other words, nothing must stifle too quickly the perplexity into which the agents find themselves plunged, owing to the emergence of new beings. This is what could be called the *requirement of external reality**—there is no reason not to use those words now that the words “reality” and “externality” have been freed of the poison of (political) epistemology. Second, the number of those which participate in this process of perplexing must not itself be limited too quickly or too arbitrarily. The discussion would of course be accelerated, but its outcome would become too easy. It would lack broader consultation, the only form capable of verifying the importance and the qualification of the new entities. On the contrary, it is necessary to make sure that reliable witnesses*, assured opinions, credible spokespersons have been summoned up, thanks to a long effort of investigation and provocation (in the etymological sense of “production of voices”).¹⁵ Let us call this constraint the *requirement of relevance*, to remind us that all the relevant voices have been convoked.

The second set answers another question: *What order must be found for the common world formed by the set of new and old propositions?* Such is the second power, which we call the power to put in order.

Two essential guarantees ensure a satisfactory answer to this question. First, no new entity can be accepted in the common world without concern for its compatibility with those which already have their place there. It is forbidden, for example, to banish all the secondary qualities* by an ultimatum, on the pretext that one already possesses the primary qualities* that have become, without due process, the only ingredients of the common world.¹⁶ An explicit work of hierarchization through compromise and accommodation makes it possible to take in, as it were, the novelty of the beings that the work of taking into account would risk multiplying. Such is the *requirement of publicity* in the ranking of entities, which replaces the clandestinity

Box 3.2. Vocabulary selected to replace the terms “facts” and “values”

POWER TO TAKE INTO ACCOUNT: HOW MANY ARE WE?

Perplexity. Requirement of external reality.

Consultation. Requirement of relevance.

POWER TO ARRANGE IN RANK ORDER: CAN WE LIVE TOGETHER?

Hierarchy. Requirement of publicity.

Institution. Requirement of closure.

permitted by the old notion of nature. Second, once the discussion is closed and a hierarchy established, the discussion must not be reopened, and one must be able to use the obvious presence of these states of the world as indisputable premises for all the reasoning to come. Without this requirement of institution, the discussion would never come to an end, and one would never succeed in knowing in what common, self-evident, certain world collective life ought to take place. Such is the *requirement of closure** of the discussion.

To make this clearer, Box 3.2 summarizes the terms we propose to introduce.

Before going further, let us note that with the new separation of powers and these four questions, we are not introducing any dangerous innovation: we are only describing more concisely what the impossible fact-value distinction sought to make indescribable. Let us take the example of prions, those unconventional proteins that appear responsible for the so-called mad cow disease. It is useless, as we now understand, to require scientists to prove definitively that these agents exist, so that politicians can then seriously raise the question of what they ought to do. At the beginning of the mad cow affair, M. Chirac, the French president, initially summoned M. Dormont, a specialist in those tiny beings: “Accept your responsibilities, Dr. Dormont, and tell us whether or not prions are responsible for the disease!” To which the professor, as a good researcher, responded coolly: “I accept my responsibilities, Mr. President. My answer is that I don’t know . . .” Objects of a vigorous controversy, prions suffice to induce perplexity—requirement no. 1—not only among researchers, but also among cattle

farmers, Eurocrats, consumers, and producers of animal-based feed, not to mention cows and prime ministers. Candidates for existence, prions bring with them all the external reality necessary to stir up the collective. The only thing they no longer bring—but no one asks it of them any longer, except inveterate modernists like M. Chirac—is the capacity to silence the collective with their indisputable essence. From this point on, they are waiting to gain this essence* from a procedure that is under way.

Who is to judge these prions, candidates for a durable and dangerous existence? Biologists, of course, but also a large assembly whose composition must be ensured by the slow search for reliable witnesses capable of forming a voice that is at once hesitant and competent—requirement no. 2, relevance of the consultation. This search for good spokespersons is going to necessitate a rather complicated course of action as well for veterinarians, cattle farmers, butchers, and government employees, not to mention cows, calves, sheep, and lambs, who must all be consulted, one way or another, according to procedures that have to be reinvented every time, some coming from the laboratory, others from political assemblies, a third group from the marketplace, a fourth from government, but all converging in the production of authorized or stammering voices. It is clear that the power to take into account is translated into a sort of state of alert imposed on the whole collective: laboratories do research, farmers investigate, consumers worry, veterinarians point out symptoms, epidemiologists analyze their statistics, journalists probe, cows mill about, sheep get the shakes.¹⁷ It is critical not to bring this general alert to an end too soon by assigning stable facts to the common world of external nature and putting the multiplicity of opinions in the social world, as if this world could be equated with the more or less irrational representations that humans make of it. If there is one thing that must not be reintroduced artificially in this business, it is precisely *the good-sense distinction between facts and values!*

Still, there is no need to mix everything up: the new separation of powers is going to manifest its relevance by making the collective undergo an operation that would be illicit in the power to take into account* but that will take on its full meaning with the power to put in order*. The *same* heteroclitic and controversial assembly of prions, farmers, prime ministers, molecular biologists, and beef-eaters is now

going to find itself in the grip of a second power that must of course stabilize the controversy, bring an end to the agitation, and calm the states of alert, but on condition that it not use the old manner, which has now been rendered unconstitutional. It is especially important not to impose an artificial distinction between facts and values, which would necessitate distributing the indisputable and the disputable arbitrarily, by inviting the government to close the discussion with its arbitrage—its arbitrariness.

It is appropriate to ask instead a completely different question: Can we live with these controversial candidates for existence, these prions? A third requirement—no. 3, the requirement of publicity of hierarchy—comes up now. Must all European cattle farming be modified, the entire meat distribution system, all manufacturing of animal-based feed, in order to make room for prions and situate them within an order that will array them from largest to smallest? It is no longer a matter of an ethical question that would come “in the wake” of a now-established question of fact. Only an intimate familiarity with the controversy over the existence of these candidates—a controversy that is still going on and for whose conclusion we no longer need to wait—makes it possible to measure the importance of the changes required simultaneously in consumers’ tastes, the imposition of quality labels, the biochemistry of proteins, the shepherders’ conception of epidemics, the three-dimensional modeling of proteins, and so on.¹⁸ To this question about relative importance, there is no ready-made answer.¹⁹ After all, automobiles kill eight thousand innocent victims every year in France: no tenderloin has killed more than a few French meat-eaters so far, and even these cases are in doubt. How can we arrange in order of importance the beef market, the future of Professor Dormont, the slaughter caused by automobiles, the taste of vegetarians, the income of my farmer neighbors in the Bourbonnais region, the Nobel Prize awarded in 1997 to Professor Stanley E. Prusiner, one of the discoverers of prions? Does the list sound too heterogeneous? Too bad—it is indeed this power to establish a hierarchy among incommensurable positions for which the collective must now take responsibility. We cannot homogenize the voices that participated in the power to take into account, any more than we can avoid seeking to homogenize those which participate in the power to put in order.

By definition, the power of arranging cannot purify propositions by

listing them in advance in the categories of “fact” or “value.” It has to come to terms with this diversity and bring it to an end through a painful series of adjustments and negotiations. The escape route of “matters of fact” is no longer possible. There no longer exists any help from the outside that could simplify the solution, neither that of nature nor that of violence, neither right nor might. When the solution is eventually found (as seems to be the case for the eight thousand French automobile deaths!), all the propositions that connect the prion, Creutzfeldt-Jakob disease, the meat-distribution system, and the theories of infectious diseases will be stabilized and will become bona fide members of the collective—requirement no. 4 of closure of the institution. Their presence, their importance, their function will no longer be subject to discussion. The prion and its attachments will henceforth have an essence* with fixed boundaries. Their descriptions will be found in manuals. Victims will be indemnified. Causalities and responsibilities will have been apportioned through an operation that could be called cause attribution, if we agreed to use this expression to cross scientific *causalities* with juridical *accusations*.²⁰ The prion and its entourage will have been completely internalized, the collective having changed profoundly, now that it is composed of—in addition to all the entities that it accepted heretofore—prions responsible for diseases that are dangerous for humans and animals, and that could be avoided if the production of animal-based meal and the conditions of slaughter were modified. The prion will have become *natural*: there is now no reason to deprive ourselves of that adjective, which is very convenient for designating, on a routine basis, full-fledged members of the collective.

By requalifying in our own terms the mad cow episode, so typical of the matters of concern* whose proliferation cracked the narrow framework of the old Constitution, we have not lost sight of the essential demands of reality, relevance, publicity, and closure: they are all present; only the “self-evident” difference between facts and values is missing from the roll call, only the indisputable externality of a prion that has always already been there. But this addition would add neither clarity nor morality; it would add only confusion. More precisely, it *would add a facileness*, an arbitrariness, a short-circuit, a shortcut, by allowing a proposition to jump directly from perplexity to institution,

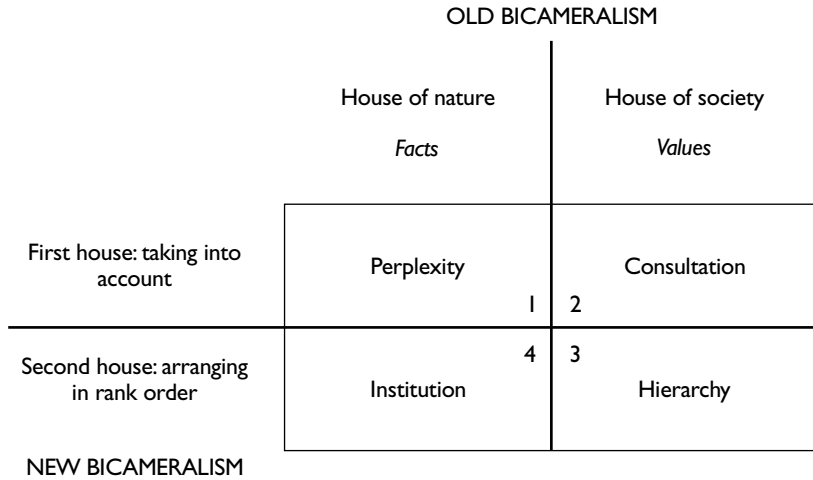


Figure 3.1 After a ninety-degree reversal, the fact-value distinction becomes the distinction between the powers of taking into account and the powers of arranging in rank order.

something that the new separation of powers is precisely designed to prohibit.

If we look at Figure 3.1, we see that we have substituted a new form of bicameralism* for the two houses of the old Constitution.²¹ There are still two houses, as in the old Constitution, but they do not have the same characteristics. By imposing a ninety-degree shift on the important difference that previously divided fact from value, we have modified not only the composition of the compartments, which are grouped in rows instead of lined up in columns, but also the *functioning* of this difference.²²

The distinction between facts and values was at once absolute and impossible, as we saw above, since it refused to be construed as a separation of powers and claimed to be inscribed in the nature of things, distinguishing ontology on the one hand from politics and its representations on the other. The second difference between the question of taking into account and that of ordering has nothing absolute about it, *but nothing impossible, either*. On the contrary, it corresponds to the two complementary requirements of collective life: How many of you

are there to take into account? Are you able to form a good common life? The fact that these two questions must be carefully distinguished does not prove that a border police, similar to the one that patrolled the old border between Science and ideology in vain, has to be put in place. It is enough simply that the discussion about the common world not be constantly interrupted by the discussion about the candidates for existence, and that discussion of the new entities not be constantly suspended on the pretext that one does not yet know to what common world they belong. Instead of an impossible frontier between two badly composed universes, it is rather a matter of imagining a *shuttle* between two arenas, between the two houses of a single expanding collective. The administrators in charge of this separation of powers (whose own powers we shall discover in Chapter 5) will surely have to be vigilant, but they will not have the impossible task of being customs officers and smugglers at the same time.

Verifying That the Essential Guarantees Have Been Maintained

We cannot conclude our effort at untangling and repackaging facts and values without verifying that we have indeed fulfilled the set of specifications to which we committed ourselves in the first section. I said, in effect, that the fact-value distinction, apart from its role as short-circuit, which we obviously are not going to maintain (against which, on the contrary, we are going to have to learn to struggle), also accomplished several other tasks that were mixed in together for contingent reasons. Let us recall in Box 3.3 what we agreed to accept on our own account, while abandoning the notion of fact, then that of value, then the distinction between the two.

We have definitely fulfilled the first clause. The work of fabrication of facts is no longer reduced to its last stage, now that we are allowing the articulation of propositions in the successive states of their natural history to emerge, from the appearance of candidate entities to their incorporation into the states of the world. Instead of defining the facts by the suspension of all controversy, all uncertainty, all discussion, we can now define them, on the contrary, through the quality of a procedure that involves any new entity in a series of successive arenas. It is

Box 3.3. Summary of the specifications that the successor to the fact-value distinction has to respect.

1. The notion that replaces that of fact has to include the successive stages of fabrication.
2. The notion that replaces that of fact has to include the role of the shaping responsible for its stabilization.
3. The notion that replaces that of value has to allow the triage of propositions, while paying close attention to the facts in detail rather than turning the attention to foundations or forms.
4. The notion that replaces that of value has to guarantee against the cheating that causes values to be disguised as facts and facts to be disguised as values.
5. The notion that replaces the fact-value distinction has to protect the autonomy of the sciences and the purity of morality.
6. The notion that replaces the fact-value distinction has to be able to ensure a quality control at least as good as, and if possible better than, the one that is being abandoned, concerning both the production of facts and the production of values.

useless to repress, hide, or play down the importance of controversies, the mediation of instruments, the cost of knowledge, and the clamor of disputes. We have installed controversies at the heart of collective activity, without worrying about whether they are nourished by the usual uncertainty of research or by the debates proper to representative assemblies.²³ When new entities are involved, there is always lively discussion. As we are no longer in a hurry to crush under the little word “fact” the countless configurations under which the new entities participate in collective life, we shall have all the space we need for them to unfold at leisure. I do not claim that this exercise will be easy, but simply that we shall be able to fulfill this item in the specifications set.

I also believe that we can fulfill the second clause fairly readily. The notion of “fact,” let us recall, had the disadvantage of not taking into account the enormous work of shaping, formatting, ordering, and deducing, needed to give the data a meaning that they never have on their own. Tradition in the philosophy of the sciences gives this work the name “theory.” A lovely euphemism that has come straight down from the Heaven of Ideas to illuminate the Cave! The word we have

chosen, that of institution*, allows us to do much more justice to *the whole set of mechanisms for attributing shape and distributing causalities* through which a new entity becomes a legitimate and recognized member of public life. The word “theory,” in contrast, limits too severely the number of agents responsible for the regrouping and stabilization of the facts.²⁴ Instruments, bodies, laws, habits, language, forms of life, calculations, models, metrology, everything can contribute to the progressive socialization and naturalization of entities, without any need to distinguish in this list between what might belong to the old universe of the “sciences” and what seems to depend on the old domain of the “political.”

Thus we believe we are capable of doing justice to the work of shaping and stabilizing, all the more so because, as we saw in Chapter 1, we have abandoned the notion of social representation that made it impossible, earlier, to give a positive meaning to the term “institution.” The notion of articulation* allows us to connect the quality of reality to the quantity of work supplied. We do not have the pluriverse on one side and the ideas humans hold about it on the other. When an entity becomes a state of the world, this does not happen in appearance and *in spite of* the institutions that support it, but “for real” and *thanks to* the institutions. This solution, impossible before the development of the sociology of the sciences and political ecology, has become the key to our effort at elucidation. We are thus going to be able to bring back into the collective all the *variations in degree* in the production and progressive diffusion of a certainty that the fact-value distinction managed only to crush into a single opposition between knowledge and ignorance.²⁵

We have already explained our position on the third clause, since we proposed to shift the normative requirement from foundations to the details of the deployment of matters of concern. Still, as proof will not be provided before the next chapter, let me leave this point aside for the moment. Let us simply prepare ourselves to modify the role of the moralist as much as that of the scientist, the politician, the administrator, or the citizen.

Let us now turn to the fourth clause, seemingly more difficult to fulfill. The only justification for the fact-value distinction was to prevent the double smuggling through which unscrupulous rascals caused their partisan preferences to be taken for ineluctable states of nature

or, conversely, used purported states of nature to avoid having to explain clearly the values to which they wanted people to cling. By abandoning the fact-value distinction, we committed ourselves to do *at least as well* as it had done, placing ourselves in the same situation as the European Union, for which the abandonment of national frontiers must not have the effect of reducing territorial security. As we see at a glance from Figure 3.1, we have had very little trouble doing better: no one can accuse us of diminishing the discussion or short-circuiting quality control! On the contrary, laid end to end, the four imperatives require that we not bring an end to perplexity too abruptly, that we not unduly accelerate the consultation, that we not forget to look for compatibility with established propositions, and finally that we not register new states of the world without an explicit motivation. It is true that at this stage, not having sufficiently retooled the “job description” of the scientist, the politician, the administrator, and the economist, I still cannot show that the virtue of a trajectory of exploration will make it possible to do much better than the difference between science and ideology. Readers will have to wait for me, then, on this crucial point, and they will be right to be suspicious until I have shown, in the following chapter, that the guarantees I offer are better than those I am asking readers to abandon.

The fifth item of the set of specifications is easier to fulfill, but more difficult to prove. If by “defense of the autonomy of science” and “purity of morality” we mean two spheres protected against all interference, it goes without saying that we are incapable of satisfying that condition. Such is precisely the misunderstanding that gave rise to the “science wars.” We must make common sense accustomed to what should have always been obvious: the more we interfere with the production of facts, the more objective they become, and the more the normative requirement gets mixed up with matters of concern, the more it will gain in quality of judgment. Still, we can guarantee that there are indeed two powers that must definitely not be mixed: the power to take into account the number of entities and voices, on the one hand, and the will of these entities and voices to form a common world, on the other hand. Something essential would be lost if the work of taking into account* were shortened, trampled on, or encroached upon by the work of putting in order*, and if the work of putting in order were begun anew, interrupted, or called back into

question by the work of taking into account. Behind the clause from the set of specifications that is impossible to carry out—the requirement to defend the autonomy of science and the purity of morality—there is thus an essential function to be conserved, but one that we have to displace in order to shelter it elsewhere. Far from resembling the impossible search for purity, it makes us think rather of the shuttle required by this new bicameralism between the two houses that must at once counterbalance each other and coordinate with each other, without getting mixed up in each other's affairs. This task will be the heart of the constitutional work of political ecology.

If anyone hesitates to certify our position on the last of the clauses, it is important to recall the extraordinary confusion in which the unrealizable distinction between facts and values ends up in practice. It will be clear that by passing from one Constitution to the other, we are not introducing chaos into a regime that was well ordered up to now. On the contrary, we are bringing just a little bit of logic into a situation of frightful disorder.

Before we are accused of “relativism,” on the pretext that we would be calling for a confusion between facts and values, let us recall the incoherence of the Old Regime, which never managed to achieve this distinction, even though it struggled tirelessly to do so—without wanting to succeed, moreover, since the real distinction between facts and values would have deprived it of any possibility of defining the good common world in its own way and on the sly.

In this confusion, everybody loses. The scientist, who is sometimes asked to be absolutely certain, sometimes to plunge into controversies, but without being given the legitimate means to move from perplexity to hierarchy. The moralist, who is asked to arrange entities in order of importance but who is deprived of any precise knowledge of these entities and of all the work of consultation. The politician, who has to decide, he is told, but who is not given access to the research front and thus has to decide in the dark. It will be said that he has the people with him. Ah, but how many crimes have been committed in the name of the people? Like the ancient chorus, the people is supposed to punctuate with its low voice, its lamentations, its wise proverbs, the agitation of those who claim to be consulting, educating, representing, conducting, measuring, satisfying it. If the public is consulted nonetheless, it is in the derisory form of “public participation

in decision-making.” If the public has to know, it is in the mode of informing, divulging, popularizing, vulgarizing.²⁶ The public is not asked to go into the laboratory and become perplexed in its turn. If it is told about institutions, the purpose is to lock it up in the prison of its own social representations, the better to subjugate it with the chains of naturalization and the ineluctable laws that are going to shut its mouth. If anyone offers to hierarchize its values, it will be deprived of all access to the details of the facts, to all the living fire of controversy, to all the uncertainty of the collective. No, there is no question about it, every unprejudiced mind that casts a glance on this profound confusion that is called “society’s debates over science and technology” can only conclude as I have: it must be possible to do a bit better than this! Provided, nevertheless, that to the four requirements we have just developed a dynamic is added that allows them to be better understood.

A New Exteriority

More than this one meticulous chapter would be needed, as I am well aware, to bring about the abandonment of the venerable distinction between facts and values. Indeed, if people are so fond of this distinction, which is as awkward as it is absolute, it is because it seems at least to guarantee a certain transcendence over the redoubtable immanence of public life.²⁷ Even in recognizing that it is inapplicable, one would like to preserve it against the supreme danger that would come from doing without it: one could find oneself defenseless before the reduction of all decisions within the narrow limits of the collective confused with the Cave. Without the transcendence of nature, which is indifferent to human passions, without the transcendence of moral law, which is indifferent to the objections of reality, and without the transcendence of the Sovereign, which is always capable of deciding, there seems to be no further recourse against the arbitrariness of public life, no court of appeals.

If one maintains the distinction between the common world* and the common good* against all odds, it will be to hold on to this reserve that is going to make it possible to rise up in indignation, either by taking from nature the courage to struggle against opinion, or by turning to incontestable values in search of something with which to

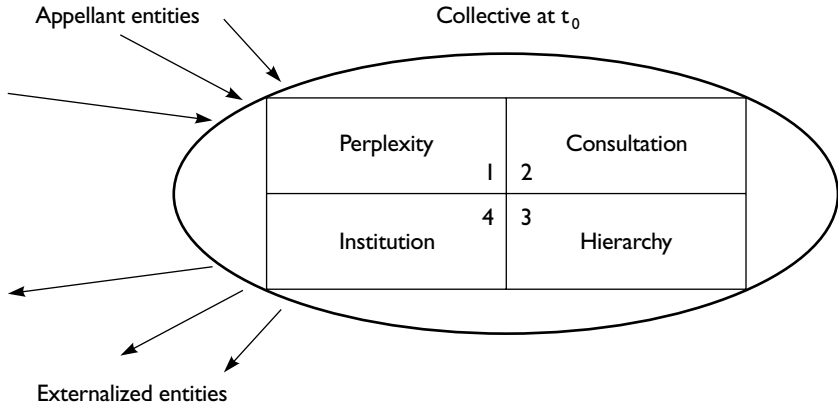


Figure 3.2 The collective is defined only by its movement: the entities thrown out by the power of rank ordering return as appellants, in the next iteration, to “trouble” the power of taking into account.

struggle against the simple states of nature, or else, finally, by asking the indisputable will of the Sovereign to decide against everything and everyone. I shall succeed in restoring the confidence of my readers, deprived of the distinction between facts and values, only if I can make them see for themselves, at the end of this chapter, that for political ecology there is another transcendence, another externality, which owes nothing either to nature or to moral principles or to the arbitrariness of the Sovereign.²⁸

Although this exteriority does not have the grandiose and formidable aspect of the three courts of appeal to which the old Constitution had entrusted the task of saving public life, it has the great advantage of being easy to find, provided that we agree to extend the work of the collective a bit. I maintain that I am replacing the difference between the common world and the common good with the simple difference between *stopping* and *continuing* the movement of the progressive composition of the good common world (according to the definition given for politics*). Let us take a look at Figure 3.2.

The preceding section did not trace the dynamics of the entire collective, but only one cycle of its slow progression, its painful explora-

tion. What I did was like explaining the successive phases of a combustion engine: but we still have to get the engine started. Every new proposition first goes through the four compartments of this figure, responding in turn to each of our essential requirements: it induces perplexity in those who are gathered to discuss it and who set up the trials that allow them to ensure the seriousness of its candidacy for existence; it demands to be taken into account by all those whose habits it is going to modify and who must therefore sit on its jury; if it is successful in the first two stages, it will be able to insert itself in the states of the world only provided it finds a place in a hierarchy that precedes it; finally, if it earns its legitimate right to existence, it will become an institution, that is, an essence, and will become part of the indisputable nature of the good common world. Such are the various phases of one cycle.

But the movement of composition cannot stop there, because the collective still has an outside! If the old Constitution required a constant classification of the provisional results of history in the two opposite compartments of ontology or politics, the same is not true of the new Constitution. The distinction between facts and values did not allow change to be registered, since matters of fact, by definition, were always already there: if there was actually a history of their discovery by humans, there was no historicity proper to nonhumans.²⁹ Although the composition of the actors of the pluriverse did not stop changing, the old Constitution registered the continuous variation in the positions only as a succession of surreptitious revolutions in the composition of the common world. Nature changed metaphysics without anyone's ever understanding what sleight of hand brought this about, since it was supposed to remain, as the name indicates, *anterior* to any metaphysics. The same is not true of the new Constitution, which has precisely the goal of following in detail the intermediary degrees between what is and what ought to be, registering all the successive stages of what I have called an experimental metaphysics*. The old system allowed shortcuts and acceleration, but it did not understand dynamics, whereas ours, which aims at slowing things down and fosters a great respect for procedures, does allow an understanding of movement and process.

Let us recall that the collective does not yet know according to what

criteria it is to articulate its propositions. It only knows—such is our hypothesis—that the propositions cannot be arranged in two sets constituted without due process. At a given moment—let us call it t_0 —we find it completing its first cycle by instituting a certain number of essences. Very well, but that also means that it *has eliminated other propositions*, being unable to make room for them in the collective. (Let us recall that we no longer have at our disposal the premature totalization of nature that we could use as a supreme court of appeal.) Of these excluded entities we cannot yet say anything except that they are exteriorized or externalized*: an explicit collective decision has been made *not* to take them into account; they are to be viewed as insignificant. This is the case, in the example given earlier, of the eight thousand people who die each year from automobile accidents in France: no way was found to keep them as full-fledged—and thus living!—members of the collective. In the hierarchy that was set up, the speed of automobiles and the flood of alcohol was preferred to highway deaths. Even if this may appear shocking at first glance, no moral principle is superior to the procedure of progressive composition of the common world: for the time being, the rapid use of cars is “worth” much more in France than eight thousand innocent lives per year. About this choice, there is nothing we can say, yet. In contrast, a gradient is going to be established between the interior of the collective and its exterior, which will gradually fill up with excluded entities, beings that the collectivity has decided to do without, for which it has refused to take responsibility—let us remember that these entities can be humans, but also animal species, research programs, concepts, any of the rejected propositions* that at one moment or another are consigned to the *dumping ground* of a given collective. We no longer have a society surrounded by a nature, but a collective producing a clear distinction between what it has internalized and what it has externalized.

Still, nothing proves that these externalized entities will always remain *outside* the collective. They no longer have to play, as they did in the old scenography of facts and values, the obtuse role of a thing in itself, of stupid matters of fact, nor the role—as vague as it is estimable—of transcendent moral principle. So what are the entities that have been set aside going to do? They *are going to put the collective in danger*, always provided that the power to take into account is sensi-

tive and alert enough. What is excluded by the power to put in order* at t_0 , can come back to haunt the power to take into account at $t + 1$ —I shall return to this dynamic in Chapter 5. Such is the feedback loop³⁰ of the expanding collective, a loop that makes it so very different from a society* endowed with its representations, in the midst of an inert nature made up of essences whose list would be fixed once and for all, expecting from moral values a salvation from on high so it can extricate itself from mere matters of fact. All the transcendence one needs, in practice, to escape from the straitjacket of immanence is found there, on the outside, within reach.

In the new Constitution, what has been externalized can *appeal* and come back to knock at the door of the collective to demand that it be taken into account—at the price, of course, of modifications in the list of entities present, new negotiations, and *a new definition of the outside*. The outside is no longer fixed, no longer inert; it is no longer either a reserve or a court of appeal or a dumping ground, but it is what has constituted the object of an explicit procedure of externalization.³¹

In considering the succession of stages, we understand why the fact-value distinction could not be of any use to us, and why we were right to abandon it, at the price of a perhaps painful effort. All our requirements have the form of an imperative. In other words, they *all* involve the question of what *ought to* be done. It is impossible to begin to ask the moral question *after* the states of the world have been defined. The question of what ought to be, as we can see now, is not a moment in the process; rather, it is coextensive with the entire process—whence the imposture there would be in seeking to limit oneself to one stage or another. Symmetrically, the famous question of the definition of facts is not reduced to just one or two stages but is distributed through all the stages. Perplexity counts as much for this question as the relevance of those who are brought in to judge it, as the compatibility of the new elements with the old, to end up with the act of institutionalizing that provisionally finishes giving it an essence with clear boundaries. Whence the awkwardness that consisted in reducing the definition of facts to just one stage of the process.

If one wished at all costs to maintain the distinction between what is and what ought to be, one could say that it is a matter of traversing the whole set of stages *twice*, by asking two distinct questions of the

same propositions, subject to each of the four requirements: *What discussion procedure must be followed? What is the provisional result of the discussion?* Behind the false distinction between facts and values was hidden an essential question about the *quality* of the procedure to be followed and about the *outline* of its trajectory, a question now liberated from the confused quarrel that (political) epistemology sustained with ethics.³²

Readers will probably notice that I have *replaced* the fact-value distinction with another one that is no less clear-cut and no less absolute, but which cuts across the other and is in a way superior to it. I am not speaking of the “shuttle” between taking into account* and putting in order*, but of the much more profound difference between, on the one hand, the short-circuit in the composition of the common world and, on the other, the slowing down that is made possible by *due process*, which I have chosen to call representation*. I have nothing in principle against dichotomies. On the contrary, I do not hesitate to make this profound contrast between *acceleration* and *representation* play a central normative role. This is the source from which we are going to draw our indignation and our legal and moral standing. “Represent rather than short-circuit,” such is the goal of political ecology. As I see it, there is a reserve of morality here that is much more inexhaustible and much more discriminating than the vain indignation whose goal was to prevent the contamination of values by facts or of facts by values.

At the beginning of this chapter, I was looking for a way to obtain the reality, the externality, and the unity of nature through due process. At the end of the chapter, we know, at least, that we are not confronting an impossible task. We simply have to modify our definition of externality, since the social world does not have the same “environment” at all as the collective: the former is definitive and made up of a radically distinct material; the second is provisional and produced by an explicit procedure of exteriorization. When a member of the old Constitution looked outside, she was looking upon a nature made up of objects indifferent to her passions, to which she had to submit or from which she had to tear herself away. When we look outside, we see a whole still to be composed, made up of excluded entities (humans and nonhumans) in whom we have explicitly decided not to be interested, and of *appellants* (humans and nonhumans) who demand

more or less noisily to be part of our Republic. There is nothing left of the old metaphysics of nature, nothing left of the old allegory of the Cave, although everything that matters to public life remains: reality—the nonhumans and their cohorts; externality—produced according to the rules and no longer surreptitiously; unity—the progressive unity of the collective in the process of exploration; to which it suffices to add the procedures for discussion that we must now make explicit.

Where does “external nature” now lie? It is right here: carefully naturalized, that is, socialized right inside the expanding collective. It is time to house it finally in a civil way by building it a definitive dwelling place and offering it not the simple slogan of the early democracies—“No taxation without representation”—but a riskier and more ambitious maxim—“No reality without representation!”



Skills for the Collective

Metaphysics has a bad reputation. Politicians mistrust it almost as much as scientists do. Speculations of philosophers alone in their rooms, imagining that they can define the essential furniture of the world on their own—just what no serious person should be indulging in any longer. Yet scorn of this sort would keep us from understanding political ecology. If we were to abstain from all metaphysical meditation, it would be tantamount to believing that we already know how the world is furnished: there is a nature *common to all*, and on top of that there are secondary differences that concern each of us as a member of a particular culture or as a private individual. If this were the case, those who have the task of defining the common good* would have nothing to worry about, for the bulk of their work would be accomplished: there would *already* exist a unified, unifying, universalized common world. All they would have left to do would be to bring order to the prevailing diversity of opinions, beliefs, and viewpoints—a thorny task, of course, but not one presenting fundamental difficulties, because this diversity does not touch on anything essential, anything that could involve the very *essence* of things—matters of fact being stockpiled separately in the cold storage of external reality. Now, to speak of nature in this way, separating the question of the common world* from the question of the common good*, is to cling, as we have seen in the three preceding chapters, to the most politicized of metaphysics, that *of nature*.

Ecological crises clearly have not immediately undermined this metaphysics of nature*. On the contrary, their theorists have tried

hard not only to save modernist nature, but also to extend its lease, by offering it a more important role in short-circuiting public life. Their efforts are obviously desperate ones, because these theorists end up quenching the fire of democracy that they had sought to revive, by further humiliating humans through a still more indisputable recourse to the real truth of the natural order. The gulf between theory and militant practice explains the slenderness of ecology's contributions to the common philosophy of politics and sciences. This slowness to react appears all the stranger in that, in one way or another, each ecological crisis has involved the scientific disciplines, researchers, and their uncertainties. Without specialists in atmospheric science, who would have felt global warming? Without biochemists, who would have spotted the prion? Without lung specialists and epidemiologists, who would have connected asbestos with lung cancer? The legacy of the Cave must really weigh heavily, for us to have remained ignorant for so long of the political novelty of ecology: the constitutional crisis of all objectivity.

To remove this contradiction between the practice of ecological or public health crises and the lesson that theorists wrongly claimed to be drawing from them—"Let's go back to nature!"—we needed to be interested in the sciences and in politics at the same time, and we needed to reject the old Constitution altogether. "We cannot hold on to nature!" I am not proposing to replace a well-organized system with a quirky one, but to substitute two houses put together according to due process for the two illegitimate houses of the old Constitution.

We are not going to enter a land where milk and honey flow: on the contrary, by eliminating the easy solutions offered by nature, we have only created new difficulties! The only difference, but it is a crucial one, is that we are going to be able to take advantage of the life-sized experiment, so to speak, in which the collective is engaged. Where the Old Regime took shortcuts but learned nothing from its experiences, we are going to set in motion a complicated procedure for learning how to practice experimental metaphysics*.

The modernist Constitution in fact saw debates over ecology merely as a mixture to be purified, a mixture combining rationality and irrationality, nature and artifice, objectivity and subjectivity.¹ The new Constitution sees in these same crises disputes that bear not on rationality and irrationality but on a completely different topic: every-

where, every day, people are fighting over the very question of the good common world in which everyone—human and nonhuman—wants to live. Nothing and no one must come in to simplify, shorten, limit, or reduce the scope of this debate in advance by calmly asserting that the argument bears only on “representations that humans make of the world” and not on the very essence of the phenomena in question. As long as we thought we were modern, we could claim to be exhausting the diversity of opinions, thanks to the unified certainty of the facts of nature: “The more Science we know,” we said, “the more rapidly minds will agree and the less disorder we shall have.”

But who would still agree without further ado to link the notions of external reality and unanimity? With this apolitical politics of public life, it is hardly likely that anyone can unify such disparate groups as those which affirm that the world is made up of atoms and those which await salvation from a God who created the world six thousand years ago; those which prefer to shoot down migrating birds rather than belong to the European Union; those which want to develop gene therapy to cure their children, against the advice of biologists, if necessary; those which vote in Switzerland against the transformation of their rapeseed fields into a laboratory annex; those which oppose cultivating human embryos and those others, associations of victims of Parkinson’s disease, which expect the same embryos to provide a cure. None of these members of the collective wants to have an “opinion” that is personal and disputable “about” an indisputable and universal nature. They all want to decide about the common world in which they live. Here ends the modernist parenthesis; here begins political ecology.

The choice we have now is thus no longer the choice between engaging or not in metaphysics, but between going back to the old metaphysics of nature or practicing an experimental metaphysics that will allow us to follow the way the problem of the apportionment between the common world and private worlds—a *problem that was supposed to have been solved once and for all*—can again open up, and as a result *find solutions other than mononaturalism** and its disastrous consequence, multiculturalism. We obviously do not wish to return to the metaphysics of philosophers alone in their rooms (unless by that expression we mean those who, like myself, agree to write up an attentive account of what happens in the newly reunited houses!). After defining

the general properties of the members of the collective in Chapter 2 and the new separation of the powers to take into account* and the power to put in order* in Chapter 3, I now have to approach the question of the *skills* that will allow us to follow in real time this experimental metaphysics that the old Constitution, with its obsession with binary order in nature and society, never managed to register. Still, before plunging into this enterprise and harvesting the fruits of our efforts, we must deal with one more difficulty and protect ourselves against the dangers of one other form of naturalism.

The Third Nature and the Quarrel between the Two “Eco” Sciences

One’s home, habitat, or dwelling is called *oikos* in Greek. Commentators have often been astonished at the fate of the word “ecology”—“habitat science,” used to designate not the human dwelling place but the habitation of many beings, human and nonhuman, who had to be lodged within a single palace, as in a sort of conceptual Noah’s ark. How can we explain, people wondered, that a term used for nature external to humanity can take from Greek the most anthropocentric, the most domestic, the most patriarchal of its terms, the one that has always been the most distant from *polis* and the exercise of liberty?²

The same problem arises with the notion of ecosystem. In supposing that they had surpassed the old limits of anthropomorphism because they were integrating nature and society, users of the term “ecosystem” were retaining modernism’s basic defect, its penchant for composing the whole without the explicit will of those humans and nonhumans who find themselves gathered, collected, or composed in it. They had even found a way to array all beings, humans and nonhumans alike, under the notion of “global ecosystem,” in a totality constituted outside the political world, in the nature of things. The ecosystem integrated everything, but too quickly and too cheaply.³ The Science of ecosystems allowed us to dispense with the requirements of discussion and due process in building the common world: obviously a capital failing in a democracy. Science pursued its ravages in philosophy itself, which purported to be putting an end to them. Eco-logical, perhaps, but not “eco-politically correct.”⁴

Political ecology obviously had a model: another “habitat science” that etymology does not distinguish from the first and which is called *eco-nomy*. It is through economics much more than through the natural sciences or militant ecologists that common sense regularly encounters nature, that is, the aptitude of the *nomos* to short-circuit the *polis*. We have succeeded in freeing ourselves from the first nature, that of the Cave and of (political) epistemology; we have been able to put into play the second nature, that of the ecological thinkers, but our efforts would be in vain if we kept intact the *third nature*, which purports to assume all the functions of the collective without paying either the political or scientific price.

After eliminating the poison of the “cold, gray” nature of the primary qualities, after combating the misunderstanding of the “warm, green” nature of the ecologists, we still have to overcome the obstacle of the nature “red in tooth and claw” of the ecopoliticians,⁵ the nature that purports to replace the relations of progressive composition of the common world with the law of the jungle governing a nature deprived of all political life. The influence of this third nature is all the greater in that, under vaguely Darwinian appearances, it serves as a springboard *inside* rather than outside the collective.⁶

Now, economics is no more “ecopolitically correct” than ecology is. *Nomos* and *logos* rightfully belong to the *polis* only provided that they do not serve as shortcuts for damaging the state of law. Economics pays a high price for the harshness that allows it to claim the title of the most “dismal” of the social sciences. To all appearances, however, it deals with all the topics we have evoked up to now under the name of political ecology. It too bears on groupings of humans and non-humans, which it calls “producers,” “consumers,” and “goods”; it too seeks to take into account the elements that it has to internalize in its calculations; it too wants to establish a hierarchy of solutions, in order to discover the optimum in its allocation of resources; it too speaks of autonomy and freedom; it too manages to produce an exterior, that of the elements that it has provisionally thrown out of its calculations: elements that it has precisely, in its own terms, “externalized.” Apparently, then, the collective that we have deployed does no more than re-discover the good sense of political economics, a modernist discipline par excellence, one that allows us to make rational calculations regarding all associations of people and things, and that would end up auto-

matically zeroing in on the best of all possible worlds if the State's claims did not intervene stupidly to distort its calculations. By shuffling the whole of the collective together, political economics would thus remain the unsurpassable horizon of our time: ecology would have only to let itself be swallowed up by economics as the prophet Jonah let himself be swallowed by the whale.

"Nature," as we now know, does not refer to a domain of reality but to a particular function of politics reduced to a rump parliament, to a certain way of constructing the relation between necessity and freedom, multiplicity and unity, to a hidden procedure for apportioning speech and authority, for dividing up facts and values. With political economics, naturalism inundates the inside of the collective. Thanks to the notion of self-regulating markets, it will be possible to do without the question of government altogether, since the relations that are internal to the collective are going to be similar to those which connect predators and their prey within ecosystems.⁷ The power relations put an end to discussion in any form, but the power in question is not the Sovereign's; it is the power, vouched for by Science, of inevitable necessity. No balance, no equilibrium is preferable to the forces of recall of "nature in us." The ideal, moreover, would be to have no government at all.⁸ Inside the collective itself the bulk of relations between humans and nonhumans will become an autonomous sphere as distinct from that of politics and values as the stars, the vast seabeds, or the penguins of Adélie Land. The three natures combined will stifle the collective for good. The laws of the nature that is cold and gray, the moral requirements of the nature that is warm and green, the harsh necessities of the nature that is "red in tooth and claw" put an end to all discourse in advance: politicians may have the last word, but they have nothing more to say.

Thanks to a detour via the meaning of the word "save," the genius of the language has given the verb "economize" the pejorative sense of "to spare oneself the trouble," to take a shortcut—in short, to shortcut. Nothing is better suited to political economics, which we can in fact define as "how to economize the political," "how to shortcut the work of doing politics for good."⁹ The four functions we sorted out in Chapter 3 are going to allow us to understand how this "Science of values," this axiology, manages to avoid both politics in the name of Science and the sciences in the name of the requirements of morality.

It is going to use calculus to spare itself the slowness of the work of representation*.

Economics exploits to the maximum the fundamental ambiguity of facts and values, which are as impossible to separate as to blend together. One would think that the modernist Constitution had been made especially for economics. If you say that this discipline is scientific and must therefore describe in detail the complicated attachments of things and people, according to the requirement of perplexity*, it will reply that it does not have time to be descriptive, because it has to move on very quickly to the normative judgment that is indispensable to its vocation. If you acquiesce, albeit in some astonishment at this casual tone, you will be surprised to see that, in order to produce the optimum, economics does not burden itself with any consultation*, and its work of negotiation is limited to the calculus alone. The requirements of relevance* and of publicity* do not seem to concern it either. If you become indignant at this cavalier attitude, economics will signal you to be quiet: “Shh! I’m calculating . . .” and will claim not to need either to consult or to negotiate, because it is a Science and because, if it defines what must be, it does so in the name of its laws cast in bronze, as indisputable as those of nature. If you point out politely that it is difficult to be counted as a science before devoting a great deal of time to the requirements of description, before plunging into controversies, before deploying instruments that are as fragile as they are costly, it will reply that it *prescribes* what must be done; and if you object once again, losing all patience, that economics does not respect values because it has jumped over all the requirements of prescription, it will retort scornfully that it only *describes* facts, without concerning itself with values! By allowing the discipline of economics to unfold, one thus keeps the collective, by the cleverest of schemes, *from having to produce any description in the name of prescription, and from having to hold any public debate in the name of simple description.*

With political economics, the impossible task of distinguishing between facts and values, which we have compared to the labors of Sisyphus, becomes so effective that it makes it possible to get both scientists and politicians all mixed up: one can no longer appeal to human values over and against raw facts, but at the same time one cannot do without the absolute distinction between facts and values! In the end,

the common habitat *will be calculated*, they say, *and no longer composed*. The bronze laws of economics will have eliminated ecopolitics. The collective, emptied of its substance, will no longer know how to come together.¹⁰

It would be pointless to have avoided the danger that the appeal to Science poses for democracy if we were to retain, at the very heart of the collective, the stupefying assertion according to which the production of values is itself the simple observation of a fact! The “science of values,” axiology, would reign in place of political ecology, short-circuiting both the hierarchization of values and the production of sciences. No, unquestionably, nothing must intervene to attenuate the tension between economics and ecology: both are equally *political*, but the first takes place apart from due process, while the second should have the courage to give itself forms that are appropriate to its historical mission. The clandestine bicameralism of the first, so typical of modernism, has to yield to the explicit bicameralism of the second, so typical of the era that follows—and that has preceded, that encompasses, that accompanies—modernization and its quick shortcuts.

Fortunately, economics mixes science with politics: since we have succeeded in liberating the sciences from the grip of Science, and politics from the prison of the social world, it must be possible to liberate economics* from its failure to dissimulate the search for values under already-established facts and the search for facts under already-calculated values, by making it undergo in its turn the little transformation of Chapter 3. By asking how it subjects itself to the two powers of representation* (“How many are we?” “Can we live together?”), it becomes much more *presentable*, since its capacities for *representation* are improved at once. Instead of distinguishing vertically between facts and values (without ever succeeding), it can easily distinguish *horizontally* between the top and the bottom of the collective (see Figure 3.1). So political economics lands on its feet! We can differentiate once again, as the wisdom of English permits, between economics as a discipline and the economy as an activity.¹¹

There is no such thing as an economy, just as there is no such thing as a *Homo oeconomicus*, but there is indeed a progressive economization of relations. We do not find, at the bottom, an economic infrastructure that the economists, situated above, would study: the *economizers* (in the broad sense of the term, which has to include ac-

counting systems and modeling scenarios, mathematicians, marketing specialists, and statisticians)¹² *performed* the collective by stabilizing the relations between humans and nonhumans. We do not have agents of economic calculation in our heads, but we do have construction of centers for calculation and profit centers thanks to which those who turn to them can produce in fact *on paper* certain calculations that sometimes make it possible to coordinate actions.¹³ As soon as we have extirpated economics both from our heads and from the world in order to reduce it to a set of specific and uncertain procedures that sometimes convey agreement, coordination, and the production of externalities, political economics loses its venom and stops competing with political ecology. Political ecology is quite clearly not soluble in the gastric juices of political economics. The biblical narrative ought to have warned us: three days later, the whale vomits Jonah up on a beach, so that he can resume his mission.¹⁴ Once back on its feet, economization becomes, as we shall soon see, one of the professions that are indispensable to the functions of the collective. Like the first nature, gray and cold, like the second, green and warm, the third nature, red and bloody, during the period when it had sole control of the collective, was only one of the forms of modernization, one of the ways to spare the collective the progressive composition of the good common world. Now that no naturalization allows us to avoid the tasks of composition, we can finally turn our attention to them.

Contribution of the Professions to the Procedures of the Houses

We do not have to decide on our own, as one did under the old speculative metaphysics, about the furnishing of the world; we have only to define the equipment, instruments, skills, and knowledge that will allow experimental metaphysics to start up again, in order to decide collectively on its habitat, its *oikos*, its familiar dwelling. To simplify our itinerary in this section, we are going to start with the old corporations that the old Constitution mobilized¹⁵ and discover how they can contribute to the entire set of functions of public life, that is, to the four functions identified in Chapter 3 (task no. 1: perplexity; task no. 2: consultation; task no. 3: hierarchy; task no. 4: institution), to which

we shall add two skills: the maintenance of the separation or shuttle between the power to take into account and the power to put in order (task no. 5), and, lastly, what could be called the *scenarization** of the collective in a unified whole (task no. 6).¹⁶ We shall benefit from the fact that all the professions contribute to developing the same job with different skills, instead of finding themselves—as they did under the Old Regime—charged with a sector carved off artificially within reality: Science concerning itself with nature, politics with the social world, morality with foundations, economics with infrastructures, administration with the State. Like fairies hovering over the four cradles of the new collective, each corporation is there to offer its own particular gifts.

The Contribution of Scientists

What can we expect of the sciences, once they have been delivered from Science? That they limit themselves to simple facts, phenomena, data, that they stay within the strict boundaries of reason, abandoning the other functions to the corporations of morality and politics? Of course not. On the contrary, they must share in *all* functions.¹⁷ Let us take one by one all the tasks to which the sciences have to contribute; to make it easier, we shall follow the numbering given above and repeated in Figure 4.1. This somewhat pedantic way of proceeding will allow us gradually to get rid of the bad habits that led us to try to make the various professions work separately, instead of coordinating their aptitudes for the construction of a single public edifice. Next, we shall see how each of the other forms of skill shares in these *same* functions with its own specific capabilities. In the following section, I shall reverse the direction of the presentation and start with the procedures of the collective, in order to define both its dynamics and the new corporations that would have to be included in it.

The sciences will give perplexity the formidable asset of *instruments* and *laboratories*, which will allow it to detect scarcely visible phenomena very early (task no. 1). Let us not forget that it is a matter of bringing into the collective associations of humans and nonhumans that are endowed with speech only by means of prostheses of an immense complexity (see Chapter 2). Now, who is better able than scientists to make the world speak, write, hold forth? Their work consists precisely

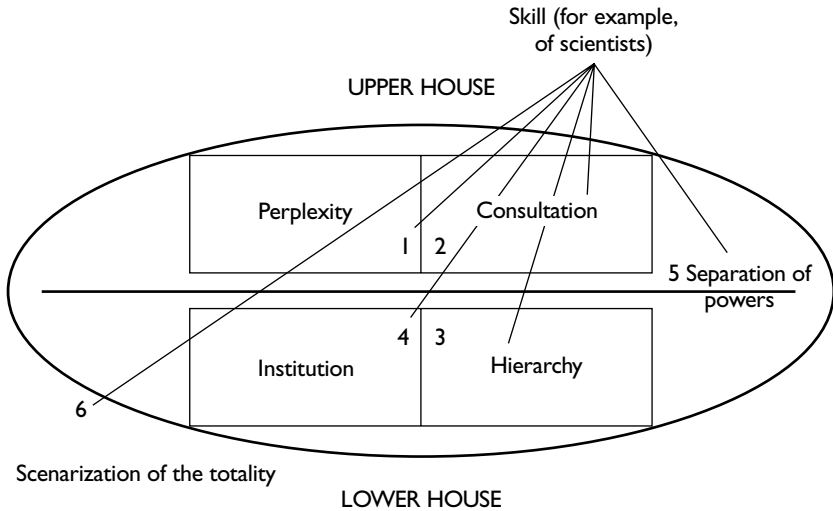


Figure 4.1 Each of the skills developed by a profession (here, that of the sciences) contributes equally to the six functions of the collective.

in inventing, through the intermediary of instruments and the artifice of the laboratory, the *displacement of point of view* that is so indispensable to public life. How can one take new beings into account if one cannot radically change the position of one's gaze? Science may claim to have established residence nowhere, but that is not where the sciences, in the plural, live. They do much better than offer a "detached" point of view, as if they could abstract themselves and attain a view from nowhere: on the contrary, they make it possible to shift viewpoints constantly by means of experiments, instruments, models, and theories—and if they succeed in considering the world from the vantage point of Sirius, it is through the intermediary of telescopes, interstellar soundings, spectrographic rays, and the theories of physics. Such is their particular form of relativism—that is, relationism. So, the sciences are going to put into the common basket their skills, their ability to provide instruments and equipment, their capacity to record and listen to the swarming of different imperceptible propositions that demand to be taken into account.

They will also contribute to the work of consultation (no. 2) through a competency that has allowed them to get ahead of all the

other callings, that of *controversy* and experimental *testing*. As we saw in Chapter 2, speech impedimenta* are what count for us in civil life—in other words, doubt about the quality of the representation. Now, the sciences have invented the principle according to which each candidate for existence finds itself attached to a group of ad hoc contradictors and to a set of reliable witnesses* chosen for the occasion, each of which will try to find the other wanting, by making the same entities speak differently in the course of the experiment, thanks to other trials. Through the search for an experimental protocol, the disciplines will very quickly investigate, for every candidate for existence, those among its colleagues that can judge it best, and which trials can best make them change their minds.¹⁸

How can we imagine even for a second depriving ourselves of the sciences to put in order of importance the heterogeneous entities in a homogeneous hierarchy (no. 3), a task that moralists used to claim as theirs, forbidding scientists—who were limited to the facts alone—to touch it with the tip of a test tube? But it is from the sciences, by contrast, that we expect a decisive skill once again: that of imagining the possibilities, while offering to public life heterogeneous *innovations and compromises*. Let us remember that this function cannot be assured if the list of the entities that have to be ordered is limited once and for all, or if it is made up of essences* with fixed boundaries. Thus, we need scientists with bold imaginations, in order to be able to zoom in on an order of preference going from large to small that unblocks the situation *by shifting* the weight of the necessary compromises *to other beings* and other properties. For instance, if pig organs that have been “humanized” to avoid rejection can be grafted onto humans, the grave ethical question of brain death suddenly becomes less important.¹⁹ With one minuscule modification in the structure of a material, a technical breakthrough, an innovative piece of legislation, a new statistical treatment, a tiny variation in temperature or pressure, what was impossible becomes possible; what was blocked is unblocked.²⁰ The sins of pride and arrogance that scientists commit in the name of Science become civic virtues when they participate, through their very imagination, in the search for wisdom by offering to recombine the habits* of the propositions submitted to collective examination.

Who would want to deprive the function of institution (no. 4) of researchers’ skills? If we have criticized Science for its confusion be-

tween perplexity and the certainty of instituted facts, it is only because Science claims it can leap directly from one to the other without rule-governed procedures. There is no longer anything illegitimate in the fact of using the competencies of scientists not only to obtain *consensus* but also to shelter it right away in forms of life, instruments, paradigms, teachings, bodily skills, black boxes. Here again, once the state of law has been restored, all the defects of scientists become strong points: yes, scientists know how to *make irreversible* what has long been the object of a controversy and that has just become the object of an agreement. Moreover, a collective that is not able to produce a definitive and durable closure of the established positions would be incapable of surviving. This attachment to paradigms, all those sins of obstinacy, and closed-mindedness, the tendency (with which scientists are so often reproached) to wear blinders, now become important qualities, indispensable to public life, for it is through them that the collective gains stability.²¹ Thanks to the skill of scientists, habits become essences*, and causalities and responsibilities alike are durably assigned.

It will be argued that researchers must not have a great deal to say about the separation of the two new powers (no. 5), since they have gotten so used to the conveniences of Science that they have only infringed on the separation by passing without warning from taking into account* to putting in order.* This is to forget that researchers devote much of their time to defending their *autonomy*. Now, this combat does not simply attest to their habitual corporatism. The capacity to ask one's own questions without being intimidated by any good sense, however few people may understand them and however little importance may be attributed to the stakes, is a form of self-defense that is indispensable to the maintenance of an uncrossable barrier between the requirements of the first house and the wholly contrary ones of the second. One must not forbid oneself to take a new being into account on the pretext that it does not appear on the current list of members of the collective.

This demand for autonomy in questioning—mistakenly confused for the moment with an indisputable right to knowledge, recognition, and budgets—has for the time being only one weakness, that of being a privilege reserved for scientists!²² Apportioned out to all the members of the collective (humans and nonhumans), this demand is going

to prove decisive for the good health of the collective. We must not only admire but *extend to everyone* this capacity to maintain one's own questions, no matter what pressures may be brought to bear by more prestigious disciplines or better-established institutions. In particular, this is the only way to benefit from the contribution of the primary qualities* without authorizing them to drive off the secondary quality*. The right to ask one's own question in one's own terms could be included in the Bills of Rights.

What is the contribution of the sciences to the final task (no. 6), which consists in offering the entire collective a scenarization by depicting it in the form of a whole, by dividing up its inner and outer limits, by acting as if the search for a common world had found its definitive haven? Here again, once it has been saved by procedures, poison becomes medicine; the minor sins of mad scientists are transmuted into virtues of the new citizens of the collective. The metaphysics of nature* had all possible disadvantages when it was practiced by Science; now, on the contrary, it becomes a key responsibility of the sciences. Nothing is more indispensable than the multiplication of the great narratives through which researchers "package" the entire collective and human and nonhuman history in a grandiose generalization from tiny bits of laboratory knowledge. The great scientific narratives on the origin of the world from the Big Bang to the thermal death of the sun, on the evolution of life from the amoeba to Einstein, of universal history "from Plato to NATO," the daily breakfasts with God about "the theory of everything," each of these crazy frescoes proposes a possible unification, and it hardly matters then that the wildest imaginary scenarios mingle with attested facts; it hardly matters that people dream of applications impossible to prove, that they exceed all the limits of good sense. It hardly matters, even, that the most ascetic reductionism claims to reign by virtue of having eliminated most of the world's entities. On the contrary, the fewer entities there are to take into account, the more convincing the totalization will be. On this great, hastily set-up stage, all that matters is the production of a common world, one that has now become licit and is offered to the rest of the collective as a new *occasion* to unite. Naturalization is no longer a defect, either, when nature no longer reigns separately: it becomes a dress rehearsal, an offer of service, one possible scenario, suggesting what the collective could become if it were unified. It is no

longer a matter of making the primary qualities the foundation of all the rest, but of making a narrative reduced to its simplest expression the provisional envelope of the collective.

This brief trajectory, which we shall follow again in the opposite direction in the next section by showing the convergence of the various professions, proves to what extent the sciences play an indispensable role in the six functions of the collective, an all the more fruitful role in that *they no longer play it alone*. Once the parenthesis of Science has been closed, along with its dream of purity and externality, the sciences, restored to the civic life that they should never have pretended to abandon, finally rediscover the meaning of the word “disinterested,” which obviously does not mean that they are cold, detached, “uninterested,” but that like everyone else they have to be able to devote themselves to the tasks of perplexity and consultation, without the requirements of the lower house constantly disturbing them by asking them to be reasonable and realistic. Conversely, when they take on the tasks of hierarchy and institution, researchers finally rediscover the form of disinterestedness that they never should have lost, since the upper house is no longer tyrannizing them and since they can henceforth finally detach themselves from the unhealthy obsession with their specialties that made them so suspect in the eyes of their partners, who were worried to see them put their own interests and those of their own projects above those of the common world.

When it was being taken seriously, the old Constitution made it necessary to criticize the sciences constantly for the traces of ideology that subsisted in them, for the surreptitious crossing of the yellow line between simple facts and values, for the crushing of poor humans under the weight of instrumental reason. Scientists had to be constantly punished for their arrogance by being dragged back to the prison of the laboratory and forced not to look higher than their own pallet. We have done the inverse: far from criticizing the sciences, one must on the contrary respect the diversity of their skills, allow the variety of their qualities to be developed, their indefinite contributions to the composition of the common world to unfold. There is no need, either, to imagine a “metascience” that would be more complex, warmer, more human, more dialectical, and that would allow us to “surpass the narrow rationalism of the established sciences.” The sciences lack neither purity nor complexity: they were led astray only by the claim to

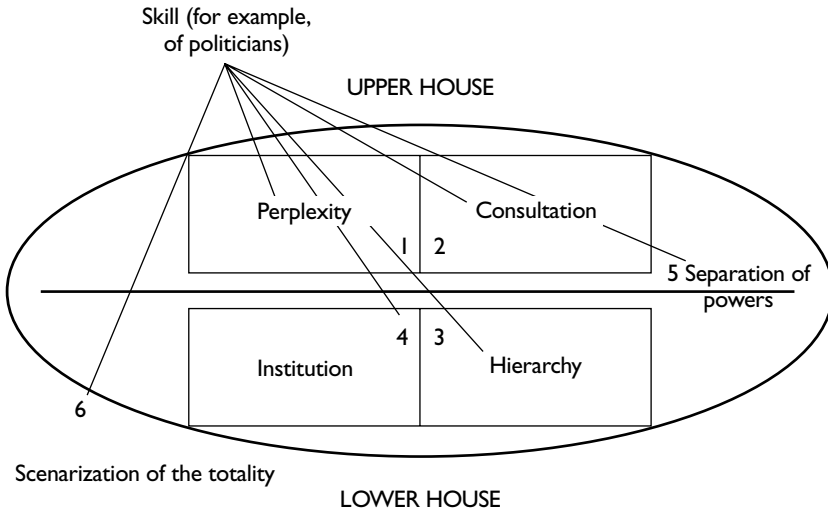


Figure 4.2. Each of the trades (here, that of the politicians) contributes equally to the six functions of the collective.

occupy the six functions *without getting involved with the other callings*, which, by different means, *pursue the same goals as the sciences*. Let us restore to the sciences the crush of democracy from which they were supposed to have been protected as they grew.

The Contribution of Politicians

To understand how various kinds of skills can be combined to offer the collective its various competencies, we need to turn to the other professions, beginning with that of politicians, which is attached to the same associations of humans and nonhumans, but according to very different skills from those to which the lab coats have accustomed us. The term “politician” does not correspond to a precise profession, any more than the term “scientist” does (Figure 4.2); we are simply starting with existing callings, as good sense offers them to us, in order to detect their contributions to the six functions of the collective that are the only things with which we are concerned at the moment.

Politicians, as we are now well aware, do not exercise their skill on a

separate domain of reality—the social world, values, power relations. They share, at first glance, in the *same* functions as the scientists but with *other* skills. At first glance, it may seem strange to ask politicians to make a contribution, right alongside the instruments of laboratory researchers, to the perplexity of the collective (no. 1), according to a scarcely acceptable prejudice that contrasts the scientist, attentive to the facts, with the politician who would betray the people who voted for him by speaking in their place.²³ In truth, neither the one nor the other can be unaware of the speech of those whom they represent both precisely and faithfully. But what politicians add of their own is *a certain sense of danger* stemming from the multitude of excluded entities that can return to haunt the collective and demand to be taken into account this time. Let us recall that the power to take into account* is never the absolute beginning of the process, but always its *resumption*. Nothing proves that those—humans and nonhumans—whom we have decided to do without are not going to come back and knock at the door, thanks to imperceptible movements that will have to be detected as quickly as possible. The entire competence of politicians consists in living in this permanent state of risk through which, when they attempt to form an “us,” they hear responses in the form of more or less inarticulate cries: “You, maybe, but not us!” It is precisely in collaborating with scientists and hovering over the same instruments that the detection of dangerous propositions by politicians is going to be able to nourish public life by responding to the requirement of external reality.

No one will deny that politicians have the skill that will allow them to contribute decisively to consultation (no. 2). Just as the researchers have learned to construct controversies and to referee them through convincing experiments, the politicians have learned, more than anyone else, to form *concerned parties*, reliable witnesses*, opinionated stakeholders. Politicians are often criticized for the artificiality of the constructions through which representative authorities are produced, agencies that have the right to speak, even though they have nothing special to say because they have not been given the capacity to produce their own questions. Their critics forget that the multiplication of artifices to fabricate agents that can say “yes” or “no” is at least as important a skill as the construction of facts by researchers in labora-

tories. Without the work of production of voices, there would no longer be voices at all. Without that artificial and ingenious research, without that continuous exploration of those who may have to sit on the jury that rules on candidates for existence, it is impossible to speak of successful consultation. Is the basic job of politicians not to create out of the whole cloth voices that stammer, that protest, that express opinions? Is this not what explains their ceaseless coming and going, their constant alertness, their ever-renewed resumption, their uninterrupted worry, their speech impedimenta? Mixed from now on with the voices of colleagues and reliable witnesses who are led to judge the quality of matters of concern*, this production of voices is not going to create a big ruckus, but will instead bring together an assembly that is already more credible, more serious, more authorized. Scientists left to themselves would never be able to extend consultation to fulfill the requirement of relevance. They would have a tendency to agree *among themselves* much too rapidly, once the ad hoc group of competent judges was defined. Helped by politicians, they will now be able to detect, for every candidate entity, the jury that is adequate to evaluate its existence according to its own requirements and in relation to its own problems.²⁴

Despite appearances to the contrary, it is not because they deal especially with humans that politicians contribute usefully to hierarchy (no. 3). In practice, politicians have never dealt with humans, but always with associations of humans and nonhumans, cities and landscapes, productions and diversions, things and people, genes and properties, goods and attachments, in brief *cosmograms*.²⁵ No, their principal competence, the one that even the most imaginative scientists cannot emulate, comes from their aptitude to *compromise*. Politicians are always criticized, with scornful accusations of compromises, deals, and combinations, and those are precisely, at this stage, the most indispensable of virtues. There is in fact no homogeneity in the hierarchy of choices that must be made between the various propositions, which are always presented as improbable collages, *cadavres exquis* ("exquisite corpses"). The "combing" through which it will be possible to arrange incommensurable beings in order from the largest to the smallest can come to fruition only if the interests, intentions, positions, of each of the components are constantly modified.

The spokespersons must in return modify those whose opinion they are supposed to represent faithfully. Faithfulness changes meaning. No scientist deigns to follow this perilous path which to him looks like *a lie*.

However, it is on this point that we see the full advantage of the collaboration between scientists and politicians, a collaboration of which the old distinction between the paradise of Science and the hell of the social world deprived us up to now. In fact, the politicians' capacity for translation/betrayal corresponds to the requirement of hierarchy, only provided that they can constantly rely on the scientists' aptitude for offering innovations and compromises: *only together* can they succeed in modifying the opinions of their constituents and also displace the burdens onto other, less important beings. The two representations* can work only in concert, with all their ingenuity combined to discover how to knit together the least objectionable of awkward compromises among incommensurable actors, each of whom is seeking to pass the buck, in order to make others pay the price for compromises that are nevertheless indispensable.²⁶ We must learn to respect these collaborations in the search for the best combination: deprived of the marvelous help of a world beyond, this is our only chance to obtain the *best* of all *possible* worlds.

With the obligation to succeed, politicians shed their brightest light. "We have to get on with it, and in a hurry; time is passing; let's decide." Such is the impulse that suddenly animates the second house when the politicians add their grain of salt. Researchers, too, know how to make decisions, to get on with it, as we have seen, but politicians add an even more indispensable skill: they can *make enemies*.²⁷ Without this ability, the meaning of decisiveness, the ability to "cut to the chase," would be only the mark of arbitrariness—the arbitrariness that so frightened scientists in the other Constitution, worried as they were that they would be obliged to know too soon.²⁸ Without the ability to divide the collective into friends and enemies, the requirement of closure* could never be fulfilled: one would want to embrace everything, keep everything, satisfy everyone, all the humans and all the nonhumans together, and the collective, left agape, would no longer be able to learn, because it would no longer have the capacity to take up again, in the next cycle, the integration of the excluded entities that would have appealed.²⁹

We can deal quickly with the contributions of politicians to the sep-

aration of powers: at least since Montesquieu, the concept comes from them. The very idea that one must not unify the work of the collective too rapidly without composing it ahead of time out of watertight compartments, such is the decisive contribution of political philosophy, the invention of a State of law, the notion of which will take on new meaning once it is connected to the notion of the autonomy of scientific questioning. Still, the politicians are going to defend the frontier by drawing on a different resource from the one scientists use. They are going to insist on the classic distinction between the phases of deliberation and those of decision. The first house is going to look to them like *the precinct of freedom*—where people inquire, speak, consult—and the second like the space *where necessity is forged*—where one establishes hierarchies, chooses, concludes, and eliminates. But this venerable distinction between deliberating and deciding is going to take on new meaning with the new Constitution. By attributing freedom to humans and necessity to nature, the Old Regime did not risk slicing up the collective, as Socrates demanded, according to its actual joints. Producing freedom and instituting necessity do not take us back to a division between nature and society, between object and subject, but to the bicameralism of political ecology, to the respect for the distinction between the power to take into account and the power to put in order. The formula may still appear shocking, but people deliberate and decide *just as much* about facts as about values.

It is probably the last competency of the politicians, the one that produces a scenario for the collective as a whole (no. 6) that is the most decisive and that has been neglected the longest. The collective, as we understand now, is not a thing in the world, a being with fixed and definitive borders, but a movement of establishing provisional cohesion that will have to be started all over again every single day. Its borders, by definition, cannot be the object of any stabilization, any naturalization, despite the continual efforts of the great scientific narratives to unify what brings us all together under the auspices of nature. To this totalization, the politicians bring a provisional unity through the incessantly resumed circuit of its envelope, what I have called its progressive composition.³⁰ The politicians do not hope to fall, by an unanticipated stroke of luck, on an already-constituted “whole,” or even to compose once and for all an “us” that would no longer need to be reconsidered. They expect the outline of the borders

of the collective to come from nothing but the *very movement* of incessant resumption, rather like the way burning brands trace shapes in the darkness of night only through the rapid motion to which we subject them. If politics stops, even for a second, there is no longer anything but a point, a lie, a madman who says “we all” *in the place* of others. It is that requirement, properly stupefying, that makes politicians incomprehensible in the eyes of all the other professions, and gets them accused, in a facile way, of lying and imposture.³¹ No one is going to emulate that skill.

Have we mixed up the sciences with politics? On the contrary, now that the scientists and the politicians are collaborating on the same tasks, we finally understand their profound difference, the one the old Constitution never made it possible to bring out, because it was hopelessly buried in an impossible distinction between the truth of things and the will of humans—as if it were easier to say what entities *are* than what they *want*. Politicians and scientists all work on the same propositions*, the same chains of humans and nonhumans. All endeavor to represent them as faithfully as possible. Must we say that scientists do not adulterate what they say, unlike politicians, who supposedly practice the art of lying and dissimulation, as if the former had to convince and the latter to persuade? No, because both callings delight in the art of transformations, the former to obtain reliable information on the basis of the continual work of instruments, and the latter to obtain the unheard-of metamorphosis of enraged or stifled voices into a single voice. Must we admit that they all have the same job? That is not true either, because the meaning of the word “fidelity” differs profoundly for the two types of skill: scientists have to maintain the distance between the propositions that they load into language and what they say about them, so that these two things will not be confused, whereas politicians have precisely to confuse them by continually modifying the definition of the subjects who say “we are, we want.” The former are guardians of the “them,” the latter masters of the “us.”

It was thought that political ecology had to bring humans and nature together, whereas it actually has to bring together the scientific and the political ways of intermingling humans and nonhumans. There is indeed a division of labor, but there is not a division of the collective. The powerful impact of political ecology comes precisely

from the *synergy* that it is going to allow between the complementary competencies that everything requires us to connect and that only the prejudices of the old Constitution obliged us to separate into distinct domains of reality. The collective has as much need to maintain distances scrupulously as it does to take the risk of abolishing them. If only these nonidentical twins had not been separated at birth and given different missions: as if the one had the job of representing nature truthfully, while only the prison of the Cave was left to the other. Without this separation, it would be easy to understand that they have to collaborate on all the functions of the collective without confusing their qualities at any given moment. We might just as well tell masons, plumbers, carpenters, and painters to collaborate without ever telling them to what public building they are to apply their successive and complementary talents! Rather, each type of skill comes in its turn and in its role to lend a hand in its own distinctive way to the task, which is sorted out differently every time.

Moreover, now that we have reached this point, nothing prevents us from saying that the sciences proceed along a straight and narrow path, while politics takes a crooked one, appropriating for our own purposes old metaphors that have long served to contrast the two regimes of public speech.³² The establishment of referential chains that allow us, through a series of continual and rule-governed transformations, to assure ourselves of the faithfulness of representations, does indeed trace segments of straight lines. The hesitant speech that has to construct, through endlessly repeated gatherings, a sphere that will serve as boundary between the inside and the outside, between “them” and “us,” in order to ensure the faithfulness of the representation, cannot be drawn with straight lines, but only with curves. Yes, the political animal remains the “prince of twisted words.” What makes him untruthful in the eyes of Science would make him a liar, on the contrary, if he tried to speak straight. Speaking of someone who draws a straight line where a curved line is required, we say that he or she is “going off on a tangent,” fleeing the obligations of his or her mission. This is the way it would be with the politician who decided to start talking science: she would be abandoning the progressive composition of the envelope of the collective: she would go fast, she would go straight ahead, she would no longer be faithfully representing her constituents. In order to grow, the collective needs these two func-

tions, dispersed everywhere; one allows it to catch hold of the multitudes without crushing them, and the other allows it to get them to speak in a single voice without scattering. If we are to begin to understand the collective's new functions in a positive way, we still have to add to it the contributions of the other professions: market organizers, moralists, and later, in Chapter 5, administrators.

The Contribution of Economists

With the economists of the Old Regime, the collective was stifled, obliged to define itself as a natural and self-regulated domain, subject to indisputable laws capable of producing values by simple calculations. All this changes if the discipline of economics-as-discipline is freed of the obligation to reflect the economy-as-infrastructure.³³ The economists, or rather the economizers, the "economy performers," will then be able to contribute in a decisive way to the creation of a scenario for the common world (no. 6), since they are becoming capable of reinforcing the difference between the inside and the outside of the collective. Talking about economics as a specific sphere reduces politics to a rump agency that cannot do the job. Offering the collective as a whole a *scale model* that designates *explicitly* what is taken into account (internalized) and what is rejected, thrown out (externalized)—this is what will make it possible to dramatize, to theatricalize the general accounting of the collective at a given moment of its exploration of the common world. When *Homo oeconomicus* designated the foundation of universal anthropology, the inquiry into the composition of the world ceased at once. But if we use the term "global economy" to designate a provisional version offered to the collective that will allow it to accept one list of entities and reject another, then economics, like all the social sciences, plays an indispensable political role: it *reflexively represents the collective to itself*. Neither the sciences nor politicians manage to dramatize the states to such an extent, since they never end up with one single bottom line. The simplistic character of which economics is so often accused becomes on the contrary its most striking quality, the only one that can produce a scale model of the common world. Thinking they had come across an instance of self-regulation, the adherents of natural equilibria made a small mistake on the placement of the prefix "self." Yes, economics is a *self-*

reflexive discipline, but it does not designate any *self*-regulated phenomenon: it simply allows the “public” to see itself, to conceive itself, *to constitute itself as a public*.³⁴

We shall be told that the economists must not be very useful for maintaining the separation of powers (no. 5), since more than all the others they have contributed to confusing it with the impossible distinction between facts and values. This would be to misunderstand to what extent the competencies of economics are transformed once the distinction between economizing and what is economized, between the requirements of the lower house and those of the upper house, has been recognized. As soon as the work of documentation, instrumentation, and formatting that accountants, statisticians, econometricians, and theoreticians practice every day has been brought to light, we notice that there is now virtually no relation between the proliferation of the links that connect humans and non-humans on the one hand, and what economics can say about them on the other. Common sense knows this perfectly well: it is quite prepared to poke fun at the economists’ weakness in predicting even the success of the most trivial gadget—not to mention the onset of crises. But, here again, a weakness is transformed into a strength: no one can confuse the indispensable work involved in translating the attachments of people and goods, by reducing them to calculations on paper, with what *really* happens in these people’s heads and through the power of these goods. By their very weakness, the economists thus do a marvelous job of protecting the inquiry of the upper house into the exploration of the connections of its necessary reduction by the lower house. Precisely by reducing the attachments in an unrealistic way in the form of calculations, economics protects the distinction between the tasks of taking into account and those of putting in order better than any other profession. No longer can anyone confuse the world with a spreadsheet!

If we stop a moment to measure the immense difficulties of the tasks of hierarchy and institution, we can readily grasp the crucial contribution of the economizers, for they are going to make it possible to give a *common language* to the heterogeneous set of entities that have to form a hierarchy (no. 3). Nothing could link black holes, rivers, transgenic soy beans, farmers, the climate, human embryos, and humanized pigs in an ordered relation, in one single cosmogram.

Thanks to the economic calculation, all these entities become at least *commensurable*. If we imagine for a moment that this calculation describes their deepest values in the way that the primary qualities* were supposed to define the ultimate meaning of things under the Old Regime, we are obviously on the wrong track. But under the new Constitution, no one would make this error any longer, since the distance between the reality of the things that are produced, purchased, appreciated, consumed, rejected, or destroyed and the fragile surfaces on which the accounts are inscribed now appears fairly visible. Once again, economics draws its strength from its weakness.³⁵ Instead of defending its virtues by imagining a metaphysics, an anthropology, and a psychology entirely invented to serve its own utopia, as was done in the eighteenth and nineteenth centuries, perhaps in the twenty-first century we may finally recognize from its account books that economics has the unique capacity to give *a common language* to those whose task is precisely to discover the *best* of the *common* worlds.³⁶

There has surely been enough complaining about the economizers' hardness of heart; they are accused of reducing the rich universe of human relations to the icy calculation of interest! They are being blamed, however, for a vice that can never be theirs. Goods cannot be reduced to economization any more than people can. What economization allows, however, is to give the provisional version of the common world (no. 4) the *justifiable* character of the result of a calculation. The modeling of relations in the form of accounts makes visible some consequences that no other method could reveal and makes it possible to close off the debates with an argument. By documenting the whole set of arbitrations in the form of statistical tables, economic theories, forecasts concerning speculative movements, we can add to the trenchancy of a political decision, to the consensus of a scientific decision, the revelation of the bottom line. If we want to institute the common world so that it will last, this result is better than we could have hoped: the State of law is expanded and not reduced by economization. Provided that we do a good job measuring the advantage we gain from having the various callings collaborate on the same functions: isolated from politicians, scientists, and moralists, the aptitude for calculations came down to short-circuiting all other forms of debate, in order to decide about externalities.³⁷ Added to the scientists' ability to institute the chain of causalities, to the politicians' ability to make en-

emies, to the moralists' ability to "fish out" those who are excluded (see below), the same aptitude for calculation becomes one of the most reasonable ways to articulate one's preferences in a vocabulary that fulfills both the requirement of publicity and that of closure.

To honor economics even while stigmatizing it, people have called it a dismal science, on the pretext that it introduced the cruel necessity of Malthusian nature into dreams of abundance and fraternity. Freed from its dream of hegemony, economics becomes on the contrary the slow institutionalization of the collective, the progressive and painful passage from scattered propositions by humans and nonhumans to a coherent but provisional calculation about the optimum way of dividing up the common world. This calculation has been somewhat downsized to the dimension of the spreadsheets filled in offices by a few thousand specialists, tens of thousands of statisticians, hundreds of thousands of accountants.³⁸ Economics is no longer politics: it no longer dictates its terrifying solutions in the name of laws cast in bronze that would be external to history, anthropology, and public life; it participates humbly in the progressive formatting of problems, in setting down on paper arbitrages that no other procedure would manage to reduce. Dangerous as infrastructure, economics becomes indispensable as documentation and calculation, as secretion of a paper trail, as modelization.

We shall say little about the tasks of perplexity and consultation, for the dominion of modernism has been such that political economics thought it described them, whereas it scarcely touched them at all.³⁹ This is the astonishing paradox of a movement that does not even have words to speak of the intimacy of the relations it has woven, more than any other collective, between goods and people! The old version of economics, consisting of objects to be bought or sold and of simply rational subjects, blinded us to the depth and complexity of the connections that humans and nonhumans have always woven together, links ceaselessly explored by merchants, industrialists, artisans, innovators, entrepreneurs, and consumers. It would take a very different anthropology to begin to account for this immense world, common to the old worlds and the new, other than by ersatz economics.⁴⁰ That is not the goal of the present book. Let us simply realize that no one is better able to detect invisible entities and involve them in the collective (no. 1) than those who are on the alert for the possible

attachments between humans and nonhumans, and who can imagine, in order to redistribute bonds and passions, likes and dislikes, recombinations of goods and people that are as yet unknown. By freeing up this competence, we are going to link the fate of humans and nonhumans, possessors and possessions, more intimately. Persons will be more solidly associated with goods and goods with persons.

More remarkable still is the aptitude of economics to fulfill the requirement of relevance pertaining to consultation (no. 2), by discovering for each type of attachment the *process of interesting*—that is, of inducing interest—which is proper to it, the juries that alone are qualified to judge it, whether in the form of consumers, specialists, experts, amateurs, or tasters, or in the form of exploiters, exploitees, outcasts, or profiteers.⁴¹ By all possible mediations, interests are going to become *articulable*. If we are going to talk about “liberating the productive forces,” then we have to leave the upper house full latitude to articulate the processes of interesting. Under the old and new regimes alike, economics *sums up* the attachments, but the meaning of the term “summary” has changed: whereas before, the summary *was substituted* for the whole as primary qualities were substituted for secondary ones, from now on the summary *is added* to the whole. With the Old Regime, one could dispense with everything that one did not incorporate into the calculation; with the new Constitution, we retain in memory what we would be at risk of forgetting: we cannot even hope ever to be rid of these things.⁴² Even more than through the action of scientists and politicians, with the help of economists propositions can be expressed; interests have a say in the matter. Through the circulation of its tracers, economics makes the collective *describable*.

The Contribution of Moralists

Let us recall the goal of our itinerary once more. By enumerating the succession of gifts set down in each of the baskets by the various fairies, we are going to begin to understand the nature of these functions other than as hybrids of science, politics, administration, and morality. If they give us for a moment the impression of a badly stitched-together consensus, it is because we can only gradually wipe out the artifices of a long separation between the various professions. Later, in the second section, we shall discover the functions of the collective

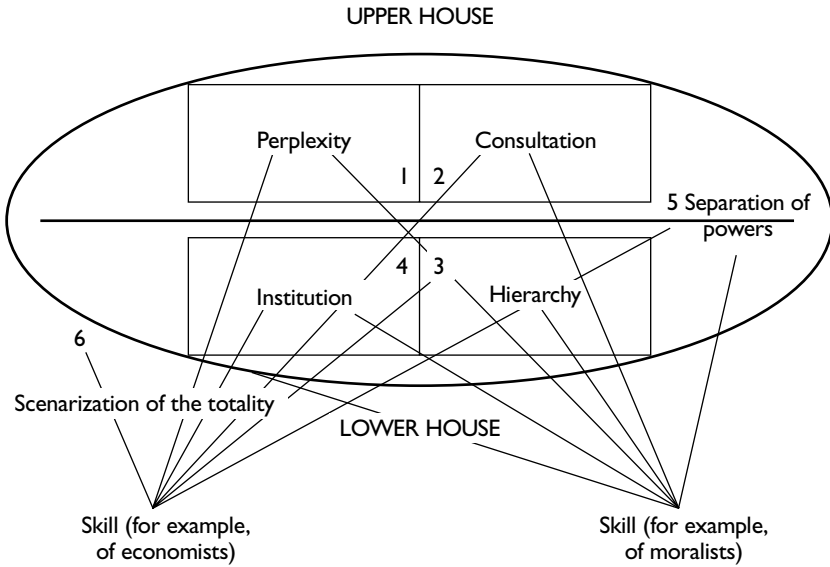


Figure 4.3 Each of the callings (here, those of the moralists and economists) contributes equally to the six functions of the collective.

for themselves, as roles as classic and as coherent as those of the executive, legislative, and judicial branches. Let us now move to the fourth calling that we have chosen to reinterpret, that of moralist (Figure 4.3).

The old split between facts and values obliged moralists, as we saw in Chapter 3, to flee back toward the foundations or limit themselves to procedures, or else to imitate in vain the type of certitude that naturalism seemed to offer.⁴³ Detached from facts in all their details, moralists could be of no use: once they have been brought back to the right path, as it were, and obliged to participate in the common tasks, their qualifications become indispensable again. We can define morality as *uncertainty* about the proper relation between means and ends, extending Kant’s famous definition of the obligation “not to treat human beings simply as means but always also as ends”—provided that we *extend it to nonhumans as well*, something that Kantianism, in a typically modernist move, specifically wanted to avoid.⁴⁴ Ecological crises, as we have interpreted them, present themselves as *generalized revolts of*

the means: no entity—whale, river, climate, earthworm, tree, calf, cow, pig, brood—agrees any longer to be treated “simply as a means” but insists on being treated “always also as an end.” This in no way entails extending human morality to the natural world, or projecting the law extravagantly onto “mere brute beings,” or taking into account the rights of objects “for themselves”; it is rather the simple consequence of the disappearance of the notion of external nature. There is no longer any space set aside where we can unload simple means in view of ends that have been defined once and for all without proper procedure. Inanimism* has disappeared along with the unanimism of the old politics of nature.⁴⁵ It is not because they know what must be done and not done that the moralists can contribute to the civic virtues, then, but only because they know that *everything that will be done well will necessarily be done badly*, and as a result will have to be *done over again right away*. “No one knows what an environment can do,” “no one knows what associations define humanity,” “no one can assume the right to classify ends and means once and for all, the right to lay down the boundary between necessity and freedom without discussion”—such are the *concerns* that the moralists are going to introduce into all the procedures of the collective.

This requirement to treat no entity simply as a means—which is also found in expressions such as “renewable resource,” “sustainable development,” and “principle of precaution” as well as in “pity” or “simple respect”—is going to contribute in a decisive way to the tasks of perplexity (no. 1), institution (no. 4), and totalization of the collective (no. 6), because it is going to make them, paradoxically, *much more difficult* to accomplish without discussion.

By definition, the second house can fulfill its duties only if it treats a certain number of entities as simple means, in the name of other entities to which it has decided to assign the role of higher ends (no. 4). No classification is possible without this dismissal. Scientists, politicians, and economists, equally obsessed, though for different reasons, by the closing of the collective, are thus always in error in the eyes of the moralists who are going to equip the entities that have been set aside with the *right to appeal* that they can use when, in order to fulfill the requirement of closure, they are driven out of the collective in the name of their (provisional) insignificance. Let us recall the eight thousand French highway fatalities—which became mere means for the au-

tomobile, which was raised to the rank of Sovereign Good. Enemies, excluded parties, and the opposition are, thanks to ethics, going to remain not simply entities that have been externalized forever, but also entities that will *have to be* reintegrated, at some later point, in the form of friends, included parties, and potential allies.

Because of this very equipment, the exigency of external reality (no. 1) is going to become even more acute, to the extent that the moralist's *scruple* is added to the questioning of all established paradigms by the scientists and to the danger of being unfaithful felt by the politicians. Those who have been excluded from the collective are going to come back all the more quickly to knock on the door, to the extent that the moralists will, so to speak, *go looking for them* outside the collective, in order to facilitate their reentry and accelerate their insertion, after accompanying them, during the preceding phase, and covering them in supplicants' cloaks. If we bring the combined attention of scientists, politicians, economists, and moralists to bear, we can better assess the state of alert or precaution that will characterize the first house to be shaken up by the slightest of perturbations. We will even be able to compare collectives with regard to their degree of sensitivity—which does not mean sentimentality—and judge the quality of their civic life according to that yardstick.⁴⁶

More generally, the moralists add to the collective continual access to its own exterior by obliging the others to recognize that the collective is always a dangerous artifice. In the eyes of morality, indeed, the closure of the collective (no. 6) by any global scenarization at all is not only impossible but also illegitimate. It would presuppose either the inclusion of the totality of beings in the "kingdom of ends," as Kant would have it, or a premature closure that would return too large a number of these beings to the status of mere means, or else, finally, the definitive acceptance of a pluralism that would renounce the search for a common world. Against the politicians and scientists who require the definition of an inside and an outside, against the economists who are quickly satisfied to have externalized what they did not know how to take into account, the moralists thus continually recall the concern with the *resumption* of the work of collection.

Without the moralists, we would risk seeing the collective only *from within*; we would end up reaching agreement at the expense of certain entities that would be definitively excluded from the collective and

considered as mere means, or we would be too quickly satisfied with a plurality of incommensurable worlds that would lead us to abandon forever the concern for *one single* common world. For the moralists, we can never call it quits. With them, the collective is always trembling because it has left outside all that it needed to take into account to define itself as a common world. A spider, a toad, a mite, a whale's sigh, these are perhaps what have made us fall short of full and entire humanity, unless it was some unemployed person, some teenager on a street in Djakarta, or perhaps it was some black hole, forgotten by everyone, at the edge of the universe, or a newly discovered planetary system.⁴⁷ Far from opposing the politicians, as the old distribution of roles would have it, the moralist's requirement of starting over again is going to enter, on the contrary, *into consonance* with the work of the politicians, to keep on mending the fragile envelope that allows them to say "us" without being unfaithful to their constituents. To every "we want" of politics, the moralist will add, "Yes, but what do *they* want?" Far from opposing the scientists, the moralist will add to the stabilization of the paradigms a constant anxiety over the rejected facts, the eliminated hypotheses, the neglected research projects—in short, everything that might make it possible to seize the opportunity to bring new entities into the collective that are at the limit of the *sensitivity* of the instruments.

It is quite clearly in the task of establishing hierarchy (no. 3) that we can expect the most of the moralists. Left to themselves, as the old Constitution so casually envisaged, they could not contribute to anything, because they did not have to manipulate the raw material of scientific arrangements, political deals, or economic descriptions. Once they come to grips with these heterogeneous entities to be arranged in order of importance, the moralists will add a decisive competency, precisely that of arranging them all—however contradictory they may be—in *a single homogeneous* hierarchy, rather like a team reconstituting a puzzle, of which one member is exclusively concerned with discovering whether the pieces gathered together in fact belong to one and the same set. What appeared absurd in the ethics of foundations—on what basis might we declare a migratory bird more important than the time-honored customs of the hunters of the Baie de Somme?—becomes indispensable if we leave aside the search "for principles" to be-

come attentive to the requirement of a unified ranking. We do not ask the moralists to tell us in what order all these entities are going to be arrayed—how would they know, on their own, outside the progressive experience of the collective? In particular, we do not ask them to imitate one science or another by pulling an unforeseen accommodation out of a hat, nor do we ask them to give lessons to politicians by adding a new compromise; we ask them rather to remind us that we have to find *one* order and not two. “As long as you have not succeeded in finding us the right combination,” they can say to scholars and politicians alike, “there will not be a *better* common world.” Their requirement will be all the stronger in that, freed from the obligation to be politically, scientifically, and economically reasonable, they know that this task cannot be accomplished without treating certain entities “as mere means.” They alone have the duty to require the impossible, to be neither clever nor industrious.⁴⁸ What was a vice, a vain pronouncement, a grotesque pretension to separation, when it remained far away from the matters of concern, becomes a civic virtue once again, as soon as moralists team up with researchers, politicians, and economizers to carry out their task of hierarchization. To collaborate with them while holding firmly to their own requirements finally no longer means to *compromise*. Antigone begins to carry out legitimate moral work only if she finds in her interlocutor a politician who is a little more political than the sinister fool Creon . . .

To reinforce the frontier between the two principal powers (no. 5), the moralists offer a contribution that is precisely the inverse of the politicians'. Whereas the latter distinguished, in the classical manner of political philosophy, between deliberation and decision, freedom and necessity, the moralists remind us that, whatever the requirements of decision may be, it will again be necessary to deliberate by crossing the frontier, but this time going in the other direction. In other words, they keep the relation between the two houses from being a one-way street, and they oblige the procedure to form a loop right away. They make it possible for a continuous *shuttle* to link the two enclosures. Moreover, they make an important contribution to consultation (no. 2) regarding the conditions of discussion, since they make sure that each candidate to existence is evaluated by a jury corresponding to its own recalcitrant problem, *not* through indifferent

questions raised for other purposes. Here again, thanks to them, means become ends.⁴⁹ The moralists protect the disrupters, the actors*, the recalcitrant parties, with an inviolable right of asylum.

In the old framework, the moralists cut rather a sorry figure, since the world was full of amoral nature and society was full of immoral violence. They could only threaten the secular order with recourse to a transcendent world, cling exclusively to formal procedures, or abandon all pretension and calculate with the others while using a different *quantum* of happiness and pain. In the new framework, they hold an essential place, since there are no longer an inside and an outside defined by essence, but a slow work of externalization and internalization, provisional work that has to be done over and over again. Thanks to the moralists, we can keep porous the fragile membrane that separates the collective from what it must be able to absorb in the future if it wants to produce a common world, a well-formed universe, a cosmos*. Thanks to the moralists, every set has its complementary counterpart that comes to haunt it, every collective has its worry, every interior has a reminder of the artifice by means of which it was designed. There exists a *Realpolitik*, perhaps, but there is also a *politics of reality*: while the former is said to exclude moral preoccupations, the latter is nourished by them.

For political ecology finally to rediscover an adapted morality, it was necessary to extend the fundamental uncertainty over the exact relation between means and ends to all entities, and not to go seeking a finally assured foundation in the “rights of nature.” We can measure to what extent morality was perverted by naturalism—that of modernism as well as that of the theory of ecology that extends modernism—while realizing that its goal is the exact inverse of the one it had been led to play by being forced to protect the human from objectification (or to protect the object from human mastery). Under the new Constitution, the role of the moralists is precisely to avoid falling into the trap in which they would find themselves with a simply human society surrounded by a simply material nature.⁵⁰ With the morality of political ecology, we no longer risk believing in the lasting existence of such an outside or such an inside. If we cannot come to an understanding—politically, scientifically, economically—without setting the majority of beings aside, thanks to morality, outcasts will be able to

make themselves heard once again. Keeping this virtue for humans alone will soon be seen as the most immoral of vices.

The Organization of the Construction Site

Let us conclude this overlong section with a brief recapitulation, similar to the plans that allow the heads of construction sites to distribute the work of the various trades in fulfilling an order. No building is more important than the one that is to house the collective, and yet none has benefited from so little attention. All the skills indispensable to its construction, its elegance, and its functionality have been called up in disorder and have never been made to work in concert. By glancing at Box 4.1, we see that it is a work of art whose beauty matters to us more than anything—and that we are indeed talking about an immense, messy, and muddy construction site!

There is no doubt about it: we have indeed extricated ourselves from the former logic of spheres of activity: each of the trades or callings shares in the same six functions, in the same two houses; they cannot be distinguished in terms of the domain of reality to which they formerly claimed to apply.⁵¹ There is no doubt, either, that we can no longer go back to modernism's old bipartite division; no entity is now asked to declare, before its propositions are taken seriously, whether it is natural or artificial, attached or detached, objective or subjective, rational or irrational. We also see to what extent each of the skills profits from the presence of its neighbors: how much the sciences improve owing to contact with politicians; to what extent economists lose their defects if they allow moralists to add their concerns to their own efforts at modelization; how politicians seem weightier if their compromises and deals are added to the arrangements and the manipulations of the scientists. Those who claimed to be building their Republics by adding together the defects of all these tradespersons instead of joining together their virtues were very poor architects indeed.

The table also shows that abandoning the old Constitution does not deliver us up, helpless, to a confusion that is as vague as it is agreeable. Nothing is better articulated than the notion—at first glance too unitary, too totalizing, too undifferentiated—of the collective. The proof

Box 4.1. Recapitulation of the contribution of each of the skills to the six functions recognized in order for the collective to carry out the search for the common world according to due process.

Task no. 1: perplexity: requirement of external reality

Scientists: instruments allowing the detection of invisible entities.

Politicians: sense of danger allowing the rapid return of the excluded voices.

Economists: rapid mobilization of the attachments between humans and nonhumans, between goods and people.

Moralists: scruples that make it necessary to go looking for invisible entities and appellants.

Task no. 2: consultation: requirement of relevance

Scientists: construction of suitable tests, reliable witnesses, ad hoc judges.

Politicians: production of opinion-holders, concerned parties, stakeholders.

Economists: articulation of differences in processes of interesting.

Moralists: defense of each concerned party's right to redefine the problem in its own terms.

Task no. 3: hierarchy: requirement of relevance

Scientists: innovations allowing compromises shifting the burden to other less important entities.

Politicians: transformations of spokesperson made to represent other aspects of their constituency.

Economists: production of a common language allowing commensurability and calculation.

Moralists: obligation to find one and not two hierarchies and thus to resume at once the work of composition.

Task no. 4: institution: requirement of closure

Scientists: attribution and distribution of causalities and responsibilities, with the consensus produced being irreversible.

Politicians: production of an inside and an outside through closure and designation of an enemy.

Economists: obtaining a justifiable decision at the end of the calculation.

Moralists: against the distinction between inside and outside; offer of a right of appeal to excluded parties.

(Continued)

(Box 4.1 continued)

Task no. 5: separation of powers

Scientists: protection of the autonomy of questioning against the obligation to be reasonable and realistic.

Politicians: distinction between phases of deliberation and decision on the division between liberties and necessities.

Economists: total distance between attachments and their reduction to calculations.

Moralists: resumption of the shuttle between the two houses, to prevent them from separating.

Task no. 6: scenarization of the whole

Scientists: opportunity to imagine a simplified but coherent and total common world.

Politicians: production of the one/all relation through continual motion and resumption of totality through multiplicity.

Economists: definition of the inside and the outside and modelization of the public for itself.

Moralists: continual rejection of totalization and pluralism as equally unfounded; obligation of resumption.

Task no. 7: power to follow through (see Chapter 5 and Figure 5.1)

is in; we can abandon the modernist order without finding ourselves defenseless. On the contrary, there are abundant procedures for registering the countless conflicts having to do with the production of a common world. One final advantage: every single one of these competencies and callings already exists in the most banal everyday reality. I have no utopia to propose, no critical denunciation to proffer, no revolution to hope for: the most ordinary common sense suffices for us to take hold, without a minute of apprenticeship, of all the tools that are right here at hand. Far from designing a world to come, I have only made up for lost time by putting words to alliances, congregations, synergies that already exist everywhere and that only the ancient prejudices kept us from seeing.

If the fairies have been so generous, if the baskets are so full of presents, I shall be asked why I have needed dozens and dozens of pages to restore self-confidence to a collective that, showered with such favors,

should not have been able to fail in its career. Let us not forget the fairy Carabosse! On the pile of gifts offered by her sisters, she put down a little casket marked *Calculemus!* But she did not specify *who* was supposed to calculate. It was thought that the best of all possible worlds was calculable, provided that the labor of politics could be short-circuited. This was enough to spoil all the other virtues, given how much heroism would have been needed to resist the attractions of that facile approach. Now, neither God nor men nor nature forms at the outset the sovereign capable of carrying out this calculation. The requisite “we” has to be produced out of whole cloth. No fairy has told us how. It is up to us to find out.

The Work of the Houses

After all the frightful difficulties of this book, we have finally reached harvest time. Historians have often described the solemn entry of sovereigns into their fine cities in the old days. Following their example, let us try to go back over everything we have just traversed and imagine the solemn entry of the sovereign capable of composing progressively the best common world, while remaining faithful to Leibniz’s proud injunction: “Let us calculate!”

We can now deploy the institutions of the common world in a public configuration that has been conceived for them at last. Let us not deny ourselves the pleasure. For the first time, thanks to a somewhat reconceived political ecology, associations of humans and nonhumans can finally enter into the collective in a civil way. No one requires them any longer to be split in two, at the gates of the city, separated into objects and subjects; no Sphinx blocks the approaches to the city to demand that they answer a stupid riddle: “Are you objective or subjective?” For the first time, nonhumans can enter into civil society without having to be converted into objects in order to come bombard the ramparts of the city, humiliate the powerful, drive off obscurantism, raise up the meek, silence the chatterers, or stop the tongues of the counselors. For the first time, no treason has surreptitiously opened up the postern to bring them into the city so that they can re-establish the moribund democracy “on the solid bases of reason.” The “first time,” of course, for our fine Western cities, for it seems that the “others,” which are called “cultures” with slightly condescending re-

spect, have never really lost the habit of politely greeting the outside that sustained them. But the long parenthesis of modernism, precisely, prevented us from meeting the “others” under auspices other than the anthropology of cultures—we shall see in the next chapter, once our own collectives have become a bit more civilized, how to imagine other, less barbarous forms of encounters, in such a way as to benefit at last from their contributions.

Let us try for the time being to run through the various functions of the collective, while taking the multiplicity of callings that contribute to assuring these functions and fusing them into homogeneous tasks. In contrast to what we did in the preceding section, we have to ask the reader to use some imagination, for no common sense yet makes it possible to take these badly stitched-together conglomerates to be self-evident native forms of life.

First, we have the two houses. We have called the first one, charged with taking into account*, the upper house, and the second, charged with putting in order*, the lower house. The terms are not important, for they too will be renegotiated, and they are here only to point out provisional sets of competencies, to allow the diplomats to speak. We know perfectly well that we are not dealing with ordinary assemblies, with closed, concentrated spaces, but rather with flowing basins, as multiple as rivers, as dispersed as tributaries, as wild as the brooks on a map of France. We have nevertheless decided to preserve these outdated expressions borrowed from parliamentary democracy to the very end, because they play no role other than that of a white flag waved in the wind so that we can finally negotiate, as parliamentarians do, while connecting with the republican heritage of our ancestors.⁵²

To follow the parade, let us keep in mind three outcomes of the previous chapters. First of all, the upper house never begins its welcome ceremonies as a society in conflict with nature, but as one of the powers of the collective attentive to the multitude that is crowding up against its gates. Next, this multitude is made up not of objects or subjects, things or people, but of more or less well articulated propositions*, some of which are entirely new, while others have been expelled, more or less recently, by the lower house, during the previous cycle. Finally, these multitudes always present themselves as associations of humans and nonhumans: a virus never appears without its virologists, a pulsar without its radioastronomers, a drug addict without

his drugs, a lion without its Masai, a worker without her union, a proprietor without her property, a farmer without his landscape, an ecosystem without its ecologist, a fetishist without his fetishes, a saint without her apparitions, an elected official without her voices—each of these propositions is accompanied by instruments capable of transposing what it says, but also by its own speech impediment, its uncertainties about the faithfulness of the representation.

Reception by the Upper House

How will the upper house react to the subtle pressure of its postulants? Careful: let no madman come ask them whether they exist for real or not, whether they are proposing rational facts or irrational beliefs, whether they belong to nature or to the “representation that humans make of it,” whether they reside in history or outside in nature. Such questions would not only be impolite, they would also be indecent and, especially, antidemocratic. (If some thug from the epistemology police insists on spoiling the solemn entry with these misplaced questions, let the officials confine him to quarters until the ceremony is over!) The upper house is not going to require an initial and impossible conversion among the entrants; it is going to react quite differently. It will get moving, enter a state of general alert, a situation of worry; it will manifest scruples, attention, precaution, fear, a state of urgency; it will be all ears—we are intentionally intermingling terms supplied by the various corporations that take part in setting up the cortege.

This state of alert has some very particular properties. The upper house is responsible for the articulation of the “we,” the collective, but unlike its partner the lower house, it has to reopen the list that composes this famous “we” to answer the question “How many are there of us to be taken into account?” An assembly that has a definitive answer to this question, that says, for example, “we humans, “we native-born French citizens,” “we Falklanders,” “we geneticists,” “we whites,” “we, the communion of saints,” “we earthworms,” would not enter into a state of alert. It would thus welcome the appeal by the external multitudes in a very uncivil fashion: it would give the appearance of a solid fortress to be defended against all comers at any price, and not that of a fragile collective in the process of exploration.

Such an assembly would only fulfill its task well on condition of being as sensitive as possible to the foreignness of what came to knock on the door of the collective. Now, it cannot preserve this astonishing property, so different from that of the societies of the Old Regime (composed of humans and social factors), except on condition that the strictest separation of powers* reign between it and the lower house. No one must impose on it the restriction implicit in the following question: "Are these new beings compatible with the regulated existence of the collective?" This question is to be decided by the other house alone. Here we find again the requirement of autonomy that the scientists rightly defend but wrongly used to appropriate for themselves, along with the political distinction, a highly welcome one, between the freedom to discuss and the necessity to decide; finally, we add the ethical requirement that the question of belonging be raised continually and without preliminary conditions. All these obligations reinforce one another to allow the indispensable separation of powers to fulfill its function. How far we are from the impossible purification of facts and values, which we left behind in the previous chapter!⁵³

If the collective is well managed, if the upper house possesses a high degree of sensitivity, then a series of questionings begins, which we could group into two sets of inquiries. First set: "You who are presenting yourselves at the door of the collective, what are your propositions? To what trials must we submit ourselves to make ourselves capable of understanding you and getting you to speak?" (task no. 1, requirement of external reality). Second set: "Who can best judge the quality of your propositions? Who can best represent the originality of your offer? By what reliable witnesses can you have yourselves represented most faithfully?" (task no. 2, requirement of relevance of the consultation).⁵⁴ Let us recall that speech is not the property of humans alone, but that of heterogeneous assemblages whose quality is precisely in question before the upper house. Let us recall, too, that the notion of proposition* does not yet make a distinction, at this stage, between wanting to be, having to be, and being. It is the responsibility first of the upper house, and then of the lower house, to introduce these differences gradually, differences that *define no longer states of things, ontological qualities, but the successive stages of a procedure whose forms must be scrupulously respected*. Essences are yet to come, the inanimate form of nonhumans as well.

It is not an easy task to transform the inarticulate mutterings of a multitude of entities that do not necessarily want to make themselves understood: every researcher, every politician, every moralist, every manufacturer or marketer, every administrator knows this well. A profusion of clever devices, setups, instruments, laboratories, questionnaires, visits, investigations, demonstrations, observations, and data collections will be required in order to make the propositions a little more clearly understood. Unlike the old Constitution, let us not forget, all this work is not chalked up on the debit side of the quality of the diction but to its credit. The more work one does in the laboratory, the more quickly and clearly matters of concern are detected; the more the opinion-formers are equipped, the better articulated their opinions will be; the more one structures attempts to bind goods and persons, the better the quality of the investigation will be; the more one is determined to raise artificial problems, the more one cultivates the art of the scruple. This link between constructivism and realism would be perfectly obvious if the Sphinx had not imposed its blockage on the city for so long by asking propositions to choose between facticity and reality.⁵⁵ It has unleashed so many hesitations in the cortege that there is some point in recalling this once again if we want the procession to advance in orderly fashion. It is by its capacity for work, by the number of items of equipment and sensors, by the artificiality of its shapings, by the interventionist nature of its setups, by the intentionality of its research, by the scope of its requirements that a good assembly is measured. Thanks to such an assembly, we understand through the mediation of its translators what is being demanded by the candidates for existence that are thronging at its door.

Thus the propositions are now already almost involved in the collective; in any case, *they are beginning to speak its language*: “I cause a deadly and unforeseen illness,” say this virus and its virologists; “I demand the means to modify cosmology profoundly,” say that pulsar and its accompanying radioastronomers; “I pay and yet what I want is not taken into account,” say this consumer and his means of calculation; “I propose to modify cosmology even more profoundly,” say that flying saucer and its ufologists; “I cast spells,” say this fetish and its fetishist. An assembly that would accept all these propositions at once would explode right away under the tremendous multiplication of foreignnesses that crowd in to demand existence. Those who are

frightened of the dangers of cultural relativism have never had such a nightmare. It is important, however, that the upper house not decide too soon to eliminate them. Let us not forget that it no longer disposes of the old razor that allowed it (without ever succeeding) to distinguish between statements of fact and judgments of value. (No, no, it is not yet time to let the epistemology police, axe in hand, out of the quarters to which they were confined . . .) The upper house must not set up either an executioner's block or a gallows: it must simply smooth the way for the other house by proceeding to the second type of inquiry, which I have called consultation.

Readers may have been bothered by this word; it has something of the flavor of a rubber stamp, knee-jerk approval. And yet this second task has the same originality and requires as much work as the production of perplexity. Who is to judge the quality of the propositions that crowd around the door of the collective? The modernist Constitution was never able to settle that question, and that is why it always stifled the democracy that it pretended to be arousing. By combining the tasks of the two assemblies, by forgetting the sacred separation of powers and substituting for it the aberrant distinction between facts and values, between what is and what ought to be, the modernist Constitution never had the courage to "motivate its decisions to reject," as they say in legal language, and it settled for an arbitrary elimination by selecting the candidates according to their appearance alone, through these little words not subject to appeal: "Rational! Irrational!" "Primary qualities! Secondary qualities!" The candidate entities, except those which had the good luck to fall into the hands of scientists in lab coats, never had the right, within the narrow framework of modernism, to avail themselves of a council composed *according to the specific problems* that they raised for the collective.

An assembly will be all the better to the extent that it succeeds in detecting, for each proposition that is a candidate for existence, the most competent jury to judge it that can satisfy the requirement of relevance*. Appearances notwithstanding, no task is more difficult than this one for those who are accustomed to the facile ways of modernism, for matters of concern* reveal precisely the total or partial incompetence of the juries that are usually convoked. If the word "consultation" has such a bad reputation, it is precisely because people think it is easy to convene the concerned parties. Now, there is noth-

ing more complicated than to discover and summon reliable witnesses* capable of finding exactly the right speech impedimenta*. You want to spread genetically modified organisms in Swiss fields? Fine. Who is to pass judgment? The Swiss, probably. The users of illegal drugs attach so much importance to their drugs that they prefer to die from them rather than do without them? Okay. Who is to pass judgment? Why not drug addicts? In any case, they cannot not sit on the jury. The salmon are deserting the tributaries of the Allier and ignore the ladders set up on the dams. Who is to pass judgment? The salmon, of course; at the very least they have to participate in the jury. You want to save the elephants in Kenya's parks by having them graze separately from cows? Excellent, but how are you going to get an opinion from the Masai who have been cut off from cows, and from the cows deprived of the elephants who clear the brush for them, and also from the elephants deprived of the Masai and the cows?⁵⁶ These are the sorts of thorny questions proposed to the upper house, which is responsible for defining a plan of investigation for each entity, a path of trials that will make it possible to evaluate the entity's claim.

It will be objected that the upper house only recycles the human mode of consultation for use by nonhumans, and that it is hard to see why one would want to extend the formalism of social democracy to objects! But the upper house does just the opposite, for it benefits henceforth from the advantages offered by the cooperation of the various professions. The social democrat can finally learn from scientists how to treat foreigners with respect. By a cruel paradox that says a lot about the weaknesses of modernism, we actually know how to consult nonhumans better than humans! A natural scientist would never imagine that the plan for her investigation is fixed once and for all for any phenomenon whatsoever. This would be like imagining that a scientific method exists! Discover a possible approach, turn up a reliable witness, find the way to falsify a hypothesis, why, that is often enough right there to warrant a Nobel Prize! No one would dream of talking about elephants without consulting the said elephants by experimental procedures of unprecedented subtlety. With humans, though, we do not take so many precautions. On the pretext that humans are endowed with speech, politicians, like many survey specialists, sociologists, journalists, and statisticians, imagine that one can speak of them in their place and without ever truly consulting them—that is, without

ever finding the risky experimental apparatus that would allow them to define their own problems *themselves* instead of simply answering the question asked. To parody Figaro: “In terms of the virtues that we require of objects, do you know many humans worthy of being non-humans?”⁵⁷

The importance of the separation of powers between the two assemblies is quite clear: if we intervene and disturb this second type of inquiry by raising the question of the candidates’ compatibility with the collective, we will never succeed in discovering a relevant jury for each proposition. On the contrary, we will want to speed things up by eliminating from the jury those whose presence would risk validating the existence of beings that must not be part of the collective—according to the lower house at the preceding stage. This was the source, under the old Constitution, of the greatest indignation: “If drug addicts make the decisions on drug policy, where are we headed?” “If people who believe in flying saucers sit on the jury that has to decide about the presence of flying saucers among us, we’ve opened the door to all sorts of madness.” “If the Masai have to pass judgment, along with elephant specialists, on the experiment that makes elephants speak, how are indisputable data going to be produced?” “If human embryos have to give their opinion against elderly victims of Parkinson’s disease, that’s the end of scientific progress.” These indignant reactions came across as the expression of morality itself, in the framework of modernism, whereas they broke the essential condition posed by the ethics of discussion: no one, as Habermas says so eloquently, can be brought to apply the results of a decision if he has not participated in the discussion that led to the decision.

Like all the great moral principles invented to defend humans against objectivization, this excellent principle applies to all: humans and nonhumans. Moreover, its application is not contested if we are told that astrophysicists have to sit on the jury that decides about the lasting existence of pulsars. However, here too we have to ask whether the astrophysicists have to sit on the jury *alone*. Once again, the collaboration of skills makes it possible to establish the list of jury members in an appropriate way. How can we detect those whose lives will be profoundly modified by the arrival of pulsars? They may not all wear lab coats. Who are they? Where are they hiding? How can we recognize them? How can we summon them? How can we get them to

speak? These are the questions that keep the upper house in a constant state of agitation and that no form of incongruity, no sin against good sense and conventions, must be allowed to disturb. This is how political ecology rediscovers the oldest democratic intuition and puts it back in its place, in the audacious elaboration of an experimental metaphysics whose results, by definition, are not yet known, results *that must be judged by those who have translated them into their own terms.*

The upper house has now completed its task: it has detected the candidates for existence, translated their propositions into its own language, found for each the jury that can answer for its quality in sponsoring it. In the terms of our historical fiction, this amounts to saying that each group of foreigners makes its solemn entrance into the city, behind a more or less vast group of members of the collective with whom they have established bonds of friendship or who have been designated as their judges, sponsors, constituents, or guarantors. Let no one object on this point that there is no real assembly capable of fulfilling these two functions of perplexity and consultation in a satisfactory way. We are no longer seeking *satisfaction*. It is not a matter of doing things well once and for all, but only of proceeding as best we can to one of the iterations of the collective. In this sense, all collectives are and always will be ill-formed. We shall see in the following chapter all the moral, scientific, and political profit that can be drawn from the setting into motion of the collective placed in apprenticeship by experimentation. All that matters to us for the moment is that the cortege can be large enough to head toward the seat of the second power, the power to put in order exercised by the lower house.

Reception by the Lower House

The more sensitive, receptive, and alert the assembly, the more it supplies the next one with the essential conditions for the ceremony that is to follow. Once they have reached the second assembly, the requirements that apply to the propositions are going to change in every respect. Whereas in the upper house, concern with the new entrants' congruence with the members of the collective who were already in place was ruled out, in the lower house the question of compatibility, of the articulation of the propositions among those already recognized, becomes a sacred duty. If the upper house was concerned with

the problem of taking into account (“How many are we?”), the lower house asks the question “Who are we?” This “we” is variable in its geometry; it changes with every iteration. Unless we are dealing with repetitious collectives that already know, have always already known, of what they are composed—but these collectives, whether on the right or the left, whether based on racial identity, the nature of things, humanism, or the arbitrariness of the sign, do not belong to the realm of political ecology. They all stem from the Old Regime, since, for them, two distinct domains of reality order all facts and all values in advance. Their metaphysics is not experimental but identity-based. We are only interested here in the collectives whose composition is going to be modified with each iteration—even if they have to reinvent themselves in order to remain the same.

The lower house asks new questions of precedence, etiquette, politeness, ordering. Although it does not call the work of the upper house into question, it has no part in precautions, states of alert, audacity, or risk. The propositions are right there, they speak, they have their jury, no one rejects their metaphysics, but respect for their presence in no way solves the new problem: How can these contradictory beings be made to live *together*? How can a world be produced that is *common* to them? No amount of pluralism can push the question further. The lower house of political ecology finds itself before a titanic task that no assembly has ever before attempted to accomplish—except on the mythic stage of myths. We have indeed deprived this second house, intentionally, of the great resource of modernism, which consisted in *eliminating* most beings because of a want of rationality or a lack of reality, so as to reach an understanding with those which remained, among themselves, that is, among rational humans. The risk that we have made the collective take will be all the greater to the extent that the upper house has fulfilled its task more completely. In fact, if the candidate entities arrive on time, well articulated, each one accompanied by the jury of its choice, the lower house will be constantly solicited by beings who will raise the question of compatibility with the common world for themselves *in their own terms*. Thanks to the treatment of the upper house, they will have become *even more irreducible to all the others* and even more incommensurable with all the others! The more subtle and alert, the more civil and civilized the higher house is, the more relativism increases.⁵⁸ Every time the lower house

says "Us," a formidable clamor will respond: "Not us!" followed by numerous cries of "Not me!"

Such is the greatness of this assembly: it seeks to obtain integration without requiring assimilation all at once; it runs the risk of unification after the upper house has run all the risks of multiplicity. At first sight, the ordering of all these irreducibles appears all the more impossible in that the lower house can no longer make use of three devices formerly used to produce any sort of agreement: it cannot import the indisputable laws of nature to silence the diversity of human interests; it cannot limit the discussion to matters of fact, while dismissing differences as either matters of opinion or private matters; finally, it cannot bring all humans into agreement at the expense of external nature, treating nature as a dumping ground to be exploited at will. From now on, nothing can limit the scope of the work it has to carry out, if we consider that it absorbs the requirements of the various metaphysics in all their force without any possible simplification: the fetish-worshiper comes with his gods, genes with their Darwin, exploited beings with their compensation claims, rivers with their "water parliaments." When we see the fright that takes hold of its members, we understand better the fantastic usefulness to moderns of the creation of the old second house, that of nature, set surreptitiously apart, where one could, without restraints on procedures and while keeping one's own counsel, without even the intervention of humans, silently wring the necks of most candidates for common existence without even having to give reasons. Quite clearly, our new elected officials no longer have the choice of indolence, since there is no more nature, and there is no more transcendence unified enough to intervene and spare the collective the work of deciding.

Still, if they do not benefit from the conveniences of modernism, the representatives do not suffer from its defects, either. The entities that the old Constitution tried vainly to order in hierarchical fashion in fact suffered from a common weakness: they were formed either of essences that were definitively installed in the world or else of ideal values without a fixed address. Worse still, thanks to the combined work of the epistemologists on behalf of nature and the sociologists on behalf of society, the lower house inherited invaders of the least accommodating sort, since natural beings were to be defined by their indisputable essence and human groups by their equally indisputable inter-

ests—with, to keep them on the straight and narrow, values all the more indisputable, in that they were at once fundamental and unusable! Despite the drastic elimination of entities to be taken into consideration (most of them being relegated to the status of mere beliefs), the task of ordering under the modernist Constitution proved to be so unfeasible that people have turned back, like the lazy despots of fairy tales, to selection by the violence of power or by the harsh necessities of facts—which amounts, as we know, to the same thing, Might and Right sailing the same ship. The lower house finds itself situated before a much larger number of propositions than under the Old Regime, but these are no longer essences* requiring that they occupy the choice seats in the collective without any possible argument: they have become propositions* endowed with habits*.

The demography of the collective has exploded, to be sure, but *its room for maneuver has increased as well*. If it has to take in many more candidates than those which the crude metaphysics of nature left out in the cold and if it does not mean to delegate to anyone else the task of putting in order, which it must fully assume, the lower house is no longer dealing with humans endowed with their indisputable interests, but with associations of humans and nonhumans articulated enough to be composed of habits,* the list and the composition of which *may vary slightly*. In other words, we are going to be able to discuss, negotiate, make some adjustments, come to terms, together with different entities; we are going to be able to begin a shuttle that was impossible even to imagine in the time of the Old Regime, with its objects that camped across from subjects without any possible relations other than the civil war of dialectical contradictions.⁵⁹ If the upper house was experimental (in order to go looking for candidates as well as juries), the lower house is no less so, even if the investigations it undertakes have to do with the best way to manipulate propositions in order to establish them in a hierarchy, before seeking the best way to close off discussion.

The word “negotiation” still retains a pejorative sense, because one measures the deals negotiators make by the yardstick of an ideal situation that of course has all the advantages—except it does not exist! As long as we think we are chipping away from the inside at a fixed sum of positions through a series of compromises, over all the arrangements floats the shadow of a transcendence that would escape all

compromise. Now, the investigation into the hierarchy of deals bears precisely upon propositions that *do not yet know definitively to what common set* they belong. Appearances notwithstanding, the appeal to any transcendence at all made this work of ordering simply *impossible*, for the (provisional) model against which the new deals were to be measured was stabilized too quickly, before the following phase of institution. The investigation does not start, then, with stubborn essences and headstrong interests, but with situations of uncertainty *shared by all* about the nature of the order that connects these entities by order of importance. The common measure for incommensurable beings cannot be found by any means other than the collaboration of scientists, politicians, economists, and moralists. Even if modernism always preferred to establish priorities surreptitiously and avoid in all possible ways what we have called the requirement of publicity*, the fact remains that it complicated the task of compromise that it claimed to be settling by avoiding it, since it always brought to bear on the negotiators the threat of an agreement that would *come from somewhere else*. If the recourse to immanence, which we have called secularization, produces at first glance a particularly horrible monster, it at least makes agreement possible, since it obliges the lower house to find a solution within itself. It restores to the *demos* what the *demos* had been deprived of since the invention of the Cave.

The investigation bears upon a blend of skills: an ingenious innovation is developed by clever engineers, one class of beings is substituted for another by bold scientists in order to unblock stalemated power relations, accommodations are made behind closed doors, simulations are produced by means of calculations, cold diplomacy is accompanied by the occasional moment of enthusiasm to warm up this improbable heap of compromises, during which the concerned entities modify the representative base on which they had founded their interests up to that point. Then the miracle is produced and the impossible harmony among incommensurables is discovered—not because the right compromise has been made, but because the nature of the “we” with which each one had chosen to identify has been changed. This work is found impure only by those who believe that the Old Regime did better, whereas its impossible purification of facts and values resulted only in a revolting confusion. By seeking to do better, people have always done worse. In practice, the past arrangements always had

the form that the lower house gives them now. With a single but essential difference: the compromises now are reached in an explicit, public, and licit manner; they are all subject to revision, archiving, and documentation; and they take the place of surreptitious arrangements or deals struck in the corridors. We benefit, finally, from a “State of law of nature.”

The experimentation appropriate to the work of hierarchization by the lower house can be presented, in a simplified way, as the search for a list of entities arranged in order of importance, from the friendliest to the most hostile. The inquiry into the negotiation amounts to getting each proposition to make the following declaration: “Here is the scenario for the world in which we are prepared to live, with so and so, and for whose continuity we are prepared to make, *contrary to our positions at the outset*, such and such sacrifices.” What was impossible with essences and interests becomes possible, if not easy, with propositions and their habits, on condition that they have full latitude to decide about the common world in which they wish to live. One could not negotiate with essences; one can do so with lists of interchangeable habits. What is the best of worlds? Here is precisely the task that must be delegated to no one, neither to God nor to any master, the task that only the lower house can carry out. Leibniz’s God has come down from Heaven to Earth. The sovereign finally goes to work to discuss, through experimentation with possible worlds, the best of deals, the *optimum* that *no one* is allowed to calculate in others’ stead.

There remains the most difficult, the most painful, the cruelest of tasks: on the one hand, the explicit and formal *rejection* of those with whom one has not been able to come to terms, and on the other hand, the incorporation of those who are accepted into durable and irreversible arrangements—in other words, the institution of essences, that of the enemies, the constitution of an inside and an outside, the externalization of impossible worlds, the expression of externalities—in short, the risk of committing an injustice. This is the second great task of the lower house: always carried out with shame up to now, it finally rediscovers its pride. Under the old Constitution, no inquiry was necessary, for the essences had no need of an institution in order to exist and the excluded parties did not take the form of enemies but that of nonexistent beings who had never belonged to the real world. While it was avoiding the constraints of the inquiry whose meticulous obsessive-

ness we are retracing, modernism believed itself infinitely more moral than all its predecessors!

The Old Regime appropriated essences for itself at the outset, through the invention of a primary metaphysics to which it denied the very quality of a metaphysics, in calling it instead simply nature. While humans could of course discover its laws, through a history of the sciences that remained miraculous, these laws could never be the object of an explicit procedure. On the contrary, it was asserted, institution and truth remained contradictory.⁶⁰ An amusing reversal of things, when we think of the immense work of fabrication, artifice, discussion, composition, and arrangement that has to be accomplished in order finally to arrive at any certainty at all where facts are concerned. Far from being unaware of this work, the lower house of political ecology is, on the contrary, organized to institute essences. Instead of taking truth and institution to be opposites, it draws, on the contrary, all the profit possible from their synonymy, since it—and it alone—can finally determine *the variations in degrees of certainty*, that is, of diffusion, of verification of the facts.⁶¹ It is no longer going to have to populate the world, as was done under the Old Regime, with experts unknown to ordinary folk, with ignorant beings who know nothing, with discoveries popping up unexpectedly. Instead of waiting for the historians of the sciences to remind it of the means necessary to the exercise of truth, it is going to equip itself with these means, these mediations, these embodiments, *at the outset*. The lower house is finally going to include in its budget the progressive extension of assured truths, by *paying the full price* for the institutions necessary to their establishment.⁶²

Modernism thought itself highly virtuous because it thought it did not have to eliminate excluded parties from the collective through violence. It was content to note, sanctimoniously, their radical nonexistence in the form of fictions, beliefs, irrationalities, nonsense, lies, ideologies, or myths. In this we can clearly see the extent of its perversion: it thought itself more moral because it did not believe it had any enemies, while it was so thoroughly scornful of those it excluded that it considered them lacking in any real existence at all! The accusation of irrationality made it possible to reject beings, to consign them to limbo, without due process, and to believe this arbitrariness more just than the meticulous procedure of the State of law . . . A hefty dose of

audacity is required to prefer this exclusion based on the nature of things—on the things of nature—over an explicit, progressive, deliberate process of excluding certain entities *for the time being as incompatible* with the common world.⁶³

The second manner, that of the lower house, has the immense advantage of being civil: if it creates enemies for itself, it does not claim to humiliate them by withdrawing existence, in addition to their presence in the collective, from them.⁶⁴ It simply tells them this: “In the scenarios attempted up to now, there is no room for you in the common world. Go away: you have become our enemies.” But it does not say to them, draped in its cloak of high morality: “You do not exist; you have lost forever any right to ontology; you will never again be counted in the construction of a cosmos”—which modernism, imbued to the core with virtue, repeated to them over and over without the slightest scruple. By excluding, the lower house trembles at the possibility of committing an injustice, for it knows that the enemies that threaten to put it in danger one day can become its allies the next.

Since it knows that the upper house will reconsider its decisions later, on appeal, the lower house can finally accept responsibility for the *establishment of causes*, the general stabilization of responsibilities and causalities. People have always spoken about laws of nature; people have always spoken with irony about the legal metaphor that inappropriately mixed together nature, indifferent to humans, and the juridical forms of the City. Now, with the lower house of political ecology, *the laws of nature finally have their own Parliament*, a public assembly that votes on them, records them, and institutes them. Yes, after its deliberations, entities do indeed find themselves bound by efficient causalities, and the chain of responsibilities finds itself quite definitely assured. The prion is indeed responsible for mad cow disease; the minister of health is indeed responsible for the deaths from blood transfusions; God is not to blame for the earthquake that destroyed Lisbon; the law of gravity explains all we need to know about the fall of bodies in the void; the State retains ownership of the coastline; the elephants let the Masais’ cattle share their pasture. Properties have thus been conferred upon propositions, and these latter are at last endowed with a lasting substance, of which they are now only the qualities.

All these attributions, all these fixings of bonds, all these decisions

about attachments end up with the definition of essences whose boundaries are finally fixed. The entities are now endowed with indisputable properties. The distribution among beings is finally based *on law and not on fact*. We can even allow ourselves the luxury, if necessary, of distinguishing between humans and things, between beings endowed with speech and those which are mute, between beings that need protection and those which can be dominated and possessed, between the realm of the social and that of nature; yes, everything that we had previously forbidden ourselves is now possible, because we know that such decisions, which can be revised in the next iteration, are in fact the end result of an explicit procedure that took place, if the lower house did its work well, according to due process. We can even have—without risk of confusion, now—subjects and objects, so long as they are not located at the beginning of the analysis but at its provisional end. *Reality now has its representation*.

This time, the cortege has entered the city, the foreigners have been assimilated, the enemies accompanied back to the borders, the gates of the city closed to curious onlookers. The officials can now release the auxiliaries of the epistemology police without risk: if they add the qualifier “rational” or “irrational” to the decisions made, it will now be merely a matter of benediction or curse: equally superfluous, equally harmless. Just as the lower house could do its work only provided that the upper house had done its, the upper house can take up its meticulous watch again the next day only if the lower house has fulfilled its functions scrupulously. If it has eliminated propositions for no reason and integrated others without motivation, the upper house will find it exceedingly difficult in the next iteration to detect rapidly the dangers created by the excluded parties. These latter will have been rendered invisible and insignificant for good. They will have become irrecoverable. The matters of concern* will have become riskless matters of fact. We will have lost the chance to become civilized.

The Common Dwelling, the *Oikos*

Night has fallen, the parade is over, the City has been built, the Sovereign has made its entry, the collective is inhabited: political ecology finally has its institutions. To close this chapter, let us recapitulate the four types of investigations that form the new competencies we promised to deploy (Box 4.2).

Box 4.2. Recapitulation of the investigations necessary to the functioning of the two houses of the collective.

Upper house: *power to take into account*

Answers the question “How many are we?”

Perplexity

To meet the requirement of external reality:

- investigation into the best way of detecting propositions that are candidates for existence, making them visible, and getting them to talk.

Consultation

To meet the requirement of relevance:

- investigation into the best means for constituting the jury capable of judging the effects of each proposition on the habits of the others.

Lower house: *power to arrange in rank order*

Answers the question “Can we live together?”

Hierarchy

To meet the requirement of publicity:

- investigation into the contradictory scenarios that gradually make it possible to compose an optimal hierarchy.

Institution

To meet the requirement of closure:

- investigation into the means to be used to stabilize the inside and the outside of the collective.

Maintenance of the separation of powers and guarantee of the quality of the procedures of exploration:

Power to follow through (see Chapter 5 and Box 5.1)

The old Constitution, even with the best of intentions, could not succeed in accomplishing any of these tasks, because it burdened them from the start with impossible mortgages. The desire was naturally to gather in external reality, as faithfully as possible, but the same effort prevented the requirement of perplexity from unfolding, because when the distinction between facts and values was imposed prematurely, the candidates for existence never found their places. How could the collective be put into a state of perplexity if the furnishings of the common world were known in advance? There was a desire, of course, to take the various opinions into account, in order to respond

to the requirement of consultation, but without awareness of the enormous amount of work it would take to produce opinion-holders artificially. How could one claim to have consulted about a problem those to whom no opportunity to reformulate the terms of the question had been given?

There was a wish, naturally, to escape the totalitarianism of a single too rapidly defined universe by way of a pluralist democracy, but without either leaving the plurality of worlds the time to unfold or leaving the unification of the common world the means to become unified. How could one call pluralism the hypocritical respect for beliefs to which one refuses to grant the status of reality? There was a wish, everyone's wish, to discover the optimum, but by disparaging as cynical and sordid the meticulous work on deals and compromises that could therefore no longer meet the requirement of publicity. How could one reach agreement, if the threat of a superior transcendence intervened to humiliate all the petty compromises in advance? As for the requirement of closure, the Old Regime could fulfill it only clandestinely, for it stubbornly opposed the truth, on the one hand, to all the real, material, institutional means that make it possible to ensure, install, extend, and diffuse the truth, on the other. Closed minds with respect to the outside, which was supposed to be made master of politics; condescension with respect to those who were supposed to be consulted; cynicism with respect to those whose compromises were to be interrupted by deals even more remote from the State of law; hypocrisy, finally, in that realism was always denied the means to make its rights heard: a fine palette of virtues for those who love to give lessons in morality and reason to all the other collectives, which are deemed irrational.

What a long way we have come since the first chapter! We have to make an effort to remember the time when a two-house politics paralyzed all these movements, all these callings, all these investigations. How well political ecology's new clothes fit! What comfort in these forms of life that are only new in appearance! Have we not rediscovered the self-evidence that the good sense of tradition had ended up concealing? It is the Old Regime that appears, in contrast, to be an insult to common sense*, a word whose meaning we now understand: it is the *sense of the common*, the sense of the search for the common world. If good sense* defines the state of the collective as it was, com-

mon sense offers the collective the form that it might have in the future.

When modernism is remote enough to be studied dispassionately, historians of ideas will remain astonished by the bizarre character of its political organization. How will we be able to explain to our grandchildren that the trades and professions summoned from all around to build the edifice of public life had received all the talents, all the competencies, all the tools they needed, but that they lacked a single directive: the designation of the edifice to be built! What strange glitch allowed certain workers to be told: "The edifice exists already, solidly constructed, but no one built it; it has been standing there for all eternity, already unified, already solid, and it is called nature, so we don't need your services," whereas other artisans were being ordered to build, under the name of Leviathan, a totally artificial being, but were deprived of all the materials that could give it solidity, durability, form, and justice? The one existed already and was not to be built; the other was to be built, but out of thin air! How can we explain to our descendants that we had wanted to establish democracy by putting construction on one side but not the materials, materials on the other side but not the construction? They will not be surprised that public life, like the Tower of Babel in the Bible story, collapsed in on itself.

Still, no defect of form explains the collapse of the collective that we have just described. Neither the jealousy of God nor the pride of men nor the poor quality of the bricks or mortar caused the scattering of peoples in a plurality of incommensurable cultures. All Republics are badly formed, all are built on sand. They hold up only if they are rebuilt at once and if the parties excluded from the lower house come back the next morning, knock at the doors of the upper house, and demand to participate in the common world, the *cosmos*, the name the Greeks gave, as Plato put it, to the well-formed collective. To grasp the competencies of the two houses, we are now going to have to look into the dynamics of their arrangements. The *logos* in fact never speaks in a clear voice: it looks for words, it hesitates, it stammers, it *starts over*.



Exploring Common Worlds

Through construction, the collective feeds on what remains outside, which it has not yet collected. But how can we talk about that which escapes it entirely? Earlier, it would have been defined as a mix of nature and societies. Nature unified the primary qualities* in a single homogeneous furnishing; the cultures regrouped the diversity of the secondary qualities* in as many incommensurable aggregates. If the unified universe of nature had nothing to do with humans, it was still possible to bring peace to *many* disunified cultures by falling back on *the one* nature. At least one question seemed to have been resolved: that of the plurality of inhabited worlds. Yet neither mononaturalism nor multiculturalism can continue to sum up the risky situation in which the collective, as I have defined it, now finds itself. There would be too many indisputable essences on the one hand, too many arbitrary identities on the other. I have no solution other than to pursue my obstinate effort to discover whether or not a successor to this traditional compromise (one nature, multiple cultures) exists somewhere, by raising a seemingly strange question: *How many* other collectives are there?

If it were surrounded by essences and identities, the collective would succumb at once (it would become a society*). It must provide an environment for itself that is completely different from the environment of a culture surrounded by a nature, by becoming sensitive to the whole that has not yet been collected and that harbors all those which it has excluded and which can appeal to be recognized again as present. To succeed in carrying out the impossible task of composing

the common world, the *demos* had grown accustomed to waiting for the help from on high of Science. In the absence of an appeal to the other world, public life seemed likely to cave in on itself. To keep the assemblies from constantly yielding to arbitrariness, contradiction, violence, and dispersion, we had been led to believe that we had to support them, shore them up on solid buttresses that no human hand could soil. How could we have imagined that the impossibility of calming public life derived precisely from the help offered by reason? The medicine was killing the patient! By changing its exteriority, the new notion of collective I am putting forward profoundly modifies the type of transcendence in the shadow of which political philosophy has always agreed to live. If there are indeed countless transcendences (the multitude of propositions that knock on the door), there is no longer *the* unified transcendence capable of putting an end to the logorrhea of public assemblies. Politics is no longer threatened by that sword of Damocles consisting of salvation brought by reason.

Political philosophy has never stopped trying to find out what type of rationality could put an end to civil wars: from the City of God to the social contract, from the social contract to the “gentle bonds of commerce,” as Adam Smith put it, from economics to the ethics of discussion, from morality to the defense of nature, politics has always had to make honorable amends for the lack of reason characteristic of human beings threatened by quarrels. Even when thinkers less obsessed with transparency, or wilier in their approach, sought to define a domain proper to politics, they always did so by making too many assumptions about the native inferiority of that simple cleverness. In seeking to avoid the *diktats* of the epistemology police, they continued to obey them, for they were defining politics as twisted, violent, limited, Machiavellian, virtuous in its own way, perhaps, but radically incapable, alas, of acceding to the lively clarity of knowledge.¹ As a result, no one defining politics has ever accorded it a treatment, and even less a mission, equal to that of reason. Recognizing a narrow niche for *Realpolitik* alongside Science and *Naturpolitik* still does not put the sciences and politics to work on the same building; we are still not speaking of the politics of reality, of realistic politics, of real politics.

Instead of being rehabilitated, politics has been increasingly neutralized. Transfusing Science into the collective amounted to pumping

out more rapidly still the little blood it had left.² Contrary to the threats of (political) epistemology, the *demos* did not suffer from a lack of Science but from an excess of it. This result appears paradoxical only to those who depict the collective in the somber colors of a society plunged into the obscurity of representations. But as we have now understood, politics does not resemble the prison of the social any more than the sciences resemble Science. Politics can no more be reduced to mere immanence than Science can offer the succor of its transcendence. The moralists never tire of contrasting relations based on reason with relations based on force, the force of a convincing argument with that of a gun held to the head, as if that opposition were the only important one, the one that had to be preserved to protect against dissolution into anarchy. We recognize in this impossible scenography of reason against force, Right against Might, the old principles of the separation of powers. In the new Constitution, the difference between relations based on force and relations based on reason counts for much less than the distinction between enemies and appellants, between the current stage of the collective *and its re-collection in the next round*. Those that have been rejected as enemies, either by the argument that condemns them to definitive irrationality or by the pistol that kills definitively, will return in any event to haunt the collective at the next stage. The only difference that matters now comes from the following question: Who are you capable of absorbing and rejecting? You can make the enemies insignificant, you can even definitively refuse to hear them out, but you will only be postponing the moment when you will see them coming back, augmenting the *arrears* of the collective. If you invented that immense theater of Right and Might just to avoid having the knife put to your throat, then you can surely be better and more securely protected against arbitrariness by a Constitution that would accept no shortcuts—and especially not that of reason.

“What? You want us to put violence and reason, Might and Right, Knowledge and Power, on the same plane?” Yes, on the same plane, that is, as *equally foreign* to the functions of the Republic: such is the hypothesis of political ecology as recharacterized in this book. The struggle between reason and violence, the dispute between Socrates the philosopher and Calicles the sophist, the opposition between demonstration and persuasion, the *pas de deux* between realism and

relativism, all that does not concern us and no longer has the vocation of summing up the history of our attachments. It is a dispute between elites to decide what will administer the death blow to the *demos* first: the staggering acceleration of natural law, or the staggering acceleration of violence. To move on to the new Constitution, we have to abandon the help offered by those two shortcuts of public life; we have to replace Science with the sciences and society with the slow work of political composition.³ They do not blend together any more than they fight each other, as we have shown at length: if we speak of the sciences in the plural and of politics in the singular, it is precisely because their functions are different, the former allowing us to maintain the diversity of the candidates for existence and the latter allowing us to keep on returning to the unity of what brings them together in a single collective—the old Constitution, in a word, did just the opposite, by speaking of Science in the singular and of political interests in the plural.

Politics is thus opposed to the shortcuts of violence exactly to the same extent that it is opposed to the shortcuts of reason. By distinguishing between values and facts, the Old Regime enjoyed the advantages of a double transcendence: it could extricate itself from simple matters of fact by appealing to values, and it could always appeal, against the outdated requirements of values and law, to the harsh reality of facts. The new Constitution does not benefit from these transcendences. It can appeal to nothing other than the multiplicity of something that lies outside itself, without any more unity than legitimacy, and that puts the Constitution in danger, because the Constitution can never be free of it. Deprived of the help of transcendence, we at first believe we are going to suffocate for want of oxygen; then we notice that we are breathing more freely than before: transcendences abound in the propositions that are external to the collective.

With its two explicitly convoked houses, the collective obliges us to slow down, that is, to *re-present*, again and again, the pains of the progressive composition of the *cosmos*. Instead of distinguishing between fact and rights, as tradition demanded, it requires of facts that they become legitimate;⁴ it now distinguishes between the ill-formed amalgams of facts and rights and associations of humans and nonhumans obtained according to due process. The only question that counts for it is the scientific, political, moral, and administrative question: Are

these propositions well-articulated or not? Do they form a good or a bad common world? It no longer suffices to exist in the upper house in order to exist in the lower one. It no longer suffices to have been rejected by the lower house to cease to exist in the upper one. *Provided that they work in a loop*, the two assemblies have as their result the production, at a given moment, of provisional assemblies, what could be called a duly processed matter of concern (*de facto de jure*).

“So you want to entrust all morality, all truth, all justice to the simple passage from one version of the collective to the following version? You would abandon certainties for groping? The great transcendence of the True and the Good for the minuscule transcendence of hesitation and starting over? We’d have to be crazy to deprive ourselves of the appeal to reason that critical unveiling allows.” Not crazy, but we’d have to stop being modern. It’s a good thing: we have never been modern.

Time’s Two Arrows

From the beginning of this book, I have contrasted the expressions “modernism” and “political ecology,” to such an extent that I can sum up our trajectory with a parody of Hamlet: “To modernize or to ecologize? That is the question.” I have given the adjective “modern”—a term ordinarily used without reflection—a meaning that is, if not pejorative, then at least suspect; this may have surprised the reader. I could not explain it more fully earlier, because its definition depended on the strange conception that the moderns have of Science and politics. It so happens that the direction of what is called time’s arrow derives from the relation between Science and society.⁵ The moderns, they themselves say, “are thrusting forward.” But what sign allows us to tell that they are progressing rather than going backward or running in place? Some feature has to allow them to differentiate the radiant future from the dark past. Now, it is *from the classic relations between object and subject* that they borrow the reference point that is going to serve as their check-off device: the past mixed together what the future will have to separate. In the past, our ancestors confused facts with values, the essence of things with the representations they had of things, harsh objective reality with the fantasies that they projected onto reality, primary qualities with secondary qualities. Tomor-

row, the moderns are sure, the distinction will be sharper; we shall be able to pry the established facts more decisively away from their matrix of desires and human fantasies. For the moderns, without the hope of a Science at last extracted from the social world, there is no discernible movement, no progress, no arrow of time, and thus no hope of salvation. We can understand that they devote desperate energy to defending the myth of the Cave and that they see in the confusion of the sciences with politics the unpardonable crime that would deprive history of any future. If Science can no longer exit the prison of the social, then there is no longer any possible emancipation—freedom has no more future than does reason.

It is all this temporal machinery, this time factory, this clock, this time-clock, that political ecology has to attack in full awareness of what it is doing. It has to modify the mechanism that generates the difference between the past and the future; it has to suspend the tick-tock that gave the temporality of the moderns its rhythm. What I could not even attempt to do at the beginning of this book without shocking common sense now presents little difficulty. It is a matter of replacement parts.

On what machinery did the promised and expected distinction between facts and values actually depend? We now know: on the production of two types of exteriorities, one used as a reservoir and the other as a dumping ground. The front of modernization advanced inexorably, going outside the social to seek an indisputable common world that served as its reservoir, in order to substitute it for the proliferation of opinions, projections, representations, fantasies that were driven out of the real world and pushed back into a vast dump, a cemetery filled with archaisms and irrationalities. “Moving forward,” under this regime, thus consisted of filling the collective with indisputable matters of fact, primary qualities, and of eliminating secondary qualities from the real world, confining them to the inner world, to the past, or at least to insignificance and inessentiality. This immense intake and outlet pump (taking in indisputable facts and forcing out disputable opinions) is recognizable: it is nature, turned into our political enemy.⁶

The machine for producing “modern times” relies on an ever-increasing naturalization—that is, as we have seen, on an ever more rapid avoidance of the legitimate procedures through which essences*

have to be instituted. A bombardment of objects out of nowhere and not made by human hands pushes representations ever further back into archaism. An extraordinary ambition: modernize the planet to the point of making all trace of irrationality disappear, replaced by un-touchable reason. Curiously, modern history ends up resembling the (very bad) film *Armageddon*: an objective missile, a comet from the outer reaches of the galaxy, will soon put an end to all human quarrels by turning the Earth into glass! What it hopes for as its salvation, as its final deliverance, is an Apocalypse of objectivities raining fire on the collective.⁷ The moderns imagine the radiant future as the definitive elimination of everything human and nonhuman! The Platonic fire, from the Heaven of Ideas, finally irradiates the dark Cave, which melts under its brilliance. A strange myth of a cataclysmic end of history for a political regime that pretends to give lessons in reason and morality to hapless and ignorant politicians . . .

Political ecology, for its part, knows neither reservoir nor dumping ground. The intake and outlet pump turns out to be jammed, plugged, pretty much rusted out beyond repair. As a result, it can no longer put into effect the difference between the rational and the irrational, between the indisputable “fact” of nature and the merely social “representation”: political ecology will thus never be able to push the cursor of time little by little along an irreversible line that would go from a confused past to a more enlightened future. Theoretical ecology, the one that first took back from the moderns their conception of nature and the corresponding conception of time, has of course tried its hand at this. It first believed that by introducing the concern for nature into politics, it could finally put an end to human waste, exploitation, and irrationality. Disguised as a revolutionary bend in the road, this was nevertheless only a matter of accelerating modern times: nature dictated its laws to history still more imperiously than it had done in the past. What is more, historicity itself was disappearing, confused with the movement of nature. No, decidedly, political ecology can no longer make the clock of the moderns work, no matter how revolutionary the latter claim to be, for it has chosen to stop constructing its public life around the distinction between facts and values, the only cog capable, up to now, of carving out a truly lasting, irreversible, progressive difference between yesterday and today.

Must political ecology then refrain from plunging into history?

Must it abandon forward movement? For want of being modern, must it resign itself to the postmoderns' running in place? Or, worse still, as it goes the other direction on the moderns' path, will it have to accept the designation "reactionary"? No, of course not, for while it does not have either the reservoir or the dumping ground of the Old Regime, it possesses other transcendences: an exteriority constructed according to a well-formed procedure that produced provisional excluded entities and postulants. It is thus quite capable of showing a difference between past and future, but it obtains that difference *by way of the gap between two successive iterations* and no longer by way of the old distinction between facts and values: "Yesterday," it might say, "we took into account only a few propositions; tomorrow, we shall take others into account, and, if all goes well, even more; yesterday, we gave too much importance to entities whose weight will decrease tomorrow; in the past, we could compose a common world with only a few elements; in the future we shall be able to absorb the shock of a larger number of beings that were incommensurable before now; yesterday, we could not form a *cosmos*, and we found ourselves surrounded by *aliens* that no one had formed—the former reservoir—and that no one could integrate—the former dumping ground; tomorrow we shall form a slightly less misshapen *cosmos*."

We have changed futures at the same time as we changed exteriors, and we have modified the exterior because the political institutions inscribed in the Constitution have been overturned. Whereas the moderns always went from the confused to the clear, from the mixed to the simple, from the archaic to the objective, and since they were thus always climbing the stairway of progress, we too are going to progress, but by always descending along a path that is, however, not the path of decadence: we shall always go from the mixed to the still more mixed, from the complicated to the still more complicated, from the explicit to the implicit. We no longer expect from the future that it will emancipate us from all our attachments; on the contrary, we expect that it will attach us with tighter bonds to more numerous crowds of *aliens* who have become full-fledged members of the collective that is in the process of being formed. "Tomorrow," the moderns cry, "we shall be more detached." "Tomorrow," murmur those who have to be called nonmoderns,⁸ "we shall be more attached." Mark Twain declared that nothing was certain but death and taxes; from now on, we shall have

to add another certainty: tomorrow, the collective will be more intricate than it was yesterday. We shall indeed have to involve ourselves still more intimately with the existence of a still larger multitude of human and nonhuman beings, whose demands will be still more incommensurable with those of the past, and we shall nevertheless have to become capable of sheltering them in a common dwelling. We no longer expect a rain of fire that would put us all in agreement by killing off everything through the force of objectivity. There is no end to our history. The arrow of the moderns was the only thing that presupposed the end of history. Since gradually becoming a *cosmos* has no end, there is thus, for political ecology, no Apocalypse to fear: it comes back home, to the *oikos*, to ordinary dwellings, to banal existence.

Not content just to put an end to the history of the moderns, political ecology also suppresses the strangest of that history's aberrations by offering it, retrospectively, an entirely different explanation of its destiny. The moderns, while they were obsessed by time, had actually never had any luck with it, for to make their vast machinery work, they needed to place the world of indisputable matters of fact outside history. They have never found the way, for example, to institute an even slightly credible history of the sciences: they have had to settle, under that name, for a history of humans discovering an indisputable and atemporal nature.⁹ The moderns were thus caught in a dilemma that they expelled to the outside like all the rest, but that ended up, like all the rest, catching up with them: they went forward with the hope of taking into account fewer and fewer propositions, whereas they had set in motion, in the course of several centuries, the most formidable machine for stirring up the greatest possible number of entities—cultures, nations, facts, sciences, peoples, arts, animals, industries, an immense shambles that they never stopped mobilizing or destroying at the very moment when they were asserting their desire to simplify, purify, naturalize, and exclude. They got rid of the rest of the world at the very moment when they were taking the world, Atlas-like, on their broad shoulders: they claimed to be externalizing everything precisely when they were internalizing the whole earth! Imperialists, they declared that they depended on no one; indebted to the entire universe, they thought they were free of any liaison; implicated everywhere, in up to their ears, they wanted to wash their hands of all responsibility . . .

When the moderns, God's equals, finally became coextensive with Creation, they chose that moment to fall into the most complete isolationism and to believe that they had exited from history! It is hardly astonishing that their clock stopped at the same time that their bicameralism* was collapsing, crushed under the weight of all those they had recruited, even as they claimed they were not taking them into account* or offering them a common world. If there is a lesson to be drawn from the myth of Frankenstein, it is exactly the opposite of the one drawn by Victor, the unhappy maker of the infamous monster. At the moment when he is proclaiming his guilt and shedding crocodile tears for having played sorcerer's apprentice with his misguided innovation, he dissimulates under this venial sin the mortal sin of which his creature rightly accuses him: fleeing from the laboratory and abandoning the creature to itself, on the pretext that, like all innovations, it was born monstrous.¹⁰ No one can take himself for God and not then send his only son to try to salvage the great project, so badly begun, of fallen Creation.

Political ecology does better than serve as successor to modernism, it *disinvents* modernism. It sees retrospectively in this contradictory movement of attachment and detachment a much more interesting history than the one in which a front of modernization advances inexorably from the darkness of archaism to the brightness of objectivity—and much richer, of course, than the antinarrative of the anti-moderns, who reread that story according to the equally inexorable trend toward a decadence that is claimed to have drawn us further and further from a rich, warm matrix, to hurl us into the frozen world of mere calculations. The moderns have always done the opposite of what they said: *this is what saves them!* There is not one thing* that is not also an assembly, a “Ding.” Not a single one of the indisputable facts that is not the result of a meticulous discussion at the very heart of the collective. Not one matter of fact that does not drag behind it a long train of unexpected consequences that come to haunt the collective by obliging it to reshape itself. Not one innovation that does not redesign cosmopolitics* from top to bottom, by obliging everyone to recompose public life. Not once in their short history have moderns known how to distinguish facts from values, things from assemblies. Not once have they managed to render insignificant and unreal what they thought they could exclude for good and without due process.

They have believed themselves irreversible, without ever managing to make anything irreversible. All those appellants remain behind them, around them, before them, in them, like creditors who are knocking at the door, demanding only that the work of inclusion and exclusion be taken up again, on new bases, and explicitly. At the very moment when they weep because they live in a world indifferent to their anxiety, they are still living in this Republic* where they were born in quite the ordinary way.

Political ecology thus does not condemn the modern experience, does not annihilate it, does not revolutionize it: it surrounds it, envelops it, fills it to overflowing, embeds it in a procedure that finally gives it its meaning. Let us put this in moral terms: political ecology pardons the modern experience. With a tender, merciful gentleness, it recognizes that there may not have been any way to do better; it agrees, under certain conditions, to wipe the slate clean. Despite the frightening burden of guilt they are fond of dragging behind them, the moderns have not yet committed the mortal sin of Victor Frankenstein. They would commit one, however, if they were to put off until later this reinterpretation of their experience that political ecology is offering them, and if, seeing themselves surrounded by such a crowd of *aliens*, they were to panic, prolonging even further this modernist definition of the present time; if they were to believe they were living in a society surrounded by a nature; if, finally, they were to imagine themselves capable of obstinately modernizing the planet. Up to now naive, perhaps even innocent, they would run a serious risk of being caught by the proverb *perseverare diabolicum est*.

The Learning Curve

In our quiver, we have not just one of time's arrows but two: the first, modernist, which goes toward detachment; the second, nonmodern, which goes toward reattachment. The first deprives us little by little of ingredients for building our collective, since essences based on nature are more and more indisputable, and identities based on arbitrariness are less and less disputable. The second arrow of time, in contrast, gradually multiplies the transcendences to which the collective can appeal, in order to take up again at the next stage what it meant by rearticulating the propositions, by offering them other habits*. Political

ecology thus does not share in the same history as that of modern progress. We are going to be able to entrust treasures to the new temporality that multiplies the potential allies it would have been crazy to entrust to the old historicity. Formerly, one always had to mistrust history, for the important things (common world, primary qualities) eluded temporality. If there were a human history full of sound and fury, it was always developing in contrast with a silent *nonhistory*, full of promises of peace that were always slow to manifest themselves because of the infinite distance that separated them from this lowly world.¹¹

As soon as we agree to differentiate the past from the future no longer through detachment but through reattachment, political ecology begins to profit differently from the passage of time. Unlike the other forms of historicity that preceded it, it can confide the questions it has been unable to answer today *to the restarting, tomorrow, of the process of composition*. It need not claim that the things it does not know at time t are nonexistent, irrational, and definitively outdated, but only that they are provisionally excluded beings on the path toward appeal, and that it will find these beings *in any event on its way to $t + 1$* , since it will never be rid of them. In other words, it no longer uses any of the three labels that the moderns have always used up to now to characterize their development: the struggle against archaism, the front of modernization, the utopia of a radiant future. It is required to devote itself to *a meticulous triage of the possible worlds*, of the cosmograms, always to be begun anew.¹² Irreversibility has changed direction: it no longer finds itself in the abolished past, but in the future to be recommenced.

Let us retain from the sciences the word “experiment,” to characterize the movement through which every collective passes in this way from a past state to a future state, from good sense to common sense. Public life has striven up to now to imitate Science and to await the salvation of reason: Why would it not try to imitate the sciences* a bit by borrowing the experimentation that is incontestably their greatest invention? An experiment, as etymology attests rather well, consists in “passing through” a trial and “coming out of it” in order to draw its lessons.¹³ It thus offers an intermediary between knowledge and ignorance. It defines itself not by the knowledge that is available at the start, but by the quality of the learning curve* that has made it possi-

ble to pass through a trial and to know a little more about it. Experiments, as any researcher worthy of the name knows quite well, are difficult, uncertain, risky, and never allow recourse to reliable witnesses* who would be available from a catalog, as it were. They can fail; they are difficult to reproduce; they depend on instruments. A bad experiment is not one that fails, but one from which the researcher has drawn no lesson that will help prepare the next experiment. A good experiment is not one that offers some definitive knowledge, but one that has allowed the researcher to trace the *critical path* along which it will be necessary to pass so that the following iteration will not be carried out in vain.

To use the notions of experimentation and learning curve advisedly, we must of course take them out of laboratories and share them with the whole set of those beings, humans and nonhumans, who turn out to be involved in them. Up to now, under the modernist regime, experiments were undertaken, but among scientists alone; all the others, often in spite of themselves, became participants in an enterprise that they lacked the means to judge. We shall say, then, that the collective as a whole is defined from now on as *collective experimentation*. Experimentation on what? On the attachments and detachments that are going to allow it, at a given moment, to identify the candidates for common existence, and to decide whether those candidates can be situated within the collective or whether they must, according to due process, become provisional enemies. The entire collective has to ask itself whether it can cohabit with so-and-so, and at what price; the entire collective has to inquire into the trials that will allow it to decide whether it is right or wrong to carry out that addition or subtraction. The deliberations of the collective must no longer be suspended or short-circuited by some definitive knowledge, since nature no longer gives any right that would be contrary to the exercise of public life. The collective does not claim to know, but it has to experiment in such a way that it can learn in the course of the trial. Its entire normative capacity depends henceforth on the difference that it is going to be able to register between t_0 and $t + 1$ while entrusting its fate to the small transcendence of external realities.

We shall be told that the norm at stake here is a very fragile one, and that the entire characterization of history cannot be entrusted to such a weak difference, to a mere *delta* of learning. But with respect to what

standard would one judge the weakness of this norm? If it is by contrast with the definitive knowledge supplied by objective familiarity with the nature of things, it goes without saying that mere collective experience appears very slight. This is what Socrates relentlessly insisted in the agora in Athens. We have become aware, however, that, no matter how useful it may be, this standard can never become commensurable with the tasks of the collective. The common world has to be built on a life-size scale, in real time, without knowledge of causes and consequences, in the middle of the agora, and with all those who are its concerned parties.¹⁴ Public life, as we have seen, cannot unfold except on condition that every threat of salvation, every hope of sudden simplification, be withdrawn. By comparison with the blinding clarity of the Heaven of Ideas, the notion of a successful experiment may appear obscure, but by comparison to the total obscurity that reigns in the hell of the Cave, the learning curve offers a certain light, the only one we have, the only one we need in order to grope around blindly in the company of people who cannot see very well.

It becomes easier to characterize the dynamics of the collective if we agree to judge it by the yardstick of collective experimentation, rather than by the yardstick—in principle a better one but in practice inapplicable—of the Old Regime.

We come back first to the question of ecology itself, superficial or deep, scientific or political, sophisticated or popular, which is at the origin of this book. As I have often noted, we no longer have to define once and for all the bonds that would regulate relations between humans and things. In particular, we no longer have to substitute for so-called political and anthropocentric bonds an order of things, a natural hierarchy that would array entities by order of importance from the greatest—Gaia, Mother Earth—to the smallest—a human being whipped into a frenzy by his *hubris*. On the contrary, we can benefit from the fundamental discovery of the ecology movement: no one knows what an environment can do; no one can define in advance what a human being is, detached from what makes him be.¹⁵ No power has been given by nature the right to decide on the relative importance and the respective hierarchy of the entities that compose, at any given moment, the common world. But what no one knows, anyone can experiment with, so long as he or she agrees to take the path of testing, while respecting the procedures that specifically avoid shortcuts.

For the same reason, we can speak again about morality without finding ourselves paralyzed by the question of foundations. In the name of what must wolves be preferred to bison in Yosemite National Park? In the name of what principle must the sheep named Dolly be forbidden to photocopy herself in thousands of clones? What duty obliges us to reserve the water of the river Drôme for fish as opposed to using it to irrigate corn fields subsidized by Europe? We no longer have to oscillate between the irrefragable right of humans—extended or not by their future generations—and the indisputable right of “things themselves” to enjoy existence. The question becomes whether or not we have caught the totality of these beings in our nets—sheep, farmers, wolves, trout, farm supports, and wandering streams. If we have, then we now have to conduct experiments on the compatibility of all these propositions, these cosmograms, by discovering, through another trial, how the assemblage is going to resist if one rejects—excludes—a single one of its members. What will Yosemite become, for example, without wolves? What is a fish without water? What is a producer of corn without a protected market? In contrast, if some entities are missing, then we have to start the work of collection all over again. Morality has changed direction: it obliges us not to define foundations, but to recommence the process of composition while moving as quickly as possible to the next iteration. The foundations are not to be found behind us, beneath us, or above us, but *ahead of us*: catching up with them is our future, as we place the collective in a state of alert, to register as quickly as possible the appeal of the excluded entities *that no morality ever again authorizes us to exclude definitively*. Every experiment produces arrears that will have to be paid one day. We can never call it quits. It would be sinful to suspend the learning curve for good, even—or especially—in the name of intangible moral principles that would define humanity once and for all and without due process.¹⁶ Humanism, too, must become experimental.

By entrusting the concern for finding its way to experimentation, by making morality a path of trials, the collective also gets itself out of a difficulty that might paralyze it as it has paralyzed theoretical ecology, which has been confronted abruptly and without mediation by the obligation to “take everything into account.” It seems, indeed, that in passing from modernism to political ecology, we pass from the impre-

scriptible right to ignore the majority of beings to the necessity of excluding none of them. Complexity, “total connectivity,” the global ecosystem, the catholicity that wants to embrace everything, all this is what always seems to accompany the erecting of an ecological way of thinking, a way of thinking rightly persuaded that in the final analysis everything is interconnected . . . By comparison with this magnificent goal, every collective appears cramped, ignorant, closed. Yet the “little transcendence” of experimentation promises, not to take everything into account, but to exclude while assuring itself that the excluded entities will be able to put it in danger and appeal to it in the following phase. Experimentation is thus asked, not to swallow the pluriverse in a single mouthful, but to ensure that it is indeed proceeding from a state n to a state $n + 1$ that takes into account a greater number of beings or that at least does not lose too many beings along the way. The order and beauty that the Greek language associates with the word *cosmos* thus do not apply to the totality, but to the learning curve. By definition, all collectives, like Frankenstein’s creature, are born deformed; all appear barbarous in others’ eyes: *only the trajectory of the experiment gives them a civil form*. The provisional totality that is composed according to due process is in no way to be confused with the totality obtained in a house or a laboratory under the name of “totalizing” and “infinitely complex nature.” Gaia is not Mother Earth, a divine ancestor from whom our collective supposedly descends, but at best our remote great-grand-niece, whom only a civilized collective will be able to generate according to due process.

By comparing the relative states of the same collective at two successive moments, we thus succeed in characterizing its *virtue*, but without falling back on definitive knowledge or moral transcendence, either, and without wanting to embrace everything all at once. With the notion of learning curve, in other words, we solve a *problem of scale*. While anyone can work on a small-scale model in the laboratory at any time, once we have left the lab, we always have to grapple with the collective at full size, without being able to wait or repeat the experiment or reduce the scale, without being able to accumulate knowledge of the causes and consequences of our actions.¹⁷ No reduction of the collective is possible; that is why nothing can replace the experiment that must always be carried out without certainties. Now, collective experimentation outlines an intermediate path between the re-

duced and the full-scale models, and it allows us to deploy the passage from one to the other over time. On one condition, however: that we *keep track of the path* we have taken. A new mechanism has to be ready to record at each moment the successive responses given to the now reopened question of the number of collectives, by constantly comparing what we have been able to absorb and what remains outside.

The Third Power and the Question of the State

If we are to agree to give up the conveniences of modernism and the hope of salvation through Science, if we are finally to secularize public life by entrusting it to the “little transcendence” of collective experimenting, if we are to charge history with giving us tiny measured doses of the enlightenment that nature can no longer provide, we need a guarantee that can serve as a provisional absolute. This is what I call the *power to follow up**, a procedural power that must not be confused with the power to take into account* and the power to put in order*. We might call it the power to *govern*, if everyone agreed to use this expression to designate the relinquishment of all mastery. The art of governing is not the necessary arbitration of reason or the necessary arbitrariness of sovereignty; it is that to which one is obliged to have recourse when one can no longer benefit from any shortcut. When we have to compose the common world little by little, going from one trial to another along the invisible path of a painful learning curve, we need this third power that possesses not the qualities of strength but rather those of weakness. We agree to have governors when no scale model is possible any longer, and when it is nonetheless necessary to scale down all the stakes to a simplified model; when there is no more mastery possible, and when masters are needed all the same.

A trial is useful only provided that we get through it, that we document our results, that we use it to prepare the protocol for the next iteration, that we make sure we have traced out a new critical path which will make it possible to learn more the next time. In modernism, as we know, there was never any real *feedback*, because the past was excluded for good and characterized as a useless archaism, as outdated irrationality, as subjectivity that had to be expelled to leave room for the indisputable objects of the common world, the only one we needed to know.¹⁸ The metaphysics of nature* prevented the slow

exploration of experimental metaphysics*. Unexpected consequences proliferated nevertheless, and were always surprising, for they had no reasonable relationship with the matters of fact that set them off. It was thus possible to pile up attempts on the ruins of previous trials, without ever talking about trials, or attempts, or ruins: each time, modernization struck forever, indisputably, definitively, irreversibly—even if it meant going back later on to repair the damage it had done by means of a new objectivity, this one just as definitive. Within the narrow framework of modernism, the moderns never managed to profit even clumsily from experimentation. They bounced violently back and forth between absolute knowledge and unforeseen catastrophes, without managing to plug in to history and its enigmatic events, which had to be decoded blindly.¹⁹ Curiously, for people so obsessed with history, time passed in vain for the moderns. Bombarded with sciences and technologies, they never used these to become wiser, since they never managed to read in these events the meticulous exploration of their own collectives of humans and nonhumans.

If the historical experience we are trying to decipher has not only dismantled the old framework of nature with its dual scientific and political power but has also proposed countless institutions and procedures that await only a new gaze to become immediately obvious, armed from top to bottom, the same does not hold true for the power to follow up, which is still inextricably confused with the question of the State. Now, the State mixes together powers that have to be distinguished: preoccupied with Old Regime politics, itself confused with Science, the State resembles the powers of divine right before the constituents of the eighteenth century began to redistribute them into separate functions. What is a State freed of the mad ambition to substitute itself for politics, for the sciences, for economics, and for morality, one that would devote itself exclusively to supplying assurances that the powers of taking into account* and of putting in order* are implemented according to due process*? What is a State that would see itself neither as a collective nor as the common world nor as the end of history? What is a State that would no longer believe that it was endowed with the power of “divine Science”? A State finally capable of governing?²⁰

I should acknowledge right away that I do not have the same resources to make this power to follow up clearly apparent as I did for

the two other powers, defined in Chapter 4: history has not advanced far enough and the grip of modernism is still too strong. For the time being, I can only contrast the State of *political science* with the State of *science policy**. I am not indulging in word play: the very expression “political science” expresses a new paralysis of public life by Science, a new injection of curare to stop the political body in its tracks. To all the disciplines that aspire to short-circuit the slow process of collective composition on the pretext of remedying its defects, political science adds a supplementary layer: by dint of rigorous, objective studies, public life would finally be purged of whatever momentum it has left. It would no longer have to compose the collective provisionally: one would finally know what the social world is made of, what passions and interests move it. A scale model would be available. Conversely, the expression “science policy,” less well known, follows the path of political science in the other direction and gradually loosens the knot that the latter had only tightened further. Science policy used to be mentioned in circles restricted, up to now every time it was necessary to decide on research to be interrupted, prolonged, or initiated, every time it was necessary to decide about the sterility or the fruitfulness of experimental protocols.²¹ If the expression is generalized, it can thus bring out the contrast that interests us: we need not political science but science policy, that is, a function that makes it possible to *characterize the relative fruitfulness* of collective experiments, without its being monopolized right away by either scientists or politicians.²²

It may seem strange to define the power to follow up as what has to remain independent of both politicians and scientists.²³ Is the State not the agency, par excellence, of the political? Would it not be better for its personnel to be steeped in the sciences? No, because the modernist regime did not know how to distinguish between political production and the dangerous support that Science offered it in bringing to it on a platter a nature or a society that was *already* totalized. They used the term “political” to characterize the agitation of the slaves of the Cave defining their world through the clash of interests, identities, and passions. Nothing proves that the State of the Leviathan can pass intact from one regime to another. It has compromised itself much too deeply, under the name “technocracy,” with the worst possible mixtures of sciences and politics, managing to short-circuit both the work of the sciences and that of politics, monopolizing all the powers and

all the competencies without managing to redistinguish them, plunging arbitration and arbitrariness into the same neglect of due process. Is it not the State that has dreamed of a “science-based politics,” a monster in whose name so many crimes have been committed?²⁴

One thing is certain: the collective is not the State, and the very particular form of government that we are seeking to install will not find fully equipped offices, ready to occupy without remodeling, in the older building of the Leviathan.²⁵ Indeed, from the standpoint of our Constitution, politics becomes as unrecognizable as the sciences: moreover, neither politics nor the sciences *are powers any longer*, but solely *skills* put to work, in a new way, to stir up the collective as a whole and get it moving. The only recognized powers, according to the sketch in the preceding chapter, are those of taking into account* and putting in order*, in which *all trades and professions* share, according to their calling. Now, the very principle of the separation of powers* requires us to be highly suspicious of the encroachments of one function on the others, since each one, although necessary, aspires to hegemony. We too need our checks and balances. A simple glance at the summary chart (Box 4.1) shows us that none of the skills necessary for the activation of the collective and neither of the two powers in question, the power to take into account or the power to put in order, could be interested in the quality of the learning curve and concentrate *exclusively on it*.

Left to itself, the upper house, especially if it is alert, will take into account everything that comes its way, without being at all concerned about the capacities of the other house to establish a hierarchy among the candidates presented. The lower house, on its own, will do its work of hierarchy* and institution*, simplifying life for itself by rejecting as definitively as possible the greatest possible number of beings, reducing them to nonexistence. Moreover, how can a strict separation of powers between these two agencies be ensured? The lower house will always be tempted to prevent the upper house from becoming perplexed* by raising as objections the harsh necessities of the common world, and the first assembly will drown the institutions* of the second without mercy, while making it see that its established order does not do justice to the incommensurable worlds of the new arrivals. Who is going to take care of guaranteeing the quality of the investigations that we have listed (see Box 4.2) and that are necessary to

both houses? Who will archive the results, little by little? The politicians, the moralists, the scientists, the economizers may traverse the various agencies in all directions, but nothing guarantees us that they will not content themselves with *a single cycle*—which amounts to interrupting the “collection” of the collective and to making the exclusions definitive, fixing the boundaries of the collective, naturalizing the distribution between inside and outside. We must then have at our disposal a *strong procedural power*, in which politicians, scientists, economists, and moralists would share as they do in the other two, but that would attach itself uniquely to restarting the work of collection as well as to judging the quality of learning—which amounts to adding a seventh task to the six functions of Chapter 4.

To exercise this new power, we need a new skill, one that we did not present in the preceding chapter, one that can be called *administration**. In the state of law of nature, a State is required, and also law. Political philosophy did not anticipate that it would end up administering the sky, the climate, the sea, viruses, or wild animals. It had thought it could limit itself to subjects and their right to property; Science would take care of the rest. Everything changes with the end of modernism, since the collective may have as its ambition bringing together the pluriverse. There is nothing, in this feature, that can astonish the “other” cultures, which are characterized precisely by a meticulous administration of the *cosmos*. Westerners, in this sense, only rejoin the common fate that for a while they thought they had escaped. This new competency amounts to being able to establish, owing to fragile bonds of writings and dossiers, what is called a paper trail.

Bureaucrats are viewed with almost as much contempt as politicians. Still, we do not see how to get along without them for the elaboration of a public life that would finally unfold according to due process, for the excellent reason that bureaucrats are *masters of processes and forms*. As long as we imagined, with the old Constitution, that a society existed in nature, the stubborn maintenance of forms risked being taken as a superfluous activity, on the same basis as the slowness of the State of law in the eyes of a police state. Immediately and effortlessly, everyone was supposed to discover the obvious categories of good sense: humanity, nature, economics, society. Starting from the moment when one passes to an experimental metaphysics*, the mo-

ment when the collective is defined no longer by a nature but by experimentation, it is going to be necessary to have access not to a global scenarization, now, but to an experimental *protocol* (task no. 7). It is going to be necessary to keep track of trials, to record their results, to archive and preserve them. Administrations ensure the continuity of public life, as we all know. This continuity becomes even more indispensable when it is necessary to retain the entire set of hypotheses, the propositions that have been accepted and rejected that are gradually going to compose the common world.

This competency will be found again, for example, in the function of perplexity (task no. 1): How can we detect new phenomena at the extreme limit of the sensitivity of instruments, without a meticulous accumulation of data over a very long time? No one has the ability to keep track of these except administrators. How can we proceed to comb and rank various incommensurable entities (no. 3), if no one has archived the set of choices already made and carefully retained the more or less solemn engagement of the parties? How can we render irreversible decisions (no. 4) without the multiplication of procedures—votes, signatures, consensus-building meetings—that allow us to stabilize the collective provisionally? How can we ensure that that consultation (no. 2) takes place according to due process without a persistent verification of the qualifications that allow the various parties involved to participate in it? How effective would the ethics of discussion be, without being followed up by bureaucratic processes? Administrators are going to have responsibility for distinguishing all the functions (no. 5) and for coordinating the various professions; yet they will not be able to ensure this coordination unless they can prevent themselves from shifting from forms to content. All the other callings are substantive; administration alone is, if not proceduralist, at least procedure-driven.²⁶

Once the skill of administration is added to those we have deployed in the preceding chapter, it becomes possible to define more precisely the learning curve on which the good articulation of the collective rests from now on, by asking the various callings to collaborate in a single function. Scientists know perfectly well how to characterize the learning curve: they call it a *research front*. More than all the others, they are sensitive to the difference between cold, acquired Science on the one hand, and hot, risky, dynamic, competitive research on the

other. Their flair will help us sense in which direction to lead the collective—provided that we add to it the remarkable flair of politicians for detecting the possible reversal of power relations in any situation. They too know how to recognize the subtle difference between static and dynamic situations, while finding in circumstances the opportunity to make them change. They know how to modify in this way the basis of the “us” they are charged with representing, as they keep to a steady course. But the collective will find itself even more alert if it can count on the economists’ infallible nose for characterizing the health of a learning curve. They have multiplied the instruments—profit margins, balance sheets, economic indicators, bureaus of statistics, stock exchanges—that allow them to designate the unstable dynamics to which they have entrusted all their treasures. The moralists have not been left behind, since they well know that moral qualification is always judged by movement, intention, direction, effort, and not only by acts or simple respect for formalism. Combining the skills of the various professions, we can thus say about the learning curve that it derives its virtue from being at once a productive research program, a dynamic political culture, a prosperous economy, a scrupulous and uneasy morality, and a well-documented procedure.

Good government is not a government that offers politics the senseless privilege of defining the common world in the place of all those whom politics assembles, but the power to follow up (Box 5.1), which exploits the combined skills of administrators, scientists, politicians, economists, and moralists to choose the trackless path that goes from a less articulated collective to the better-articulated next state.

By seeking to install itself in comfort, political economy seems to tend toward a surprising result: just as we have had to deliver the sciences from Science and the collective from the social, we require a State that is no longer paralyzed by politics, by Science, or, of course, by economics. To the liberal State is opposed the *liberated* State, a State freed of all forms of naturalization. A new power, strong but limited strictly to the art of governing, has to succeed in preventing all the powers, all the partial competencies, from interrupting the exploration of the learning curve, or from dictating its results in advance. All the scientific, moral, administrative, political, and economic virtues must converge to keep intact this power to follow up that turns out to be invested not with a general will engendered by the social contract,

Box 5.1. Complementing Box 4.1, this box recapitulates the contribution of the various skills from Chapter 4 to the task of following through, in order to characterize in a concerted fashion the virtue of the learning curve.

Task no. 7: power to follow through

Contribution of administrators: follow-through on the protocol of experiments, failures, tests.

Contribution of scientists: detection of a research front.

Contribution of politicians: choice of opportunities that allow the reversal of power relations.

Contribution of economists: unstable equilibrium that ensures movement.

Contribution of moralists: quality of intentions and directions.

not with a destiny of total recapitulation close to absolute Mind, but with a simple and very modest *learning compact** that alone is capable of trying to find out what the associations of humans and nonhumans propose, and which goes beyond the actions controlled by each entity in unpredictable ways. If humans need government, it is not because they lack virtue, but because they are not in control of their common actions—and their governors have still less control over them. All knowledge of the public good must in its turn also be the object of meticulous experimentation. The State ensures the comparison between matters of concern n and $n + 1$.

If this definition appears too weak to those who believe they must be heirs of Louis XIV, Rousseau, Danton, Hegel, Bismarck, or Lenin, they should recall the importance attached to the fragile envelope that separates the inside of the collective from the outside. If it is true that the State has the monopoly on defining the enemy*, the power to follow up can inherit that burdensome task, provided that the word “enemy,” as we have already seen, changes meaning. The term will no longer be used to designate human neighbors gathering troops along a border; nor will it be used to incriminate beings so unassimilable that one would have the right to deny them even existence itself, by eliminating them once and for all as irrational. No, the enemy, human and nonhuman, is the one who is rejected but who will come back the next day to put the collective at risk: today’s enemy is tomorrow’s ally.²⁷ In

addition to the foreign wars and the civil wars of the past, there are internal wars that bring into conflict associations of humans and non-humans whose number and threat were previously unknown.²⁸ The State is no longer solely concerned with preparing for war abroad and preventing civil war; it must also be on continuous alert for this other war—which does not yet have a name, although it has always been raging—by which a collective in the process of exploration opposes anything that challenges its reason for being, that threatens it with annihilation, and with which it must nevertheless *come to terms*.

Depending on the strength of the power to follow up, a given collective will thus find itself integrated into two quite different regimes: it will be defined either as a fortress under assault by barbarians, or else as a collective surrounded by excluded entities that are on the path toward appeal. In the first case, the enemies will have shifted into insignificance, into inarticulateness, and will have become *barbarians* in the etymological sense, producing inaudible gibberish; in the second case, the enemies will be combated as future allies and will remain capable of worrying the entire collective with the mere thought of their provisional exclusion. There are no barbarians other than those who believe they have definitively found the words to define themselves. The *logos* is not a clear and distinct speech that would be opposed to the incomprehensible babblings of the others, but the speech impediment* that is catching its breath, starting over—in *other words*, that is seeking its words through a trial.

If we borrow Lévi-Strauss's powerful definition and use the term "barbarians" to designate those who believe that they are being assailed by barbarians, conversely, we can call "*civilized*" those whose collective is surrounded by enemies*. In one case we have contamination by barbarianism, in the other contamination by *civilization**: the barbarian sees barbarians everywhere, the civilized being sees civilized beings everywhere. According to these two figures of speech, the danger changes meaning: whereas (external) barbarians threaten (internal) barbarians with destruction, (external) civilized beings threaten (internal) civilized beings with *new requirements**. We might thus say about the power to follow up that it "defends civilization," provided that we no longer define civilization, as modernism did, by a position on the ladder of progress (there is no more ladder, and no more progress), but instead by the *civility* with which a collective

allows itself to be disturbed by those whom it has nevertheless explicitly rejected. The State defends independence without and autonomy within. Is not civilization in the reception of *aliens* a fairly precise way of retaining from the old State the essence of its vocation, once it has been liberated from its pretensions to becoming the sole rational agent of history, the only totalizer?

The Exercise of Diplomacy

The collective advances blindly; it gropes; it records the presence of new entities and at first it cannot tell whether they are friends or enemies, whether they aspire to share the same world or whether they will escape it forever. Unable to foresee, to master, *it must govern*. Its white cane in hand, it slowly takes the measure of the furnishings of the universe that surrounds or threatens it. If it does not know how many obstacles it has to reckon with, it does not know either how many helpful objects it can rely on. Like little Tom Thumb, it can only keep track of where it has traveled; it expects no salvation except the recording of the protocols that accumulate behind it. Wander if you like, but always hew to the strictest, most obsessive traceability. The state of law depends on this fragile inscription of successive trials. No other light will come to help you. Fortunately, those whose difference you are discovering little by little are plunged into the same obscurity as you. They do not know for sure whether they belong to the same world or not. They too grope their way forward. They do not yet have essences with fixed boundaries, nor do they have definitive identities, but only habits and properties. Take heart: they are as frightened as you are! Once the question of the number of collectives is reopened, the Other is going to change form. As historicity did just now, and exteriority before it, alterity is going to change: it too has become *altered*.

As long as the collective succeeds in drawing lessons from what it rejects and excludes, it can be defined as civilized: it may change enemies, but it does not have the right to multiply them at each iteration. As soon as it believes it is surrounded by insignificant entities that threaten it with destruction, it will become barbarian again. It will become, for instance, a society surrounded by a nature to be dominated, a society that believes it is free from everything that it does not take

into account, a society that believes itself to be universal from the outset, a society that sees itself as one with nature. Examples of barbarian collectives abound. On this account, as we can see quite clearly, the moderns have never demonstrated a very high level of civilization, for they have always viewed themselves as the ones who were pulling away from the barbarianism of the past, the ones who were resisting the return of archaism, the ones who were supposed to bring progress to those who lacked it. By shifting from modernism to political ecology, we can say that the moderns are *closing the parenthesis* that had set them apart from the others for a time. Or rather, after modernism's trial by fire, we might enter into a new era in which no collective could any longer, without further ado, use the label "barbarian" to characterize what it is rejecting. All the same, we are not going to wallow in multiculturalism and abstain from making any value judgments; instead, we are going to start talking to one another again, as people should have done at the beginning of the age of the so-called great discoveries. The collective has to replay the primitive scene of empire building, but those who disembark when they encounter civilized beings are this time civilized themselves. After centuries of misunderstandings, we are now replaying the tragic scene of the "first contacts."

As I have pointed out several times, the use of the word "collective" in the singular does not mean that there is just one of them, but that its function is to bring together a collection of some sort, in order to make its members capable of saying "us."²⁹ The discipline of anthropology has served as chief of protocol to teach the moderns to enter into contact with others. Still, the rules of its etiquette hide a lack of tact that political ecology has to correct at the outset. Physical anthropology in effect defines "the" universal nature of man by relying on Science, while cultural anthropology records the variety of cultures in the plural—obsessive scientism on the one hand, condescending respect on the other. From the viewpoint of the new Constitution, we cannot imagine anything worse, since those who are defining unity are the object of no counterforce, while cultures can accede to no reality other than that of "social representations." If it wants to become civil, anthropology can no longer allow itself to meet those who surround it by asking the traditional question of modernism: "Thanks to nature, I know in advance, without needing to hear what you have to say, who you are; but tell me anyway what representations you have made of

the world and of yourselves—it would be so interesting to compare your visions to the equally factitious ones of your neighbors.”³⁰ Knowing in advance what the entities to be taken into account are, or taking them into account without the claim to reality that resides in them: each of these approaches commits an error—the first against perplexity*, the second against consultation*—that we now know how to ferret out. No, unquestionably, neither mononaturalism or multiculturalism could raise the question of number in a useful way.³¹ If anthropology stopped there, it would become truly barbarous. It has to change roles by becoming *experimental**

As soon as we introduce the expression “multinaturalism*,” we oblige anthropology to complicate the modernist solution to the political problem of composition of a common world. The word reminds us that no collective can claim to assemble without giving itself the complex means to verify, in relation to the humans and the non-humans that it unifies, what they say about it after their own fashion. To speak about unity, it is thus not enough to anticipate a place reserved for all the excluded entities, no matter how comfortable that place might be: that place has to be designed by the excluded entities themselves, and according to their own categories, as I noted in the chapter above.³² Neither ecumenism nor catholicity nor social democracy nor political economy nor *Naturpolitik* can define for the others and in their place the position that is appropriate for them. Fortunately, despite the fears of those who always want to bring us back to the age of the Cave, multinaturalism consecrates not the victory of multiculturalism but its defeat, for the latter served only as a counterpart to mononaturalism. The absolute relativists, if such beings exist, could not welcome *aliens* in a civil fashion, since they would react to such novelties with a simple blasé shrug of the shoulders: nothing, in their eyes, could make a difference any longer.

With political ecology, we truly enter another world, one that no longer has nature and culture as ingredients, a world that can therefore neither simplify the question of the number of collectives any longer *by unifying it through nature* nor complicate the question *by accepting an inevitable multiplicity of incommensurable cultures*. We enter a world composed of insistent realities, in which propositions* endowed with habits no longer agree either to keep the institutions charged with accepting them quiet, or to be accepted by becoming

mute about the reality of their requirements. The outside is no longer either strong enough to reduce the social world to silence or weak enough to let itself be reduced to insignificance. In the new sense we have given back to this word, the excluded entities require the collective to present itself and to *represent* itself at their appeal—that is, to say that it risks once again the fate of all its representative agencies. What the civilized collective aims at is not indifference: the outside *makes all the difference* and the collective becomes all the more civilized in that it learns to become sensitive to these contrasts. “Nothing human is foreign to me,” says the Latin sage; let us say, rather, “Nothing that is foreign to me is inhuman.”³³

What is going to make it possible to survey the borders by asking in a civilized way the question of the number of collectives to be assembled? If we have to be somewhat mistrustful of classical anthropology because it would accept unity too quickly, as it has accepted multiplicity (because it would accept multiplicity only against a background of unity), do we have to resign ourselves to entering into a relationship only in the form of ignorance, conquest, or war? We need to add to anthropology the competencies of a much older calling, that of *diplomat**, which can complement the power to follow up defined in the preceding section, while serving it as scout and interpreter.³⁴ In fact, contrary to the arbiters who always rely on a superior and disinterested position, the diplomat always belongs to one of the parties to the conflict.³⁵ But the diplomat has one peculiar and decisive advantage over the anthropologist: a potential traitor to all camps, he does not know in advance in what form those whom he is addressing are going to formulate the requirements that may lead to war or peace. He does not open talks by respecting the social representations hypocritically because he knows in advance that they are “all equally false,” any more than he knows in advance that it would be possible to reach an understanding, if only the parties could succeed in speaking of the common world, always already there, that of nature, that of good sense, that of the facts, that of the agreement of minds and of common knowledge.

At no moment does the diplomat use the notion of a common world of reference, since it is to construct that common world that he confronts all the dangers; at no moment, either, does he regard “simple formulations” with respectful contempt, since any one of them, however impalpable, may hold the key to the agreement that nothing has

guaranteed in advance. He consents only, quite rightly, to “parley,” in the fine diplomatic expression, and to “make representations.” He never speaks of what may be rational or irrational. In other words, the distribution of essences* and habits* depends on the talks. Never (and here lies the greatness of his mission) does he resign himself, either, to the incommensurable—that is, at bottom, to war. There is more wisdom in the disgraced figure of the diplomat than in the respected figure of the modernist anthropologist because the latter respects only because he scorns, while the former, if he does not scorn, *does not respect either*.³⁶ He swallows his pride. He is said to be false and hypocritical, whereas, on the contrary, he is indignant, and he despairs of ever being able to discover what has to be preserved and what has to be rejected *for each situation* in the elaboration of the common world, in the triage of the best of all possible worlds.

How does the ecologist diplomat work? What is the secret of someone who agrees to seek the language of the common house, the one about whom one must say, according to the etymology of *oikos-logos*, that she “speaks the language of dwellings,” *that she “articulates the collective”*? Let us keep in mind that she never opens the debates with the either-or injunction imposed by the old Constitution, since she has understood that that preliminary condition had previously condemned all pourparlers to failure: “We shall reach agreement on the common world, on nature, all the more quickly if you could only leave in the cloakroom all the ragged irrational garments that only divide us and that refer only to subjectivity or to social arbitrariness.”³⁷ No, now she has to look for the difference between two distinct elements: *the essential requirements* on the one hand, the *experimental metaphysics* that expresses them on the other. In Figure 5.1, which goes back to the ninety-degree reversal of Figure 3.1, we have picked up the distinction.

The two opposing pairs do not divide up the possible worlds in the same way. Whereas culture never offered anything but a particular viewpoint on common nature, and could not supply any enlightenment about its single particularity, every collective *can participate in the manufacture of the common world of essential requirements*—an expression that I borrow, like that of traceability, from the world of standardization practice and quality control. In other words, with the old principle of triage, what was essential was always already known; with the new, what is essential *is still to come*.³⁸ As for the expressions, it is no

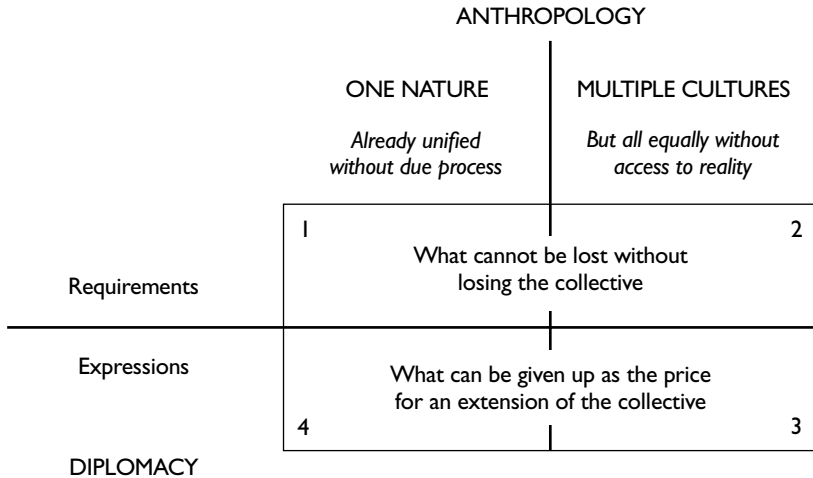


Figure 5.1 Whereas anthropology classifies what it encounters as nature or cultures, diplomacy has to carry out a triage between what is expendable and what is essential.

longer a matter, with the new touchstone, of representations that are all equally respectable and all equally false, of worldviews or symbolic elaborations, but of a painful pulling away, a grueling metamorphosis, in order to know the price that a collective would be ready to pay to agree to let others come into the common house that is under construction.³⁹ Apart from a diplomatic trial, no collective can differentiate between what is essential and what is superfluous: it will go to war over anything, because it sees everything as *equally* necessary. Only slowly, through preliminary negotiations, pourparlers, will a collective agree to reconsider its own constitution, by differentiating what is essential from what is superfluous according to other principles. It will undertake this exhausting task *only on condition that the other will agree to subject itself to the same triage*. How far we are from the peaceful distinction, always already made, between the nature of things and the representations that humans make of them. What seemed to make good sense was lacking in common sense.

I gave an example of this diplomacy in Chapter 3 when I attempted to extract the essential requirements that found themselves imprisoned in the difference between facts and values. I then returned to the negotiating table with a sort of “deal”: if we were to promise to offer

you better guarantees for the protection of your essential requirements, would you agree to modify the metaphysics of nature* that appears to you, for the time being, to be the one aptest to protect you, even though it originates in the Cave that prevents us, for our part, from existing? Would you be ready to give up that metaphysics if, for that price, you could bring nonhumans and the *demos* into the expanding collective? Nothing proves that the diplomat will succeed (nothing proves that I have succeeded, either—it is up to the reader to judge). This uncertainty makes diplomacy a riskier calling than anthropology, since the latter always knows in advance where to find the essential inessentials (in nature) and where to find the inessential essentials (in representations), while for the diplomat, the smallest slip of the tongue is enough to trigger stoning by both camps.

And yet the diplomat has a wild card up her sleeve that the modernist anthropologist lacked: she agrees to engage with collectives that find themselves, with respect to the precise distribution of requirements and expressions, *in the same uncertainty* as the one in whose name she is dealing. That is why they have declared themselves for so long to be at war: there is no common arbiter above them. Neither the one who sends her nor the one who agrees to greet her knows exactly why they are fighting—or even whether they are fighting. If metaphysics is not experimental, there is nothing to negotiate, since the essences* are always already there and the identities all the more decisively entrenched in that they are unjustifiable. But by no longer claiming to speak in the name of nature, by no longer accepting the polite indifference of multiculturalism, the diplomat who follows in the wake of the anthropologist gives herself opportunities to succeed that were not open to her predecessors. Civilization can contaminate just as barbarity can. For the first time, the other collectives—how many? no one yet knows—meet a civilized representative who asks them what their habits and their properties are.⁴⁰ There is always a tendency to minimize how terrifying it is for any proposition to be forced to bifurcate abruptly, in order to cut itself into two halves, one both rational and common, the other irrational and private. How can one speak the language of the *logos* if, as the Indians said of the whites, the moderns have forked tongues? It hardly matters with what respect that irrationality, adorned with the name “culture,” is surrounded; it hardly matters how many museums are devoted to it; it hardly mat-

ters, even, that a common structure may make it possible, by a series of transformations, to pass from one irrationality to the other in such a way that, thanks to the science of anthropology, irrationality ends up resembling an ersatz reason. The fact remains nevertheless that the collective encountered has been deprived of all contact with the very essence of phenomena.⁴¹ Everything that is essential belongs to the visitor who is teaching the native a lesson; the native is rich only by virtue of his difference.

Do we really know what would happen if, instead of this modernist approach, we entered into contact after the fashion of the ecological diplomat? Can one imagine the power of the balm that would then fall upon all the wounds opened up by the encounters that have taken place under the auspices of nature? The virtue of the diplomat, the factor that always makes him “a piece of shit in a silk stocking,” as Napoleon famously said of Talleyrand, is that he imposes *on the very ones who sent him* this fundamental doubt about their own requirements. “At bottom,” he says to them, “you don’t know, either, what you were holding to before I got the negotiation going. You have just discovered how much you care about this treasure; you would perhaps be prepared, then, to house it in a different metaphysics, if by doing so you could increase the size of the common house. Would you be ready to shelter those whom you took to be enemies but who have just taught you what you cherish more than anything in the world?” We have put the plow before the horse. No, in fact, we don’t care that much about nature: let us define rather what we do care about, and then let us give this treasure a name that is dear to us. “Where your treasure is, there will your heart be also” (Luke 12:34).

To put it differently, the diplomat is charged with what the later Kant called “the kingdom of ends.” The ecological crisis, as we have often noted, presents itself above all as a generalized revolt of means. Nothing and no one is willing any longer to agree to serve as a simple means to the exercise of any will whatsoever taken as an ultimate end. The tiniest maggot, the smallest rodent, the scantest river, the farthest star, the most humble of automatic machines—each demands to be taken also as an end, by the same right as the beggar Lazarus at the door of the selfish rich man. At first glance, this proliferation of ends appears untenable: modernism stiffens against it. Then, once the modernist parenthesis is closed, a question that several centuries had left

in suspense, unresolved, arises: Under what auspices must we unite, now that there is no more nature to do the work in our place, under the table, apart from representative assemblies?

The diplomat is not exactly a fourth power. He is only charged with leaving the *question of the number of collectives open*, a question that, without him, everyone would have a tendency to simplify somewhat. Explorer, investigator, sensor, he has the advantage over all the other powers of not knowing with certainty what the collective that sends him is composed of. More twisted than the moralist, less procedural than the administrator, less willful than the politician, more bent than the scientist, more detached than the explorer of markets, the diplomat in no way minimizes how difficult it is to know the terms in which each of the parties contemplates describing its “war aims.” His presence alone suffices, all the same, to modify profoundly the *danger* faced by a collective in quest of the number of those with whom it is going to have to compromise. The external enemy, for good reason, terrifies those who imagine that what defines their essence is going to be torn away: barbarians frighten barbarians. But the enemy that the diplomat accompanies does not put the collective in danger in the same way, since he is the bearer of a peace proposal that goes far beyond mere compromise: “Thanks to you, we are going to understand the difference between our essential requirements and their temporary expressions.”⁴² Finally, we are going to know what we want and what this “we” is that says it is endowed with a will. The diplomat recalls that *no one who does not lend himself to this work of negotiation can invoke the unity of the collective*. In imitation of the third commandment, against blasphemy, let us add to our tables of the Law: “Thou shalt not speak of the unity of the collective in vain.”

War and Peace for the Sciences

Have I settled the question of the number of collectives? No, of course not, for history is not over and has no meaning other than the one that is discovered through an experimentation of which no one can skip the steps or foresee the results. I have done better than to settle the question; I have left it open, while raising anew the question of the number of collectives on which war and peace depend. This is easy to understand: if all the excluded entities left outside then advance in

a civil manner toward the Republic*, while aspiring to participate in the same common world without formulating contradictory demands, there is no state of war. With a single world, the conflicts will always be superficial, partial, localized. Everything changes, on the contrary, if one of the multiplicities demands the destruction of a given collective, its forced incorporation, or its capitulation. This is the end of the state of peace. Now, thanks to political ecology, we notice little by little that *we have never left the state of war*, the *state of nature* that Hobbes thought the Leviathan had gotten us out of, whereas we are still deep in it; we have only passed from one *Naturpolitik* to another.⁴³ The pacifying violence of Science defined a single common world without giving us the means, interpreters, histories, networks, forums, agoras, parliaments, or instruments we would have needed to compose it progressively. The power to say what was rational and what was irrational has been exercised up to now without any counterforces.

Lord knows that history has not been sparing of conflicts. To these wars, sciences and technologies have contributed more and more each time by broadening the scale, the scope, the violence, the virulence, the logistics of these battles. Concerning these offers of service on the part of engineers and scientists, it has long been claimed that this was only a deviation from the mission of Science, only an unfortunate diversion from a project that remained that of knowledge, only a practical application of a pure and always disinterested intention. At a given moment, people thought, since scientific objects create consensus and harmony, Science will end up extending far enough so that conflicts will be only bad memories. The rationality of the primary qualities* will indeed end up taking the place of the irrationality of the secondary qualities*. This will take time, but one day or another we shall enter the land where atoms and particles flow—otherwise we would have to despair of humanity. The victory of peace is just around the corner.

Then we encountered, in the writings of journalists, the curious expression “science wars.” At first it designated only a minuscule matter, no bigger than a nodule on the skin: it seemed that certain “post-modern” thinkers would have liked to extend multiculturalism to Science, denying nature its unity, denying the project of knowledge its disinterestedness, denying scientific laws their indisputable necessity. Against this threat, certain scientists, certain epistemologists were

mobilizing. They wanted to wipe out what they took to be a cancer that was going to invade the entire university body and soon metastasize among hapless, defenseless students. Then, through a sudden mutation, one noticed that the term “science wars” had a premonitory sense and became the symptom of a much more formidable evil.⁴⁴ Not only did the sciences no longer suffice to ensure peace, but Science made peace impossible, for it put at the beginning of history, and outside it, what has to come at the end. While people were fighting Lilliputian battles against “postmodernism,” a Great War had already begun, added to all the others, in which the sciences were no longer a supporting force, as before, but rather its tactics and strategy as much as its logistics. To the monster of multiculturalism has now been added the hideous specter of multinaturalism. The science war has become once and for all a war of the worlds.

In abandoning mononaturalism, political ecology does not promise peace. It is only beginning to understand what wars it has to fight and what enemies it has to learn to designate. It is finally discovering the dangers that made it subject to a threat of pacification worse than the evil it was fighting: indisputable objects on the one hand, subjects barricaded within arbitrary identities on the other. In losing the help of the simplifiers, it is rediscovering the essential source of peace to which it had never had the right to have recourse because nonhumans had been militarized in the uniform of objects: things*, those partial assemblies capable of creating agreement, provided they are taken as propositions* convoked according to due process by a Republic* finally extended to nonhumans. We have lost the simplification of nature, but we have also released ourselves from the complication that it introduced by simplifying the situation too quickly. No facility, but no impossibility in principle. No transcendence, but no prison of immanence either. Nothing but the ordinary work of politics. People had always wanted, up to now, to save themselves from the inhuman by appealing to Science, and to save themselves from Science by appealing to the human. But another solution remains to be explored: to save oneself from Science and from the inhuman by appealing to the sciences and to the propositions of humans and nonhumans finally assembled according to due process.

Terrible luck, really. At the very moment when totalitarianism was collapsing, globalization was beginning. Are not “total” and “global”

two synonyms for the common world? And yet, despite their ambitions, neither the *scientific* politics of totalitarianism nor the *political* economics of globalization allows us to discover the right institutions, because they have only reduced the number of concerned parties. Nothing is less scientific than totalitarianism; nothing is less universalizable than globalization and its world-class futilities. It seems as though we always want to move from one prematurely unified world to another, while short-circuiting the practical means for achieving this unity in every case. If we have not yet left the state of nature, if the war of “all the everythings” against “all the everythings” is raging, we at least have hope of being able finally to enter into a State of law of which the traditional forms of politics give no idea whatsoever. The collective is still to come.

Fortunately, by losing mononaturalism, the collective frees itself at the same time from multiculturalism. Up to now, pluralism had never been anything but a rather facile tolerance, since it never poured out its generosities except by drawing on an unchallenged common fund. By losing nature, we also lose the fragmented, dispersed, irremediable form that it gave, by contrast, to all the multiplicities. The moderns, delivered from this formidable ethnocentrism of inanimate nature, can again enter into contact with the Others and benefit from their contribution to the elaboration of the common worlds, since the Others (and these are no longer cultures) have never used nature to carry out their politics.⁴⁵ The universal is neither behind nor above nor below, but ahead. We do not know what the *diverse* looks like, if it no longer sets itself apart against the prematurely unified background of nature. Relativism would disappear with absolutism. There would remain relationism, the common world to be built. To enter into its perilous peace talks, the *logos* can find no help except in turning to frail parliamentarians.

Conclusion

What Is to Be Done? Political Ecology!

To offer political ecology a legitimate place, it sufficed to bring the sciences into democracy.

Throughout the present book, I have had to propose this solution while using outmoded terms: “speech,” “discussion,” “Constitution,” “Parliament,” “house,” *logos*, and *demos*. As I am well aware, I have expressed only one particular viewpoint, one that is not simply European but French, perhaps even social democratic, or worse still, logocentric. But where has anyone seen a diplomat who did not bear the stigmata of the camp he represents? Who does not put on the livery of the powerful interests that he has chosen to serve and thus to betray? If we have to call upon parliamentarians, it is precisely because there is no vantage point on Sirius from which judges could assign faults to the various parties. Am I therefore limited to my own point of view, imprisoned in the narrow cell of my own social representations? *That depends on what follows*. It is true that diplomats do not benefit from the privileges granted by the Heaven of Ideas, but they are not prisoners of the dark Cave, either. They are beginning to parley, wherever they are, with the words they have inherited. They present themselves with these formulas to others who have no better ones, no more definitive ones, and who are also leaving the narrow confines where they were born. For a diplomat, the first words do not count, but only those that follow: the first stitch in the common world that their fragile terms are going to make it possible to knit. Everything is negotiable, including the words “negotiation” and “diplomacy,” “sciences” and

“democracy”—simple white flags waved at the front to suspend hostilities.

If I have sometimes offended against good sense*, it is because I wanted to rediscover common sense*, the sense of the common. People who speak of nature as if it were an already constituted unity that would make it possible to throw back onto social representations everything that calls for disunion—such people *exercise a kingly power*, the most important of all, a power superior to all the purple mantles and all the gilded scepters of civil and military authorities. I ask no more of them than one minuscule concession: since you have granted yourselves the power to define what unites us and what drives us apart, what is rational and what is irrational, show us also the proofs of your legitimacy, the traces of your election, the motivations for your choices, the institutions that permit you to exercise these functions, the *cursus honorum* through which you have had to make your way. Starting from the moment when you agree to redefine public life as the progressive composition of the common world*, you can no longer exercise this power under cover of the “indisputable laws of nature.” If there are laws, there has to be a Parliament. “No reality without representation.” No one is asking you to abandon all power, but simply to exercise it *as a power*, with all its precautions, its slowness, its procedures, and especially its checks and balances. If it is true that absolute power corrupts absolutely, then the power that made it possible to define the common world under the auspices of nature corrupted you more than any other. Is it not time to free yourselves of that absolutism by rising to the dignity of representatives, each of whom must learn to doubt?

The science wars bring us back today to the situation of the religious wars that forced our predecessors in the seventeenth century to invent the double power of politics and Science, while thrusting faith back into the inner self. When each reader of the Bible, in direct contact with his God, could come to reverse the established order in the name of his own interpretation, it spelled the end of public order. There was no more common world. That is why our ancestors had to secularize politics and relativize religion, which had become a simple private conviction. Must we carry out the same neutralization, now that each of us can rise up against public authority with his or her own interpretation of nature in the name of direct contact with the facts?

Can we secularize the sciences as we have secularized religion and make of exact knowledge an opinion that is respectable, to be sure, but private? Must we imagine a State that would guarantee nothing other than the freedom to practice the scientific rites freely *without supporting a single one of them*? As soon as it is formulated, the solution appears aberrant, since morality and religion have been successfully secularized only thanks to that assurance of an already-accomplished unity that Science used to hand us on a platter. Agnostic in Science and religion both, the secular Republic would be emptied of all substance. So far as the common world is concerned, it would rest on the least interesting and most arbitrary of smallest denominators: the king-self.

I have sought to explore a different solution. Instead of eliminating the requirements that bear on the constitution of the facts by sending them back to the private sphere, why not, on the contrary, *lengthen the list* of these requirements? The seventeenth-century solution, the simultaneous invention of indisputable *matters of fact* and of endless discussion, ultimately did not offer sufficient guarantees for the construction of the public order, the *cosmos*. The two most important functions were lost: the capacity to debate the common world, and the capacity to reach agreement by closing the discussion—the power to take into account* along with the power to put in order*. Even though no pontiff can now say “*Scientia locuta est, causa judica est,*” the loss of authority turns out to be compensated a hundredfold by the possibility of exploring in common what a *good* fact is, what a *legitimate* member of the collective is. If we need less Science*, we need to count much more on the sciences; if we need fewer indisputable facts, we need much more collective experimentation* on what is essential and what is accessory. Here, too, I am asking for just a tiny concession: that the question of democracy be extended to nonhumans. But is this not at bottom what the scientists have always most passionately wanted to defend: to have absolute assurance that facts are not constructed by mere human passions? They believed too quickly that they had reached this goal by the short-cut of *matters of fact* kept from the outset apart from all public discussion. Can one not obtain—more painfully, more laboriously, to be sure—a quite superior guarantee if humans are no longer alone in elaborating their Republic, their common *thing*?

I do not claim that politics once translated into ecology will be easier. On the contrary, it is going to become more difficult, more demanding, more procedural, indeed, more bureaucratic, and, yes, groping. We have never seen the establishment of a State of law simplify life for those who were used to the conveniences of a police state. Similarly, imagining a “State of law of nature,” a *due process* for the discovery of the common world, is not going to make life easier for those who claim to be sending back to the nonexistence of the irrational all the propositions whose looks they do not like. They are going to have to argue and come to terms, without skipping any of the steps we have covered in the preceding chapters. But, as we have seen many times, by losing nature, public life also loses the principal cause of its paralysis. Freed from transcendences that are as inapplicable as they are beneficial, politics breathes more freely. It no longer lives in the shadow of the sword of Damocles, the threat of salvation from elsewhere. Agreement is going to have to be reached.

Is the hypothesis I have developed normative or descriptive? I have proceeded as though the new Constitution described a state of things that is already in place, lacking only certain adequate terms to become self-evident to those best prepared to see it. This was the only way to rejoin common sense. The difference between the descriptive and the normative depends, moreover, on the distinction between facts and values: thus I could not use it without contradicting myself. There is in “mere description” an overly powerful form of normativity: what *is* defines the common world and thus all that *must be*—the rest having no existence other than the nonessential one of secondary qualities. Nothing is more anthropocentric than the inanimism* of nature. Against the norm dissimulated in the politics of *matters of fact*, then, we had to be even more normative. For the rest, there is nothing less utopian than an argument that aims at nothing but putting an end to that utopia, the modernist eschatology that is still expecting its salvation from an objectivity originating elsewhere. It is to the *topos*, the *oikos*, that political ecology invites us to return. We come back home to inhabit the common dwelling without claiming to be radically different from the others. In any event, having arrived much later than the avant-garde, a little earlier than Minerva’s owl, intellectual workers can never do much better than to help other intellectuals, their readers, rejoin what the *demos* already brought into the state of things some time ago.

Someone will object that it is necessarily a question of a utopia, since power relations will always come to break up the State of law and oppose to the delicate procedure deployed here the wordless brutality of the established order. It is true that I have not made use of the resources offered by critical discourse. I have unmasked only one power, that of nature.* I had a very powerful reason to do so: society* plays the same role in critical discourse that nature plays in the discourse of the naturalizers. *Societas sive natura*. To assert that underneath legitimate relationships there are forces invisible to the actors, forces that could be discerned only by specialists in the social sciences, amounts to using the same method for the metaphysics of nature* as was used for the Cave: it amounts to claiming that there exist primary qualities—society and its power relations—that form the essential furnishings of the social world, and secondary qualities, as deceitful as they are intensely experienced, that cover with their mantle the invisible forces one cannot see without losing heart. If the natural sciences have to be rejected when they employ that dichotomy, then we have to reject the social sciences all the more vigorously when they apply it to the collective conceived as a society*. If the common world has to be composed progressively along with the natural sciences, let us be careful not to use society to explain the actors' behavior. Like nature, and for the same reason, society finds itself at the end of collective experimentation, not at the beginning, not all ready-made, not already there. It is only good for attempting to take power—without ever managing to exercise it, since it is even mistaken about its own strength.

The social sciences—economics, sociology, anthropology, history, geography—have a much more useful role than that of defining, in the actors' place and most often against them, the forces that manipulate them without their knowledge. The actors do not know what they are doing, *still less* the sociologists. What manipulates the actors is unknown *to everyone*, including researchers in the social sciences. This is even the reason there is a Republic, a common world still to come: we are unaware of the collective consequences of our actions. We are implicated by the risky relations of which the provisional ins and outs have to be the object of a constant *re*-presentation. The last thing we need is for someone to compose in our stead the world to come. But to inquire into what binds us, we can count on the human sciences' offering the actors multiple and *rapidly revised* versions that allow us to understand the collective experience in which we are all engaged. All

the “-logies,” “-graphies,” and “-nomies” then become indispensable if they serve to propose constantly, to the collective, new versions of what it might be, while keeping track of the singularities. With the social sciences, the collective can finally *collect itself again*. If quite ordinary minds are capable of becoming precise and meticulous scientists, thanks to their laboratory equipment, we can imagine what ordinary citizens might become if they benefited, in order to conceive of the collective, from the equipment of the social sciences. Political ecology marks the golden age of the social sciences finally freed from modernism.

May I keep the expression “political ecology” to designate that sort of state of war? I am aware that the connection with the “green” parties remains very tenuous, since I have done nothing but criticize the use of nature by showing that it paralyzed the combat of the ecology-minded. How can I keep the same term, political ecology, to designate the *Naturpolitik* of the ecologists who claim to be bringing nature back into politics, and to designate a public life that has to get over its intoxication with nature? Am I not abusing the term here? If I have allowed myself to lack respect for the political philosophy of ecology, it is because it has made very little use up to now of the combined resources of the philosophy of the sciences and comparative anthropology, both of which, as we saw in Chapter 1, require us to give up nature. In contrast, I have not ceased to do justice to the burgeoning practice of those who discover behind every human being proliferating associations of nonhumans and whose tangled consequences make the old division between nature and society impossible. *What term other than ecology would allow us to welcome nonhumans into politics?* I hope I may be pardoned for shaking up the wisdom of ecology in the hope of ridding it of some of its most flagrant contradictions. To speak of nature without taking another look at the democracy of the sciences did not make much sense. And yet if we assure ourselves that humans no longer engage in their politics without nonhumans, is this not what the “green” movements have always sought, behind awkward formulas involving the “protection” or the “preservation” of “nature”?

A delicate question remains: Does political ecology have to inherit the classic political divisions? The parties that lay claim to political ecology, as has often been noted, have trouble telling their left from their right. But left and right depend on the Assembly that brings to-

gether the parliamentarians, on the organization of the rows, on the form of the amphitheater, on the position of the president, on the podium where the speaker presides. Political ecology is seeking not to choose a place within the old Constitution, but to convene a collective in a different assembly, a different arena, a different forum. Left and right will no longer reproduce the old divisions. No prewrapped package will permit the forces of Progress and the forces of Reaction to confront each other any longer, as if there were a single front of modernization that would make the Enlightenment, secularization, the liberation of morals, the market, the universal all walk in step. The divisions within the parties have been superior to what unites them for a long time now.

What is to be done with the left and the right if progress consists in going, as we have seen, from the tangled to the more tangled, from a mix of facts and values to an even more inextricable mix? What if freedom consists in finding oneself not free of a greater number of beings but attached to an ever-increasing number of contradictory propositions? What if fraternity resides not in a front of civilization that would send the others back to barbarity but in the obligation to work with all the others to build a single common world? What if equality asks us to take responsibility for nonhumans without knowing in advance what belongs to the category of simple means and what belongs to the kingdom of ends? What if the Republic* becomes at once a very old and very new form of the Parliament of things?

For the triage of possible worlds, the left-right difference appears very awkward indeed. At the same time, it is unthinkable to come to an agreement by outstripping that opposition through a unanimous power, since nature is no longer there to unite us without lifting a finger. I am not too worried about this difficulty. Once assembled with its own furnishings, political ecology will quickly be able to identify the new rifts, the new enemies, the new fronts. There will be time enough then to find labels for them. Most are already right here in front of us. Surprising in the eyes of the Old Regime, these regroupings will appear banal for the new one. Let us not hurry, in any case, to inherit old divisions.

Are there really any solutions, moreover, besides political ecology? Ultimately, what do you want? Can you really say, without blushing, still believing it, that the future of the planet consists in a melting

away of all cultural differences, in the hope that they will gradually be replaced by a single nature known to universal Science? If you are not that bold, then be honest: Will you have the nerve to admit, conversely, that you are resigned to the idea that cultures, although inessential, should become as many incommensurable worlds, added mysteriously to a nature that is at once essential and devoid of meaning? And if you do not pursue that goal either, if mononaturalism combined with multiculturalism strikes you as an imposture, if you really no longer dare to be modern, if the old form of the future really has no future, then must we not put back on the table the venerable terminology of democracy? Why not try to put an end to the state of nature, to the state of war of the sciences? What risk do we run in trying out a politics without nature? The world is young, the sciences are recent, history has barely begun, and as for ecology, it is barely in its infancy: Why should we have finished exploring the institutions of public life?

Summary of the Argument
(for Readers in a Hurry . . .)

Glossary

Notes

Bibliography

Index

Summary of the Argument (for Readers in a Hurry . . .)

Italics refer to the titles of the table of contents; asterisks refer to terms defined in the glossary.

INTRODUCTION: This book is a work of *political philosophy of nature*, or political epistemology. It asks *what we can do with political ecology* (p. 1). To answer this question, it is not enough to talk about nature and politics; we also have to talk about science. But here is where the shoe pinches: ecologism cannot be simply the introduction of nature into politics, since not only the idea of nature but also the idea of politics, by contrast, depends on a certain conception of science. Thus, we have to reconsider three concepts at once: *polis*, *logos*, and *phusis*.

CHAPTER 1: *Why must political ecology let go of nature?* (p. 9). Because nature is not a particular sphere of reality but the result of a political division, of a Constitution* that separates what is objective and indisputable from what is subjective and disputable. To engage in political ecology, then, we must first of all *come out of the Cave** (p. 16), by distinguishing Science* from the practical work of the sciences*. This distinction allows us to draw another one, between the official philosophy of ecologism on the one hand and its burgeoning practice on the other. Whereas ecology is assimilated to questions concerning nature, in practice it focuses on imbroglios involving sciences, moralities, law, and politics. As a result, ecologism bears not on *crises of nature but on crises of objectivity* (p. 18). If nature* is a particular way of totalizing the members who share the same common world instead of and in place of politics, we understand easily why ecologism marks *the end of nature*

(p. 25) in politics and why we cannot accept the traditional term “nature,” which was invented in order to reduce public life to a rump parliament. To be sure, the idea that the Western notion of nature is a historically situated social representation* has become a commonplace. But we cannot settle for it without maintaining the politics of the Cave, since doing so would amount to distancing ourselves still further from the reality of things themselves left intact in the hands of Science.

To give political ecology its place, we must then *avoid the shoals of representations of nature* (p. 32) and accept the risk of metaphysics. Fortunately, for this task we can profit from the fragile *aid of comparative anthropology* (p. 42). Indeed, no culture except that of the West has used nature to organize its political life. Traditional societies do not live in harmony with nature; they are unacquainted with it. Thanks to the sociology of the sciences, to the practice of ecologism, to anthropology, we can thus understand that nature is only one of the two houses of a collective* instituted to paralyze democracy. The key question of political ecology can now be formulated: can we find *a successor to the collective with two houses* (p. 49): nature and society*?

CHAPTER 2: Once nature has been set aside, another question arises—*how to bring the collective together* (p. 53)—that is heir to the old nature and the old society. We cannot simply bring objects* and subjects* together, since the division between nature and society is not made in such a way that we can get beyond it. In order to get ourselves out of these *difficulties in composing the collective* (p. 67), we have to consider that the collective is made up of humans and nonhumans capable of being seated as citizens, provided that we proceed to the apportionment of capabilities. The first kind of division consists in redistributing speech between humans and nonhumans, *while learning to be skeptical of all spokespersons* (p. 62)—those who represent humans as well as those who represent nonhumans. The second apportionment consists in redistributing the capacity to act as a social actor, while considering only *associations of humans and nonhumans* (p. 70). It is on these associations and not on nature that ecology must focus. This does not mean that the citizens of the collective belong to language or to the social realm since, by a *third apportionment*, the sectors are also defined by *reality and recalcitrance* (p. 77). The set of three apportionments allows us to define the collective as composed of propositions*.

To convene the collective, we shall thus no longer be interested in nature and society, but only in knowing whether the propositions that compose it *are more or less well articulated* (p. 82). The collective as finally convened allows a *return to civil peace* (p. 87), by redefining politics as the progressive composition of a good common world*.

CHAPTER 3: Do we not find the same confusion again with the collective as we did with the abandoned notion of nature, namely, premature unification? In order to avoid this risk, we are going to seek *a new separation of powers* (p. 91) that makes it possible to redifferentiate the collective. It is impossible, of course, to go back to the old separation between *facts and values*, for *that separation has only disadvantages* (p. 95), even though it seems indispensable to public order. To speak about “facts” amounts to mixing a morality that is impotent in the face of established facts with a hierarchy of priorities that no longer has the right to eliminate any fact. It paralyzes both the sciences and morality.

We restore order to these assemblies if we distinguish two other *powers: the power to take into account, and the power to put in order* (p. 102). The first power is going to retain from facts the requirement of perplexity*, and from values the requirement of consultation*. The second is going to recuperate from values the requirement of hierarchy*, and from facts the requirement of institution*. In place of the impossible distinction between facts and values, we are thus going to have *two powers of representation of the collective* (p. 108) that are at once distinct and complementary. While the fact-value distinction appeared reassuring, it did not allow us to *maintain the essential guarantees* (p. 116) that the new Constitution requires by inventing a State of law for propositions. The collective no longer construes itself as a society in a single nature, for it creates *a new exteriority* (p. 121), defined as the totality of what it has excluded by the power of putting in order and which obliges the power of taking into account to go back to work. The dynamics of the progressive composition of the common world thus differ as much from the politics of humans as from that of nature under the old Constitution.

CHAPTER 4: It now becomes possible to define the *skills of the collective* (p. 128), provided that we first avoid *the quarrel of the two “eco”-sciences* (p. 131), which would confuse political ecology with political economics. If economics presents itself as the summing-up of the col-

lective, it usurps the functions of political ecology and paralyzes science, morality, and politics simultaneously, by imposing a third form of naturalization. But once it has been emptied of its political pretensions, it becomes a profession indispensable to the functions of the new Constitution, and each of its members brings, through the intermediary of individual skill, *an individual contribution to the furnishing of the houses* (p. 136). *The contribution of the sciences* (p. 137) is going to be much more important than that of Science*, since it will bear on all the functions at once: perplexity*, consultation*, hierarchy*, and institution*, to which we must add the maintenance of the separation of powers* and the scenarization of the whole*. The big difference is that *the politicians' contribution* (p. 143) is going to bear on the same six tasks, thus permitting a synergy that was impossible earlier, when Science was concerned with nature and politics with interests. These functions are going to become all the more realizable in that *the contribution of the economists* (p. 150) and then *that of the moralists* (p. 154) will be added, defining a common *construction site* (p. 161) that takes the place of the impossible political body of the past.

Thanks to this new organization, the dynamics of the collective is becoming clear. It rests on *the work of the two houses* (p. 164), of which one, the upper house, represents the power to take into account* and the other, the lower house, represents the power to arrange in rank order*. *Reception by the upper house* (p. 166) has nothing to do with the old triage between nature and society: it is based on two investigations, the first undertaken to satisfy the requirement of perplexity, and the other to satisfy the requirement of consultation. If this first assembly has done a good job, it makes *reception by the lower house* (p. 172) much more difficult, because each proposition has become incommensurable with the common world already collected. And yet it is here that the investigation into the hierarchies* that are compatible among themselves must begin, along with the investigation into the common designation of the enemy* whose exclusion will be instituted by the lower house during an explicit procedure. This succession of stages makes it possible to define *a common house* (p. 180), a State of law in the reception of propositions, which finally makes the sciences compatible with democracy.

CHAPTER 5: A collective whose dynamics has just been thus re-defined no longer finds itself facing the alternative between *a single*

nature and *multiple* cultures. It is thus going to have to reopen the question of the number of collectives by *exploring the common worlds* (p. 184). But it can begin this exploration only if it abandons the definition of progress. There are in fact not one but *two arrows of time* (p. 188); the first one, modernist*, goes toward an ever-increasing separation between objectivity and subjectivity, and the other, non-modern, goes toward ever more intricate attachments. Only the second makes it possible to define the collective by *its learning curve* (p. 194)—provided that we add to the two preceding powers a *third power, the power to follow up*, which brings up anew *the question of the State* (p. 200). The State of political ecology remains to be invented, since it is no longer based on any transcendence but on the quality of follow-up in the collective experimentation. It is on this quality, the art of governing without mastery, that civilization* capable of putting an end to the state of war depends. But to make peace possible, we still need to benefit from *the exercise of diplomacy* (p. 209). The diplomat renews contact with the others, but without making further use of the division between mononaturalism* and multiculturalism*. The success of diplomacy will determine whether *the sciences are at war or at peace* (p. 217).

CONCLUSION:

a) Since politics has always been conducted under the auspices of nature, we have never left the state of nature behind, and the Leviathan remains to be constructed.

b) A first style of political ecology believed that it was innovating by inserting nature into politics, whereas in fact it was only exacerbating the paralysis of politics caused by the old nature.

c) To give new meaning to political ecology, we need to abandon Science in favor of the sciences conceived as ways of socializing non-humans, and we have to abandon the politics of the Cave for politics defined by the progressive composition of the good common world*.

d) All the institutions that allow for this new political ecology already exist in tentative form in contemporary reality, even if we shall have to redefine the positions of left and right.

e) To the famous question “What Is to Be Done?” there is only one answer: *“Political ecology!”* (p. 221)—provided that we modify the meaning of the term by giving it the experimental metaphysics* in keeping with its ambitions.

Glossary

ACTOR, ACTANT: Actant is a term from semiotics covering both humans and nonhumans; an actor is any entity that modifies another entity in a trial; of actors it can only be said that they act; their competence is deduced from their performances; the action, in turn, is always recorded in the course of a trial and by an experimental protocol, elementary or not.

ADMINISTRATION: One of the five skills analyzed in this book whose contribution is indispensable to the functions of the new Constitution*; it makes it possible to document collective experimentation and exerts the third power, that of follow-up, while ensuring respect for due process.

ARTICULATION: That which connects propositions* with one another; whereas statements* are true or false, propositions can be said to be well or badly articulated; the connotations of the word (in anatomy, law, rhetoric, linguistics, and speech pathology) cover the range of meanings that I am attempting to bring together, meanings that no longer stress the distinction between the world and what is said about it, but rather the ways in which the world *is loaded* into discourse (*see also* Logos*).

ASSOCIATION: Extends and modifies the meanings of the words “social” and “society*,” words that are always prisoners of the division between the world of objects and that of subjects; instead of making the distinction between subjects and objects, we shall speak of associa-

tions between humans and nonhumans; the term thus includes both the old natural sciences and the old social sciences.

BICAMERALISM: Term used in political science to describe systems of representation with two houses (Assembly and Senate, House of Commons and House of Lords); here I am extending the meaning to describe the distribution of powers between nature* (conceived, therefore, as a representative power) and politics*. This “bad” bicameralism is succeeded by a “good” bicameralism that distinguishes between two representative powers: the power to take into account* (the upper house) and the power to put in order* (the lower house).

CAVE: Expression derived from the Platonic myth in *The Republic* and used as a short-cut to designate the bicameralism* of the old Constitution with its separation between the Heaven of Ideas on the one hand and the prison of the social sphere on the other (*see also* Old Regime*).

CIVILIZATION: Designates the collective* that is no longer surrounded by a single nature and other cultures, but that is capable of initiating, in civil fashion, experimentation on the progressive composition of the common world*.

COLLECTIVE: To be distinguished first of all from society*, a term that refers to a bad distribution of powers; it accumulates the old powers of nature and society in a single enclosure before it is differentiated once again into distinct powers (the power to take into account*, the power to put in order*, the power to follow up*). In spite of its use in the singular, the term refers not to an already-established unit but to a procedure for *collecting* associations of humans and nonhumans.

COLLECTIVE EXPERIMENTATION: When it is no longer possible to define a single nature and multiple cultures, the collective has to explore the question of the number of entities to be taken into account and integrated, through a groping process whose protocol is defined by the power to follow up*. From the word “experimentation” as it is used in the sciences, I borrow the following: it is instrument-based, rare, difficult to reproduce, always contested; and it presents itself as a costly trial whose result has to be decoded.

COMMON GOOD: The question of the common good or the good life is usually limited to the moral sphere, leaving aside the question of the common world* that defines matters of concern; the Good and the True thus remain separate; here we are conflating the two expressions to speak of the good common world or *cosmos**.

COMMON SENSE: *See* Good sense*.

COMMON WORLD (also good common world, *cosmos**, the best of worlds): The expression designates the provisional result of the progressive *unification* of external realities (for which we reserve the term “pluriverse”*); the world, in the singular, is, precisely, not what is given, but what has to be obtained through due process.

CONSTITUTION: Term borrowed from law and political science, used here in a broader metaphysical sense, since it refers to the division of beings into humans and nonhumans, objects and subjects, and to the type of power and ability to speak, mandate, and will that they receive. Unlike the term “culture,” “Constitution” refers to things as well as to persons; unlike the term “structure,” it points to the willful, explicit, spelled-out character of this apportionment. To dramatize the contrasts, I set the “old” modern Constitution in opposition to the “new” Constitution of political ecology, the way the Old Regime*, in French history, is set in opposition to the Republic* (*see also* Experimental metaphysics).

CONSULTATION: One of the two essential functions of the power to take into account*: it answers the question about what trials are appropriate to pass judgment on the existence, the importance, and the intention of a proposition*; it applies, of course, to nonhumans as well as to humans; it does not have the ordinary meaning of an answer to an already-formulated question; instead, it implies participation in the reformulation of the problem through a search for reliable witnesses*.

COSMOS, COSMOPOLITICS: Here we are going back to the Greek meaning—“arrangement,” “harmony”—along with the more traditional meaning, “world.” The cosmos is thus synonymous with the good common world* that Isabelle Stengers refers to when she uses

the term *cosmopolitics* (not in the multinational sense but in the metaphysical sense of the politics of the cosmos). To designate its antonym we could use the term “cacocosmos.”

DEMOS: Greek term used here to designate the assembled public, freed of the double pressure exerted over its debates by salvation via Science* along with the shortcuts of force.

DIPLOMACY: Skill that makes it possible to get off a war footing by pursuing the experiment of the collective* concerning the common world* by modifying its essential requirements: the diplomat succeeds the anthropologist in the encounter with cultures.

DUE PROCESS: The expression, borrowed from law and government, is intended to stress, through contrast, the undue, surreptitious character of the habitual arrangements of the Old Regime. Contrary to the distinction between nature and society, between facts and values, the powers of representation of the collective* make it necessary to proceed slowly, according to due process, by offering the production of the common world the equivalent of a state of law. The contrasting concepts *de facto* and *de jure* are combined here in a single formula.

ECONOMICS, ECONOMIZER: Political economics as the economics of the political (short-circuiting of the State of law) is contrasted with economics as the formatting of ties and the elaboration of a common language allowing for the construction of models as well as the calculation of optima. Economics freed from politics (like epistemology*) thus becomes a skill (on the same basis as politics or the laboratory sciences) and not the infrastructure of societies. An economizer is someone who practices economics and thus “performs” the economy.

ENEMY: This word is used first to designate the exterior of the collective, which, unlike nature*, has not the passive role of a given, but the active role of something that has been placed outside (*see* Exteriorization, externalization*), something that can put the interior of the collective in mortal danger, and, finally, something that may return at the following stage to demand its place as partner and ally. The enemy

is specifically not what is definitely foreign, immoral, irrational, or nonexistent.

ENVIRONMENT: The concern that one can have for it appears with the disappearance of the environment as what is external to human behavior; it is the externalized whole* of precisely what one can neither expel to the outside as a discharge nor keep as a reserve.

EPISTEMOLOGY, (POLITICAL) EPISTEMOLOGY, POLITICAL EPISTEMOLOGY: In the proper sense of the term, “epistemology” refers to the study of the sciences and the procedures for such study (like science studies but with different instruments); in contrast, I use the term “(political) epistemology” (or, less kindly, “epistemology police”) to designate the distorting of theories of knowledge in order to rationalize politics but without respecting the procedures for coordination either of the sciences or of politics (it is a matter of engaging in politics in a way that is protected from all politics, hence the parentheses); finally, I use the term “political epistemology” (without parentheses) to designate the analysis of the *explicit* distribution of powers between sciences and politics in the framework of the Constitution*.

ESSENCE: Term from metaphysics that takes on a political meaning here; not the beginning of the process of composition* or articulation* (the term “habit*” is reserved for that), but its provisional conclusion; there are indeed essences, but these are obtained by institution* at the end of an explicit process that gives them durability and indisputability by attaching attributes to their substance. To recall this concrete history, I use the expression “essences with fixed boundaries.”

EXPERIMENTAL ANTHROPOLOGY: The capacity of anthropologists to encounter other cultures used to depend on the certainty provided by mononaturalism*; the anthropology I call experimental establishes new contact with other cultures, while rejecting both mononaturalism and multiculturalism (*see also* Diplomacy*).

EXPERIMENTAL METAPHYSICS: Metaphysics is traditionally defined as what comes after or above physics, thus presupposing an a priori distribution of primary* and secondary qualities* that set-

tles the problem of the common world*, the object of this book, too quickly. To avoid this premature solution, I call experimental metaphysics the search for what makes up the common world, and I reserve the deliberately paradoxical expression “metaphysics of nature” for the traditional solution that gave nature a political role.

EXTERIORIZATION, EXTERNALIZATION: Economists use the expression “externalities” to designate entities that cannot be taken into account but that play an important role (negative or positive) in the calculations; here, I give it a more general and more political meaning, to replace the customary notion of nature external to the social world; external nature is not a given, but rather the result of an explicit procedure of externalization (what one has decided not to take into account or what threatens the collective) (*see also* Enemy*).

FOLLOW-UP (POWER TO FOLLOW UP): One of the three powers of the collective (with the power to take into account* and the power to put in order*); it seeks the test path that allows collective experimentation to explore the question of common worlds; it is procedural and not substantive; so long as it does not presuppose mastery, it is thus synonymous with the art of governing.

GOOD SENSE, AS OPPOSED TO COMMON SENSE: These terms are set in opposition, in order to replace critical discourse and the operation of unmasking; good sense represents the past of the collective, while common sense (the sense of what is held in common, or the search for what may be common) represents its future. Whereas it may be permissible to force good sense somewhat with venturesome arguments, it is always necessary to verify that one is finally rejoining common sense.

HABITS: Properties of propositions* before the operations of the collective have instituted them in a lasting way as essences*; this is the only way one can carry out the tasks involved in elaborating the common world without immediately running up against indisputable nature and indisputable identities and interests.

HIERARCHY: One of the two essential functions of the power to put in order*; it is a matter of arranging propositions, which are by defini-

tion heterogeneous and incommensurable, into a single homogeneous order and according to a single relationship of order, an obviously impossible task that will have to be taken up again at the next iteration.

HUMANS AND NONHUMANS: To bring out the difference between civilian relations within the collective and the militarized relations maintained by objects* and subjects*, I use this expression, which is synonymous with propositions* and associations*. Its only signification is negative: it simply reminds us that we are *never* speaking of the subjects or objects of the old bicameralism*.

INANIMISM: A neologism based on “animism,” used to recall the anthropocentrism of a metaphysics that presupposes objects that are “indifferent” to the fate of humans; this makes it possible in fact to reform humans right away, by distinguishing between the primary (essential) qualities* and the secondary (superficial) qualities*.

INSTITUTION: One of the two requirements of the power to put in order*, the one that makes it possible to respond to the requirement of closure and to prepare the re-collection of the collective as it goes through the next loop; the word often has a pejorative sense in the literature of the human sciences, as opposed to “spontaneous,” “real,” “creative,” and so on; it is used in a positive sense here, as one of the forms of reason. I also use the expression “conceptual institution” as a synonym for “form of life.”

INTERNALIZATION: *See* Exteriorization, externalization.

LEARNING COMPACT: Expression used to replace “social contract,” which would bind humans together in a totalized fashion to form a society; the apprenticeship pact presupposes nothing but the common ignorance of the governors and the governed in a situation of collective experimentation*.

LEARNING CURVE: An expression borrowed from psychology and management and used here to designate the situation of a collective deprived of the old solution once given to the question of its exteriority (one nature/multiple cultures) and obliged to resume experimentation with no guarantee other than the quality of its learning. Its follow-up is the object of the seventh task of the Constitution*.

LOGOS: A multiform Greek term, to which we give the meaning “articulation*” here; it designates all the speech impedimenta* that are at the heart of the public thing*; synonymous with “translation,” it is defined not by clarity or even by a special attention to language, but by the difficulty of accompanying the reflexive expression of the collective engaged in the progressive composition of the common world*.

MATTERS OF CONCERN: An expression invented to contrast with matters of fact and to recall that ecological crises have no bearing on a type of beings (for example, nature or ecosystems) but on the way all beings are manufactured: the unexpected consequences as well as the mode of production and the manufacturers remain tied to matters of fact, whereas they appear to be detached from objects* properly speaking.

MATTERS OF FACT: The indisputable ingredients of sensation or of experimentation; the term is used to emphasize the political oddity of the distinction, imposed by the old Constitution, between what is disputable (theories, opinions, interpretations, values) and what is indisputable (sensory data).

MILITANT ECOLOGY: In a somewhat artificial way, the militant practice of ecology is contrasted here with the official philosophy of ecological thinkers, theorists of *Naturpolitik* who continue to use nature as a mode of public organization without noticing that this premature unity can only paralyze the movement of composition*.

MODERN: Designates not a period, but a form of the passage of time; a way of interpreting a set of situations by attempting to extract from them the distinction between facts and values, states of the world and representations, rationality and irrationality, Science* and society*, primary qualities* and secondary qualities*, in such a way as to trace a radical difference between the past and the future that makes it possible to externalize* definitively whatever has not been taken into account. Whatever suspends this passage without replacing it is *postmodern*. Whatever replaces the passage of modern time by taking into account again what has been externalized is *nonmodern* or *ecological*.

MONONATURALISM, MULTICULTURALISM, MULTINATURALISM: To emphasize the political character of the undue unification of the collective in the form of nature in the singular, the prefix “mono” is added, to bring out right away the kinship between the solution retained and *multiculturalism* (an Anglo-Saxon expression that has been adopted by political science): against a background of prematurely unified nature, prematurely fragmented and incommensurable cultures stand out. To designate the impossibility of the traditional solution, I add to naturalism, in a somewhat provocative fashion, the prefix *multi*.

MORALIST: One of the five professions called to participate in the functions of the collective defined by the new Constitution*; defined neither by an appeal to values nor by a respect for procedures, but by an attention to the defects of composition* of the collective, to all that it has externalized* by denying to all propositions the function of means and offering to keep them as ends.

NATURE: Understood here not as multiple realities (*see* Pluriverse*) but as an unjustified process of unification of public life and of distribution of the capacities of speech and representation in such a way as to make political assembly and the convening of the collective in a Republic* impossible. I am combating three forms of nature here: the “cold and hard” nature of the primary qualities*, the “warm and green” nature of *Naturpolitik**, and finally the “red and bloody” nature of political economics*. To *naturalize* means not simply that one is unduly extending the reign of Science to other domains, but that one is paralyzing politics. Naturalization can thus be carried out on the basis of society*, morality*, and so on. Once the collective has been assembled, there is no longer any reason, by contrast, to deprive oneself of expressions of common sense and to use the term “natural” for something that goes without saying or something that is a full-fledged member of the collective.

NATURPOLITIK: On the model of *Realpolitik*, this term designates a deviation from political ecology that claims, in opposition to militant ecology, to be renewing public life, even while keeping intact the idea of nature* invented to poison it.

NONHUMAN: *See* Humans and nonhumans.

OBJECT, AS OPPOSED TO SUBJECT: Here we are contrasting the subject-object pair with associations between humans and nonhumans. “Objects” and “objectivity,” along with “subjects” and “subjectivity,” are polemical terms, invented to short-circuit politics once nature* has been put in place; thus we cannot use them as citizens of a collective that can recognize only their civil version: associations of humans and nonhumans.

OLD REGIME: This deliberately simplistic term (and the more polemical term “Cave”) is used to bring out the contrast between the bicameralism* of nature and society, on the one hand, and that of the new Constitution*, which allows a state of law, on the other. Just as the French Revolution called into question the legitimacy of the aristocratic power of divine right, political ecology calls into question the aristocratic power of divine “Science.”

ORDERING (POWER TO PUT IN ORDER): One of the three powers of representation of the collective (said of the lower house); answers the question “Can we form a common world?”

PERPLEXITY: One of the seven tasks through which the collective makes itself attentive and sensitive to the presence outside itself of the multitude of propositions that may want to be part of the same common world*.

PLURIVERSE: Since the word “*uni*-verse” has the same deficiency as the word “nature” (for unification has come about without due process*), the expression “pluriverse” is used to designate propositions* that are candidates for common existence before the process of unification in the common world.*

POLITICAL ECOLOGY: The term does not differentiate between scientific ecology and political ecology; it is built on the model of (but in opposition to) “political economy*.” It is thus used to designate, by opposition to the “bad” philosophy of ecology, the understanding of ecological crises that no longer uses nature to account for the tasks to be accomplished. It serves as an umbrella term to designate what

succeeds modernism according to the alternative “modernize or ecologize.”

POLITICS: Used here in three senses that are distinguished by periphrasis: a) in its usual meaning, the term designates the struggle and compromises between interests and human passions, in a realm separate from the preoccupations of nonhumans; in this sense, I use the expression “politics of the Cave*”; b) in the proper sense, the term designates the progressive composition of the common world* and all the competencies exercised by the collective; c) in the limited sense, I use the term to designate just one of the five skills necessary to the Constitution, the one that allows faithful representation by the activation—always to be repeated—of the relation between one and all.

PRIMARY QUALITIES, AS OPPOSED TO “SECONDARY QUALITIES”: A traditional expression in philosophy to distinguish the fabric of which the world is made (particles, atoms, genes, neurons, and so on), as opposed to representations* (colors, sounds, feelings, and so on); primary qualities are invisible but real and never experienced subjectively; secondary qualities, visible but nonessential, are experienced subjectively. Far from being an obvious division, it is the operation of (political) epistemology* par excellence that is undone by experimental metaphysics and forbidden by the new Constitution.

PROGRESSIVE COMPOSITION OF THE COMMON WORLD: Expression that replaces the classic definition of politics as an interplay of interests and powers: the common world is not established at the outset (unlike nature* and society*) but must be collected little by little through diplomatic work* done to verify what the various propositions* have in common. *Composing* is always contrasted with *short-circuiting*, shortcut, arbitrariness (*see also* Due process*).

PROPOSITION: In its ordinary sense in philosophy, the term designates a statement* that may be true or false: it is used here in a metaphysical sense to designate not a being of the world or a linguistic form but an association of humans and nonhumans before it becomes a full-fledged member of the collective*, an instituted essence*. Rather than being true or false, a proposition in this sense may be well or badly articulated. Unlike statements, propositions insist on the dy-

namics of the collective in search of good articulation, the good cosmos*. To avoid repetition, I sometimes say “entities” or “things*”.

RELIABLE WITNESS: Designates situations capable of testing the faithfulness of representations, in the knowledge that the distribution between what speaks and what does not speak is no longer definitive and that there are just spokespersons* whom one doubts, just speech impedimenta.

REPRESENTATION: Used in two radically different senses, which are always distinguished by the context: a) in the negative sense of social representation, it signifies one of the two powers of (political) epistemology which forbids all public life, since subjects or cultures have access only to secondary qualities* and never to essences*; b) in the positive sense, it designates the dynamics of the collective which is re-presenting, that is, presenting again, the questions of the common world, and is constantly testing the faithfulness of the reconsideration.

REPUBLIC: Does not designate the assembly of humans among themselves, nor the universality of the human detached from all the traditional archaic bonds; on the contrary, by taking another look at the etymology of *res publica*, the public thing*, it designates the collective* in its effort to undertake an experimental search for what unifies it; it is the collective assembled according to due process* and faithful to the order of the Constitution*.

REQUIREMENT, DEMAND: Terms that take the place of the old division between necessity and freedom; each of the functions of the collective* defines a requirement: external reality for perplexity*; pertinence for consultation*; publicity for hierarchy*; closure for institution*. The expression “essential requirements,” borrowed from the vocabulary of standardization, makes it possible to establish the division between the habits* and the provisional essences* of propositions*.

SCENARIZATION: One of the seven functions that the new Constitution* is to fulfill and that amounts to defining the border between inside and outside; but instead of starting from an already-constituted

unity (nature* or society*), the various skills (of the sciences, politics, government, and so on) propose *scenarios* of unification that are all provisional and that the reconsideration of the collective will quickly make obsolete.

SCIENCE, AS OPPOSED TO THE SCIENCES: I contrast Science, defined as the politicization of the sciences by (political) epistemology in order to make public life impotent by bringing to bear on it the threat of salvation by an already unified nature*, with *the sciences*, in the plural and lowercase; their practice is defined as one of the five essential skills of the collective in search of propositions* with which it is to constitute the common world and take responsibility for maintaining the plurality of external realities.

SEPARATION OF POWERS: Traditional expression in law and political philosophy, customarily used to designate the difference between the legislative and the executive (and sometimes the judicial) branches of government; I use it: a) in the negative sense, to designate the distinction between nature* and society* (which makes it possible to see the latter as an element of the old Constitution and not as a given); b) in the positive sense, to designate the indispensable distinction between the power to take into account*, the power to put in order*, and the power to follow up*. To maintain it is one of the seven tasks of the Constitution*.

SOCIETY, SOCIAL: The terms “society” or “social world” are used to designate the half of the old Constitution* that has to unify subjects detached from objects and always subjected to the threat of unification by nature; it is an already-constituted whole that explains human behavior and thus makes it possible to short-circuit the political task of composition; it thus plays the same paralyzing role as nature*, and for the same reasons. The adjective “social” (in “the prison of the social sphere” or “social representation*” or “social constructivism”) is thus always pejorative, since it designates the hopeless effort of the prisoners of the Cave* to articulate reality while lacking the means to do so.

SPEECH IMPEDIMENTA: Designates not speech itself but the difficulties one has in speaking and the devices one needs for the artic-

ulation* of the common world—to avoid taking logocentric words (*logos**, “consultation*,” “spokesperson*”) as facile expressions of meanings that would not need any particular mediation to manifest themselves transparently.

SPOKESPERSON: An expression used at first to show the profound kinship between representatives of humans (in the political sense) and representatives of nonhumans (in the epistemological sense). Next, the term is used to designate all the speech impedimenta* that explain the dynamics of the collective. The spokesperson is precisely the one who does not permit an assured answer to the question “Who is speaking?” (*see also* Reliable witness*).

STATE: Just one of the instances of a collective in the process of exploration; the entity that allows the exercise of the power to follow up*; that has a monopoly on the designation of the enemy*; that is the seat of the art of governing; that guarantees the quality of the collective experiment.*

STATEMENT: As opposed to a proposition*, a statement is an element of human language that seeks to verify its adequacy to the world of objects through an operation of reference. This awkward distinction between words and world amounts to an interruption of the collective exploration.

SUBJECT: *See* Object.

TAKING INTO ACCOUNT (POWER TO TAKE INTO ACCOUNT): One of the three powers of the collective (said to belong to the upper house), the one that obliges us to answer the question “With how many new propositions are we to constitute the collective?”

THING: We are using the term in the etymological sense that always refers to a matter at the heart of an assembly in which a discussion takes place requiring a judgment reached in common—in contrast to “object*.” The etymology of the word thus contains the index of the collective* (*res, ding, chose*) that we are trying to assemble here (*see also* Republic*).

UPPER HOUSE, LOWER HOUSE: *See* Bicameralism.

Notes

Introduction

1. It is surprising to note that, while most of the issues raised by the ecology movement depend entirely on the sciences for their visibility, the exceptions to this rule remain few in number. We may think, for example, of the greenhouse effect, or of the progressive disappearance of the cetaceans; in every instance, the scholarly disciplines turn out to be on the front lines, which was not the case with other social movements. We find one of the exceptions in Serge Moscovici (1977 [1968]), an all the more precious exception in that the book was written more than thirty years ago. Still, the seminal book by Michel Serres (1995) is the one that establishes the closest link between questioning that focuses on the sciences and the questioning addressed to ecology from the standpoint of a joint anthropology of law and science. The present work extends some of Serres's advances on the contractual function of the sciences. Ulrich Beck (1997) also alludes frequently to the sociology of the sciences, as does Pierre Lascombes (1994), in a book that has been especially important for my own work. For the rest, except for works on public participation (Irwin and Wynne 1996; Lash, Szerszynski, and Wynne 1996), the intersections between ecology and science studies remain astonishingly sporadic. Still, we have Steven Yearley (1991), Klaus Eder (1996), and George Robertson (1996).

2. All the terms marked with an asterisk are discussed in the glossary at the end of the book, p. 237. As I have abstained from any linguistic innovations, I use this sign to remind readers that certain common expressions must be understood in a somewhat technical sense that will be specified little by little.

3. In the "geopolitics" of the philosophy of nature, France benefits from a comparative advantage because the notion of an ahuman nature that ought to be protected has never taken root here. From Diderot to François Dagognet (1990), by way of Bergson, André Leroi-Gourhan (1993), and André-George Haudricourt (1987), we find in France a rich "constructivist" tradition that praises the artificiality of nature, thanks to the industrious figure of the engineer. For example, we find a striking version of this French-derived constructivism in Moscovici: "The world turns its back on intelligence, molts

into a dead star, denies the meaning of its own existence, if, in the event of its constitution, one does not see it embody the labor of the shepherd or the farmer, the craftsman or the clockmaker; I shall add to this comparison all varieties of scholars” (1977, 170). Unfortunately, the French believe they have criticized the American version of nature simply by pointing out that there is no nature that is not manmade. Once they had criticized deep ecology and its excessive respect for a mythic nature, that of “wilderness,” they thought they had nothing left to think (Ferry 1995).

4. Having learned from experience that one must not demand too much of readers, I have put together this book as if it presupposed no knowledge of my previous work. Those who are familiar with that work will see, however, that I am returning to the topic I addressed in the last chapter of my investigation into the modern Constitution (Latour 1993); I am taking another look at what I called the Parliament of Things, which was visible at the time, as it were, from the outside. The fact that it has taken me nearly ten years to describe it from the inside does not simply prove that I think slowly. I thought then that people had not done a good job talking about the sciences but that they knew how to deal with politics. I did not imagine that politics would differ as much from the picture drawn of it by political science as science differed from the picture drawn of it by epistemology. I was sadly mistaken. I addressed the issue in another work, which is really the twin volume of this one, in which I attempted to extract the philosophy proper to the science studies that my colleagues and I have been engaged in for a number of years now, and that has had a great deal of difficulty taking root (Latour 1999b). Finally, this book obviously presupposes a wholly different theory of the social than the one espoused by the sciences of society* (a simple pendant, as we shall see, to the politics of nature criticized in the pages that follow).

I. Why Political Ecology Has to Let Go of Nature

1. With regard to this argument, see the companion volume (Latour 1999b). I am especially indebted, of course, to the now-classic text by Steven Shapin and Simon Schaffer (1985), and to the many commentaries it has generated.

2. On the origin, history and impact of this expression, I have recently compiled a sort of encyclopedic assemblage (Latour and Weibel 2002).

3. Unlike Karl Popper (1963), who criticizes Plato’s “totalitarianism” the better to save Socrates, I am not attacking either Plato or Socrates here, but rather the obsessive repetition of the allegory in today’s trivialized version, which still claims to be saving the Republic through Science. See Latour 1999b for a detailed analysis of *Gorgias* that owes a great deal to Barbara Cassin (1995).

4. Foolish remarks of this sort were endemic to the famous “Sokal affair.” For overviews of this tempest in a teapot, see Baudoin Jurdant (1998).

5. I must have been in my cups: I had promised never again to speak ill of epistemologists. But the so-called Sokal affair set me off again, reviving a righteous anger against this form of fundamentalism in the realm of reason—which has a lot in common with the religious form. From here on, I shall distinguish the political epistemology* that deals simultaneously with the organization of public life and with the sci-

ences from epistemology in the strict sense, the epistemology that applies philosophy to problems of knowledge without making any special effort to short-circuit the political question. Steven Shapin (1994) would be an example of the first, and Pierre Duhem (1904) of the second. I have the greatest respect for my epistemologist colleagues, who use different tools from mine to try to grasp the secrets of scientific practices. I have equal respect for the political epistemologists who agree to treat the theory of the sciences and political science as *a single philosophical problem*. However, I have no respect at all for those who claim that the “problem of knowledge” has to be *distinguished* from the political question, in order to hold the frenzy of the social world at bay. It is crucial to combat epistemologists of this last sort. It is in order to distinguish these from the others that I add parentheses to the expression “(political) epistemology.” Either we are talking about the organization of public life and must not mix in questions about the nature of scientific activity, or else we are talking about scientific production and there is no reason to combine it with considerations about bringing politics into line. One political epistemology against another political epistemology, fine; epistemology against epistemology, certainly; epistemology against politics, out of the question.

6. The notion of Constitution*, essential to the comprehension of this argument, is developed at length in Latour 1993: it is a matter of replacing the opposition between knowledge and power, between nature and society, with a prior operation of distribution of the rights and responsibilities of humans and nonhumans. It is this notion that makes symmetrical anthropology possible and makes modernity comparable to other forms of public organization.

7. There is a direct and unbroken chain of arguments going from the first sophists (Cassin 1995) to the “science wars” episodes.

8. I can be permitted at this point some chauvinism about my own field. And yet I have never understood how readers of science studies could avoid from the outset seeing in this research a questioning of the very notion of the “social” world, “social” explanation, “social” history. On this essential point, see two articles written some time ago: Callon and Latour 1981, and Callon 1986. I have been involved in two enlightening quarrels on this point with adherents of “social construction”: see Collins and Yearley 1992, with our reply in Callon and Latour 1992 and later in Bloor 1999, and my response, Latour 1999a. Science studies have been accused of politicizing Science, whereas they have done precisely the opposite: they have depoliticized the sciences by putting an end to the kidnapping of epistemology by the epistemology police.

9. The word “politicize” is used from here on in two distinct ways. The first amounts to reserving power plays for the prison of the Cave alone, and treating the world of Science as apolitical. The famous “neutrality” of Science arises from this preliminary distribution of functions between Science on the one hand and politics on the other. “To politicize,” if we accept this division of work at least provisionally, will always amount to sully pure and perfect Science by showing the powers at play behind it. Against this pollution of scientific neutrality, it will always suffice to return to the initial purity, to recall the “absolute difference” that exists between the concerns of the human world and the cold reality of things. But to politicize also refers to *the very invention of this absolute difference*, to this division of roles between an apolitical reserve on the one hand and the shrinking of public life to the realm of passions and interests

on the other. In order to free the sciences from that politics, we have had to repoliticize Science.

10. It is surprising to see that, after a remarkable book on technology in Heidegger, Michael Zimmerman (1994) approaches the philosophy of ecology without shaking up the traditional political position of nature in the slightest. Many other examples of this modernism could be found.

11. To be convinced of this, it suffices to reread one of the most influential thinkers ecology can boast, Hans Jonas, to see to what extent he finally reappropriates an obligation that the proponents of “natural law” in earlier times would never have dared to impose, because nature adds its formidable moral requirement to the power of causes: “Thus, our showing up to now that Nature harbors values because it harbors ends and is thus anything but value-free has not yet answered the question of whether we are at pleasure or duty bound to join in her ‘value decisions’: whether, to put it paradoxically, the values undeniably entertained by and for herself are indeed valuable (even whether *having* values as such is valuable!)—in which case alone assenting to them would be a duty” (Jonas 1984, 78). There are thus now two reasons instead of one to obey nature: “In our counterdictum, the ‘ability’ means that of releasing causal effects into the world, which then confront the ‘ought’ of our responsibility” (128).

12. Let us not confuse this with the critique of unspoiled nature, or “wilderness,” to which the second section will be devoted.

13. Once again, as I know perfectly well, there are countless nuances among all the thoughts that I am gathering together quite unjustly under the heading of philosophy of ecology.* The urgency for me lies neither in fairness nor in erudition, but in the creation of a space entirely freed from the grasp of nature. From this necessarily partial and even partisan viewpoint, the nuances disappear very quickly. However, from the very first words—and it is easy to convince oneself of this—in the writings of those excellent authors whose work I have too hastily amalgamated, nature once again becomes the source of all moral and scholarly demands. Jonas is not the only example; William Cronon’s is even more striking. Cronon is the author of probably the best book there is on the history of an environment (Cronon 1991). And yet he concludes the introduction to a book that brings together the most sophisticated American postmoderns with a sentence that leaves the old nature completely intact: “And *yet* the rock remains, as do the trees and the birds, the wind and the sky. They are first and foremost themselves, *despite* the many meanings we discover in them. We may move them around and impose our designs upon them. We may do our best to make them bend to our wills. *But in the end* they remain inscrutable, artifacts of a world that we did not make and whose meaning for themselves we can never finally know. . . . This silent rock, this nature about which we argue so much, is also among the most important things *we have in common*. That is why we care so much about it. It is, paradoxically, the uncommon ground we cannot help but share” (Cronon 1996, 55–56, my italics). Six hundred pages of deconstructionist criticism follow, letting nature play the role it has always played in modernism: that of a world *already common*, indifferent to our disputes!

14. For the time being, we do not need a precise definition of modernism. It is enough to know that the relation between Science and society offers, as I see it, the surest way to distinguish between “moderns,” “premoderns,” “antimoderns,” and “post-moderns”—on all these points, see Latour 1993. If the use of the adjective surprises,

readers may turn right away to the first section of Chapter 5, “The Two Arrows of Time.”

15. I am well aware that there is no lack of good reasons that would make it possible to explain why, in the heat of a new battle, ecological thinkers have not devoted all their strength to discussing the political nature of nature. Like Sartre before them, they did not want to dishearten the proletariat by beginning to doubt the Science that seemed to them to serve as the indispensable lever for public emotion. This “strategic naturalism” allowed them to turn these famous ineluctable laws of nature against their enemies. Their tactics may have been good ones in war, and it is somewhat unfair to criticize them for this expedient use of nature, but it still remains bad political philosophy. In the long run, one cannot pour new wine into old skins. See, for example, the caricatural use of scientism in Paul Ehrlich and Anne Ehrlich (1997); the authors simply wanted indisputable “good” science to triumph over the “bad” science of the reactionary ideologues. A philosophy of ecology that did not absorb the controversies among scientists would neglect all its intellectual duties.

16. There is no shortage of remarkable works on the impossibility of stabilizing the modifier “natural.” My two favorites are Alston Chase (1987), and Cronon’s astonishing book on Chicago (1991). On parks, the example of my friend David Western (1997); for an introduction, see Cussins 1997. For France, see Danny Tromm’s fascinating thesis (1996). The connections between the patrimonialization of art and that of nature are made very clear in Poulot 1997. See Daston 1998, a fascinating work on the history of nature in science, and Daston and Park 1999.

17. In all this research I have greatly profited from Lafaye and Thévenot 1993 and Thévenot 1996; these works displace the false debate about nature by using the key notions of proximity and attachment.

18. This is the whole problem of the “Seventh City,” so called by allusion to the work of moral and political philosophy initiated by Luc Boltanski and Laurent Thévenot (1991). If there is a seventh city in addition to the six that the authors have deployed, then this opens up the question of the limits of common humanity (Latour 1998).

19. This is how I interpret the expressions “risk society” and “manufactured uncertainties” popularized by Beck (1992). Beck certainly does not mean that we are more at risk today than we were yesterday, but that consequences are attached to objects in a way that is forbidden by modernism. A risky attachment is a “smooth” object to which its associated risks, its producers, its consumers, its cortege of “affairs” and juridical challenges, are finally added (Beck 1995). In short, an interesting, tangled object, very close to the objects described by anthropologists. See Strathern 1992 and Thomas 1991.

20. See the very detailed report that makes it possible to distinguish the case of asbestos from that of the prions responsible for mad cow disease: “In fact, the dossier [that of asbestos] was born very early in the alarmist mode (by 1900); later, at the time of maximum production and consumption of the different varieties of asbestos in the 1970s, it shifted to the mode of conflict and protest and then passed into a modality of bureaucratic responsibility, which, after the fact, gives the impression of a nearly fourteen-year-long blanket of silence, only to emerge again into the mode of scandal and accusation (‘contaminated air’)” (Chateauraynaud, Hélou, et al. 1999, 124). See also Chateauraynaud and Tornay 1999.

21. To remain compatible with the terminology introduced in Latour 1993, we could also call them quasi objects. The expression “matters of concern” simply adds to objects all the machinery that is necessary to maintain them as established facts, as was recognized more than half a century ago by Ludwig Fleck (1935), and recently documented, for instance, by Hans-Jörg Rheinberger (1997).

22. Genetically modified organisms would provide another marvelous example, since they are already agitating everyone *before* having had any unwanted consequences, their proponents and opponents operating in full view *before* they are part of any stabilized practice.

23. It seems to me that, for the French at least, the contaminated blood scandal served as an intermediary between the last modernist objects and the first risky objects of ecology. It was still possible at that point to believe that the drama of contaminated blood could be absorbed within the old framework of controlled action. This is no longer the case with mad cow disease and still less with the “all-out war” over genetically modified organisms. See the remarkable book, a very important one for me, by Marie-Angèle Hermitte (1996); the role played by the expectation of absolute certainties on the part of Science is used to explain the French government’s slowness to react.

24. I shall not define this term until Chapter 2; for the time being, it retains its undifferentiated meaning of “human or nonhuman actor, anything that acts—that is, modifies the state of another.”

25. Whence the importance for my work of the thesis of Florian Charvolin (1993), which built on a meticulous analysis of the archives to demonstrate the enormous work of aggregation necessary for first minister of the environment’s controversial and badly organized intervention.

26. Safaris are now organized in the Chernobyl region to watch wildlife; naturalists worry that the possible end of the Cold War in Korea will threaten the wildlife that has been flourishing in the no man’s land along the demarcation zone! As to the most polluted zone of the United States, it has also become the richest in new species (Cronon 1996).

27. Moreover, this is why ecological thinkers have so often been infatuated with the sciences of phenomena far from equilibrium, even though these sciences can offer them nothing more than a metaphor for the much more fundamental imbalances that political ecology has been able to bring to light. Yes, nature is “far from equilibrium,” but in an entirely different sense than chaos theories or other borrowings from physics claim! The ideas of nature and of equilibrium are contradictory. See Botkin 1990 and Deléage 1991.

28. This link between deep ecology and democracy remains uncertain, as Luc Ferry has shown (Ferry 1995). The example of Jonas is particularly clear, for example, when he writes: “What we are talking of so far are the governmental advantages of any tyranny, which in our context one must hope to be a well-intentioned, well-informed tyranny possessed of the right insights . . . If, as we believe, only an elite can assume, ethically and intellectually, responsibility for the future” (Jonas 1984, 147). It is decidedly difficult to free oneself of the vanities of scientific power, especially when one can with moral rectitude join the magisterium of Science.

29. See Naess 1988; even if Arne Naess’s work goes a little deeper than deep ecology,

he aims at “self-realization,” which confuses the issue, for we return finally to a solid anthropocentrism. He nevertheless addresses a question that I have left aside, that of the psychology of citizens linked by what he calls relational fields to the totality of the biosphere, thanks to “ecosphy.” We shall see in Chapter 4 how to grant ethics a completely different role and what political work is necessary before we can speak of “relational field,” “ecospheric belongings,” or even any sort of unification. Naess, in his pleasant gobbledy-gook, is a good representative of this philosophy of ecology that does feel the metaphysical limits of the division between nature and humanity, but that strives to “go beyond” the “limits of Western philosophy” instead of delving into the political origins of this division. If we are to combat this division, it is by adopting a different politics, not a different psychology. On Naess’s biography, see Rothenberg and Naess 1993.

30. From Ferry 1995, those French readers who await the permission of philosophers to think politically concluded that it was not useful to be interested in the philosophy of ecology, and that a good old Kantian definition of humanity as separation from nature would be perfectly sufficient. What can the reasonable ecologist respond to the deep ecologist? Ferry asks, for example. “Quite a few things, actually. Starting with the fact that the hatred of the *artifice* linked to our civilization of uprooting is also a *hatred of humans as such*. For man is the antinatural being par excellence. This is even what distinguishes him from other beings, including those who seem the closest to him: the animals. This is how he escapes natural cycles, how he attains the realm of culture, and the sphere of morality, which presupposes living in accordance with laws and not just with nature” (Ferry 1995, xxviii). It is one thing to be skeptical of deep ecology; it is another to define humanity as separation from pure immediacy. Ferry never realizes that he shares exactly the same nature as those he combats. Only the color is different. Moreover, as a good Kantian, he finds no better solution than the aestheticization of relations between humanity and nature.

31. See the fascinating compendium by Jacques Brunschwig and Geoffrey Lloyd (2000 [1996]), especially the articles by Lloyd and Barbara Cassin.

32. It suffices to read François Jullien (1995, 1997) to notice alternatives that have been available to political epistemology for a long time. There is nothing inevitable in the recourse of politics to Science, as we can see in reading Lloyd 2000 (1996). We find the same difference in political epistemology in Sophie Houdart’s fascinating thesis (2000) on a Japanese laboratory of behavioral biology.

33. As we shall see later on, the positions do not change in the slightest if one uses the unity of “society in general” and power relations. The same paralysis results. This is why the sociological critics of deep ecology never go very far, for they take from society and its power relations the wherewithal to critique the extreme nature of their adversaries. See the extreme example of Murray Bookchin (1996): in seeking to rehabilitate politics without modifying its definition, Bookchin has, in the name of “social ecology,” extended the lease not of nature but of the class struggle!

34. The expression was used for the first time, as far as I know, by Eduardo Viveiros de Castro (1998, 446), in relation to the Amazonian conception of the body. Let us note, however, that one of the French journals in the field puts the three terms *Natures, Sciences, Sociétés* in the plural, so the French are not hopeless after all . . .

35. If it sufficed to critique the notion of nature to escape from it, political ecology

would have the philosophy to which it aspires. Unfortunately, this is not the case. An article with such a flamboyant title as “La nature est morte, vive la nature!” seeks to demonstrate that, after the mechanistic view of nature, another “more organic” vision is going to take its place. “The new conception of nature is more organic . . . and includes man as, in [Aldo] Leopold’s words, ‘a plain member and citizen of the biotic community’” (in *Hastings Center Report* [September–October 1992]: 23). One might expect some measure of doubt from John Baird Callicott about the political usefulness of the notion of nature. But no: in passing, and without even noting the fact, he has short-circuited the work of unification. We have thus moved from the presumed dualism of the past to a comprehensive unity, without noticing that nature plays the same role twice!

36. It is no accident that I am using the term “secularization.” If naturalization has played such an important role in the antireligious struggle, it is because it has always used the object of nature, the causal object, the smooth matters of fact, as a battering ram to knock down the door of powers and of obscurantism. Nature remains fully permeated by the ancient notion of religion that it has fought.

37. We shall see later on, and especially in Chapter 5, that this collective cannot identify itself in the singular without a new work of political composition—unlike nature, whose unity seems always achieved in advance without anyone’s lifting a finger (Latour 2002e).

38. The effort to reconcile these two positions, as artificial as they are extreme, provides all the dramatic interest of Soper 1995, one of the best books written for heightening the tension between the social construction of reality on the one hand and the feminist and political themes of ecology—which need a solid realism to maintain the critical tension—on the other.

39. A long and rich tradition can be traced from the very early Barnes and Shapin 1979 to Schama 1996 through, for instance, Thomas 1983.

40. The dialectical interpretation changes nothing, for it maintains the two poles, contenting itself with setting them in motion through the dynamics of contradiction.

41. In a book that is very well informed about the English ecology movements, Phil Macnaghten and John Urry (1998) do not succeed in breaking the attachment of these movements to nature, except by showing that it is “socially constructed” in the form of landscape and wilderness. Criticism is thus exercised through the *refusal* to recognize in any of the actors engaged in the environment any hold whatsoever on reality (which is thus left, though the authors do not acknowledge this, to the scientists capable of speaking about nature in the singular).

42. I am using the metaphor of secularization for the time being, but in the conclusion I will have to note that this metaphor is clearly inadequate, since one cannot consign sciences to the inner subjective self, as had been thought possible for ending religious wars.

43. This is the theme of Moscovici’s premonitory book (Moscovici 1977 [1968]).

44. See Ian Hacking’s useful presentation (Hacking 1999) of the various shades of social constructivism.

45. Fleck (1935) long ago offered an example of a realist version of science, simply by digging further and deeper into what empiricism had to offer. For a realist version of

science studies, see Latour 1999b. Nothing proves that reality and unity are synonyms (James 1996 [1909]). On the contrary, all those studies tend to take realities and pluralities as synonymous and to show in the work of unification a distinct and properly political labor.

46. One should not hasten to say that the social is going to lack transcendence the way a pigeon enclosed in a vacuum pump would lack oxygen. We shall discover later on the transcendence proper to the *demos*, but not before Chapter 5. In the meantime, it suffices to remember that the apparent “mere” immanence of the collective is only an avatar of the allegory of the Cave.

47. If sociology had managed to inherit from Gabriel Tarde (1999 repr.; see also Tarde 1969) as well as from Emile Durkheim, this conception of the social world as association would never have been forgotten and sociology would always have known how to cross the artificial border between nature and society without raising an eyebrow. In any case, that would have given me more courage to define sociology as the science of associations (in Latour 2002c and even already in Latour 1988).

48. This is the expression offered by William James (1996 [1909]).

49. See the Conclusion for other roles open to the social sciences besides critical denunciation.

50. See Rothenberg and Ulvaeus 1999, 36–51 (“Will the Real Chief Seattle Please Speak Up?”) for the story of one of the frauds through which an anthropological document about the Indian Chief Seattle concerning the respect owed to Mother Earth was invented out of the whole cloth. This essential of deep ecology was the invention of a Yankee preacher!

51. I see a historical turning point in the recent creation of a chair at the Collège de France, successor to Levi-Strauss’s chair, for “anthropology of nature,” since that discipline had always before dealt with *cultures*. See Philippe Descola 2001.

52. Descola 1996, 97. If there is something more astonishing than the almost total absence of references to sociology or the social history of the sciences in the works of the philosophy of ecology, it is the even greater absence of comparative anthropology.

53. Hence the importance for me of Descola 1994 and especially Descola 1996. The “monist” anthropologist has to be interested, precisely, in naturalism above all. “The conclusion seems inescapable: suppress the idea of nature and the whole philosophical edifice of Western achievements will crumble. But this intellectual cataclysm will not necessarily leave us facing the great void of Being which Heidegger ceaselessly denounced; it will only reshape our cosmology and render it less exotic for many cultures who are on the verge of embracing the values of what they believe is modernity” (Descola 1996, 98). It is not certain, however, as we shall see in Chapter 5, that anthropology, even if it is comparative, even if it is monist, can measure up to the new political tasks required by the controversial collection of the aforementioned “cultures.”

54. We shall see in the final section of Chapter 5 how to replay the primitive scene of the “first contacts” by staging a more diplomatic encounter.

55. On this entire invention of the “other” by the double politics of Science, see Latour 1993. The distinction between “them” and “us” arises entirely from the absolute difference, introduced into facts and values since “they” would not differentiate be-

tween the two, that confuses the order of their society with the order of the world, whereas “we” know how to differentiate between the two orders. In fact, the distinction between “us” and “them” is no more than the exportation of the fact-value distinction. Thus we change from one alterity to another as soon as we change from one conception of Science to another.

56. Here I am politicizing Whitehead’s critique of the distinction between primary and secondary qualities, as well as of the strangeness of the role given to the human mind: “The theory of psychic additions would treat the greenness [of a blade of grass] as a psychic addition furnished by the perceiving mind, and would leave to nature merely the molecules and the radiant energy which influence the mind towards that perception” (Whitehead 1920, 29–30). The same critique, based on Whitehead and James, of the division between primary and secondary attributes is also found in Naess 1988, but with a very different solution.

57. See the enormous analytic work summed up in Fox-Keller 1986 on the link between feminist questions and science studies; see also Schiebinger 1999.

58. The whole interest of Donna Haraway’s work stems from the fact that she has brought together two projects, that of feminism and that of political ecology, not in the simplistic form Carolyn Merchant gave them (1980, 1992), but by taking as the central point of her investigation in each case the question of science and its uncertainties. See in particular Haraway 1989 and Haraway 1991. For a fascinating illustration of the combined debates of feminism, science studies, and sociobiology, see the arguments brought together in Strum and Fedigan 2000.

59. Here I am borrowing Whitehead’s striking expression of the bifurcation of nature: “What I am essentially protesting against is the bifurcation of nature into two systems of reality, which, in so far as they are real, are real in different senses. One reality would be the entities such as electrons which are the study of speculative physics. This would be the reality which is there for knowledge; although on this theory it is never known. For what is known is the other sort of reality, which is the byplay of the mind. Thus there would be two natures, one is the conjecture and the other is the dream” (Whitehead 1920, 30). Whitehead nevertheless carefully maintains the notion of nature, which, for reasons of political philosophy that do not concern him, I prefer not to retain; but see Isabelle Stengers 2002.

60. It is to this pathetic choice that Luc Ferry and those who engage in polemics against him would like to reduce us. See, on the contrary, the research that has been very important to me conducted by Cussins 1996 on the subjectivities of hospitals, and by Emilie Gomart (1999, 2002) on subjects’ experimentation with drugs.

2. How to Bring the Collective Together

1. I had called this Republic a “Parliament of Things” at the end of my inquiry into the Moderns (Latour 1993). Since then, thanks to a contract with the Ministry of the Environment, I have had the opportunity to study “local parliaments on water,” water district councils charged by the law on water conservation and quality to represent portions of rivers—see Latour and Le Bourhis 1995.

2. Michel Serres has often made this observation, and he made it the essential argument of *Statues* (Serres 1987; see especially p. 110). See the fascinating study by Yan Thomas on the judicial origin of the *res*: “When [the *res*] appears in this function, it is not as a seat where the unilateral mastery of a subject is exercised . . . If the *res* is an object, it has this function above all in a debate or an argument, a common object that *opposes* and *unites* two protagonists within a single relation” (Thomas 1980, 417). And, further on: “Its objectivity is ensured by the common agreement whose place of origin is controversy and judicial debate” (418).

3. It is in the famous opposition between Boyle and Hobbes (Shapin and Schaffer 1985) that the double proposition has taken on its clearest form for me, but it now forms the common program of a large part of political epistemology.

4. Michel Serres commented in advance on the Kyoto conference when he wrote masterfully about Galileo: “Science won all the rights three centuries ago now, by appealing to the Earth, which responded by moving. So the prophet became king. In our turn, we are appealing to an absent authority, when we cry, like Galileo, but before the court of his successors, former prophets turned kings: ‘the Earth is moved.’ The immemorial, fixed Earth, which provided the conditions and foundations of our lives, is moving, the fundamental Earth is trembling” (Serres 1995, 86).

5. The new history of the sciences is noticing retrospectively that this was always the case, even for Galileo (Biagioli 1993), Boyle (Shapin and Schaffer 1985), Newton (Schaffer 2002), and Kelvin (Smith and Wise 1989); these great scientists have never really been seated apart, since they established the division whose genealogy is traced in detail by the abovementioned historians. We have never been modern, even in Science—especially in Science.

6. For once, the epistemology police is in agreement with political epistemology, but for opposite reasons: such is the background for what have been called the science wars.

7. Serres has nevertheless gone furthest in questioning the opposition, thanks to his original use of law: “So since its establishment, science has played the role of natural law. This time-honored expression conceals a profound contradiction, that between the arbitrary and the necessary. Science conceals the same contradiction, in exactly the same places. Physics is natural law: it has played this role since its dawning” (Serres 1995, 23). But out of disdain for politics and even more for the social sciences, he has kept the premature oneness of nature intact; indeed, he has given it a new lease on life.

8. We have already seen this argument in Jonas 1990, and in Serres’s famous “war of everyone against everything” (Serres 1995, 15).

9. Such is the question raised in Stone 1985 and Stone 1987. The granting of speech to humans and nonhumans is further complicated by the obvious difficulties of collective persons or corporate bodies. “I am sure,” Christopher Stone argues, “that I can judge with more certainty and meaningfulness whether my lawn needs water, than the Attorney General can judge whether and when the United States wants (needs) to take an appeal from an adverse judgement by the lower court” (Stone 1974, 24, also quoted in a marvelous little book by Miguel Tamen (2001).

10. This is the innovation, decisive for me, of Serres’s *Natural Contract*; we shall try to tease out all its effects. “What language do the things of the world speak, that we

might reach an understanding with them, contractually? But, after all, the old social contract, too, was unspoken and unwritten: no one has ever read the original, or even a copy. To be sure, we don't know the world's language, or rather we know only the various animistic, religious, or mathematical versions of it. When physics was invented, philosophers went around saying that nature was hidden under the code of algebra's numbers and letters: that word *code* came from law. In fact, the Earth speaks to us in terms of forces, bonds, and interactions, and that's enough to make a contract" (Serres 1995, 39).

11. For recent descriptions of this work of making things in the laboratory speak, or rather write and trace, see Jones and Galison 1998 and Latour and Weibel 2002.

12. The distinction between primary and secondary qualities quite clearly required that controversies among scientists not be visible. How can we go about stabilizing them, today, if scientists cannot reach agreement among themselves about the common background, the furnishing of the world? One can oppose "the" genetic makeup to culture, but only as long as there is only one definition of the gene, not if there exist several of them—for controversies over genes, see Lewontin 2000 and Kupiec and Sonigo 2000.

13. Pierre Lascoumes (1994) and Marie-Angèle Hermitte (1996) have assessed the problems created for national governments by the experts' disagreements. See also the fine example in Sheila Jasanoff 1992.

14. By failing to study the innumerable discussion forums of researchers, the tradition stemming from the Cave separated demonstration from rhetoric, two regimes of speech that Barbara Cassin calls *apodeixis* and *epideixis*, demonstration and persuasion (Cassin 1995). We owe the recent weakening of the distance between these two forms of construction of the world to laboratory studies on the one hand and studies of scientific rhetoric on the other. See several fine examples in Dear 1991, Licoppe 1996, and Rosental 2000. Françoise Bastide's work, unfortunately interrupted too soon, also strikes me as very fruitful (Bastide 2001).

15. This is what Michel Callon and Arie Rip called hybrid forums, in Callon and Rip 1991. For a more developed argument, see also Callon, Lascoumes, et al. 2001.

16. I shall show in Chapter 4 how we can profit from the tremendous work of Jürgen Habermas (Habermas 1990, Habermas 1996) on the transcendental conditions of communication. At this stage, however, Habermas's work seems counterproductive, for we would have to subject it, as we would Kantian morality, to too much twisting in order to apply it to nonhumans, whom he seeks precisely to keep at a distance. By succeeding in separating human communication from instrumental reasoning still more profoundly (and this is the aim of his philosophy), one would succeed only in moving the two assemblies even farther apart and in giving still more power to the first—that of reason—which renders the second—that of humans—mute! Haberman's enterprise is a strange one, in that it aims to silence those whom he aspires to see speaking more freely.

17. Marie-Angèle Hermitte's book (Hermitte 1996) on the contaminated blood scandal in France shows magnificently all that needs to be changed in the conception of expertise and responsibility as soon as it is no longer possible to hypothesize that knowledge brings controversies to an end. The same is true of "mad cow disease"—an excellent example—and of course of the continuo provided to the experts' theories by

the long controversy over climate change. Those who wait for absolute certainty before acting are living in the wrong time. This is the main lesson of the precautionary principle.

18. In Chapter 4 we shall return to the new meaning that has to be given to the term “decision,” which I shall link to the key notion of institution*.

19. Strange: the list of indictments taken up again by Beck maintains intact the tradition’s capacities for speech without remarking that for a very long time now humans have ceased to be the only ones endowed with the use of speech (Beck 1997, 122).

20. Here it would be useful to be able to show the role of the circulating references that establish bridges between words and things (Hacking 1983). Numerous examples can be found in the remarkable work by Peter Galison (1997) and in the detailed studies by Karin Knorr-Cetina (1999) and Hans-Jörg Rheinberger (1997). See also the accessible and detailed example in Latour 1999b, and in the last section of this chapter the key notion of articulation*.

21. The whole problem of Habermas’s work lies here, for what he says about humans would make an excellent definition of nonhumans! “As soon as we conceive intentional social relations as communicatively mediated in the sense proposed, we are no longer dealing with disembodied, omniscient beings who exist beyond the empirical realm and are capable of context-free actions, so to speak. Rather, we are concerned with finite, embodied actors who are socialized in concrete forms of life, situated in historical time and social space, and caught up in networks of communicative action (Habermas 1996, 324). This is exactly what becomes of things that have been freed from the anthropomorphism of the object! Habermas, while believing that human beings had to be liberated, forgot those beings that *made* them human: nonhumans, the great losers in his moral philosophy.

22. There is now a vast literature on scientific instruments and the various forms of visualization and argumentation they allow. The accumulation of these studies has completely subverted the old monologue of representation speaking about the world across the gulf of reference. This gulf has now largely been filled in, and no one today will take as an example of a scientific utterance “the cat is on the mat,” an utterance whose truth value would depend on whether or not the said cat is present on the said mat. Some starting points can be found in Lynch and Woolgar 1990 and Jones and Galison 1998. As with many of the themes in the previous chapter, specialists in my field are confronted with the following alternative: either we can keep on offering the same introductions, to modify the image that readers have of scientific practice, or we can take this literature for granted and tackle the truly interesting problems that arise in a multitude of fields as soon as we have modified the theory of science that was paralyzing us previously.

23. I have noticed that all discussions on the abandonment of the distinction between object and subject always fall flat, for most readers who have some familiarity with German philosophy believe that the task has *already* been accomplished by Hegel and his descendants, thanks to the movement of dialectics. Now, dialectics, far from solving the problem, makes it insoluble, since it makes contradiction itself the driving force behind history and even the cosmos. This amounts to extending the artifacts of modernist thought to the world itself. No anthropomorphism is more complete than the one that makes the universe share in the category errors of a few philosophers of

the sciences. We can get a good idea of this way of proceeding from a paragraph in Hegel's *Logic* where Hegel criticizes Kant for having limited contradiction to thought instead of assigning it to things: "The blemish of contradiction, it seems, could not be allowed to mar the essence of the world [for Kant]; but there could be no objection to attach it to the thinking Reason, to the essence of mind . . . But if a comparison is instituted between the essence of the world and the essence of the mind, it does seem strange to hear how calmly and confidently the modest dogma has been advanced by one, and repeated by others, that thought or Reason, and not the World, is the seat of contradiction" (Hegel 1817, 77 [§48]). Kant may be wrong in assigning to thought a contradiction that derives, as we have just seen, from the fact that the moderns are incapable of conceptualizing the political order, but at least he is wise enough not to drag the world into his own delirium. Hegel is unfortunately not so restrained, and, thanks to him, the universe is starting to become agitated under the totally improbable forms of objectivity, subjectivity, and the history of the mind. Who is the more naive? Let us have the civility not to drag the associations of humans and nonhumans into such wars. Unfortunately, a large part of the philosophy of ecology retains in a popularized form this ambition to "get beyond the contradiction between man and nature" (see Chapter 1).

24. Collins and Kusch (1998) go further than anyone else in science studies toward the analysis of this dichotomy between human action and human behavior and present the most carefully argued version of it.

25. For an anthropology of fists pounding tables, see the witty article by Ashmore, Edwards, et al. (1994) and the detailed description of Herrstein-Smith 1997. Many fists were bruised and many desks pounded during the "science war" episodes.

26. This minimal definition of action was offered some time ago by the semiotics of A.-J. Greimas (1976) and brought to science studies by Latour 1988. It has proven very useful for the analysis of the emergence of new actors whose performances (what they do in trials) always precede their competences (what they are). See numerous examples in Latour 1999b. For an astonishing analysis of the ontologies proper to the new laboratory actors, see Rheinberger 1997.

27. For a very early and magnificent description of all the agencies necessary for the accompaniment and stabilization of a fact, see Fleck 1935.

28. For the use of those notions of actor and actant to erase the distinction between social and nonsocial elements, see the case of a technical project in Latour 1996a.

29. The notion of presentation comes from Stengers 1996; it will play an essential role in Chapter 5 as we exit from the solution of mononaturalism and multiculturalism thanks to the role of diplomacy*.

30. Let us not forget that the social as association, invented by Tarde, bears no relation to the social of Durkheim. On the difference between the two, see Latour 2002c.

31. Isabelle Stengers has suggested using the expression "the ecology of practices" to characterize her project (Stengers 1996), but one can also speak of risk, as Beck does (Beck 1995), or of the public, as Dewey does, defining it as follows: "Those indirectly and seriously affected for good or for evil form a group distinctive enough to require recognition and a name" (Dewey 1954 [1927], 35).

32. François Jullien's work (Jullien 1995) on Chinese philosophers has the great merit of showing us to what extent Westerners have dramatized the question of the external world and made effectiveness incomprehensible (Jullien 1997).

33. I have come to understand this thanks to Gomart 1999 and Gomart 2002, along with a whole series of recent works on what becomes of subjectivity once objectivity has been transformed by science studies; see in particular Despret 1999 and Berg and Mol 1998.

34. One of Isabelle Stengers' contributions is that she has shown how the social sciences would finally become scientific if they agreed "to treat humans as things," that is, paradoxically, with all the respect with which a researcher in the so-called "hard" sciences manages to let himself be surprised by the resistances offered by his object of study (Stengers 1997b). The indifference of nonhumans protects them against objectivization, whereas humans, always concerned about doing well (especially when a lab coat asks one of them to imitate an object), are not very good at defending themselves against enrollment in objectivization, proving the anthropomorphic and polemical role of objectivity, moreover, by their perfect imitation! The argument is developed still further in Despret 1996, and especially Despret 2002, where it becomes a means for sorting out the experimental arrangements of psychologists. On what I call the Stengers-Despret shibboleth, see Latour forthcoming.

35. On the properly metaphysical meaning of the word "proposition," see Whitehead 1978 [1929].

36. This was the thrust of my effort in Latour 1999b, and it serves as a philosophy of the sciences in the present book. I am grateful to Geneviève Teil for her fine example (Teil 1998).

37. It is a great misfortune that empiricism was invented during an ongoing political battle for the control of matters of fact: instead of a *maximum* of contact between speech and charged phenomena in language, people had to be content with a *minimum*, mere "sensory data," in order to limit the scope of discussion as much as possible (Whitehead 1920). For this sad political history of empiricism, see Shapin and Schaffer 1985 and Poovey 1999.

38. There is a magnificent discussion of this Deleuzian point in Zourabichvili 1994, although Deleuze could have learned it from Gabriel Tarde: "For thousands of years, people have been cataloguing the various manners of being, the various degrees of being, and they have never had the idea of classifying the various species, the various degrees, of possession. Yet possession is the universal phenomenon, and there is no better term than 'acquisition' to express the formation and growth of any being whatsoever. The terms 'correspondence' and 'adaptation' made fashionable by Darwin and Spencer, are vaguer, more equivocal, and they do not grasp the universal phenomenon from the outside" (Tarde 1999 [repr.], 89). The argument owes nothing to an anti-essentialist reflex: there are indeed essences and properties, but they come into play after the fact, once the work of institutions has been accomplished according to due process.

39. The works of the epistemologist Alexandre Koyré present the canonical version of this presumed break between the order of the natural world and the order of the social world, at the very moment when the whole of public life is falling under the con-

trol of the primary qualities. Concerning the same period, we can contrast Koyré's treatment (Koyré 1957) with that of a political epistemologist, in Shapin 1996.

3. A New Separation of Powers

1. The science wars, from this standpoint, are not lacking in a certain grandeur. I would join the camp of the "Sokalists" right away if I heard someone calmly proclaim that the sciences are one "system of beliefs" among others, a "social construction" without any particular validity, an interplay of political interests in which the strongest wins (positions that are usually attributed to me by people who have not read my work!). "That means war!" as Isabelle Stengers reminds us (Stengers 1998), and there is good reason to fight to prevent this extension of the obscurantism of the Cave to the Enlightenment. Still, the battle I am waging has a different aim: to keep anyone from depriving us of light by burying us in the inner reaches of the Cave, only to dazzle us later on with a projector that can only burn our retinas.

2. For a telling critique of the anthropomorphism implied in the notion of matters of fact, see Tarde 1999, repr., 44.

3. On the vascularization necessary for facts to exist, one could consult the whole of science studies from Fleck 1935 to Rheinberger 1997. Let us not forget that Science and the sciences do not have the same feeding habits: whereas Science is weakened by any trace of construction, the sciences are nourished by the work of fabrication allowed by laboratories. I am well aware that the theme of fabrication or the construction of facts necessitates a profound transformation of the notion of fabrication itself (Hacking 1999). I have attempted this myself several times, particularly in Latour 1999b, Latour 1999c, and again in Latour forthcoming.

4. The essential elements of this lengthy quarrel against empiricism, which Pierre Duhem made classic (Duhem 1904), can be found in Bachelard 1951 as well as in Popper and Kuhn.

5. We shall understand only at the end of Chapter 4 why these two terms are synonymous, even if the traditional dispute between the internal and external histories of science presents them as separated; see Pestre 1995. This separation, whose history Steven Shapin has studied (Shapin 1992), is actually just an artifact of the old Constitution.

6. Habermas (1996) attempts to find an intermediary between facts and values in the notion of norms. Like many of his solutions, this one has the disadvantage of retaining the defects of the traditional concepts, even as it finds astute social means to alleviate them. To discover the "procedural rationality" that is appropriate to political ecology (see Chapter 5), we must thus avoid the solution offered by the notion of the norm and dig deeper, in order not to retain the difference, consecrated by Habermas, between instrumental reasoning concerned with means and communicative action, which would be concerned with ends (Latour 2002a).

7. See for example the useful update on the discourses of genetics in Fox-Keller 2000.

8. This is why the distinction introduced in Chapter 1 between Science* and the sciences* owed nothing to this hope of purifying Science of any trace of ideology.

“Pure and autonomous” Science is still more remote from the sciences as they are practiced than is Science polluted by ideology.

9. Bachelard probably should be credited for the amount of energy devoted in France to washing the sciences clean of any trace of contamination through an “epistemological break” that always has to be begun anew, a constant battle against the “epistemological obstacles” that common sense, always mistaken, multiplies to suit itself (Bachelard 1967). See also Georges Canguilhem’s tireless efforts to purge the sciences of all their ideological adhesions, in Canguilhem 1988 (1968). Some prefer to forget this today, but during Althusser’s era people went so far as to try to purge Marx’s Science of its ideology. In this tradition, rationality is exercised only through a continual asceticism that separates it from what makes it exist. We can understand how difficult it is to found a Republic* with such an epistemology of combat.

10. On this work of art, see Waldron’s fascinating book (Waldron 1990).

11. Let us recall that a proposition* is not a term from linguistics; it designates the articulation through which the world is invested in words. A river, a black hole, and a fly fisherman’s union, as well as an ecosystem or a rare bird, are propositions. They are all similarly made of a still uncertain mixture of entity and speech.

12. For the time being, I shall use the term “institution” in a trivial sense. It will become clearer later on. At the risk of being tiresome, I should like to recall that for the practice of the sciences (and thus for the sociology of the sciences), “institution” is not a negative term but a positive one (Fleck 1935); the more the sciences are instituted, the more their reality and their truth increase. We shall see later on that the terms “institution” and “essence” are synonyms. On the relation between substance and institution, see Latour 1999b, chapter 5.

13. Let us recall again (see Chapter 2) that speech, in our argument, belongs from now on to assemblies of humans and nonhumans, and that the word *logos* describes the whole gamut from complete silence to complete speech, and the complex apparatus that gives voice to things and people alike.

14. The referendum organized by the Swiss in June 1998 is full of lessons from this standpoint. Since genetically modified organisms have to spread in fields, farmers became concerned parties in the discussion and claimed the right to add their grain of salt to the assured discourse of the lab coats. But the proliferation of voices in the course of the campaign (which was finally won by the industrials and the majority of researchers) was not limited to “classic” humans. Very quickly, as usual, the participants began to make nonhumans (genes, experimental fields, Petri dishes) speak differently; the lovely unanimity of these nonhumans found itself replaced by a lovely cacophony of experts subjected to the trial of a public discussion (Callon, Lascoumes, et al. 2001). In cacophony and kakosmos, the prefix is the same.

15. Another of Stengers’ expressions, “reliable witness,” should remind readers that humans are not necessarily involved and that it is not a matter of clearly expressing an opinion, either (Stengers 2000). As we shall see in the next chapter, the search for reliable witnesses is a risky enterprise, for which the overworked word “consultation”* does not seem to offer adequate preparation. By adding the notion of pertinence to the notion of consultation, we hope to alleviate its weakness, provided that the results of Chapter 2 on speech impedimenta are not forgotten. Democracy may be logocentric, but in the *logos* nonhumans speak too, or rather mumble. The *logos* encompasses not

only the stammerings of the orator Demosthenes but the complete gamut from silence to logorrhea.

16. The “bifurcation of nature,” to use Whitehead’s expression (Whitehead 1920), has become, if I dare say so, unconstitutional . . .

17. See especially the role of “whistle blowers,” as described by Chateauraynaud and Tornø (1999), and Sheila Jasanoff’s important book (Jasanoff 1995). For the difference between indoor and outdoor research, see Callon, Lascoumes, et al. 2001.

18. We recognize in the dislocation between the continuing movement of research and the work of closure, the emergence of the principle of precaution, so important for all these questions. See Godard 1997, Ewald 2001, Dratwa 2003, and Sadeleer 2002.

19. As we shall see in the following section and especially in Chapter 5, the only answer to this question is an experimental answer that can serve as a serious substitute for morality only after the introduction of the notion of collective experience*.

20. On the distinction between science and law, see Latour 2002d.

21. In all the following diagrams, I will use the metaphor of lower and upper house to designate these two assemblies that redissect the collective unified in the previous chapter. The metaphor is a bit far-fetched, I know, but I want to retain as many of the terms associated with our Western democratic tradition as possible.

22. Ulrich Beck has gone quite far in his exploration of the politics of risks with his invention of a new form of bicameralism. He clearly connects laboratory experience with that of the collective: “At this time there are two types of sciences that are in the process of diverging within the civilization of danger: the old laboratory science, still flourishing, that opens up the world through mathematics and technology but that has no experience, and a new form of political discursivity that, thanks to experience, makes the relation between ends and means, constraints and methods, visible in the form of controversies” (Beck 1997, 123). He sees the solution in the invention of two houses: “We must thus resort to two enclaves or forums, perhaps a sort of High Court or Technology Court that would guarantee the separation of powers between technical development and technical realization” (124). And his solution cannot be seen as anti-scientific any more than mine can: “Contrary to a widespread prejudice, doubt once again makes everything possible—science, knowledge, the critical spirit, and morality—but all this in a smaller size, more hesitant, more personal, more colorful, and more capable of learning, and by the same token also more curious, more open to contradictions, to incompatibilities, since that depends on the tolerance acquired thanks to the ultimate certainty that one will be mistaken in any event” (126).

23. This is a way of doing justice to Hermitte’s requirements in order to produce a “theory of decision making in a situation of uncertainty” (Hermitte 1996, 307) and to accept all the consequences of the principle of precaution.

24. A number of recent writings constitute a veritable anthropology of formalism that is profoundly modifying the theoretical description of theory work. See in particular Pickering 1995, MacKenzie 1996, Galison 1997, and Rosental 2000.

25. The contaminated blood scandal as well as the debates over the acceptance of genetically modified organisms make it possible to grasp the intermediate stages between local uncertainty and global certainty. On this notion of relative existence, see Latour 1999b, chapter 5.

26. The critique of expertise and its limits is capably analyzed in Jasanoff 1995, Lash,

Szerszynski, et al. 1996, and Irwin and Wynne 1996, and soundly deconstructed in Callon, Lascoumes, et al. 2001. All these studies stress the extent to which the old pedagogical conception of the relations between experts and the public is now outdated.

27. These ideas of transcendence and immanence all come, obviously, from the myth of the Cave and from a weakened conception of the social. They must nevertheless be taken seriously, as long as we have not restored to the collective its own proper form of immanence, which Plato mockingly but accurately calls *autophuos* in *Gorgias*. On this point, see Latour 1999b, chapters 7 and 8.

28. I have rarely given a lecture on science studies without having someone counter with the Lyssenko affair, followed three minutes later with the objection of the Nazis' "Jewish science" (the order may change but the time lapse remains more or less stable). Those who might still have doubts about the morality of the bicameralism defined here may try to put it to the test with these two obligatory tortures of the epistemology police. The Lyssenko affair does not attest to an invasion of genetic science by political ideology, but, on the contrary, to an invasion of politics by Science, in the case in point the scientific laws of history and economics. With Red totalitarianism, the two short-circuits of Science and violence, Right and Might, reinforced one another to produce at one and the same time very poor politics—neither potato growers nor geneticists were consulted—and very poor science—the people involved managed neither to follow the influence of the genes nor to document the importance of the climate and modes of cultivation. How many seconds does it take to understand that the scientific ambitions of the Nazis did not respond to any of the requirements of perplexity, consultation, publicity, or closure? To suppress by violence all the slowing down of the procedure of the sciences and of politics in order to produce indisputable laws of history and race in the name of which they could kill *en masse* and with a clear conscience is not exactly the goal pursued by science studies . . .

29. I have been working stubbornly for twenty-five years to take advantage of this tiny problem: How is it that people can so easily accept a history of scientists but have so much difficulty granting a somewhat serious dose of historicity to the things these scientists have discovered? By separating the history of the sciences from ontology too quickly, people have prevented themselves from taking advantage of this very interesting *anomaly*.

30. Not to be confused, despite the cybernetic metaphor, with the numerous efforts by sociologists to short-circuit politics with a biologized or naturalized theory of the social world, as, for example, with Luhmann 1989. The vocabulary we are seeking remains properly political here, not biological.

31. This allows us to make clearer the difference encountered in Chapter 1 between modernist objects and nonmodern or risky objects*. Asbestos, which we took as our example, is characterized by the extreme slowness with which the excluded entities returned to compel reconsideration of the definition of this "perfect" insulating material: in France it took some thirty years for lung diseases to become an *integral part* of the definition of this inert material, this miracle product, for the presence of all those patients, upon their return to the finally perplexed collective, to require the demolition of thousands of square meters of offices and schools. A risky, civilized attachment would have taken less time to move from the outside to the inside (see Chapter 4, note 46): those the power to put in order had just excluded would have put the power to take

into account on alert right away. It is through this feature that I shall define civilization* later on, and it is that which will allow us to take full advantage of the principle of precaution (Ewald 2001).

32. We shall have to return to this crucial feature in detail in Chapter 5, when we approach the notion of collective experience* and the very particular type of normativity that will allow us to describe its course. I shall in fact use it to define a third power that could be called the *power to follow up**, which amounts to imagining—to use humble terms appropriate to industry—a sort of “quality control” on the “traceability” of the procedures.

4. Skills for the Collective

1. We see this in caricatural fashion in the discussion about subjective risks and objective risks, another place where the distinction between primary qualities* and secondary qualities* is made crudely; the former alone refers to reality, while the latter refers merely to psychic states, manipulation, or culture; see Rémy 1997. Once the division has been made, the question arises whether to take the eliminationist model (by means of force or by means of pedagogy) or the model of respectful hypocrisy (through confinement to the ghetto of culture or through discreet manipulation). On the other solutions, see the testimony collected in Lascoumes, Callon, et al. 1997.

2. See Acot 1998, and especially Drouin 1991 and Anker 2001.

3. For a history of the notion of ecosystem, see the meticulous study by Golley (1993). The term “ecumenical” has the same root as “ecology.” The familiar expression “everything that goes together” to form a whole must not be abused. Ecologists know how incredibly difficult it is to define partial totalizations, even locally. Politicians do too. See the excellent example offered in Western, Wright, et al. 1994, concerning the difficulty of determining what does or does not form a whole around the edges of natural parks when one puts humans and nonhumans together.

4. This is why, from the introduction on, I have refrained from distinguishing scientific ecology from political ecology. I have kept only the latter term, for it alone can highlight all the difficulty involved in composing a good common world. Moreover, speaking of “complexity” in no way guarantees that these political and procedural difficulties will be taken into account: one can short-circuit public life just as easily by oversimplifying as by “complexifying.” The famous “sciences of complexity” do not bring us any closer to the problem of composition than do the “sciences of the simple.”

5. A famous line by Tennyson that has become a proverb describing Darwinism:

Man . . .
 Who trusted God was love indeed
 And love Creation’s final law—
 Tho’ Nature, red in tooth and claw
 With ravine, shriek’d against his creed.

Tennyson, “In Memoriam AHH” (1850), Canto 56

6. Darwin is obviously innocent of the Darwinisms committed in his name. Despite his borrowings from Malthus, he is in no way guilty of naturalism, since the evolutions of which he speaks have *neither unity, nor optimum, nor totalization*. For Darwin, evolution unifies nothing at all—as Stephen Jay Gould showed with such persistence (Gould 1989). Darwin would have had no trouble speaking of multinaturalism, since ultimately each living creature possesses *its own* nature. As soon as one resorts to theories of evolution to speak of “nature” in the singular, one loses the realities of the pluriverse and keeps only its function as shortcut. This is why it is so important to distinguish the appeal to external realities from the procedures for unifying the world that belong, properly speaking, to politics itself, even if we are talking about genes, proteins, whales, cockroaches, or physiology.

7. We find an indication of this in a stunning passage in Karl Polanyi: “Here was a new starting point for political science. By approaching human community from the animal side, Townsend by-passed the supposedly unavoidable question as to the foundations of government; and in doing so introduced a new concept of law into human affairs, that of the laws of Nature. Hobbes’ geometrical bias, as well as Hume’s and Hartley’s, Quesnay’s and Helvetius’ hankering after Newtonian laws in society had been merely metaphorical: they were burning to discover a law as universal in society as gravitation was in Nature, but they thought of it as a human law . . . If, to Hobbes, man was as wolf to man, it was because outside of society men behaved like wolves, not because there was any biological factor which men and wolves had in common. Ultimately, this was so because no human community had yet been conceived of which was not identical with law and government. But on the island of Juan Fernandez there was neither government nor law; and yet there was balance between goats and dogs. . . . No government was needed to maintain this balance; it was restored by the pangs of hunger on the one hand, the scarcity of food on the other. Hobbes had argued the need for a despot because men were *like* beasts; Townsend insisted that they were *actually* beasts and that, precisely for that reason, only a minimum of government was required. . . . No magistrates were necessary, for hunger was a better disciplinarian than the magistrate. To appeal to him, Townsend pungently remarked, would be ‘an appeal from the stronger to the weaker authority’” (Polanyi 1957 [1944], 114–115).

8. This question is going to be turned into an artifact: Should the economy be entrusted to the market or to the State? This is as artificial as asking whether scientists are realists or constructivists; or the one that asks whether politics should be anthropocentric or *phusicentric*. See Chapter 5 on the power to follow up. We find an argument similar to Polanyi’s in Dewey 1954 (1927), 91.

9. See the analysis of economics as a short-circuiting of the political in Carl Schmitt: “A domination of men based on pure economics must appear a terrible deception if, by remaining nonpolitical, it thereby evades responsibility and visibility” (Schmitt 1976 [1963], 77). For Schmitt, the economy, in the nineteenth century, follows religion, in the eighteenth century, and precedes technology, in the twentieth century, in the devices invented to oust politics from playing any role.

10. Even though Marxism also criticized the naturalization of the economy, its goal was not to rehabilitate politics but to subject it still further to the laws of the first naturalization, that of Science. This is the strong criticism that Polanyi, a *political* socialist rather than a *scientific* socialist, addresses to Marx: “The true significance of the tor-

menting problem of poverty now stood revealed: economic society was subjected to laws which were *not* human laws. The rift between Adam Smith and Townsend had broadened into a chasm; a dichotomy appeared which marked the birth of nineteenth century consciousness. From this time onward naturalism haunted the science of man, and the reintegration of society into the human world became the persistently sought aim of the evolution of social thought. Marxian economics—in this line of argument—was an essentially unsuccessful attempt to achieve that aim, a failure due to Marx's overly close adherence to Ricardo and the tradition of liberal economics" (Polanyi 1957, 125–126). For a radical and very early critique of Marxist and liberal economics, see Tarde 1902.

11. Here I am extending the reversal carried out by Michel Callon, in the wake of Simmel 1978 (1900) as well as Polanyi, a reversal that makes it possible both to keep the virtues of the discipline of economics (in particular the formatting of ties) and to avoid the belief that the economy defines the basis of the world, in Locke's fashion. See, in particular, Callon 1998b.

12. In addition to the seminal work of Laurent Thévenot on including economization as a particular form of action (Thévenot 1986), on accountability I have benefited in particular from Peter Miller's research (Miller 1994), and from Power 1995; on the operations specific to marketing, Cochoy 1999; on the progressive construction of economic theorems, Lépinay 2003. Polanyi went the furthest toward understanding the science of economics as the chief agent of the economy, a stroke of genius that installed the sociology of economics at the heart of the critique of political economics, something that the usual critics of economism had completely missed, owing either to scientism or to humanism: "To the bewilderment of thinking minds, unheard-of wealth turned out to be inseparable from unheard-of poverty. Scholars proclaimed in unison that a science had been discovered which put the laws governing man's world beyond any doubt. It was at the behest of these laws that compassion was removed from the hearts, and a stoic determination to renounce human solidarity in the name of the greatest happiness of the greatest number gained the dignity of secular religion" (Polanyi 1957, 102).

13. On the materialization of modes of calculation, see Callon and Latour 1997; this amounts to making economics undergo the operation of material embodiment that the other sciences have undergone thanks to science studies and to the efforts of "situated cognition"; see Suchman 1987, and the essential book by Edwin Hutchins (1995). We can sum this up with a slogan: *Cogito ergo sumus*, "When I think with precision, it is the laboratory that thinks." If a rational calculus exists in economics, let us look for the laboratory (in the broad sense) that allows it.

14. The numerous attempts to absorb political ecology into political economy thanks to the choice of another *quantum*—for example energy instead of money—would keep the defects of the old Constitution intact, or rather would compound the defects of the *three* naturalizations, since the meta-economy thus produced would have causal, moral, and natural bases all at the same time! What would one not do to spare oneself the hard work of taking up political life again! The economy of the environment, as we shall see, serves conversely as an indispensable instrumentalization for following procedures of externalization.

15. I have restricted myself to the trades that modernism has exploited most. This is why, despite its importance, law is not mentioned. Indeed, law has always had the good manners to accept its relativism and its constructivism without making a big fuss. It is capable of recognizing that others have a legal system that is simply different; it agrees to bring together reality and fiction in a positive way. It is less implicated, so to speak, in the question of nature than Science, politics, or morality (Latour 2002d). The same thing holds true for art, which we have not considered either, in spite of its importance in the formation of the tasks of the collective, and for the same reason: no one has ever said, even in the Western tradition, that the relation between art and nature was indisputable (Clark 1999, Latour and Weibel 2002)! I have thus retained only the trades that are the most difficult to anthropologize, those which have real trouble with constructed entities.

16. In Chapter 5, we shall add a seventh function to which all the professions will have to contribute and that will have to do with following up on the learning curve of the collective, namely, the age-old art of governing.

17. The sciences have always participated in all the tasks of the collective, moreover, as the new history of the sciences clearly shows, but this time they do so without hypocrisy and according to due process; see among others the fine example of Galileo (Biagioli 1993), Pasteur (Geison 1995), and Lord Kelvin (Smith and Wise 1989).

18. The modern beginnings of this often chaotic history can be found in Shapin 1994 and Licoppe 1996.

19. One can think of the difference it makes to the ethical debate if stem cells are substituted for embryos for the therapeutic use of totipotent cells. Another example, one that allowed the Pasteurians to introduce into the stalemated situation of the class struggle between rich and poor a different struggle, the one between *contagious* rich and poor and *vaccinated* rich and poor. Health measures taken against microbes would have been unthinkable without this slight displacement of the struggle (Latour 1988). Another canonical example is found in the way the French atomic scientists translated the military art into nuclear physics: see Weart 1979. A marvelous case of compromise and innovations with the basic laws of physics, in this case relativity theory, is provided by MacKenzie 1990. These arrangements and substitutions are innumerable, and they define the sciences, often allied with technological breakthroughs, where task no. 3 is concerned.

20. Science studies have pursued this point in a wide variety of ways: see Law 1986, Bijker and Law 1992, and Bijker 1995. For the approach taken by researchers at the Ecole des Mines, see especially Akrich and Latour 1992, and Latour and Lemonnier 1994.

21. We can see the reversal with respect to the earliest studies undertaken in the sociology of the sciences; these explained the closing off of uncertainties by the stabilizing effect of ideologies, the weight of sociological factors or institutions (in the ordinary sense); see Barnes and Shapin 1979. Here, on the contrary, the sciences themselves are participating in the stabilization of the collective. Conversely, we see that scientism errs only because it confuses a particular skill (contribution to task no. 4) with the overall scientific endeavor. It is no longer at all difficult to say that the sciences participate—and fortunately so—in the production of the indisputable. Let us reassure the

“Sokalists”: the law of universal gravity is now quite solidly *established*—even though it no longer has in 1, 2, and 3 the same capacity to shut people up!

22. We can recall the famous episode in which Lord Kelvin, a physicist, claimed that the life span of the solar system was much more limited than the biologists, inspired by Darwin, needed it to be for the unfolding of evolution. The biologists resisted politely and continued to think in terms of hundreds of millions of years, despite the physicists’ interdiction, even though physicists had much more prestige at the time. The phenomenon of evolution “insisted” despite the absence of a physical theory capable of reducing it or explaining it. And the biologists were quite right to hold onto their enigma, since with the discovery of radioactivity the physicists would soon endow the sun with a life span that was finally compatible with biological evolution. This is a good example of resistance on the part of a problem to premature solutions. Extend this resistance to everyone, and you have democracy defined as the autonomy of the problems raised. It is when the “public at large” stubbornly seeks to protect its interrogations, if need be against the accusation of irrationalism by certain scientific lobbies, that it is the most scientific (Stengers 1997b).

23. This prejudice is found throughout (political) economy. To define the rational force of falsificationism, Lakatos gives a precise definition of an election! But the parallel escapes him, since for him “politics” means red hordes trampling the due process of Science alone (Lakatos 1978). For the contrary view, see Callon 1995.

24. Let us recall the admirable example of the Swiss referendum on genetically modified organisms. No scientist worthy of the name would have forgotten to consult the genes, the field experiments, the antibiotics, the corn- and rapeseed flowers. Yet politicians had to intervene brutally afterward to allow the consultation to add the humans who were going to “profit” most directly from the benefits of biogenetics. They had been forgotten! When scientists are added, justice is done to Habermas’s requirement (“Just those action norms are valid to which all possibly affected persons could agree as participants in rational discourses” [Habermas 1996, 107]). But Habermas can never make this an operational requirement, since he has driven the nonhumans out of his City, as Plato drove the artists out of his.

25. To take up a useful expression from Tresch 2001.

26. This collaboration can be observed up close in the establishment of the local water commissions in France. For every catchment, these commissions have to make a plan for shared water use (Latour 1998). Sometimes the understanding is reached owing to the discovery by hydrogeologists of new water reserves, sometimes by the modification of the constituents represented by one of the spokespersons: the farmer who came in to defend his rights to irrigation leaves convinced of the need to defend the river. The “we” that he represented has changed meaning. Such adjustments are never achieved if one has a nature with fixed resources and a society with established interests—in other words, scientism in the natural sciences on the one side, scientism in the social sciences on the other.

27. On this property of politics, to be modified below, see Schmitt 1976 (1963).

28. Decision theory is inherited entirely from the myth of the Cave, for it has neglected to point out that people also decide about facts and causes (contribution of the sciences to task no. 4). Conversely, as soon as the word “decision” is applied also to the

discovery of acknowledged facts, it loses some of its trenchancy, its arbitrariness, and becomes the “discovery” of the solution that is *immanent* in the situation. Machiavelli becomes a scientist: the Sovereign becomes a lab technician; the word “decision” changes meaning and no longer alternates between the sovereign arbitration of the facts and the arbitrariness of the Sovereign.

29. In Chapter 5, I shall come back to this essential definition of the enemy* that must not be humiliated because it might become an ally. In effect, we are going to make it a synonym for externalization*.

30. The Plato of *Gorgias*, still close to the political capacities that he is in the process of stifling one by one, uses the superb expression “autophuos,” self-generation (513b) to describe and mock this immanence particular to the conditions of felicity of public life (Latour 1999b). On this vocabulary of sophistics, see Cassin 1995. John Dewey translated this skill particular to politicians most directly with his very reflexive notion of “public,” an artificial elaboration that models for itself the unexpected consequences of its actions (Dewey 1954 [1927]).

31. We can measure once again the difference between society* and the collective*; the notion of society, so cherished by sociologists of the social, *eliminates* in advance all the problems of composition, modelization, reflexivity, and agitation that I am obliged to deploy one after the other. With the transcendence of nature already there and that of society always already present as a totality, neither the skill of scholars nor that of politicians is visible.

32. On this difference in the two regimes of enunciation, see Latour 2002b.

33. Polanyi 1944, 249: “After a century of blind ‘improvement’ man is restoring his ‘habitation.’”

34. In John Dewey’s sense (Dewey 1954), that is, as something that has to be constantly refreshed and, so to speak, re-represented to its own eyes, since experts are exactly as blind as citizens as to the unexpected consequences of collective action.

35. This reversal had already been carried out by the beginning of the last century by Gabriel Tarde, in a book as little known as it is astonishing, on “passionate interests” (Tarde 1902).

36. By extending Simmel’s reflection on money, one can imagine, moreover, that the generalization of the numerical will offer “social metaphysics” other possible summaries besides the language of money. See, for example, the fascinating effort in “cyber-geographies” in Rogers and Marres 1999. If we follow them, we note that economics is not necessarily the definitive form for publicizing calculations and hierarchies.

37. On externalities, I am following here the introductory essay of Callon 1998b and the political consequences drawn in Callon, Lascoumes, et al. 2001.

38. This whole argument is comprehensible only on condition that we take the term “calculation” literally and not metaphorically: either one can carry out a calculation, and accounting instruments in the broad sense are required, or else these instruments are lacking and the ties in question remain *incalculable*; see Callon and Latour 1997. This is what precludes any metaphorical use of “calculation” or “economic capital,” especially to explain social life (Favereau 2001).

39. The economists alternate between excessive modesty and excessive pretension: if one praises the intensity of their influence on the economy, they humbly claim to

have no responsibility in the matter, denying any performative role in the formatting of connections; conversely, they assert with assurance that even if economics did not exist, the thing to be described, the economy itself, would exist as such. If they are to be a bit civilized, they will have to recognize their power (the economy arises from the practices of economics) and its limits (the economy extends no farther than the network of its instruments).

40. See the work that has been done in economic anthropology, especially Thomas 1991 and Cochoy 2002.

41. See the work of Antoine Hennion on taste and the production of interest in “things themselves” (Hennion 2002).

42. Capitalism can be defined not as a particular infrastructure but as internalities without the externalities that it has produced. In the literal sense, it is an artifact of calculation, with all the performative effects that ensue. It is thus useless to denounce capitalism—on the contrary, denunciation only reinforces it. Capitalism must be re-wrapped in the externalities that have always accompanied it, while economics cannot be allowed to confuse itself with politics. On all this, see Tarde 1902 and Polanyi 1957.

43. To solve the problem of morality, utilitarianism—or its contemporary versions, renewed by Darwin—uses versions of Science, nature, or economic calculation that no longer correspond, as we have seen, to the real virtues of either researchers or economists. After short-circuiting sciences and politics, utilitarianism creates an impasse over the proper contribution of morality. It would be hard to do worse!

44. The same argument is made by the founder of deep ecology, Arne Naess (1988): “Immanuel Kant’s maxim ‘You shall never use another person only as a means’ is expanded in Ecosophy T [the code name Naess gives his philosophy] to ‘You shall never use any living being only as a means’” (p. 174). Naess’s limitation to “living beings” reflects the same error Kant made, even if what he takes into account is a little broader. Tarde, as usual, had anticipated the argument in 1902 (!) when he gave political economics the following goal: “The ideal end toward which humanity tends, without yet seeing it clearly, is, on the one hand, to create with the elite of all the planet’s fauna and flora a harmonious concert of living beings conspiring, in a system of ends, to the very ends of man freely pursued; and, on the other hand, to capture all forces, all inorganic substances, to make them work together, as simple means, to serve the henceforth convergent and consonant ends of life. One must adopt the standpoint of this distant goal in order to understand to what extent the basic concepts of political economy require revising” (Tarde 1902, 278).

45. It is no good complaining, as the critics of deep ecology do, that morality is being extended to “inanimate beings.” Exactly the opposite is the case. We have finally withdrawn from inanimate beings the enormous moral privilege from which they benefited under the old system, which allowed them to define “what is” and thus gave them an indisputable pass to enter the common world (see the last table in Chapter 2). As usual, legal scholars, more rapidly freed from the constraints of modernism, are the ones who have innovated in experimental metaphysics (Stone 1987), more than moralists, who are bogged down in the distinction between objects and subjects (Latour 2002a, Tamen 2001).

46. Common sense does this without difficulty. In *Le Monde* of July 29, 1998, a jour-

nalist, Jean-Yves Nau, praises the French system of blood transfusions because it was able to move quickly to a state of alert with regard to an infectious agent called “TTV”: “The rapidity with which French health authorities reacted this time after *Lancet* came out is markedly different from the procrastinations of 1985” (the year of the HIV/AIDS contamination of the blood supply). And he adds: “Today, scientific uncertainties no longer lead to inertia on the part of the responsible authorities. The new virus thus bears witness, thirteen years later, to the ground that has been covered in the service of public health” (p. 6). On the crucial importance of the precautionary principle, see Dratwa 2003.

47. Such is the moral and civic limit of a major study by Boltanski and Thévenot 1991—which, scandalously, is not yet available in English. The hypothesis of common humanity creates an impasse for the most important of moral requirements: it leaves open the question of what constitutes or does not constitute humanity.

48. If the intolerable role of the committed intellectual speaking in the name of Science and authorized by Science to short-circuit politics is fortunately disappearing, moralists rediscover a function that needs neither Science nor the prophetic tone nor illusions of unveiling to be accomplished; see Walzer 1988.

49. On this obligation, see Despret 2002. The ethics of discussion (once it has been extended to nonhumans and humans alike), the obligation to consult those about whom one is speaking, depend not only on morality but also on administration, the guardian of procedure, as we shall see in Chapter 5.

50. We can understand the signal weakness of Ferry’s attack on ecology (Ferry 1995): if he had succeeded in revising the ancient distinction between moral subjects and inert objects, he would only have arrived at immorality!

51. In Chapter 5 we shall find another professional role, that of administrator*, but its usefulness cannot appear before we have defined the power to follow up* that is charged with describing the learning curve of the collective.

52. I have simply taken up the same positions that they occupied in Figure 3.1. I am using in a contradictory sense the expressions “upper house”—normally used for senates—and “lower house”—normally used for houses of representatives—specifically in order to recall the incongruous and provisional character of such labels. By playing on the legal and scientific terms, I could have called the former the “house of claims” and the latter the “house of causes.”

53. We are also far from the maintenance of the pluralism that accepts diversity of opinions only against a background of an indisputable common world made up of a rather badly composed mix of nature and human rights. The upper house will take the exploration of multiplicity much further than any “respect for the pluralism of opinions,” because it will run the risk precisely of not taking them to be mere opinions (Stengers 1997b); conversely, the lower house will seek unity much more assiduously than people try to do in regimes that claim to be pluralist.

54. On this sort of “extended peer review,” see Ravetz 1983.

55. This is the key feature of the so badly misunderstood notion of constructivism; see Latour 2003.

56. On this remarkable example, see Western 1997 and Thompson 2002.

57. From this viewpoint, the human sciences have everything to learn from the ex-

act sciences, not because the latter would treat their candidates for existence as objects that can be mastered at will, but on the contrary because they discover day after day, in laboratory failures, the recalcitrance of objects. See the important arguments in Stengers 1996 and Despret 1996; for a commentary, see Latour 2000.

58. Need I recall that relativism is a positive term that has absolutism as its contrary and that refers, as Deleuze put it so well, not to the relativity of truth but “to the truth of the relation” (Deleuze 1993)?

59. A beautiful example is provided by the French law on the official organization of a controversy over various ways to deal with long-term nuclear waste; see Barthe 2000.

60. The whole problem of the sociology of the sciences lies in the fact that it first juxtaposed these two terms to bring out their contradiction in a critical form, before thoroughly modifying their relations in a noncritical form. On this *felix culpa* of sociology, see Latour 1999c.

61. Once again, common sense goes further than good sense in the recognition of these thousands of intermediate steps in the degrees of certainty between existence and nonexistence. We need only think about the countless nuances of realism regarding simple affirmations of the following sort: cigarette smoke leads to death; speeding on highways is responsible for fatal accidents. In what world must we live, finally, for these utterances to take on definitive truth? This notion of variable degree is all the more important in that we find ourselves before an unexpected configuration: the artificial continuation of scientific controversies that we had thought finished. This is the case of studies on the dangerousness of cigarettes, on global warming, on the Shroud of Turin, on the risks associated with nuclear accidents, and so on. The presence of the scientific disciplines is now clearly distinct from the closing of debates.

62. This requirement has become even more crucial in a time where revisionism has generalized its strange mixture of conspiracy theory and absolute belief in indisputable matters of fact. One should now be able to fight against the artificial continuation of scientific controversies on everything from the link between cancer and cigarettes to global warming and concentration camps. Here again, matters of fact reveal themselves to be a weaker defense than sturdy matters of concern, on condition of being well instituted and constantly kept up.

63. To the great surprise of the modernists, constructivism may turn out to be a more peaceful and universal language than naturalism (Latour 2002e).

64. Carl Schmitt deserves credit for bringing back to light the essential political importance of the enemy whom one does not hate, but I am of course extending the meaning of this term to nonhumans, or rather to composite propositions produced by humans and nonhumans. Here is Schmitt’s famous distinction: “The distinction between a friend and an enemy denotes the utmost degree of intensity of union or separation, of association or dissociation. It can exist theoretically and practically, without having simultaneously to draw upon all those moral, aesthetic, economic, or other distinctions. The political enemy need not be morally evil or aesthetically ugly; he need not appear as an economic competitor, and it may even be advantageous to engage with him in business transactions. But he is, nevertheless, the other, the stranger; and it is sufficient for his nature that he is, in a particularly intense way, existentially something different and alien, so that, in the extreme case, conflicts with him are possible.

These can be decided neither by a previously determined general norm nor by the judgment of a disinterested and therefore neutral third party” (Schmitt 1976 [1963], 26–27).

5. Exploring Common Worlds

1. Even when J. G. A. Pocock, in his classic, monumental work (Pocock 1975), rehabilitates Machiavelli and the tradition he represents, he always does so, at best, by representing Machiavelli as a descendant of Aristotle, accepting as a consequence that political skill remains infinitely removed from epistemology.

2. On all these metaphors for the political body, see the analysis of *Gorgias* in Latour 1999b, chapters 7–8.

3. Despite its claims, the discourse of power does not reveal the presence that is behind relations of force; it participates in it (see the conclusion). Critical discourse is completely molded by (political) epistemology; it is the adopted son common to Socrates and Callicles. On the notion of power, see, for example, Law 1986. Here is the whole difference between critical sociology, which uses the notion of power as its principal weapon and the sociology of criticism, which is interested in the sociologists’ obsession with discourse in terms of power. In addition to the work of Boltanski and Thévenot 1991, see, on the anthropology of the critical gesture, Latour and Weibel 2002.

4. This has nothing to do, of course, with the legitimizing of the established facts—the power relations—cherished by critical sociology, which believes it is making great advances by resuming the discourse of primary qualities and secondary qualities: violence becomes the power of causal explanation invisible to the actors, while *illusio* spreads its mantle of arbitrary significations over the nakedness of power relations. Naturalization* expands once again, but this time on the courtyard side of society* and no longer on the garden side of nature; on the critique of legitimization, see Favereau 2001.

5. In this section I am summarizing Latour 1993 and Latour 1999b, 193–202.

6. Let me recall that the expression “political enemy” no longer has the meaning of “subhuman,” “lecherous viper,” or some other insult, but that it is henceforth used as a term of respect: what endangers the collective today may be an ally tomorrow, and morality, which “salvages” those who have been excluded, is in no way at stake.

7. One might wonder about the link between the crimes and cataclysms of the century that has just ended and this suicidal and apocalyptic conception. At bottom, the moderns always desire their own disappearance, the disappearance of their *oikos*. Their grudge is not against nature; it is against themselves. (On this topic, see Jonas 1984, chapter 6, on utopia.)

8. For want of a better term. Beck proposes “reflexive” or “second” modernization (Beck, Giddens, et al. 1994).

9. This is the meaning of the past perfect tense in the expression “we have never been modern.” It is a question not of one more illusion, but of an active interpretation of the history of the West, which has had a formidable performative effect but which is gradually losing its effectiveness and which thus obliges us to reinterpret the past—a

phenomenon that is in its turn quite banal. At the very moment when Descartes, sitting all alone by his stove, formulates his “Ego cogito,” as we can see now, the scientific community finally begins to work in concert. What is modern? The solitary *cogito*? The common work of proof-workers? Or the strange relation between the invention of the *cogito* and the scientific community, at the very moment when that community is inventing itself? The *retrospective* discovery, by the new history of the sciences, of the countless links between the sciences and public life, and between these links *and their denial*, offers the most spectacular proof that we have never been modern.

10. On the reinterpretation of the myth and its illustration, see Latour 1996a.

11. I leave entirely aside here the possibility of historicizing nature by telling a more lively story of its development (Gould 1987), since this new liveliness does not modify the political use made of nature (Stengers 1997a).

12. The accusation of historicism appeared condemnable only in the Old Regime by contrast with the assured certainties that could always be opposed to the world of the Cave. It is no longer a matter here of entrusting everything to mere contingency, but of modifying the meaning of that word through adequate institutions. “Contingent” becomes once again the result of a political reapportionment with regard to what may be or may not be, what must be or must not be.

13. I am not reutilizing the distinction between *experimentum* and *experientia*, experiment and experience (Licoppe 1996), since common sense*, caught up increasingly in the science wars, needs experimentation as well as experienced people from now on.

14. These are the four conditions offered by Callicles for political action and rejected as irrelevant by Socrates in the *Gorgias*.

15. Lovelock, the inventor of the Gaia *hypothesis*, is quite careful, moreover, not to make this an already constituted totality. His books lay out the progressive composition of the links between scientific disciplines, each charged with a sector of the planet and gradually discovering with surprise that they can define one another mutually (Lovelock 1988). By forcing the issue, we can say that Lovelock’s Gaia is the complete opposite of nature, and that it bears closer resemblance to a Parliament of disciplines.

16. The distinctions between procedural, substantial, and consequential moralities become less important if we consider the collective in its experimental dynamics. If we look at them more closely, we see that the different schools of moral philosophy do not oppose one another, so much as each designates successive segments of this learning curve, while making an effort to characterize its virtue.

17. That there is no reduced model of the collective is the origin of the chief misunderstanding between Socrates and the *demos* in *Gorgias*.

18. We can indeed measure the progressive disappearance of modernism as an interpretation of itself, through the proliferation of colloquia, institutions, procedures concerning risks and the principle of precaution. This is one of the best indications of the presence in Europe at least of this new Constitution, whose dotted lines I am simply filling in with a black pencil (Barry 2001).

19. This is the great contribution of Ulrich Beck, to have been able to shift from modernization to second or reflexive modernization without getting drawn off course by the red herring of the postmoderns.

20. This is also the essential problem taken up by Dewey in response to Lippmann’s

criticism (Lippmann 1922); on this, see Marres forthcoming. Lippmann's solution—technocracy—having triumphed for half a century, we had to wait for its complete demise to fathom the profundity of Dewey's own solution.

21. See for example Callon 1994; and Callon, Laredo, et al. 1995.

22. Here we need to bring together the works of people such as Lakatos on the relative fruitfulness of research programs (Lakatos 1978) and authors such as Habermas on the quality of consultative procedures (Habermas 1990). If the juxtaposition seems strange, it is only because of the limits of the old Constitution: Lakatos makes every possible effort to protect judgment on the sciences from human politics (which for him are arbitrary); Habermas, for his part, continually strives to protect human judgment from nonhumans (confused with instrumental reason). However, in order to succeed, each one needs what the other preserves, sheltered in his trench. The scientific politics of the French Muscular Dystrophy Association, studied by Callon and his colleagues, is for me the most striking example of this new conjunction of morality and things in an original science politics (Callon and Rabeharisoa 1999).

23. I am not concerned here with the false quarrel between the State and the market, which presupposes an abandoned conception of the economy as infrastructure (see Chapter 4). To the traditional free-market State that claims to liberate markets from the clumsy control of public power, I am opposing here the State free of any pre-occupation other than governing, because it has been cured of its intoxication with mastery and no longer hopes for any transcendence.

24. Needless to say, it makes no difference whether this politics based on the indisputable laws of nature and history comes from the old *Pravda* or from the recent *Wall Street Journal*: Marxists from the Left and Marxists from the Right are twins; for both, science (that is, economics) should short-circuit politics.

25. This point is the essential one in John Dewey's magnificent argument against all totalitarian or even simply totalizing definitions of the State, which he, too, calls experimental: "The State must always be rediscovered" (Dewey 1954 [1927]), 34). Why? Precisely because nothing can be already totalized, and especially not the State: "But a community as a *whole* involves not merely a variety of associative ties which hold persons together in diverse ways, but an organization of all elements by an integrated principle. And this is precisely what we are in search of. Why should there be anything of the nature of an all-inclusive and regulative unity?" (38). Yes, the State is concerned with the public, but the public is precisely something *whose mode of totalization is not known*. If it were known, if actions could be controlled, we would indeed have no need, according to Dewey, for governors. When government comes on stage, it is because all mastery has failed. Dewey's minimal State thus has nothing to do with the free-market State, which can be nothing more than a simple appendix to the economic "sphere."

26. This is one way to solve the opposition between procedural and substantive rationality. Contrary to what is claimed by Callon, Lascoumes, et al. 2001, it is highly unlikely that agreement can be reached without going to the substance of the propositions at stake. But it remains true that the third power has to stick obsessively to procedure.

27. While Carl Schmitt offers the advantage of rejecting "neutralization" of politics by economics or technology, along with the advantage of clearly distinguishing an en-

emy from a criminal, he makes the error of completely forgetting nonhumans and confusing politics in general with just one of the functions (that of institution* of exteriority) in which political skill plays a role (Schmitt 1976 [1963]). To make his work usable, I have had to undertake a risky genetic manipulation and blend Schmitt's "enemy" with Hans Jonas's "sense of danger" (Jonas 1984): it is easy to see that the exterior is not a nature, but an otherness capable of doing us harm and even of doing us in, and that "decision-making" corresponds to only a seventh of the collective's functions.

28. I see the current quarrel over genetically modified organisms as the first example of the internecine wars (technological, economic, juridical, organizational, and geopolitical—in short, worldwide and total after their fashion), since the appeal to the sciences cannot in any case calm the debate by making it zero in on a common world. Even the mad cow episode is, from this viewpoint, less "innovating," since one can still imagine retroactively that one "should have been able" to foresee the dangers, thanks to the sciences and technologies. With genetically modified organisms, the sciences and technologies are clearly participating in the combat as an additional source of uncertainty. And the debate is important precisely *because* there is no clear-cut risk. What is at stake is clearly a cosmogram: a world in which one wants to live.

29. In an article that has been very important for this book, Viveiros de Castro (1998) shows to what extent ethnography is wrong to spread the rumor that other peoples always designate themselves by an ethnocentric expression that means "men" or "real men." In the case of the Amazon region, at least, a mistake in translation gave the first person plural—"we"—as the proper name of the people. The same problem arises with the use of the first person plural in the designation of the collective. There is no people consisting of "us," at least not yet.

30. At the University of Chicago I myself experienced the weakness of such a formulation when I had simultaneously to confront the anger of the "Sokalists" who were demanding that I consider cosmology as absolutely and not relatively different from "the" indigenous cosmologies, and the amusement of anthropologists who were demanding that I respect the diversity of "the" indigenous cosmologies without requiring in addition that they confront the requirement of the unity of reality, the one that is imposed by the principle of symmetry and that would have consisted in explaining "the" cosmology of physicists *in the same terms* as those of indigenous peoples. They were all in harmony as they avoided my way of posing the argument: the former in order to maintain the unity of nature, the latter in order to maintain the multiplicity of cosmologies. For the former, I was a relativist anthropologist; for the latter, I gave too much credit to the sciences, while demanding that reality be spoken of once again. The naturalists were indignant that I was speaking of multiplicity; the culturalists were indignant that I was still singing the same old song about unity. The indignation alone was the same, even though it was focused on exactly what kept the peace in the other camp. Everybody was pounding on the table, but out of synch with the other camp, and that gave the conversations a fine drumbeat effect! I had never before felt to this extent the division of functions between naturalists and culturalists. If, thanks to the science wars, we now know what effect the culturalist explanation based on cosmology "among other things" has on a cosmologist, we do not know, so far as I can tell, what effect being re-

spected as one culture “among others” has on a “culture,” deprived of privileged access to reality.

31. I had tried, in my investigation of the moderns, to make anthropology “symmetrical” in order to allow it to absorb not nature and cultures, any longer, but what I was then calling “natures-cultures,” two things that had become comparable against a background other than that of the old universal nature (Latour 1993). The expression was awkward and the attempt naïve, since no matter how hard we may try make artifacts symmetrical, they remain artifacts. With rare exceptions, anthropologists have retained the bipolar organization of their discipline; still, see Viveiros de Castro 1998. This is all the more a pity in that, as Marshall Sahlins has remarked many times (Sahlins 2000a, 2000b), the notion of culture itself has changed since it was appropriated by the others as a very particular form of politics, what Appadurai calls “the globalization of differences”: see Appadurai 1996.

32. Let us recall that nonhumans are always better treated than humans, as I have shown, after Stengers, in Chapter 2 (Stengers 1997b). In fact, their recalcitrance is not in doubt. No one would think of speaking of them without making them speak according to complex mechanisms in which the interpreter sometimes risks his life. Now, on the side of humans, these mechanisms, these apparatuses, remain rare—whence the stress placed in this section on encounters between “cultures.” These are what we have to civilize. Encounters with nonhumans, once (political) epistemology has been rendered harmless, pose comparatively few problems. With things, we always remain polite because they always know how to resist!

33. In the old modernist theme of the “neutrality” of Science, there was a profound form of impoliteness toward nonhumans, who were said to be incapable of making a difference, and limited to the stupid being-there of inanimism*. On this, see Bloor 1999 and my reply.

34. I am borrowing the expression and the argument from Stengers 1997b.

35. This is the key difference, recognized by Schmitt (1976 [1963]) between police operations, interior to the established State, and the condition of war, defined precisely by the absence of any agreed-on arbiter. This is why any war that is waged “as if” there were an indisputable arbiter—for instance nature—becomes a mere police operation (Latour 2002e). The diplomat is franker than the referee: at least he recognizes that there is a war.

36. It was for this reason that Isabelle Stengers proposed “to put an end to tolerance”—there is in tolerance something that is in fact intolerable if it is obtained at the price of relinquishing any requirement of reality. Such is the deleterious effect of the ever-so-modernist notion of belief: the moderns believe that the others believe (Latour 1996b). No tolerance is worse than that of multiculturalism. The openness of mind of someone like Hegel, doing by himself the diplomatic work of synthesis, cannot pass as a virtue either, for he was doing his work all by himself in his study. It is fairly easy to come to agreement with those about whom one is speaking from afar with respect, while lodging them somewhere as a surmounted episode of the history of absolute Mind!

37. On the history of this arrangement around matters of fact, see Shapin and Schaffer 1985, and Shapin 1994. Whereas the seventeenth century had invented a way

to put an end to civil wars by making peace over laboratory facts observed by gentlemen, the twenty-first century is reopening the question and discovering with some horror that laboratory facts can be both real and contestable. As for the gentlemen . . . (See the conclusion.)

38. See the astonishing work of diplomacy by Sahlins (1995), in which he grapples with one of his opponents who purports to define the Hawaiians as responsible for Captain Cook's death thanks to universal "good sense," confused with the opinion of the British about God. See also the tremendous effort by Viveiros de Castro, who has become the spokesperson for the philosophy of the Amerindians of the Amazon region, to assess the difficulty of the enterprise of justice: if the Amerindians agreed to define a common world, it would be necessary to change metaphysics. It is moreover from them, through the intermediary of Viveiros de Castro, that I learned the use of the word "multinaturalism," since their collective presupposes a human culture common to all human and nonhuman beings, and *natures* that differ according to bodies (Castro 1998).

39. To this, oh! so catholic goal, Viveiros de Castro always replied that "his" people in the Amazon would simply answer with a polite but firm "No way!" To be one world, to live under one roof—that also has to be negotiated, and persistently.

40. I encountered it in Africa without understanding it, some thirty years ago; it was only in Tobie Nathan's practice that I myself recognized the difference between encountering a patient under the auspices of anthropology and encountering a patient under the auspices of risky diplomacy (Nathan 1994). Naturally, those who cry, as did a well-known Parisian psychoanalyst, "Without a universal unconscious there is no more French Republic," accuse Nathan of culturalism—just as the Sokalists accuse me of social constructivism. Through all these misunderstandings we see the reaction of modernism, incapable of imagining a successor to the nature-culture opposition. If you want the encounter to occur on a new basis, if you want those you are addressing to share in the common basis of essential requirements, if you want nonhumans to make a difference that is not only in fact, you are necessarily a traitor. Yes, the diplomat is a traitor, but he may succeed where the faithful fail, because he alone doubts that his fellow citizens have succeeded in already discovering their real war goals.

41. Structuralism, like Hegel's solitary syntheses, had the disadvantage of establishing the common world and its laws of composition (symmetry, inversion, similarity, opposition, condensation, and so on) without taking into account those whose cultures were being thus unified and whose opinions were taken to be as vain as the secondary qualities* for the metaphysics of nature. After recognizing both the importance of this distinction between objective and subjective and the impossibility of applying them, Lévi-Strauss sees no other solution than to invent a new *unknown*, the structural unconscious that "enables us to coincide with forms of activity which are both at once *ours* and *other*: which are the condition of all the forms of mental life of all men at all times" (Lévi-Strauss 1987 [1950]), 35).

42. It is slanderous to speak of diplomats as mere rug merchants. If we take, for example, the debate between American creationists and evolutionists, we are not going to split the difference, with an ill-conceived compromise between a world created six thousand years ago and an Earth formed six billion years ago, and agree, for example,

on two billion years! That would satisfy no one. The diplomat goes much further: he demands that we put on the table what a God is and what an Earth is. This is the entire advantage of an experimental metaphysics over the head-on clash of a metaphysics of nature* struggling with the “traditions.” The same is true of the painful debate over abortion in the United States.

43. Moreover, this is why the Leviathan, “that Mortal God, to which we owe under the *Immortal God*, our peace and defense,” appears so monstrous. It no more represents politics than nature represents the sciences. Such is the error I committed, in the book on the moderns, by trying to establish symmetry between the artifact of Science and that of Politics. This is indeed why I have since abandoned the principle of symmetry, replacing it with an equal respect for sciences and for politics. I hope it is now clear, at the end of this book, that I have simply attempted to sketch a more realistic portrait of a Leviathan ending the state of nature for good.

44. This was already the theme of the little *Tractatus scientifico-politicus* that I wrote just as the Cold War was ending, stressing the parallelism between the wars of religion and the science wars (Latour 1988). At the time, I saw no solutions other than the distinction between force and power for getting away from the already obsolete opposition between relations based on reason and relations based on force. I thought that the principle of generalized symmetry would make it possible to extricate ourselves. I had not yet grasped, at the time, the properly constitutional work of modernism that rendered such a move impossible.

45. See the section on anthropology in Chapter 1, and the work of Descola and Palsson (1996).

Bibliography

- Acot, Pascal. 1998. *The European Origins of Scientific Ecology*. Paris: Editions des Archives Contemporaines.
- Akrich, Madeleine, and Bruno Latour. 1992. "A Summary of a Convenient Vocabulary for the Semiotics of Human and Nonhuman Assemblies." In *Shaping Technology-Building Society: Studies in Sociotechnical Change*, ed. Wiebe Bijker and John Law, 259–264. Cambridge, Mass.: MIT Press.
- Anker, Peter. 2001. *Imperial Ecology: Environmental Order in the British Empire, 1895–1945*. Cambridge, Mass.: Harvard University Press.
- Appadurai, Arjun. 1996. *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis: University of Minnesota Press.
- Ashmore, Malcolm, Derek Edwards, and Jonathan Potter. 1994. "The Bottom Line: The Rhetoric of Reality Demonstrations." *Configurations* 2 (1): 1–14.
- Bachelard, Gaston. 1951. *L'activité rationaliste de la physique contemporaine*. Paris: Presses Universitaires de France.
- . 1967. *La formation de l'esprit scientifique*. Paris: Vrin.
- Barnes, Barry, and Steven Shapin. 1979. *Natural Order: Historical Studies in Scientific Culture*. London: Sage.
- Barry, Andrew. 2001. *Political Machines: Governing a Technological Society*. London: Athlone Press.
- Barthe, Yannick. 2000. "La mise en politique des déchets nucléaires: L'action publique aux prises avec les irréversibilités techniques." Doctoral thesis, Ecole Nationale Supérieure des Mines de Paris.
- Bastide, Françoise. 2001. *Una notte con Saturno: Scritti semiotici sul discorso scientifico*. Trans. Roberto Pellerey. Rome: Meltemi.
- Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. London: Sage.
- . 1995. *Ecological Politics in an Age of Risk*. Cambridge: Polity Press.

- . 1997. *The Reinvention of Politics: Rethinking Modernity in the Global Social Order*. Trans. Mark Ritter. Cambridge: Polity Press.
- Beck, Ulrich, Anthony Giddens, and Scott Lash. 1994. *Reflexive Modernization: Politics, Tradition, and Aesthetics in the Modern Social Order*. Stanford, Calif.: Stanford University Press.
- Berg, Marc, and Anne-Marie Mol. 1998. *Differences in Medicine: Unraveling Practices, Techniques, and Bodies*. Durham, N.C.: Duke University Press.
- Biagioli, Mario. 1993. *Galileo Courtier: The Practice of Science in the Culture of Absolutism*. Chicago: University of Chicago Press.
- Bijker, Wiebe. 1995. *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change*. Cambridge, Mass.: MIT Press.
- Bijker, Wiebe, and John Law. 1992. *Shaping Technology-Building Society: Studies in Sociotechnical Change*. Cambridge, Mass.: MIT Press.
- Bloor, David. 1999. "Anti-Latour." *Studies in History and Philosophy of Science* 30 (1): 81–112.
- Boltanski, Luc, and Laurent Thévenot. 1991. *De la justification: Les économies de la grandeur*. Paris: Gallimard.
- Botkin, Daniel B. 1990. *Discordant Harmonies: A New Ecology for the Twenty-First Century*. Oxford: Oxford University Press.
- Bookchin, Murray. 1996. *The Philosophy of Social Ecology: Essays on Dialectical Naturalism*. New York: Black Rose Books.
- Brunschwig, Jacques, and Geoffrey Lloyd. 2000 [1996]. *Greek Thought: A Guide to Classical Knowledge*. Trans. under the direction of Catherine Porter. Cambridge, Mass.: Harvard University Press.
- Callicott, J. Baird. 1991. *Companion to a Sand County Almanac: Interpretive and Critical Essays*. Madison: University of Wisconsin Press.
- . 1992. "La nature est morte, vive la nature!" *Hastings Center Report*. September–October 1992: 16–23.
- Callon, Michel. 1986. "Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieux Bay." In *Power, Action, and Belief: A New Sociology of Knowledge?* ed. John Law, 196–229.
- . 1994. "Is Science a Public Good?" Fifth Mullins Lecture, Virginia Polytechnic Institute, March 23, 1993. *Science, Technology, & Human Values* 19 (4): 395–424.
- . 1995. "Representing Nature, Representing Culture." Unpublished lecture, Center for Social Theory and Technology, University of Keele, Eng., March 24, 1995.
- . 1998a. "An Essay on Framing and Overflowing: Economic Externalities Revisited by Sociology." In *The Laws of the Market*, ed. Michel Callon, 245–269. Oxford: Blackwell.
- . 1998b. *The Laws of the Market*. Oxford: Blackwell.

- Callon, Michel, Philippe Laredo, and Philippe Mustar. 1995. *La gestion stratégique de la recherche et de la technologie*. Paris: Economica.
- Callon, Michel, Pierre Lascoumes, and Yannick Barthe. 2001. *Agir dans un monde incertain: Essai sur la démocratie technique*. Series: "La couleur des idées." Paris: Le Seuil.
- Callon, Michel, and Bruno Latour. 1981. "Unscrewing the Big Leviathans: How Do Actors Macrostructure Reality?" In *Advances in Social Theory and Methodology: Toward an Integration of Micro and Macro Sociologies*, ed. Karin Knorr-Cetina and Aron Cicourel, 277–303. London: Routledge and Kegan Paul.
- . 1992. "Don't Throw the Baby Out with the Bath School! A Reply to Collins and Yearley." In *Science as Practice and Culture*, ed. Andy Pickering, 343–368. Chicago: University of Chicago Press.
- . 1997. "'Tu ne calculeras pas,' ou comment symétriser le don et le capital." *Nouvelle Revue du MAUSS* 9: 45–70.
- Callon, Michel, and Vololona Rabeharisoa. 1999. *Le pouvoir des malades*. Paris: Ecole Nationale Supérieure des Mines de Paris.
- Callon, Michel, and Arie Rip. 1991. "Forums hybrides et négociations des normes socio-techniques dans le domaine de l'environnement." *Environnement, Science et Politique, Cahiers du GERMES* 13: 227–238.
- Canguilhem, Georges. 1988 [1968]. *Ideology and Rationality in the History of the Life Sciences*. Cambridge, Mass.: MIT Press.
- Cassin, Barbara. 1995. *L'effet sophistique*. Paris: Gallimard.
- Castro, Eduardo Viveiros de. 1998. "Les pronoms cosmologiques et le perspectivisme amérindien." In *Gilles Deleuze: Une vie philosophique*, ed. Eric Alliez, 429–462. Paris: Les Empêcheurs de Penser en Rond.
- Charvolin, Florian. 1993. *L'invention de l'environnement en France (1960–1971): Les pratiques documentaires d'agrégation à l'origine du Ministère de la protection de la nature et de l'environnement*. Paris: Ecole Nationale Supérieure des Mines de Paris.
- Chase, Alston. 1987. *Playing God in Yellowstone: The Destruction of America's First National Park*. New York: Harcourt Brace.
- Chateauraynaud, Francis, Christophe Hérou, Cyril Lemieux, et al. 1999. *Alertes et prophéties: Les risques collectifs entre vigilance, controverse et critique*. 2 vols. Paris: Programmes Risques Collectifs et Situations de Crise du Centre National de la Recherche Scientifique.
- Chateauraynaud, Francis, and Didier Torny. 1999. *Les sombres précurseurs: Une sociologie pragmatique de l'alerte et du risque*. Paris: Editions de l'Ecole des Hautes Etudes en Sciences Sociales.
- Clark, Tim J. 1999. *Farewell to an Idea: Episodes from a History of Modernism*. New Haven, Conn.: Yale University Press.

- Cochoy, Franck. 1999. *Une histoire du marketing: Discipliner l'économie de marché*. Paris: La Découverte.
- . 2002. *Une sociologie du packaging ou l'âne de Buridan face au marché*. Presses Universitaires de France: Paris.
- Collins, Harry, and Martin Kusch. 1998. *The Shape of Actions: What Humans and Machines Can Do*. Cambridge, Mass.: MIT Press.
- Collins, Harry, and Steven Yearley. 1992. "Epistemological Chicken." In *Science as Practice and Culture*, ed. Andy Pickering, 301–326. Chicago: University of Chicago Press.
- Cronon, William. 1991. *Nature's Metropolis: Chicago and the Great West*. New York: Norton.
- . 1996. *Uncommon Ground: Rethinking the Human Place in Nature*. New York: Norton.
- Cussins, Charis. 1998 [1996]. "Ontological Choreography: Agency for Women Patients in an Infertility Clinic." In *Differences in Medicine*, ed. Marc Berg and Anne-Marie Mol, 166–201.
- . 1997. "Des éléphants dans le magasin de la science." *La Recherche* 303: 53–56.
- Dagognet, François. 1990. *Nature*. Paris: Vrin.
- Daston, Lorraine. 1998. "The Nature of Nature in Early Modern Europe." *Configurations* 6 (2): 149–172.
- Daston, Lorraine, and Katharine Park. 1999. *Wonders and the Order of Nature*. Cambridge, Mass.: Zone Books.
- Dear, Peter. 1991. *The Literary Structure of Scientific Arguments*. Philadelphia: University of Pennsylvania Press.
- Deléage, J.-P. 1991. *Histoire de l'écologie, une science de l'homme et de la nature*. Paris: La Découverte.
- Deleuze, Gilles. 1993. *The Fold: Leibniz and the Baroque*. Trans. Tom Conley. Minneapolis: University of Minnesota Press.
- Descola, Philippe. 1993 [1986]. *In the Society of Nature: Native Cosmology in Amazonia*. Cambridge: Cambridge University Press.
- . 1996. "Constructing Natures: Symbolic Ecology and Social Practice." In Philippe Descola and Gísli Palsson, *Nature and Society*, 82–102.
- . 1997. *The Spears of Twilight: Life and Death in the Amazon Jungle*. Trans. Janet Lloyd. London: Flamingo.
- . 2001. *Leçon inaugurale: Chaire d'anthropologie de la nature*. Series no. 159. Paris: Collège de France.
- Descola, Philippe, and Gísli Palsson. 1996. *Nature and Society: Anthropological Perspectives*. London: Routledge.
- Despret, Vinciane. 1996. *Naissance d'une théorie éthologique*. Paris: Les Empêcheurs de Penser en Rond.

- . 1999. *Ces émotions qui nous fabriquent: Ethnopsychologie de l'authenticité*. Paris: Les Empêcheurs de Penser en Rond.
- . 2002. *Quand le loup habitera avec l'agneau*. Paris: Les Empêcheurs de Penser en Rond.
- Dewey, John. 1954 [1927]. *The Public and Its Problems*. Athens: Ohio University Press.
- Dratwa, Jim. 2003. "Taking Risks with the Precautionary Principle." Doctoral dissertation, Centre de la Sociologie de l'Innovation, Ecole Nationale Supérieure des Mines de Paris.
- Drouin, Jean-Marc. 1991. *Réinventer la nature: L'écologie et son histoire*. Pref. Michel Serres. Paris: Desclée de Brouwer.
- Eder, Klaus. 1996. *The Social Construction of Nature*. London: Sage.
- Ehrlich, Paul R., and Anne H. Ehrlich. 1997. *Betrayal of Science and Reason: How Anti-Environmental Rhetoric Threatens Our Future*. Washington, D.C.: Island Press.
- Ewald, François. 2001. *Le principe de précaution*. Paris: Presses Universitaires de France.
- Favereau, Olivier. 2001. "L'économie du sociologue ou penser (l'orthodoxie) à partir de Pierre Bourdieu." In *Le travail sociologique de Pierre Bourdieu: Dettes et critiques*, expanded ed., ed. Bernard Lahire, 255–314. Paris: La Découverte.
- Ferry, Luc. 1995. *The New Ecological Order*. Trans. Carol Volk. Chicago: University of Chicago Press.
- Fleck, Ludwig. 1935. *Genesis and Development of a Scientific Fact*. Chicago: University of Chicago Press.
- Fox-Keller, Evelyn. 1986. *Reflections on Gender*. New Haven, Conn.: Yale University Press.
- . 2000. *The Century of the Gene*. Cambridge, Mass.: MIT Press.
- Galison, Peter. 1997. *Image and Logic: A Material Culture of Microphysics*. Chicago: University of Chicago Press.
- Geison, Gerald G. 1995. *The Private Science of Louis Pasteur*. Princeton, N.J.: Princeton University Press.
- Godard, Olivier. 1997. *Le principe de précaution dans les affaires humaines*. Paris: Editions de l'Institut National de la Recherche Agronomique et de la Maison des Sciences de l'Homme. et de la MSH.
- Golley, Frank Benjamin. 1993. *A History of the Ecosystem Concept in Ecology: More than the Sum of the Parts*. New Haven, Conn.: Yale University Press.
- Gomart, Emilie. 1999. "Surprised by Methadone." Doctoral thesis, Ecole Nationale Supérieure des Mines de Paris.
- . 2002. "Methadone: Six Effects in Search of a Substance." *Social Studies of Science* 32 (1): 93–135.

- Gould, Stephen Jay. 1987. *Time's Arrow, Time's Cycle: Myth and Metaphor in the Discovery of Geological Time*. Cambridge, Mass.: Harvard University Press.
- . 1989. *Wonderful Life: The Burgess Shale and the Nature of History*. New York: W. W. Norton.
- Greimas, Algirdas Julien. 1976. *On Meaning: Selected Writings in Semiotic Theory*. Trans. Paul J. Perron and Frank H. Collins. Minneapolis: University of Minnesota Press.
- Habermas, Jürgen. 1990. *Moral Consciousness and Communicative Action*. Trans. Christian Lenhardt and Shierry Weber Nicholsen. Cambridge: Polity Press.
- . 1996. *Between Facts and Norms: Contributions to a Discourse Theory of Law and Democracy*. Trans. William Rehg. Cambridge: Polity Press.
- Hacking, Ian. 1983. *Representing and Intervening: Introductory Topics in the Philosophy of Natural Sciences*. Cambridge: Cambridge University Press.
- . 1999. *The Social Construction of What?* Cambridge, Mass.: Harvard University Press.
- Haraway, Donna J. 1989. *Primate Visions: Gender, Race, and Nature in the World of Modern Science*. London: Routledge and Kegan Paul.
- . 1991. *Simians, Cyborgs, and Women: The Reinvention of Nature*. New York: Chapman and Hall.
- Haudricourt, André-George. 1987. *La technologie science humaine: Recherches d'histoire et d'ethnologie des techniques*. Paris: Editions de la Maison des Sciences de l'Homme.
- Hegel, G. W. F. 1817. *Précis de l'Encyclopédie des sciences philosophiques*. Paris: Vrin.
- Hennion, Antoine, and G. Teil. 2003. "Discovering Quality or Performing Taste? A Sociology of the Amateurs." In *Theoretical Approaches to Food Quality*, ed. M. Harvey, A. McMeekin, and A. Warde. Manchester: Manchester University Press.
- Hermitte, Marie-Angèle. 1996. *Le sang et le droit: Essai sur la transfusion sanguine*. Paris: Le Seuil.
- Houdart, Sophie. 2000. "Et le scientifique tint le monde': Ethnologie d'un laboratoire japonais de génétique du comportement." Doctoral thesis, Université de Paris X.
- Hutchins, Edwin. 1995. *Cognition in the Wild*. Cambridge, Mass.: MIT Press.
- Irwin, Alan, and Brian Wynne. 1996. *Misunderstanding Science? The Public Reconstruction of Science and Technology*. Cambridge: Cambridge University Press.
- James, William. 1996 [1909]. *A Pluralistic Universe: Hibbert Lectures at Manches-*

- ter College on the Present Situation in Philosophy*. Lincoln: University of Nebraska Press.
- Jasanoff, Sheila. 1992. "Science, Politics, and the Renegotiation of Expertise at EPA." *Osiris* 7: 195–217.
- . 1995. *Science at the Bar: Law, Science and Technology in America*. Cambridge, Mass.: Harvard University Press.
- Jonas, Hans. 1984. *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*. Trans. Hans Jonas and David Herr. Chicago: University of Chicago Press.
- . 1990. *Le principe responsabilité: Une éthique pour la civilisation technologique*. Paris: Cerf.
- Jones, Carrie, and Peter Galison. 1998. *Picturing Science, Producing Art*. London: Routledge.
- Jullien, François. 1995. *The Propensity of Things: Toward a History of Efficacy in China*. Cambridge, Mass.: Zone Books.
- . 1997. *Traité de l'efficacité*. Paris: Grasset.
- Jurdant, Baudoin. 1998. *Impostures intellectuelles: Les malentendus de l'affaire Sokal*. Paris: La Découverte.
- Knorr-Cetina, Karin. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, Mass.: Harvard University Press.
- Koyré, Alexandre. 1957. *From the Closed World to the Infinite Universe*. Baltimore, Md.: Johns Hopkins University Press.
- Kupiec, Jean-Jacques, and Pierre Sonigo. 2000. *Ni Dieu ni gène*. Paris: Le Seuil.
- Lafaye, Claudette, and Laurent Thévenot. 1993. "Une justification écologique? Conflits dans l'aménagement de la nature." *Revue Française de Sociologie* 34 (4): 495–524.
- Lakatos, Imre. 1978. *The Methodology of Scientific Research Programmes*. Ed. John Worrall and Gregorie Currie. Cambridge: Cambridge University Press.
- Lascoumes, Pierre. 1994. *Eco-pouvoir: Environnements et politiques*. Paris: La Découverte.
- Lascoumes, Pierre, Michel Callon, and Yannick Barthe. 1997. *Information, consultation, expérimentation: Les activités et les formes d'organisation au sein des forums hybrides*. Paris, Centre National de la Recherche Scientifique: Actes du séminaire Programmes Risques collectifs et situations de crise.
- Lash, Scott, Bronislaw Szerszynski, and Brian Wynne. 1996. *Risk, Environment, and Modernity: Towards a New Ecology*. London: Sage.
- Latour, Bruno. 1988. *The Pasteurization of France*. Trans. Alan Sheridan. Cambridge, Mass.: Harvard University Press.
- . 1993. *We Have Never Been Modern*. Trans. Catherine Porter. Cambridge, Mass.: Harvard University Press.

- . 1996a. *Aramis, or the Love of Technology*. Trans. Catherine Porter. Cambridge, Mass.: Harvard University Press.
- . 1996b. *Petite réflexion sur le culte moderne des dieux Faitiches*. Paris: Les Empêcheurs de Penser en Rond.
- . 1998. "To Modernize or to Ecologize, That Is the Question." In *Re-making Reality: Nature at the Millennium*, ed. Bruce Braun and Noel Castree, 221–242. London: Routledge.
- . 1999a. "For Bloor and Beyond: A Response to David Bloor's 'Anti-Latour.'" *Studies in History and Philosophy of Science* 30 (1): 113–129.
- . 1999b. *Pandora's Hope: Essays on the Reality of Science Studies*. Cambridge, Mass.: Harvard University Press.
- . 1999c. "When Things Strike Back: A Possible Contribution of Science Studies to the Social Sciences," *British Journal of Sociology* 51 (1): 105–123.
- . 2000. "A Well-Articulated Primatology: Reflexions of a Fellow-Traveler." In *Primate Encounters*, ed. Shirley Strum and Linda Fedigan, 358–381. Chicago: University of Chicago Press.
- . 2002a. "The Ends of Means." *Theory, Culture, and Society* 19: 247–260.
- . 2002b. *La fabrique du droit: Une ethnographie du Conseil d'Etat*. Paris: La Découverte.
- . 2002c. "Gabriel Tarde and the End of the Social." In *The Social in Question: New Bearings in the History and the Social Sciences*, ed. Patrick Joyce, 117–132. London: Routledge.
- . 2002d. "Et si l'on parlait un peu politique?" *Politix*.
- . 2002e. *War of the Worlds: What about Peace?* Ed. John Tresch, trans. Charlotte Bigg. Chicago: Prickly Paradigm Press.
- . 2003. "The Promises of Constructivism." In *Chasing Technoscience: Matrix for Materiality*, ed. Don Ihde and Evan Selinger, 27–46. Bloomington, Ind.: Indiana University Press.
- . Forthcoming. "How to Talk about the Body? The Normative Dimension of Science Studies." *Body and Society*.
- Latour, Bruno, and Jean-Pierre Le Bourhis. 1995. *Comment faire de la bonne politique avec de la bonne eau? Rapport sur la mise en place de la nouvelle loi sur l'eau pour le compte de la Direction de l'eau*. Paris: Centre de Sociologie de l'Innovation. Mimeograph.
- Latour, Bruno, and Pierre Lemonnier. 1994. *De la préhistoire aux missiles balistiques: L'intelligence sociale des techniques*. Paris: La Découverte.
- Latour, Bruno, and Peter Weibel. 2002. *Iconoclasm: Beyond the Image Wars in Science, Religion, and Art*. Cambridge, Mass.: MIT Press.
- Law, John. 1986. *Power, Action, and Belief: A New Sociology of Knowledge?* Sociological Review Monograph. London: Routledge and Kegan Paul.
- Lépinay, Vincent. 2003. *L'économie d'une formule: Anthropologie d'un produit*

- dérivé financier complexe*. Centre de Sociologie de l'Innovation, Ecole Nationale Supérieure des Mines de Paris.
- Leroi-Gourhan, André. 1993. *Gesture and Speech*. Trans. Anna Bostock Berger. Cambridge, Mass.: MIT Press.
- Lévi-Strauss, Claude. 1987 [1950]. *Introduction to Marcel Mauss, Sociology and Psychology: Essays*. Trans. Felicity Baker. London: Routledge and Kegan Paul.
- Lewontin, Richard. 2000. *The Triple Helix: Gene, Organism, and Environment*. Cambridge, Mass.: Harvard University Press.
- Licoppe, Christian. 1996. *La formation de la pratique scientifique: Le discours de l'expérience en France et en Angleterre (1630-1820)*. Paris: La Découverte.
- Lippmann, Walter. 1922. *Public Opinion*. New York: Simon & Schuster.
- Lloyd, Geoffrey. 1996. "Putting the Greeks in Their Place." *Extrême-Orient, Extrême-Occident* 18: 177-187.
- Lovelock, James. 1988. *The Ages of Gaia: A Biography of Our Living Earth*. New York: Bantam Books.
- Luhmann, Niklas. 1989. *Ecological Communication*. Chicago: University of Chicago Press.
- Lynch, Mike, and Steve Woolgar. 1990. *Representation in Scientific Practice*. Cambridge, Mass.: MIT Press.
- MacKenzie, Don. 1990. *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance*. Cambridge, Mass.: MIT Press.
- . 1996. *Knowing Machines: Essays on Technical Change*. Cambridge, Mass.: MIT Press.
- Macnaghten, Phil, and John Urry. 1998. *Contested Natures*. London: Sage.
- Marres, Noortje. Forthcoming. "The Rules of Engagement: Issue-Movements, New Media, and the Democratic Deficit." Doctoral dissertation, University of Amsterdam.
- Merchant, Carolyn. 1980. *The Death of Nature: Women, Ecology, and the Scientific Revolution*. London: Wildwood House.
- . 1992. *Radical Ecology: The Search for a Livable World*. London: Routledge.
- Miller, Peter. 1994. "The Factory as Laboratory." *Science in Context* 7 (3): 469-496.
- Moscovici, Serge. 1977 [1968]. *Essai sur l'histoire humaine de la nature*. Paris: Flammarion.
- Naess, Arne. 1988. *Ecology, Community, and Lifestyle: Outline of an Ecophilosophy*. Cambridge: Cambridge University Press.
- Nathan, Tobie. 1994. *L'influence qui guérit*. Paris: Editions Odile Jacob.
- Pestre, Dominique. 1995. "Pour une histoire sociale et culturelle des sciences: Nouvelles définitions, nouveaux objets, nouvelles pratiques." *Annales (Histoire, Science Sociales)* 3 (May-June): 487-522.

- Pickering, Andy. 1995. *The Mangle of Practice: Time, Agency, and Science*. Chicago: University of Chicago Press.
- Pocock, J. G. A. 1975. *The Machiavellian Moment: Florentine Political Thought and the Atlantic Republican Tradition*. Princeton, N.J.: Princeton University Press.
- Polanyi, Karl. 1957 [1944]. *The Great Transformation*. Boston: Beacon Press.
- Poovey, Mary. 1999. *History of the Modern Fact: Problems of Knowledge in the Sciences of Wealth and Society*. Chicago: University of Chicago Press.
- Popper, Karl. 1963. *The Open Society and Its Enemies*. New York: Harper.
- Poulot, Dominique. 1997. *Musée, nation, patrimoine, 1789–1815*. Paris: Gallimard.
- Power, Michael. 1995. *Accounting and Science: National Inquiry and Commercial Reason*. Cambridge: Cambridge University Press.
- Ravetz, Jerome R. 1983. *Scientific Knowledge and Its Social Problems*. Oxford: Oxford University Press.
- Rémy, Elizabeth. 1997. "Comment dépasser l'alternative risque réel / risque perçu: L'exemple de la controverse sur les champs électromagnétiques." *Annales des Mines, collection Responsabilité & Environnement* 4: 27–34.
- Rheinberger, Hans-Jörg. 1997. *Toward a History of Epistemic Things: Synthetizing Proteins in the Test Tube*. Stanford: Stanford University Press.
- Robertson, George. 1996. *Future Natural: Nature/Science/Culture*. London: Routledge.
- Rogers, Richard, and Noortje Marres. 1999. "Landscaping Climate Change: Mapping Science and Technology Debates on the World Wide Web." *Public Understanding of Science* 9: 141–163.
- Rosental, Claude. 2000. "La production de connaissances certifiées en logique: Un objet d'investigation sociologique." *Cahiers Internationaux de Sociologie* 109: 343–374.
- Rothenberg, David, and Arne Naess. 1993. *Is It Painful to Think? Conversations with Arne Naess*. Minneapolis: University of Minnesota Press.
- Rothenberg, David, and Marta Ulvaeus. 1999. *The New Earth Reader: The Best of Terra Nova*. Cambridge, Mass.: MIT Press.
- Sadeleer, Nicolas de. 2002. *Environmental Principles: From Political Slogans to Legal Rules*. Oxford: Oxford University Press.
- Sahlins, Marshall. 1995. *How "Natives" Think: About Captain Cook, for Example*. Chicago: University of Chicago Press.
- . 2000a. *Culture in Practice*. New York: Zone Books.
- . 2000b. "'Sentimental Pessimism' and Ethnographic Experience; or, Why Culture Is Not a Disappearing 'Object.'" In *Biography of Scientific Objects*, ed. Lorraine Daston, 158–201. Chicago: University of Chicago Press.

- Schaffer, Simon. 2002. "The Devices of Iconoclasm." In *Iconoclasm*, ed. Bruno Latour and Peter Weibel, 498–515. Cambridge, Mass.: MIT Press.
- Schama, Simon. 1996. *Landscape and Memory*. New York: Knopf.
- Schiebinger, Linda. 1999. *Has Feminism Changed Science?* Cambridge, Mass.: Harvard University Press.
- Schmitt, Carl. 1976 [1963]. *The Concept of the Political*. Trans. George Schwab. New Brunswick, N.J.: Rutgers University Press.
- Serres, Michel. 1987. *Statues*. Paris: François Bourin.
- . 1995. *The Natural Contract*. Trans. E. MacArthur and W. Paulson. Ann Arbor: University of Michigan Press.
- Shapin, Steven. 1992. "Discipline and Bounding: The History and Sociology of Science as Seen through the Externalism Debate." *History of Science* 30: 334–369.
- . 1994. *A Social History of Truth: Gentility, Civility, and Science in Seventeenth Century England*. Chicago: University of Chicago Press.
- . 1996. *The Scientific Revolution*. Chicago: University of Chicago Press.
- Shapin, Steven, and Simon Schaffer. 1985. *Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life*. Princeton, N.J.: Princeton University Press.
- Simmel, Georg. 1978 [1900]. *The Philosophy of Money*. Trans. Tom Bottomore and David Frisby. London: Routledge and Kegan Paul.
- Smith, Barbara Herrnstein. 1997. *Belief and Resistance: Dynamics of Contemporary Intellectual Controversy*. Cambridge, Mass.: Harvard University Press.
- Smith, Crosbie, and Norton Wise. 1989. *Energy and Empire: A Biographical Study of Lord Kelvin*. Cambridge: Cambridge University Press.
- Soper, Kate. 1995. *What Is Nature? Culture, Politics, and the Non-Human*. Cambridge: Cambridge University Press.
- Stengers, Isabelle. 1996. *Cosmopolitiques 1: La guerre des sciences*. Paris: La Découverte, Les Empêcheurs de Penser en Rond.
- . 1997a. *Cosmopolitiques 5: Au nom de la flèche du temps: Le défi de Prigogine*. Paris: La Découverte.
- . 1997b. *Cosmopolitiques 7: Pour en finir avec la tolérance*. Paris: La Découverte, Les Empêcheurs de Penser en Rond.
- . 1998. "The Science Wars: What about Peace?" In *Impostures intellectuelles*, ed. Baudoin Juriant.
- . 2000. *The Invention of Modern Science*. Minneapolis: University of Minnesota Press.
- . 2002. *Penser avec Whitehead: Une libre et sauvage création de concepts*. Paris: Gallimard.

- Stone, Christopher D. 1974. *Should Trees Have Standing? Toward Legal Rights for Natural Objects*. Los Altos, Calif.: William Kaufmann.
- . 1985. “‘Should Trees Have Standing?’ Revisited: How Far Will Law and Morals Reach? A Pluralist Perspective.” *Southern California Law Review* 59 (1): 1–154.
- . 1987. *Earth and Other Ethics: The Case for Moral Pluralism*. New York: Harper and Row.
- Strathern, Marilyn. 1992. *After Nature: English Kinship in the Late Twentieth Century*. Cambridge: Cambridge University Press.
- Strum, Shirley, and Linda Fedigan. 2000. *Primate Encounters*. Chicago: University of Chicago Press.
- Suchman, Lucy. 1987. *Plans and Situated Actions: The Problem of Human-Machine Communication*. Cambridge: Cambridge University Press.
- Tamen, Miguel. 2001. *Friends of Interpretable Objects*. Cambridge, Mass.: Harvard University Press.
- Tarde, Gabriel. 1902. *Psychologie économique*. Paris: Félix Alcan.
- . 1969. *On Communication and Social Influence: Selected Papers*. Ed. Terry N. Clark. Chicago: University of Chicago Press.
- . 1999 [1895]. *Monadologie et sociologie*. Paris: Les Empêcheurs de Penser en Rond.
- Teil, Geneviève. 1998. “Devenir expert aromatisant: Y a-t-il une place pour le goût dans les goûts alimentaires?” *Sociologie du Travail* 98 (4): 503–522.
- Thévenot, Laurent. 1984. “Rules and Implements: Investments in Forms.” *Social Science Information* 23 (1): 1–45.
- . 1996. “Mettre en valeur la nature: Disputes autour d’aménagements de la nature, en France et aux Etats-Unis.” *Autres Temps* 49: 27–50.
- Thomas, Keith. 1983. *Man and the Natural World: A History of the Modern Sensibility*. New York: Pantheon.
- Thomas, Nicholas. 1991. *Entangled Objects: Exchange, Material Culture, and Colonialism in the Pacific*. Cambridge, Mass.: Harvard University Press.
- Thomas, Yan. 1980. “Res, chose et patrimoine (note sur le rapport sujet-objet en droit romain).” *Archives de Philosophie du Droit* 25: 413–426.
- Thompson, Charis. 2002. “When Elephants Stand for Competing Philosophies of Nature: Amboseli National Park, Kenya.” In *Complexities in Science, Technology, and Medicine*, ed. Anne-Marie Mol and John Law. Durham, N.C.: Duke University Press.
- Tresch, John. 2001. “Mechanical Romanticism: Engineers of the Artificial Paradise.” Ph.D. diss., Department of History and Philosophy of Science, University of Cambridge.
- Tromm, Danny. 1996. “La production politique du paysage: Eléments pour une interprétation des pratiques ordinaires de patrimonialisation de la

- nature en Allemagne et en France.” Doctoral thesis, Institut d’Etudes Politiques de Paris.
- Waldron, Arthur. 1990. *The Great Wall of China: From History to Myth*. Cambridge: Cambridge University Press.
- Walzer, Michael. 1988. *The Company of Critics: Social Criticism and Political Commitment*. New York: Basic Books.
- Weart, Spencer. 1979. *Scientists in Power*. Cambridge, Mass.: Harvard University Press.
- Western, David. 1997. *In the Dust of Kilimanjaro*. Washington, D.C.: Island Press.
- Western, David, R. Michael Wright, and Shirley Strum. 1994. *Natural Connections: Perspectives in Community-based Conservation*, Washington, D.C.: Island Press.
- Whitehead, Alfred North. 1920. *Concept of Nature*. Cambridge: Cambridge University Press.
- . 1978 [1929]. *Process and Reality: An Essay in Cosmology*. New York: Free Press.
- Yearley, Steven. 1991. *The Green Case: A Sociology of Environmental Issues, Arguments, and Politics*. London: Harper and Collins.
- Zimmerman, Michael E. 1994. *Contesting Earth’s Future: Radical Ecology and Postmodernity*. Berkeley: University of California Press.
- Zourabichvili, François. 1994. *Deleuze: Une philosophie de l’événement*. Paris: Presses Universitaires de France.

Index

- Account, taking into, 108, 116, 119–120, 126, 131, 233; excluded entities, 144; fact-value distinction and, 111; requirements of, 109; researchers and, 140; the State and, 201; as upper house of the collective, 165, 173, 181
- Actants, 75, 77, 80
- Actors, 73, 75, 80, 81, 86, 160
- Administration, 154, 204, 205, 277
- Animals, 42, 44, 45, 67
- Anthropocentrism, 19, 26, 88; ancient Greeks and, 131; ethnocentrism and, 32; inanimism of nature and, 224; modernism and, 93
- Anthropology, 7, 150, 152; comparative, 9, 13, 42–49, 226, 232; diplomacy and, 212, 214; irrationality and, 216; modernism and, 165; physical, 210
- Anthropomorphism, 54, 75, 77, 263n23
- Apocalypticism, 4, 25, 190, 192
- Appellants, 122, 126, 162, 194
- Aristotle, 71
- Articulation, 86, 89, 106, 107, 109, 118, 162, 172, 205, 244, 247, 263
- Asbestos, 23, 24, 129, 255n20, 269n31
- Association, social world as, 37, 70–82, 87
- Authority, 6, 14, 17, 69, 75, 133, 222, 223, 261, 271
- Barbarians, 208, 209–210, 217
- Batrachians, 63, 87
- Big Bang, 35, 141
- Biology, 99
- Biotopes, 21
- Bureaucrats, 204
- Callicles, 52, 186
- Capitalism, 93, 276n42
- Cartesianism, 19
- Causality, 22, 27, 28, 73, 81; chains of, 78, 152; “mad cow disease” and, 114; stabilization of, 179
- Cave, Platonic allegory of, 19, 31, 33, 132, 176; abandonment of, 10–18, 90, 127, 231; confused with the collective, 121; crisis of objectivity and, 23; deep ecology and, 27; facts and, 105; language and, 84; legacy of, 129; models of the collective and, 37–39; modernist defense of, 189; nature-society opposition and, 34; notion of external reality, 78; political ecology and, 26; politics as power and interests, 47, 50; separation of facts and values, 101; social world as prison, 55, 98, 149; speech and, 67, 68, 92; unity of nature and, 29
- Citizens, 78, 79
- Civilization, 71, 208, 210, 215
- Civil society, 164
- Cloning, 97, 101, 102, 198
- Closure, requirement of, 111, 146, 153, 162
- Collective, the, 1, 7, 8, 30; anthropology and, 42; articulated, 82–87; civilization and, 212; competencies of, 233; composition of, 232; definition of, 28;

- Collective (*continued*)
 difficulties in convoking, 57–62; exoticism and, 45–46; experimentation and, 205, 223; feedback loop of, 125; houses of, 164–180, 234; human-nonhuman associations, 61, 70–82; as melting pot, 80; models of, 37–39; multiplicity and, 55; politicians and, 144; secularization of, 89; as Third Estate, 54; two powers of representation, 108–116, 135; unity and, 59
- Common good, 121, 128
- Common sense, 7, 182, 195, 222
- Common world, 93, 106, 121, 195, 206
- Communism, 26
- Compromise, 110, 139, 146, 159, 176
- Concern, matters of, 51, 75, 96, 103, 114, 118, 145, 159, 168, 169, 180, 239, 278
- Constitution, new, 8, 13–14, 42, 50, 52; anthropology and, 210; building of common world, 93; changing of, 74, 120; comparative anthropology and, 42; deliberation and decision in, 147; due process and, 54; ecological crises and, 57; economics and, 152, 154; externalization and, 125; fact-value distinction and, 123; “green” movements and, 19; moralists and, 160; objectivity and, 18–19; rewriting of, 59; spokespersons and, 64, 68; state of law and, 233. *See also* Political ecology
- Constitution, old (modernist), 53, 54, 62, 92, 95, 146; abandonment of, 161; binary order and, 131; democracy stifled by, 169; economics and, 134, 154; exteriority and, 122, 123; matters of concern and, 114; metaphysics of nature and, 93; moralists and, 158; ordering under, 175; public life and, 136; rejection of, 129; science-ideology distinction and, 100, 142; transcendence and, 187; two-house collective of, 56, 59, 115, 129
- Consultation, 109, 111, 112, 134, 153; moralists and, 155; perplexity and, 162; politicians and, 144; relevance and, 181; scientists and, 142, 145; values and, 106, 107
- Cosmograms, 145, 151, 195, 198
- Cosmos*, 8, 41, 81, 90, 93, 183; administration of, 204; apocalypse and, 192; fabrication of, 101; indifference to human passions, 54; learning curve and, 199; moralists and, 160
- Creutzfeldt-Jakob disease, 114
- Cultures: “culture” as marked category, 49; mediated access to nature through, 32; multiplicity of, 29, 47, 48 (*see also* multiculturalism); non-Western views of the collective, 45; “others” as, 164–165; secondary qualities and, 184
- Cybernetics, 22
- Darwin, Charles, 88, 265n38, 271n6, 274n22
- Deep ecology, 26, 27; anthropology and, 43, 44; critics of, 257n33, 276n45; democracy and, 256n28; Kantianism and, 276n44
- Democracy, 3, 6, 129, 164, 182, 228; ancient Greeks as inventors of, 71; appeal to Science and, 18, 135; natural necessity and, 5; neutralization of, 14; new institutions of, 42; parliamentary, 165; representation and, 127; sciences and, 143; speech and, 69–70; State of law and, 234; stifled by old constitution, 169. *See also* Republic
- Demos*, 54, 176, 185, 186, 215
- Descartes, René, 93, 280n9
- Dialectics, 40, 72, 77, 79, 175, 263n23
- Diplomacy, 209–217, 221, 235
- Domination, 81
- Dualism, 94
- Due process, 54, 79, 91, 135, 224; as representation, 126; the State and, 201; totality and, 199
- Ecological crises, 58, 63, 65, 129; metaphysics of nature and, 128; political philosophy and, 93; as revolt of the means, 155–156, 216
- Ecology movements, 2, 9, 251n1; concept of nature retained by, 19; ideological spectrum and, 5; sociology of, 7
- Economics and economists, 95, 132–136,

- 176; contributions of, 150–154, 162–163, 207; learning curve and, 206; power of the State and, 204
- Ecosystems, 5, 8, 35, 44, 131, 133
- Enemy, definition of, 207, 278n64
- Enlightenment, 227
- Environment, genetics and, 29
- Epistemology, political, 3, 110, 132, 231; anthropocentrism and, 87–88; Constitution and, 14, 18–19; multiplicity and, 30; nature and, 28; ontology and, 12; Science and, 10, 11, 13; separation of powers and, 91; social representations of nature and, 33; sociology and, 17; work of collection and, 47
- Essences, 86, 87, 104, 108, 167; diplomacy and, 213, 215; fixed boundaries of, 139; habits transformed into, 140; “mad cow disease” and, 114; negotiation and, 177; propositions as, 175
- Ethnocentrism, 32, 45, 220
- Exoticism, 45–46, 54
- Experimentation, collective, 196–200
- Expertise, 14, 63, 267n14
- Externality (exteriority), 79, 90, 110, 121–127, 152; of nature, 91; nonhumans and, 38
- Fabrication, process of, 96, 117
- Fact, matters of, 30, 31, 62, 114, 128; contradictory requirements in, 103–105, 109; *cosmos* and, 223; definition of facts, 125; differences and, 174; disadvantages of concept of fact, 95–102; externality and, 79; fact-value distinction, 118–119, 121, 126, 134, 233; ideology and, 99; salvation from, 125; speech and, 65, 67
- Feminism, 33, 48–49, 260n58
- Frankenstein myth, 193, 194, 199
- Freedom, 79, 189; articulated collective and, 86; economics and, 132; necessity and, 74, 80, 82, 147, 156, 159
- Freud, Sigmund, 87, 88
- Gaia hypothesis, 5, 199, 280n15
- Galileo Galilei, 55–56, 58, 88, 261n4
- Genetics, 29
- Globalization, 58, 219, 220
- Global thinking, 3
- Global warming, 63, 129, 278nn61–62
- Good sense, 7, 182–183, 222
- Gravity, law of, 51
- Greeks, ancient, 28, 32, 58, 71
- “Green” movements, 1, 19, 26, 226
- Habermas, Jürgen, 171, 262n16, 263n21, 266n6, 281n22
- Habits, 86, 87, 139, 175, 194, 213
- Hegel, G. W. F., 207, 263n23, 283n36, 284n41
- Hierarchy, 22, 90; economists and, 151; end of nature and, 25; experimentation and, 197; lower house of the collective and, 203; moralists and, 155, 158–159; politicians and, 146; publicity and, 111, 113, 162, 181; scientists and, 139, 142; totalization and, 29; values and, 97, 107, 109, 121
- Historians, 32, 95, 164
- History, 32, 33–34, 55, 99, 166; joint history of society and nature, 35; mistrust of, 195; political ecology and, 190; Science and, 219
- Hobbes, Thomas, 53, 218, 271n7
- Humanism, 198, 272n12
- Human-nonhuman associations, 70–82, 94, 136, 143; economists and, 151, 153; social actors and, 232
- Humans: defended against objectivization, 171; distinguished from subjects, 51; as excluded entities, 126; fact-value distinction and, 123; freedom and, 79, 81; humiliation of, 129
- Idealism, 33, 40
- Ideology, 99, 119, 142
- Immediacy, pure, 27, 257n30
- Inanimism, 156, 224
- Institution, 108, 109, 267n12; causalities and, 118; economists and, 151; lower house of the collective and, 203; moralists and, 155; requirement of closure and, 111, 114, 162, 181; researchers’ skills and, 139; scientists and, 142

- Instruments, 137, 138, 158, 196
 Intermediaries, 64, 67
 Irrationality, 94, 129, 190, 200, 215, 216
- Kakosmos* (bad common world), 99
 Kant, Immanuel, 155, 157, 216, 276n44
 Kantianism, 51, 155, 257n30, 262n16
 Knowledge, 10, 27, 33, 118; absolute, 74, 201; asceticism of, 14; history of the sciences and, 36; limits of, 15; philosophy of, 84; politics and, 185; process of fabrication and, 117; production of, 99; secondary qualities and, 47; silence of nature and, 92
 Kyoto conference (1997), 56, 65, 107, 261n4
- Laboratories, 11, 13, 52, 62, 75; causality in experiments, 81; facts in, 103; perplexity and, 137; public life and, 69, 121; scientific controversies in, 63–64, 66; socialization and, 77; work of fabrication in, 266n3
 Language, 37, 47, 118, 152; articulation of the collective and, 83, 84, 85; pluriverse and, 85; propositions and, 148
 Law, 23, 81, 180, 204. *See also* State of law
 Learning compact, 207
 Learning curve, 194–200
 Leibniz, Gottfried Wilhelm, 164, 177
 Lenin, V. I., 207
 Leviathan state, 202, 203, 218, 235, 285n43
 Lévi-Strauss, Claude, 208, 259n51, 284n41
 Logocentrism, 66, 221
 Logos, 84, 90, 132, 183, 208
 Lysenko affair, 100, 269n28
- “Mad cow disease,” 24, 111–113, 179
 Marx, Karl, 93, 267n9, 271n10
 Metaphysics, 60–61, 69, 152; bad reputation of, 128; essences and, 178; experimental, 123, 129, 131, 201, 204–205, 235; facts-values opposition and, 102; identity-based, 173
 Metaphysics of nature, 127, 130, 175, 200–201, 215; articulated collective and, 82; nature-society distinction and, 60; old Constitution and, 93; Science and, 141. *See also* Nature
 Middle Ages, 29, 30
 Militant practice, 19, 20, 32, 80
 Modernism, 21, 23, 27, 65, 93; civilization defined by, 208; clandestine bicameralism of, 135; concept of nature, 129; confusions of, 188–189; disinvention of, 193; economics as, 132, 153; in historical perspective, 183; houses of the collective and, 174; Kantianism as, 155; law and, 273n15; morality and, 160, 179; nature-culture opposition and, 284n40; “others” and, 165; subjectivity and, 200; time and, 235. *See also* Constitution, old (modernist)
 Modernity, 46, 253n6
 Monism, 94
 Monoculturalism, 48
 Mononaturalism, 33, 48, 130, 184, 219, 220
 Montesquieu, Baron de, 147
 Moralists, 176, 206; contributions of, 154–161, 162–163, 207; power of the State and, 204; on reason and force, 186
 Morality, 3, 19, 57, 99; economics and, 133; excluded entities and, 198; purity of, 117, 119; science and, 98; transcendent moral principle, 124; utilitarianism and, 276n43
 Mother Earth, 26, 43, 44, 197, 199, 259n50
 Multiculturalism, 29, 33, 36, 184; diplomacy and, 215; mononaturalism and, 130; Science and, 218; tolerance of, 283n36; unified nature and, 47, 48; value judgments and, 210
 Multinaturalism, 29, 211, 219, 284n38
 Multiplicity, 133, 174
 Myth, 10, 16, 68, 79
- Napoleon I, emperor of France, 216
 Naturalization, 73, 74, 89, 118, 136, 234; as dress rehearsal, 141; “modern times” and, 189; society and, 279n4; the State and, 206
 Nature, 4, 29, 40, 53; abandonment of concept of, 91; cultures and, 8, 29; de-

- fense of, 185; end of, 25–32, 231–232; externality of, 91; history opposed to, 166; humanity's removal from constraints of, 27; "in general," 59; non-Western cultures and, 42–43; politics of, 1–8, 19–20; protection of, 20, 21, 27, 80; relation to political ecology, 5, 9, 19; sciences and, 10; "social construction" of, 32, 33; social representations of, 32–41; society and, 109; third nature, 131–136; totalization of, 124; as unmarked category, 49. *See also* Metaphysics of nature
- Naturpolitik*, 19, 30, 32, 47, 185; excluded entities and, 211; hidden work of nature and, 92; war and peace in, 218
- Negotiation, 175, 217
- Noise pollution, 5
- Nonhumans, 42, 52, 126; consultation and, 170; historicity and, 123; as objects, 51; relations with humans, 70–82, 94, 136, 143; speech prosthesis of, 67, 68, 69; voting rights and, 60, 69
- Objectivity, 4, 42; as apocalypse, 190, 192; *cosmos* and, 54; crisis of, 18–25, 129, 231; language and, 37; morality and, 98; muteness of, 79; political procedure and, 55; as salvation from elsewhere, 224; speech and, 67, 70; status of nonhumans and, 50
- Object-subject opposition, 76, 78, 82, 86, 89–90
- Occidentalism, 45
- Oikos* (common dwelling), 180–183, 192, 279n7
- Old Regime. *See* Constitution, old (modernist)
- Ontology, 29, 36, 41, 83, 167; distinguished from politics, 115; excluded parties and, 179
- Order, putting in, 112, 119, 125, 126, 131, 233; deliberation-decision distinction and, 147; as lower house of the collective, 165, 181; researchers and, 140; the State and, 201
- Orientalism, 45
- Paradigm, 97, 157
- Perplexity, 104, 110, 111, 134, 153, 205; external reality and, 162, 181; facts and, 140; moralists and, 155; propositions and, 109; scientists' contributions and, 137, 142
- Philosophers, 128
- Philosophy, 131
- Physics, 99, 138, 261n7, 274n22
- Plants, 45
- Plato, 10, 13, 16, 93, 99, 183
- Pluriverse, 40, 41, 52, 73; articulation and, 118; experimentation and, 199; facts and, 103; metaphysics and, 60, 72; propositions and, 83
- Political ecology, 1–8, 20, 58; absolute knowledge and, 74; anthropology and, 44; comparison with feminism, 49; definitions of, 57; democracy and, 172; disinvention of modernism, 193–194; division of labor and, 148–149; economics and, 136; end of modernism and, 130; goal of, 126; "green" parties and, 226; history of the sciences and, 36; modernism and, 27; morality and, 160; objectivity and, 18–25; Platonic myth of Cave and, 231; propositions and, 83–84; public life and, 31; science studies and, 40; speech and, 68; time and, 190, 195; uncertainty and, 25, 26. *See also* Constitution, new
- Political philosophy, 62–63, 65, 93, 159, 185
- Political science, 202
- Politicians, 4, 6, 52, 89, 120, 176; consultation and, 170–171; contributions of, 143–150, 162–163, 207; Kyoto conference and, 56; metaphysics and, 127; moralists and, 158; natural resources and, 28; power of the State and, 204; values and, 95
- Politics, 17, 18, 40, 185, 202; circumvention of, 87; death of nature and, 26; ideological spectrum, 226–227; relation to nature, 28; as shared common world, 47, 50, 53, 122, 235
- Postmodernism, 191, 219, 254n13

- Power, 43, 53, 54, 59, 144; reversal of power relations, 206; violence of, 175
- Pre-Cambrian era, 35
- Primary qualities, 47, 55, 60, 85, 141; "cold, gray" nature of, 132; common world and, 110; distribution of, 61; as foundation, 142; political ecologists and, 93; rationality of, 218; ultimate meaning and, 152; unification of, 184
- Prions, 24, 111, 112, 113, 114, 179
- Procedures, 98, 107, 205
- Progress, 188, 189
- Propositions, 83–84, 86–87, 94, 105, 116; collective and, 165; contribution of politicians and, 148; with habits, 211; rejected, 124
- Prusiner, Stanley E., 113
- Psychologists, 95
- Public health crises, 129
- Publicity, requirement of, 110–111, 113, 134, 153, 162, 176
- Public life, 18, 34, 183; ancient Greeks and, 28; centers of, 19; civil and military versions of, 61; as composition of common world, 222; experimentation and, 197; externality and, 91; hope of salvation and, 31; imitation of Science by, 195; point of view in, 138; political epistemology and, 88; reason and, 185; Science and, 202; short-circuiting of, 129; speech and, 69
- Rationalism, 96, 142
- Realism, 34, 40, 42, 85, 168, 186
- Realpolitik*, 160, 185
- Reason, 52, 68, 94, 185, 186, 200
- Recalcitrance, 81, 82, 87, 232
- Reification, 80
- Relativism, 12, 13, 35, 51, 173; accusations of, 120; dangers of, 101; disappearance of, 220; fear of, 169; realism and, 186–187; relationism, 138
- Relevance, requirement of, 110, 134, 145, 169
- Religion, 13, 258n36, 285n44
- "Renewable resources," 156
- Representation, 13–14, 41, 125, 146, 186; collective's powers of, 108–116; double problem of, 55; due process as, 126; economics and, 134; essences and, 188; faithfulness of, 149; mononaturalism and, 48; quality of, 139; speech and, 70; Western notion of nature as, 232
- Republic, 54, 55, 106, 127; excluded parties and, 183, 217–218; nonhumans and, 219; as Parliament of things, 227; propositions and, 83; society of Orders and, 60; speech and, 69. *See also* Democracy
- Republic* (Plato), 10
- Research front, 205
- Rhizomes, 24, 51
- Rousseau, Jean-Jacques, 27, 207
- "Savages," 42–43, 44
- Scenarization, 137, 138, 141, 157, 205
- Science, 3, 6, 11; ancient Greeks as inventors of, 71; appeal to authority of, 130, 135; certainty of facts and, 139–140; collective and, 185–186; distinguished from sciences, 19, 32, 34–35, 94, 231; externality of, 16–17, 38–39, 142; freedom and, 189; ideology and, 99–100, 102, 116; as intermediary, 4; isolation from social world, 13; matters of fact and, 97; "neutrality" of, 253n9, 283n33; physical anthropology and, 210; as politicization of the sciences, 10; public life and, 40, 195; salvation by, 56, 57, 200; sciences assimilated to, 50; society and, 10, 16, 92, 146; subjectivity and, 73–74; survival of, 12
- Sciences, 9–10, 217–220, 266n3; articulated speech and, 89; autonomy of, 119, 120, 140; history of, 35, 36, 39, 96; mononaturalism and, 48; multiplicity and functions of, 187; philosophy of, 12, 55, 117, 226; politicization of, 10, 16, 17; secularization of, 223; "social construction" of, 35; sociology of, 7, 9, 118, 273n21; state of law and, 91
- Science studies, 37, 40, 49, 253n8, 264n26; collective and, 28; scientific controversies, 63; social constructivism and, 36
- Science wars, 119, 228, 266n1;

- cosmologies and, 282n30;
 postmodernism and, 219; wars of religion and, 222, 285n44
- Scientists, 4, 6, 48, 52, 120, 176; contribution of, 137–143, 162–163; contributions of, 207; facts and, 95; Kyoto conference and, 56; Philosopher-Scientist, 11; power of, 53; the State and, 204
- Secondary qualities, 47, 55, 56, 84, 141; common world and, 110; distribution of, 61; diversity of, 184; irrationality of, 218
- Secularization, 89, 176, 223, 258n42
- Separation of powers, 8, 14–15, 95, 167; compatibility with the collective and, 171; contribution of politicians, 136–137; economists and, 151; putting in order, 112; reason and force in, 186; the State and, 203
- Sisyphus, myth of, 101, 102, 134
- Smith, Adam, 185, 272n10
- Social actors, 76–77
- Social constructivism, 36, 40, 51, 54, 80–81, 104
- Social contract, 58, 185
- Social Darwinism, 33
- Socialism, 26
- Socialization, 73, 74, 89, 118
- Social sciences, 34
- Society, 4, 53, 125, 184; collective as, 225; Science and, 10; transcendence of, 275n31
- Sociology, 16, 17, 36, 39, 52, 259n47
- Socrates, 52, 147, 186, 197
- Sovereign, the, 121, 122, 133, 164, 180
- Speech impedimenta, 62–64, 103, 139, 170; apportioning of speech, 133; politicians and, 145; reality and, 85
- Spokespersons, 62–70, 110, 112, 146, 232
- State, the, 201–209, 281n25. *See also* Leviathan state
- State of law, 91, 140, 152, 178, 182, 225
- Subjectivity, 42, 129; as archaic irrationality, 200; humans as subjects, 51; multiplicity of, 73; speech and, 67, 70
- “Sustainable development,” 156
- Symbolism, 39
- Talleyrand-Périgord, Charles-Maurice de, 216
- Technocracy, 5, 202
- Theory, 96, 97, 118
- Third Estate, 54, 55, 60
- Time, two arrows of, 188–194, 235
- Totalitarianism, 219, 220, 269n28
- Totality, 22, 29, 199
- Totalization, 141, 147
- Transcendence, 175–176, 182, 185, 188, 199; freedom from, 224; multiplicity of, 194
- Twain, Mark, 191
- Uncertainty, 73, 75, 82, 83, 155
- Unity, 127, 133
- Utopia, 5, 195, 224
- Values, 30, 95–102, 105–108, 109, 150
- Violence, 57, 62, 72, 114; Lysenko affair and, 269n28; moralists and, 160; of political passions, 78; of scientific controversies, 65
- Voltaire (François-Marie Arouet), 27
- Western culture, 19, 28; comparative anthropology and, 42, 44; modernity and, 46; public life in, 50
- Witnesses, reliable, 110, 139, 144, 170, 196
- Women, 33, 48–49, 69