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Preface

This book is an anthropological study of how Americans view global warming and other environmental changes. Recent polls show that environmental awareness has increased greatly. For example, approximately half to three-quarters of all Americans now consider themselves to be "environmentalists." This study explores the meanings behind this and other remarkably high poll numbers. Anthropological research techniques, developed for the study of foreign cultures, are used to investigate the beliefs, values, and cultural models that constitute the foundations of public environmentalism. Using several examples of global environmental change such as global warming, ozone depletion and species extinctions, we document how the public transforms scientific information as they interpret it. We also explore American environmental values, and how beliefs and values together influence preferences for or against environmental policies.

Our interviewees include members of the general public, as well as selected groups ranging from radical Earth First! members to laid-off sawmill workers in Oregon. Among the surprising findings are that the public and scientists have completely different understandings of some critical environmental problems and proposed policy solutions, that environmental values have already become intertwined with other American values—from religion to parental responsibility—and that an environmental view of the world is more universal than previous studies have suggested.

Our results provide insights into the nature of environmentalism, insights that many readers will experience as seeing something familiar but understanding it for the first time. Our results also have practical significance, for example, in suggesting ways to greatly improve environmental communication—whether by teachers, advocates, politicians, journalists, or scientists.

Acknowledgments

A work of this scope benefits from a wide circle of colleagues and critics. The authors are fortunate that many have abetted, encouraged, and criticized us. Michael Ross moved the book a huge step forward with a critical review of an early draft manuscript, making major organizational and research literature suggestions. We are also grateful to Steven R. Brechin, Roy D'Andrade, Riley E. Dunlap, Jill Neitzel, Priscilla Weeks, David Wilson, and three anonymous reviewers for their comprehensive reviews of the entire manuscript.

We also appreciate comments on individual chapters by Ann Bostrom, Janet M. Chernela, John M. Darley, Dan Deudney, Glen Ernst, J. Houston Kempton, Lester Milbrath, Apoorva Muralidhara, Vijaykumar Ramakrishna, James Risbey, Robert Socolow, Bron Taylor, and Susan Weller.

Our editor at The MIT Press, Madeline Sunley, provided critical support and advice as we responded to reviewers and finalized the manuscript. The production editor, Sandra Minkkinen, improved clarity and consistency of the manuscript, and Robert E. Schultz created the figures.

In many places, we compare lay people's cultural models of the world with those of scientists. To do so, we draw on the fields of biology, biochemistry, ecology, climatology, atmospheric chemistry, and physics. On our own, we could never cover so many fields at the depths required for these subtle comparisons. We are therefore indebted to several natural scientists for their time and patience—typically in the form of answering endless questions from coauthor Kempton. We acknowledge the help of Al Cavalo, Kerry Cook, David O. Hall, Jerry Mahlman,

Steve Pacala, James Risbey, and Robert Socolow. We are confident that we have at least occasionally garbled their insights and explanations, and remind their colleagues that errors in this book remain our responsibility.

As for data collection, we are grateful to Apoorva Muralidhara, Dan Levi, and Leslie Clark for assistance in conducting the semistructured interviews, and to Anita Iannucci, Jason Masterman, Karston Mueller, and Christina Rojas for their help in administering our surveys. Assistance in contacting informants was provided by Randa Low, William Mautz, Bron Taylor, and Roz Holler (who helped in other ways as well). We are grateful to Bron Taylor for administering our survey to Earth First! members and to Riley Dunlap for providing unpublished U.S. national polling data from his Health of the Planet survey (Dunlap, Gallup, and Gallup 1992; 1993).

This research was made possible by grant BNS-8921860 from the National Science Foundation. We especially acknowledge the encouragement and support of Stuart Plattner and Tom Baerwald, our NSF program officers respectively of Cultural Anthropology and of Human Dimensions of Global Change. Partial support for the first fourteen open-ended interviews was provided by a grant from the Hewlett Foundation to Princeton University's Center for Energy and Environmental Studies. Substantial writing time was supported as part of Kempton's faculty position at the University of Delaware's Center for Energy and Environmental Policy. Major portions of chapter 4, and occasional passages of chapters 5 and 6, draw from reports on our early findings (Kempton 1991a; 1991b). The section on surveys in chapter 1 is also published in Kempton 1993.

Our own division of labor was as follows. Boster and Kempton conceived the project and wrote the NSF proposal that funded most of the data collection and analysis. Kempton developed the semistructured interview protocol; all three coauthors carried out the semistructured interviews, extracted the key ideas for the survey, and wrote up the individual cases (chapter 7 and appendix D). Kempton was responsible for coverage of the science, policy, and environmental sociology literature. Hartley conceived and wrote initial drafts of several sections of chapters 5 and 6. Boster carried out the survey, analyzed it, and wrote

chapter 8, most of appendix A, and parts of chapter 1. Kempton conceived and wrote the remaining chapters, and brought the entire draft to the final form. All of us worked on each others' writing, challenged each others' conclusions, and occasionally yelled at each other. Many of the strengths of this volume are the product of these interactions among the authors and with those mentioned above and below.

We close by acknowledging the contributions of our informants; both those who took the time to talk with us in person and those who responded to our written survey. We hope we have lived up to our responsibility as anthropologists to faithfully convey their individual and collective wisdom.

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1

Introduction

The natural world is constantly changing. But today's multiple simultaneous changes are unprecedented and, in the view of some scientists, potentially catastrophic. For the first time, the primary driving force of planet-scale change is humanity, with our growing numbers and increasingly disruptive activities. Major global-scale changes include ozone depletion, species extinctions, and global warming. Scientists cannot predict the ultimate effects of these global changes—their scope and pace have no precedents in human history and few precedents in the geological history of the earth.

Along with these environmental changes, the environmental beliefs and values of human cultures are also rapidly evolving. This book, written by three anthropologists, deals with these changing cultural concepts of the environment in the United States. Understanding culture is an essential part of understanding environmental problems because human cultures guide their members both when they accelerate environmental destruction and when they slow it down. For everyone—leaders, citizens, and scientists alike—the cultural framework shapes the issues people see as important and affects the way they act on those issues.

In order to understand environmental perspectives in the United States, we interviewed people from all walks of life. In conducting this research we found that popular environmental sentiment is not an isolated topic but links closely to such diverse areas as religion, parental responsibility, beliefs about weather, and confidence in the government versus industry to solve environmental problems. Reflecting our finding of interconnectedness, this book describes environmental thinking more holistically

and more comprehensively than have other studies to date. The result is not just a closer look at environmental thinking but a unique attempt to understand the belief systems and values at the foundation of environmental sentiments in the United States.

Our goal is to analyze the components and causes of popular environmentalism. To do so, we use an anthropological approach. We start with extensive, semistructured interviews with open-ended questions, enabling interviewees to explain their beliefs and values in their own words. These interviews produced surprising findings not detected in previous research. We then constructed a closed-ended survey questionnaire to test how widely our findings apply across diverse groups in American society. The result of these two stages is, we feel, the essential but heretofore undocumented "big picture": the most complete and holistic view yet developed of the beliefs, logic, and values embedded in mainstream American environmental thinking.[1]

Why use anthropological methods in our own culture? In previous research we have compared cultural models regarding energy and environmental issues as seen by differing groups of people. For example, we find vast differences among the cultural models held by laypeople, scientists, and administrators (e.g., Kempton 1987; 1993). Through the process of being socialized into a community of specialists, experts in the science and policy of environmental change can lose touch with lay thinking. By documenting the divergences of lay models from those of specialists, this book can be used to understand why environmental initiatives are supported (or opposed) and to design more effective communication.[2] But we hope that this book's exposition of laypeople will affect environmental specialists in a more profound way. Ordinary people's reactions to current environmental issues sometimes remind us of fundamental values or plain wisdom that can be forgotten in "sophisticated" policy analysis. This book may thus alert specialists when policy goals or analytic assumptions have lost touch with basic values of citizens.

In exploring variation in environmental models, we also hope to make a contribution to anthropology and cognitive science. We find that American perspectives on global environmental change are based on fundamental moral and religious views on the relationship between nature

and humanity, other species' rights, humanity's right to change or manage nature, and our society's responsibility to future generations. American environmental views are thus enmeshed in a core set of cultural beliefs and values. Understanding how these core beliefs are structured and how they are distributed within society expands anthropology's understanding of cultural knowledge and cultural values. It also provides a revealing case study for cognitive scientists concerned with the ways in which people assimilate new information by fitting it to preexisting concepts.

Although we cannot speak as authoritatively about possible contributions to other disciplines, we hope that this book also has something to say to the philosopher or ethicist about ordinary people's values and ethical reasoning, to the political scientist about the complexities that underlie voting patterns and public acceptance of policies, and to the environmental sociologist about the structure of American environmentalism. For the student of science and society, we hope to not only show how scientific theories are selected and transformed by laypeople as those theories spread widely through society but also to raise the question of the status of lay science. On a practical level, our extensive examples of discrepancies between scientists' and laypeople's understanding of global environmental problems should be of value to science educators. Finally, since the lay thinking we document seems to explain acceptance or rejection of many environmental policies, we believe that this work will be of value to those who must respond to public opinion about the environment as well as those who seek to influence it.

In the remainder of this introduction, we review measures of the increase in American environmentalism, describe how other scholars explain environmentalism, outline our unique approach, and give an example of a traditional society's cultural models of the environment.

Measures of American Environmentalism

To many readers it may seem obvious that environmental concerns have grown dramatically in recent years. This subjective impression is supported by numerous surveys as well as voting and market data. This section, which briefly reviews the existing evidence of increasing envi-

ronmental concern, is included so that we do not have to demonstrate it ourselves, thus freeing us to concentrate on our focus: the nature of this environmentalism.

Dunlap and Scarce (1991) review the extensive survey evidence for increased environmentalism among the U.S. public. This section draws examples from that review and elsewhere (surveys not otherwise cited are drawn from the appendix of Dunlap and Scarce's review). Unless otherwise noted, each survey is based on a "national probability sample," meaning that the results are statistically representative of the U.S. population. We use these survey data to make three points: Americans have become significantly more proenvironmental since the sixties, and especially since 1980; their environmentalism goes deeper than just opinion or attitude to core values and fundamental beliefs about the world; and their environmentalism affects market and voting behavior.

Change in environmental thinking can be seen most clearly by the few questions that have been asked consistently over a twenty-year period. For example, the Roper Organization asked whether the respondents thought "environmental protection laws and regulations have gone too far, or not far enough, or have struck the right balance." From 1972 to 1990, those answering "not far enough" climbed from 34 to 54 percent, "right balance" dropped from 32 to 26 percent, and "too far" dropped from 13 to 11 percent. Note that this trend toward increased acceptance of environmental regulation bucked a more general trend of increasing public criticism of other regulations during the same period. Also of interest, "don't know" dropped from 21 to 9 percent as more Americans developed opinions on this topic.

In a second long-term comparison, Cambridge Reports asked respondents to choose between "We must sacrifice economic growth in order to preserve and protect the environment" and the converse. From 1976 through 1990, those choosing to sacrifice economic growth grew from 38 to 64 percent, while those preferring to sacrifice environmental quality dropped from 21 to 15 percent. "Don't know" halved from 41 to 21 percent.

Some more recent polling questions go beyond opinion to personal identity. In 1990, the Gallup Organization asked Americans "Do you consider yourself to be an environmentalist or not?" with the remarkable

finding that 73 percent considered themselves to be environmentalists, 24 percent did not. (For brevity, we do not list percentage responses of "no opinion," "not sure," etc. on this and subsequent questions.) Those considering themselves to be environmentalists were about equally split when subsequently asked whether they considered themselves "strong" environmentalists. In a similar question, Cambridge Reports asked respondents in 1990 to mark on a 1 to 7 scale how much they would identify themselves with the label "environmentalist." Fifty-eight percent answered on the "do identify" side of the scale, with 20 percent on the "do not identify" side, and 20 percent in the middle. It bears emphasizing that these questions do not merely ask whether respondents are concerned about environmental pollution (such questions routinely generate agreement above 90 percent). Rather, they ask whether the respondent considers herself or himself "an environmentalist." The majority of Americans now do.

Americans say they want environmental protection even when asked to make difficult trade-offs. A New York Times/CBS 1990 survey found that 56 percent agreed "We must protect the environment, even if it means jobs in the local community are lost"; 36 percent disagreed (Berke 1990). They also say that they will personally pay to help the environment. For example, Yankelovich found in 1990 that 64 percent said "I would be willing to pay as much as 10 percent more a week for grocery items if I could be sure that they would not harm the environment." Only 31 percent disagreed. (In 1971 the figures were 47 and 43 percent, respectively.) Also in 1990, Cambridge Reports asked for a specific dollar figure: "How much more per month would you personally be willing to pay for all the goods and services you use as a consumer, if you knew that as a result . . . business and industry would . . . not harm the environment?" The median response was $36.99 monthly, up from the 1984 figure of $8.10. This increase is not due to inflation—if figured in constant 1990 dollars, consumers' willingness to pay increased from $10.23 to $36.99 monthly.

In addition to opinion polls, data on voting and market decisions reinforce the conclusion that environmentalism is increasing. Voting and purchasing data prove that individuals are willing to do more than answer positively in a survey—they are willing to commit political or