ENVIRONMENTAL DILEMMAS AND POLICY DESIGN

HUIB PELLIKAAN
Leiden University

and

ROBERT J. VAN DER VEEN
University of Amsterdam

CAMBRIDGE
UNIVERSITY PRESS

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge, United Kingdom

CAMBRIDGE UNIVERSITY PRESS
The Edinburgh Building, Cambridge CB2 2RU, UK
40 West 20th Street, New York NY 10011–4211, USA
477 Williamstown Road, Port Melbourne, VIC 3207, Australia
Ruiz de Alarcón 13, 28014 Madrid, Spain
Dock House, The Waterfront, Cape Town 8001, South Africa

http://www.cambridge.org

First published 2002

Printed in the United Kingdom at the University Press, Cambridge

Typeface Times 10/12 pt. *System* LaTeX2e [TB]

A catalogue record for this book is available from the British Library

Library of Congress Cataloguing in Publication data

Pellikaan, Huib.
Environmental Dilemmas and Policy Design / Huib Pellikaan and Robert J. van der Veen.
p. cm.
Includes bibliographical references and index.
ISBN 0 521 62156 9
1. Environmental policy – Netherlands. 2. Environmental protection – Netherlands.
3. Rational choice theory. I. Veen, Robert J. van der. II. Title.
GE190 .N45 2002
363.7′05′09492 – dc21

ISBN 0 521 62156 9 hardback
ISBN 0 521 62764 8 paperback

Contents

Figures

Tables

1

Environmental pollution as a problem of collective action

1.1 Can something be done?

The concern about environmental pollution in public policy and public opinion in the USA originates, according to former Vice President Al Gore, with the publication of Rachel Carson's *Silent Spring* (1962).[1] Its publication made everyone aware of the negative effect of pesticides (DDT) on agricultural production. The environmental movement in Europe got off the ground with *The Limits to Growth* (1972), the report of the Club of Rome. Concern with the natural environment is nothing new. It dates back to seventeenth-century air pollution in London and to Thomas Malthus's warnings in the eighteenth century about the negative effects of population growth.[2] However, there is an important difference between early and modern concerns. In the early days the public had no influence on the decisions of the political elite in handling environmental affairs. Nowadays, what politicians and policymakers propose or decide is closely followed by public opinion.

The publication of *Silent Spring* created a shock effect in the USA. As a result DDT was banned and laws protecting clean air, land and water were introduced. The notion of limits to growth of the Club of Rome created a political climate that made environmental politics and policy both possible and necessary. Since 1972, many other studies have been published on the ozone layer, global warming and the greenhouse effect, and the irreversible decline of biodiversity. But no report has yet been able to match the impact of *Silent Spring* or *The Limits to Growth*. The lack of effect of these later studies is not that most people disbelieve the scenarios. Aaron Wildavsky's exposure of the

[1] See Al Gore's Introduction in the new edition of *Silent Spring*.
[2] See Goodin, 1992: 1–18.

so-called weaknesses of the 'environmental crisis industry', in *But Is It True?* (1995), simply did not impress the public media.[3]

The real problem may be that people think 'It Is True', but also think that their individual contribution, or even that of their own government, to solving these global problems would be too insignificant to keep on bothering. In other words, the desire of people to act on facts about environmental pollution is not simply a matter of whether or not they believe that those facts are true. If the willingness of citizens depended solely on the reliablity of facts, environmental policy would no doubt be forced to respond more quickly to expert knowledge, such as the Intergovernmental Panel on Climate Change (IPCC). For example, in 1999, the IPCC released a report 'Aviation and the Global Atmosphere' that describes the impact of air travel on the atmosphere. The report compares estimates of changes in aircraft technology to the annual increase of flights, and warns that trends in aviation will lead to higher risks of global warming. Most passengers know that aircraft engines produce high emissions of gases, such as carbon dioxide, which contribute to the greenhouse effect and destroy the ozone layer.

That a continued expansion of air travel increases environmental risks of smog and associated health dangers is well established; that it leads to global warming and ultimately climate changes is contestable, up to a point. But as suggested, the real issue behind the failure to respond may be the collective action problem. Even if everyone in the world agreed about the facts on global warming, its probable consequences, and the most effective methods of counteracting it, rational actors, as Mancur Olson has it, 'will not act to advance their common or group objectives unless there is coercion to force them to do so'.[4] In global environmental issues like the ones described above, there are collective action problems at many levels. National governments cannot easily be forced to take action, in the absence of an international enforcement agency. At the national level, producers and consumers can be coerced to some extent by their governments, but only if there is robust political consensus to sustain coercive measures. Given the higher-level collective action problem, this consensus is not likely to be forthcoming. But even if it were, with effective legal regulation, tax incentives and the like in place, the licence to pollute would still remain at the micro-level of producer and consumer behaviour. Thus many collective action problems would exist even then, within a considerable space of private freedom. None of these is amenable to non-coercive solution. On the logic of collective action, then, there seems to be no hope whatsoever of solving even the most pressing global environmental problems. Yet somehow, one would be inclined to believe, the logic must be less compelling than it appears at first sight. For national environmental policies do exist,

[3] See Wildavsky, 1995. [4] See Olson, 1971: 2.

citizens sometimes show a concern for the side effects of their own behaviour as consumers, and there is at least a framework for international cooperation offering the hope of slow progress. Especially at the global level where the prospect of doom looms largest, there is a need for a perspective that would affirm the rational capacity of human beings for stepping up efforts of environmental cooperation.

1.2 Environmental dilemmas and the logic of collective action

In this book, however, we are not in the business of suggesting, or even discussing policy solutions to truly global environmental problems. Our brief is far more limited. We want to look at how these problems appear at the micro-level of individual citizen behaviour, against the background of a reasonably vigorous and highly visible set of environmental policies in the Netherlands. Our reason for focusing on the Netherlands is not merely that being Dutch, it is the country we know best, nor that the country is a small one, heavily exposed to polluting emissions elsewhere, with a large population density, an open economy, and a high level of education; it is also that, no doubt partly due to these factors, from 1989 onwards, Dutch environmental policymakers have been systematically pressing firms and citizens to undertake voluntary action for the sake of precisely defined objectives of national environmental policy. The background of this is described in chapter 2. We shall be saying more about these matters of policy in section 1.5 below. Here it is important to state that a main aim of this book is to use a suitably refined framework of rational choice theory, in order to assess the viablity of environmental policies that try to inform, educate and persuade, rather than to regulate behaviour by legal restrictions and monetary incentives. The framework of rational choice theory will be loosely expounded in the course of this chapter. But the details of our approach are spelled out in chapter 3, which concludes the first of the three parts that comprise this book.

Our orientation to policy assessment fits into the perspective of empirical social science, and it will utilize some simple quantitative methods. We have not been conducting in-depth interviews; nor have we been engaging in participatory observation. We use a dataset based on a large-scale survey that was conducted in the spring of 1994. The core of the survey is described in the five chapters of part II. It involves studying the responses of the thousand people whom we interviewed, to questions that are designed to bring out their attitude towards voluntary collective action in a way that fully respects the format of rational choice theory. If there is anything novel in our research, it is our attempt to join together insights into rational behaviour in collective action situations with the empirical methods of survey research. To present this research design, and to invite a discussion of its merits, is the other main aim of the study.

The results of the survey will be applied specifically to the context of the policies we wish to assess. This is done in the five chapters of part III. Since what goes on in the field of environmental policies that tries to draw on the moral resources of citizens is rather complex, the application of the survey results is not straightforward. The concluding part of the book, therefore, will proceed at a leisurely pace, allowing the reader to check, step by step, how we deal with problems of interpretation. It will also try to clarify some major theoretical issues concerning the role of moral commitment, self-interest and reciprocity that arise along the way.

In this chapter, we present an overview of the main argument. We start by addressing the logic of collective action. By that logic, clearly, the attempts of Dutch policymakers to enlist the citizens in projects of voluntary collective action are just a waste of time. For as stated above, the logic holds that the (undoubtedly) large group of individual citizens in the Netherlands will need to be *coerced* into environmentally friendly behaviour. It will not be enough just to ask them politely to behave, nor even to appeal to their consciences. For since citizens on the whole are rational actors, the nature of most environmental decision problems prevents them from voluntarily contributing to any commonly recognized objective. The reason is a quite general one. It is that each individual realizes that cooperative action is costly, while incurring the cost does not have a noticeable impact on the attainment of the common objective. These features of the situation will move a rational actor to avoid the cost, whatever the other citizens may be doing. Thus, if most citizens are rational actors, their voluntary action will simply defeat their common objective. In order to achieve the objective, they will have to be forced to contribute. And they will also have a good reason to accept being forced, on reflection, because each of them will then be better off than he or she would be in the absence of coercive measures.

Our response to this challenge is as follows. While we are prepared to accept that most people are rational actors most of the time, it still remains of interest to ask in what environmental contexts individuals may fail to respond rationally, in so far as that can be observed at all. But even if everyone responded rationally all the time, the logic of collective action, we maintain, is too restrictive to be compelling as an account of rational action. In the present context, it is restrictive in two respects. On the one hand, it assumes too quickly that environmental problems of the kind that are commonly discussed as such, do indeed involve 'common objectives' to which voluntary action might then respond in the negative way predicted. On the other hand, given that an environmental problem does clearly involve a common objective, rational actors may have good grounds for doing their bit to to achieve it, even if they recognize perfectly well that their own actions, taken separately, do not noticeably alter the state of the environment.

If both of these caveats need to be made, then many decision structures on which Olson's reasoning focuses should be analysed in a less dogmatic way. As will be explained in chapter 3, one should conceive of these decision structures as *potential* collective action problems rather than *actual* ones, that is to say, situations in which a common objective is necessarily defeated by individual rational actions. Throughout the book, we shall often be referring to a potential collective action problem by using the shorthand expression of an 'environmental dilemma'. Our main claim is that empirical investigation will have to determine whether or not the logic of collective action holds good, hence whether environmental dilemmas are actualized or not.

To clarify this, let us look at the general structure of an environmental dilemma which citizens face, without assuming that there is a common objective in play. This structure is radically simplified, but it contains all the ingredients for making the point about potentiality versus actuality.

(1) In some area of action, citizens act in either of two ways: they pollute (*p*) or they do not pollute (*np*), and *np* is more costly than *p* for each citizen, in terms of time and resources.
(2) The impact of any single citizen's action (*p* or *np*) on the state of the environment is hardly noticeable.
(3) If almost all citizens *np*, the environment will be significantly less polluted (*NP*) and if almost all *p*, it will be significantly more polluted (*P*).
(4) Each citizen assumes that (almost all of) the others either *p* or *np*.

What is involved in the existence of a common environmental objective, given this structure? The question is often passed by quickly, but it needs to be addressed with care. For obviously, an environmental dilemma can only become actualized, if attaining *NP* through voluntary action is indeed the common objective. The structure itself does not determine whether or not this is the case. What one can reasonably say, perhaps, is that citizens will be likely to have the structure in their minds, if indeed there is a social presumption that *NP*, considered as a less polluted state of the environment, is a good thing. In extremely clear-cut cases of environmental pollution, there is more than such a presumption, however. For example: suppose it is known by all that *P* spells imminent, inescapable and large disaster. Then the question of the common objective is simply answered. The disaster must be avoided. Voluntary action to achieve *NP* is obviously held to be a good thing as well.

But the environmental dilemmas among citizens that we have in mind are not like this. If they were, it would be likely indeed that the citizens had already taken the further step of massively voting for government to enforce *NP*, just to be on the safe side of the logic of collective action, however inconclusive that logic may be in general. So we are looking at less clear-cut cases. For

example, *P* may sensibly be held to *play a part* in bringing environmental disasters about, in the longer run. And such disasters may or may not occur, depending on what happens elsewhere in the larger domain of voluntary action, and on what is taken out of that domain, to be henceforth regulated legally. The collective goods involved in environmental dilemmas among citizens, such as toxic waste disposal, cutting down on energy consumption, cycling or walking to the neighbourhood supermarket instead of driving the car, buying organic products at higher prices and so on, are not typically decisive goods. If they come about, that makes a difference for the better, to be sure, but it does no more than contribute to a 'cleaner environment' in the end. Given this, it is not always certain that the social presumption that *NP* is a good thing will carry much weight, in any local case of the dilemma. In some areas of environmental degradation, failure to undertake voluntary action may be considered less of a big deal for other reasons as well. The joint outcome *P* may not spell disaster. Instead, *P* may be likely to contribute to loss of environmental qualities, for example wildlife, or more generally biodiversity. Such qualities are valued very differently by citizens.[5] Again, it is less certain that *NP* will be a common objective, in the relevant sense.

The social presumption that *NP* is a good thing may still be widespread, despite possible reasons for discounting its weightiness on the part of individual citizens. Nonetheless, the view that attaining *NP* through voluntary action is a good thing as well, might not be predominant. For *NP* to become a common objective, there must be a widely shared agreement of another kind. The collective cost of achieving the less polluted state of the environment should be perceived as worth incurring. To explain, features (1) and (3) of the above decision structure imply that *NP* will come about only when (almost) all incur the cost of *np*. So whether *NP* is accepted as a common objective also depends on how individual citizens evaluate that cost. This should be distinguished from the familiar question about whether individual citizens will be disposed to pay the cost themselves *given* that there is a common objective. For, from feature (2), the attainment of *NP* does not depend on an individual's own action, even marginally. But attaining *NP* still presents costs to the many others, whose actions are jointly decisive. Thus, even if certain individuals consider *NP* to be preferable to *P*, they may think that the accumulated cost of *np* (not necessarily including the cost to themselves) outweighs the prospective benefit to all of *NP* (including the benefit to themselves). They will then tend to disagree that *NP* is a common objective of collective action.

This issue is perhaps more important than is often recognized. For it shows that many citizens may be opposed to both voluntary collective action *and* to governmental regulation of their behaviour, even if they are aware of

[5] See Miller, 1999.

environmental issues, and even if they are not indifferent about the risks involved. In any such case of the environmental dilemma, action may be non-cooperative because most citizens hold that no one should reasonably be asked to perform the action *np*, because that is simply asking too much. Obviously, this is not a case where the environmental dilemma is being actualized. From the point of view of those facing the choice, there is no compelling reason not to continue polluting, since there is no common objective in the first place. It follows that citizens will object to coercive measures for reducing pollution in these environmental dilemmas, unless the cost of compliance is somehow lowered. The government may nevertheless hold coercive measures to be justified. But if it were possible to implement those measures, then the policymakers cannot say that government is stepping in to 'solve a collective action problem'. They can only say that government is taking responsibility for redressing a situation that the citizens should have properly viewed as a collective action problem, in the opinion of the policymakers. In a democratic regime, this is of course a much more risky line to take in defence of a coercive policy. All this suggests that one should not assume too quickly that mere awareness of environmental dilemmas automatically brings into existence a common objective of voluntary action on behalf of the environment. Therefore it is important to inquire what citizens actually think, with respect to the issue of the common objective, in each separate case of an environmental dilemma.

Compared to the unfortunate cases just sketched, the ones Olson has in mind are less problematic. If *NP* is accepted as a common objective in the sense we have just specified, then indeed the failure to attain it is suboptimal from the point of view of the citizens themselves. Coercive policies would then seem to be called for. Yet, in a free society coercive policies may often be infeasible, even if citizens might not strongly object to being coerced. Such are the cases on which we will be focusing below. These are also the cases in which one wants to know whether the logic of collective action really holds good.

Given the general structure set out above, this depends on the validity of a particular inference. This is the inference from its features (1) and (2), to the conclusion that rational actors will choose to pollute. But that inference, clearly, is not a valid one. To make it valid requires an additional premise: rational actors whose action is (1) costly in terms of time and resources, and (2) sure not to make a noticeable difference to the outcome of joint action, will best serve their interests by avoiding the cost, regardless of the actions of the others. This additional premise will close the inferential gap. But it is not obvious why it should be true, when there is a common objective in play. The truth of the additional premise generally depends on how rational actors compare the significance of the common objective to the significance of the resource cost of refraining from a polluting action, in terms of their perceived interests. The decision structure of the environmental dilemma does not logically fix these

interests. So it seems that premises about individual interests must be brought in, so as to guarantee that the insignificance of the actions *p* or *np*, coupled to the cost of *np*, rationally mandates action *p*.

Much can be said about individual interests in the abstract, and we shall further look into this in chapter 3. Rather than dwelling on it here, one thing can be mentioned in advance. Even if one has no trouble with the additional premises that close the gap between the logic of collective action and the decision structure on which it is predicated, it is still important to try and find out what is actually going on. This is what we propose to do, by studying some environmental dilemmas in depth, by means of survey data.

1.3 Surveying environmental dilemmas from the actor's perspective: rational choice

Our research strategy is described in part II of the book. It is introduced in this section and the next two. We confront a representative sample of Dutch citizens with three cases of household behaviour that can be recognized as having the structure of an environmental dilemma: bringing toxic waste to a neighbourhood recycling point (*Chemical Waste*), economizing on energy at home (*Energy Saving*), and forgoing holiday travel to foreign destinations for the sake of reducing air pollution (*Holiday Destination*). Our reasons for selecting these three cases of the environmental dilemma will be elaborated in chapter 4. The respondents are asked to put themselves in the position of someone facing the dilemma, and our first aim is to let them state their preferences and choices, in order to study the issue of rational choice.

As noted in section 1.2, we consider the logic of collective action to be far too restricted an account of rational choice to be a sensible general predictor of people's behaviour. The way in which we shall study rational choices empirically will reflect this point of view in the strongest possible way. For we do not impose any restriction on preference orderings whatsoever. From the *perspective of the actor*, we say, following Arrow and Riker's 'thin-theory of rationality', all that rationality requires in respect of preferences over states of the world is that these states are ranked by a complete and transitive ordering. This means that our respondents will be candidates for the respectable status of rational choosers if they are able to rank all possible outcomes of an environmental dilemma consistently. They do *not* need to satisfy the assumptions of the logic of collective action in order to qualify as rational actors.

What they do need to satisfy, however, is a plausible rule of rational choice. As will be explained in chapter 5, we work with the least controversial of such rules, the 'dominance rule'. This rule simply says that if, among the available strategies of action, there is one that will make you better off than any other

strategy, regardless of what the other players do (hence 'dominant strategy') then you ought to choose that strategy.

To explain the underlying rationale of a research design based on the actor's perspective, let us specify first how the decision structure that characterizes the environmental dilemma (see section 1.2) can be converted into a game form with four possible outcomes.[6] Represented in terms of strategy choices by the 'players', the four outcomes are labelled as P = (D,C), Q = (C,C), R = (D,D) and S = (C,D). The game form corresponding to the decision structure of the environmental dilemma has only one real decision-making agent, whom we call 'Individual'.

Individual is the person facing the environmental dilemma, whose possible actions, or 'strategies', are listed first within the brackets describing each of the four outcomes P, Q, R and S above. Given the fact, noted earlier, that the structure of the dilemma will usually involve at least the presumption that a less polluted state of the environment is preferable to a more polluted one, we shall follow the usual convention of labelling the non-polluting act *np* as the *cooperative strategy* (C) of the game form, and the polluting act *p* as the *non-cooperative or defect strategy* (D).

The second player in the game form is called 'The Others'. The second player is no real decision-making agent. According to feature (4) of the decision structure, 'The Others' simply represents the possible actions *np* or *p* of the many others, which Individual takes into consideration in his decision to act within the dilemma, on the assumption that (almost all) of them act in the same way. In the game form, then, Individual may form a preference ordering over the four outcomes, and he may rationally act upon these preferences, by choosing one of the two strategies, C or D. Each person included among 'The Others' can in turn assume the role of Individual, and become the decision-maker in an equivalent game form. In this way, the *n-person* structure of an environmental dilemma is broken up into as many individual game forms 'Individual vs The Others' as there are agents facing the dilemma.[7]

The survey questionnaire, of course, does not put the story in this extremely abstract way. As will be described in chapter 4, we ask each respondent to place himself/herself in the position of Individual, the decision-making agent who is faced with the environmental dilemma. We then ordinally measure the

[6] A 'game form' is a game-theoretical structure specifying how the strategies of the players jointly determine the possible outcomes, without specifying the utility pay-offs that the players attach to each of the outcomes.

[7] The outcome of the n-person game corresponding to an environmental dilemma will thus depend on the strategy choices of each of the n players in the 'Individual vs The Others' game form. If the players are rational, then strategy choices will depend on their preferences over the four outcomes. However, for our purposes, it is not being assumed in advance that the players are rational, as will be explained below.

preferences of the respondents over these four outcomes, as well as the strategies they intend to choose – to pollute (D) or to refrain from polluting (C). By comparing preference orderings with choices, one can test whether or not respondents satisfy the dominance rule of rational choice.

The point of all this may be easily gleaned from what we have been saying above about the need to investigate the logic of collective action. So let us cast that logic in the present game form, to see what would be required of a respondent to satisfy the conditions of Olson's rational agent. The logic of collective action presumes that the non-polluted state of the environment is seen as a common objective by each member of the large group of citizens. This may be taken to imply a preference for the universally cooperative outcome Q = (C,C) over the universally non-cooperative outcome R = (D,D). But at the same time, the logic of collective action insists that a rational individual will want to avoid the cost of cooperating even in the presence of this common objective. That implies a preference for outcome P = (D,C) over outcome Q = (C,C), and also a preference for outcome R = (D,D) over outcome S = (C,D). It is assumed that a rational agent with these three pairwise rankings (Q > R, Q > P, and R > S, where '>' means 'strictly preferred to') satisfies the property of transitivity in ranking the four outcomes overall. This implies that on the logic of collective action, the rational agent must form the preference ordering P > Q > R > S, or in shorthand 'PQRS'.[8]

As noted, the pairwise rankings P > Q and R > S express the assumption that the rational agent will want to avoid the cost of cooperating, whatever others do. Conversely, this means that the preference ordering PQRS necessarily gives the individual a dominant strategy to defect (i.e. choose D). That is to say: *if* an individual has this preference ordering, *then* he will always be better off, in terms of the two above pairwise rankings, by defecting than by cooperating, regardless of the collective behaviour of the others. Moreover, since an individual with ordering PQRS ranks Q > R, he will end up with his third preferred outcome R = (D,D), in case the others all defect. Since all the others are faced with the same dilemma, and each of them is a rational agent, each of them will act on the preference ordering PQRS, and defect. This produces the suboptimal outcome R predicted by the logic of collective action. So the common objective – defined as the attainment of Q = (C,C) – is defeated by the joint result of individual rational action.

Presenting the logic of collective action in this way is merely a formal restatement of the familiar reasoning. But it allows one to conclude that if that logic

[8] In the present context, the property of transitivity says that if an alternative x is strictly preferred to alternative y, and y is strictly preferred to z, then x must be strictly preferred to z. On transitivity, P > Q and Q > R implies P > R. Next, Q > R and R > S implies Q > S. Finally, P > Q and Q > S implies P > S. All six possible pairwise rankings of the four outcomes are now fixed. This yields the complete ordering P > Q > R > S.

holds for a respondent in the format of our questionnaire, then that respondent must necessarily report both the preference ordering PQRS and the strategy choice D. As will be seen in chapters 4 and 5, however, only a small minority of respondents in fact satisfy those two conditions, in each of the three cases of the environmental dilemma we have included in the survey.

To the contrary, on the test proposed, rational actors of a decidedly cooperative kind abound among our respondents in all three cases of the survey, though significantly more so in Chemical Waste and Energy Saving than in the case of Holiday Destination. Chapters 4 and 5 will show that most respondents are capable of specifying a complete preference ordering, and of making a definite strategy choice. Of all the possible preference orderings that might be reported (there are $4 \times 3 \times 2 \times 1 = 24$ of these), most are actually represented in the profiles of the three cases of the dilemma. But it will also be seen that the two most popular orderings in each case are the following: QSPR and QPSR.

On what has been laid out above, it is easy to see that these particular orderings are extremely environmentally friendly. Both have the universally cooperative outcome Q at the top, and both have the universally non-cooperative outcome R at the bottom of the ranking. This common property implies that both orderings impose a dominant strategy to cooperate on a rational actor. Why? Well, having a dominant strategy to cooperate here means that you will do worse by defecting, whatever the many others do, given the preferences you have. If you put Q at the top and R at the bottom of your ordering, it follows that you must have $Q > P$ and $S > R$. These are the two pairwise rankings that express a dominant strategy to cooperate, since if you decide to defect, you will end up with either of the two dispreferred outcomes $P = (D,C)$ and $R = (D,D)$. We will be going into this in more detail in chapter 5.

It may be of interest to learn straightaway that of the many respondents with either of the two orderings QSPR and QPSR, by far most indicate that they would want to cooperate in the dilemma. They report the dominant strategy C. Such respondents, who are most heavily represented in the cases of Chemical Waste and Energy Saving, thus choose in line with what one of the most solid rules of rational choice requires. Moreover, as one will see from chapters 4 and 5 as well, relatively many respondents in the case of Holiday Destination report preferences indicating that they do not regard voluntary action on behalf of the environment to be a common objective, and a large proportion of them chooses the corresponding rational strategy of non-cooperation. Preference orderings of this type, for example, would be RPSQ and RSPQ, the opposite numbers of the above mentioned environmentally friendly orderings.

What does all this show? So far, it shows that the logic of collective action is not among the most plausible theories for predicting what rational actors would want to do in situations of environmental collective action involving consumer behaviour. But of course, here we have run up against a sceptical

objection, often voiced when we presented preliminary material from this book. The responses we recorded, that objection says, may well be biased in a 'socially desirable' direction. The overall predominance of cooperative responses might show that many are just reporting their *Sunday Preferences*, while in reality, they continue to pollute the environment at least six out of seven days in God's week, in accordance with the logic of collective action. The fact that many respondents show commendable consistency between Sunday Preferences and Sunday Choices only tells us, so the sceptic continues, that such respondents are rather sophisticated dissimulators, not easily caught out in a lie for the sake of environmental correctness. This in itself is of interest, the sceptic concedes. But in the end, one should not be carried away about what respondents report they would do in the hypothetical survey cases of the dilemma, unless this squares with what they report that they have actually been doing in the real world, and unless additionally, those reports are corroborated by the statistical *facts* about what the population at large has actually been doing, and how that has affected the environment.

We agree with the last of these strictures, and shall answer them in section 1.4 below. At this point, however, it is worth commenting briefly upon the first point. The objection that survey respondents have a tendency to give 'socially desirable' answers (especially in face-to-face interviews, such as ours) rests upon the notion that social pressure to conform to norms of environmentally good behaviour biases the responses in a cooperative direction. In any concrete instance of survey research, this is just as difficult to disprove as it is to prove, and there is an obvious burden of proof here on those who want to make much of the objection. But at least we can say that in our survey, the answers at the two independent measurement points of preference orderings and strategy choices in the three environmental dilemmas, show that the respondents have no difficulty in responding differently in different cases. Moreover, they often respond in ways indicating (notably in Holiday Destination) that they are perfectly comfortable to report 'environmentally incorrect' rankings of the dilemma's outcomes, consistently with reporting non-cooperative preferences. Of course it still may be true that there is an overall bias in the cooperative direction, despite the differences among cases we have recorded. If that bias is considerable, then this would have to show up by the failure of responses to the dilemmas to predict the response to properly matched questions about real world behaviour. As will be seen presently, we have no great worries on this score.

1.4 How motives speak to preferences

Meanwhile, our survey design calls for a further exploratory move, one which is relatively novel in empirical research. Recall that from the perspective of the actor, we have decided to accept any complete ordering of the four outcomes

as a necessary condition of rational choice. This opens up a different charge of the following kind. It can be objected that many people may act rationally upon given preferences, but that those preferences, for all one knows, could be completely unrelated to their own assessment of the situation, if, that is, they assess the situation coherently at all. In other words, even though many of our respondents may score nicely on the test of rational choice, they may be defective in other respects of practical reasoning. And if this is so, then is there any good reason to think that such people will continue to act rationally on arbitrary preference rankings?

This is an issue that we have taken seriously. It is not only that empirical evidence of rational choice from observed preference orderings and choices will tend to be more reliable, if one can somehow show that the preferences are non-arbitrarily formed. It is also that once one embraces the actor's perspective, there arises a need to inquire into the grounding of people's preference rankings in environmental dilemmas. Remember that we have criticized the logic of collective action because it attributes a specific preference ordering (PQRS) to the rational agent, on the ground that such an agent has no good reason to cooperate towards a common objective, and a good reason to defect, irrespective of others' choices to cooperate or defect. If our critique is valid, then ideally at least, we should be able to give some alternative account of the possible motives that underlie the various different preference orderings that people may come up with. And the theoretical need for such an account arises also from our aim to assess people's responses to the environmental values and norms which were being promoted by the Dutch government at the time of the survey.[9]

While fully granting that survey techniques are not the best way of looking into people's minds, it is possible to collect additional information which enables one to check systematically whether the preferences that people report in the three environmental dilemmas make sense. In particular, we have asked the respondents two motivational questions about each of the dilemmas they face. These questions relate directly to the two points of inquiry identified earlier in section 1.2. The first concerns the issue of the 'common objective': do respondents think that cooperative action (not necessarily including their own) is a good thing, in each particular case? Answers to this question are assembled on a three-point 'motive dimension of Valuation'. The second point of inquiry is to what extent respondents are willing to help contribute to a less polluted state of affairs, in each of the environmental dilemmas. Answers to that question are assembled on a three-point 'motive dimension of Willingness'. Note

[9] Incidentally, this goes to show that the issue of biased response in a 'socially desirable' direction becomes far more complicated once one starts inquiring into the exact nature of a person's positive response to 'social pressures to comform'. If the agents exercising the pressure are citing a structure of reasons which can be picked up by the survey design (as we try to ensure), then it is not at all immediately obvious what the profile of the 'environmentally correct' response would have to be.

that the answers to both of these motivational survey questions are regarded as independent. For, in keeping with the actor's perspective, we would not want to rule out in advance that someone who does not consider, say, reducing pollution through toxic waste recycling to be a good thing might still, for whatever idiosyncratic reason, be willing to participate in a communal recycling scheme at some cost in time and effort to himself.

The point of collecting independent information on these two dimensions of motivation is that it might help to explain reported preferences. Motives may speak to preferences, to put it poetically. But what do they say? This is where we have to go out on a limb, and start thinking about consistency between motives and preferences. Our approach is tentative. But it works, to a surprisingly significant extent. There is at least one feature that we would like any test of consistency to reflect. This feature captures the exclusive motivation of the rational actor, according to the logic of collective action. In our consistency test, that actor should at least show up conclusively as someone who is (a) fully endorsing the desirability of collective action for the sake of the environment, and is (b) adamantly unwilling to contribute herself. This feature will impose a relation of consistency between, on the one hand, the respondent's observed positions of positive Valuation and negative Willingness on the two motivational dimensions and, on the other hand, the reported preference ordering PQRS. Likewise, and equally obviously, the environmentally friendly orderings QSPR and QPSR will have to be consistent with observed positions of positive Valuation and positive Willingness. Working along these lines, chapter 6 will propose a consistency test, in which each of the twenty-four possible preference orderings is assigned to just one of nine possible combinations of Valuation and Willingness on the respective three-point scales.

While the results of this consistency test will be extensively discussed in that chapter, here we can say at least this: motives and preferences of the cooperative kind are strongly related. Moreover, consistency between motives and preferences helpfully turns out to predict consistency between these preferences and their corresponding cooperative choice intentions, according to the test of the dominance rule of rational choice. Having consistent preferences thus helps to choose rationally. The empirical significance of these findings of course depends on the incidence of cooperative motives (positive Valuation and positive Willingness) in each case. As chapter 6 will show, such motives are quite predominant, although it must always be noted carefully that they occur most frequently by far in the two cases of Chemical Waste and Energy Saving, in which the environmental dilemma concerns voluntary action in the setting of daily household activity. When citizens are asked to forgo the pleasures of recreative travel so as to reduce pollution of the environment, as in the case of Holiday Destination, then they become less cooperatively minded. These facts show up at each stage of practical reasoning where the survey measures

a response to the environmental dilemmas: at the level of motives, preferences and choice intentions.

1.5 Non-equivalent dilemmas and reported behaviour

In itself, this may not seem surprising. But note that on the logic of collective action, environmental dilemmas are supposed to be equivalent. They all convert into *actual* dilemmas. Whatever case one may want to study, the logic of collective action predicts that the environment will be messed up, because people will invariably find it in their best interest to pollute. So if it comes as no surprise that Holiday Destination appears to be a much harder case in which to cooperate than, say, Chemical Waste, then that shows that the logic of collective action is being discounted as a matter of course. For it is then recognized that environmental dilemmas, despite their common structure, are non-equivalent with respect to the likely behaviour they generate. Thus, it is well worth asking whether our findings about the *aggregate* differences in cooperative response in the three cases are also reflected at the level of the *individual respondent*. In particular, one will want to ask whether it is statistically likely that a respondent who wants to cooperate in the case of Holiday Destination (in terms of motive, preference or choice indicators) will also want to cooperate in Chemical Waste, or Energy Saving.

Propositions like this can be tested by means of Robert Mokken's scaling technique.[10] In chapter 7, we explain how. It will be shown that on most variables of the environmental dilemma, the cases of Holiday Destination, Energy Saving and Chemical Waste form a unidimensional scale. This means that for a respondent, statistically speaking, the obstacles to cooperation in the first of these cases are larger than they are in the second, and the obstacles to cooperation in the second case are larger than in the third. We are not able to give direct evidence that backs up our explanations of this main finding at the end of part III. But what we have to say is plausible enough, we hope, and it will be summarized presently.

At this point it is necessary, however, to take up the remaining sceptical points raised in section 1.3 above. How are responses to imagined environmental dilemmas related to reported behaviour? And does the behaviour reported in our survey faithfully reflect what actually goes on in the real world, with respect to the environmental effects of consumer behaviour? We want to be quite modest with respect to this last and generally debated question. There are two points to be noted. First of all, the reported behaviour on holiday choices, much the least cooperative of the three cases, is in line with Dutch studies, which clearly show that the volume of recreational trips by air, especially outside of Europe, has

[10] See Mokken, 1971.

grown considerably in the period 1988–97. It is also confirmed that, as far as recycling behaviour in general is concerned, consumers act quite cooperatively, and the case of toxic household waste that we have focused on is certainly no exception. But even though the evidence does not at all suggest a wide gap between reported and actual behaviour, secondly, that evidence is far too slim to draw any definite conclusions. This is mainly because in all three of our cases, the questions on reported behaviour are much too specific to be related directly to assessments of the environmental effects of Dutch consumption patterns, since the measurements involved in those assessments typically group together many different types of behaviour in large clusters, with respect to different pollution effects identified by environmental policy. Bearing that in mind, we are hardly in a position to back up the claim that what our respondents are saying they do is what they actually do, nor can we say anything useful about what difference this would make for measured emissions of carbon dioxide, units of acidification, and so on. These issues, obviously, are the object of a separate field of study, and our survey is not designed even to start addressing them.

What we are concerned to discuss, however, is the relationship between motives, preferences and choices in our three dilemmas on the one hand, and reported behaviour in the corresponding real-world settings on the other. Chapter 8 is devoted to this task. It will describe the questions we asked about past behaviour in relation to the environment. More importantly, it will show that the explanation of reported behaviour in the three cases we studied, is considerably improved when the variable of strategy choice is added to a causal model which uses macro-sociological characteristics of respondents. As we shall argue, this goes to show that what people say they are doing with respect to the environment is highly sensitive to the area of behaviour, that is, to the case of the dilemma at hand. Reported behaviour is far less sensitive to age, education, political affiliation, income level, or even people's scores on standard questions about their general awareness of, and concern about, the state of the environment. Thus we conclude that our research design, by looking at the way in which people's stance towards environmental action in specific contexts of behaviour hangs together consistently, does indeed have something to contribute to the general endeavour, in empirical social sciences, of explaining the behaviour reported in mass surveys.

1.6 Policies of self-regulation in the Netherlands

Part III of the book squarely places the survey results in the social context of the Netherlands. An important part of that context is that during the nineties, roughly speaking, environmental issues have been prominent in that country. Moreover, Dutch citizens have been, and still are, routinely addressed by the

environmental policy sector to take account of the effects of their behaviour over a wide range of polluting emissions. The background of this has been explained in chapter 2 of part I. To summarize briefly, environmental policy plans in the Netherlands have had relatively ambitious goals up to the present. The official goal is that observed pollution should be decoupled, in absolute terms, from the growth of production and consumption in order to achieve a 'sustainable economy'. The point that concerns us here is that while changes in technology, restructuring of the agricultural sector, and industry regulation can achieve part of this overall goal, keeping consumption behaviour in check is held to be a quite important objective in service of it as well. Hence, Dutch consumers are targeted in environmental plans, and indeed in a pretty detailed way. People are not asked to consume less. Rather, and on this we shall focus specifically, they are being asked to consume in environmentally responsible ways.

To promote responsible behaviour, policymakers in the Netherlands employ various policy instruments of self-regulation, the *social instruments*. These consist of campaigns to increase environmental awareness, spreading relevant information, changing educational curricula, product certification, installing recycling facilities, and so on. What such policies of self-regulation have in common, formally expressed, is that they try to alter behaviour without limiting the feasible set of behavioural options open to people. Policies of self-regulation in the Netherlands are, to put it bluntly, instruments of moral reform. They aim to obtain voluntary compliance with objectives of reducing emissions, objectives which are specifically written into the national plans for the 'target group of consumers'. And their stated purpose is, as the local jargon has it, to achieve 'internalization of environmental values', and correspondingly, to achieve 'internalization of environmentally responsible conduct'. This means that the government, from the late eighties onwards, has formulated a fairly coherent environmental ethos, which is used to address consumers in their citizen roles to respond in the required ways, in their daily roles as consumers. Again, this is not to say that consumers are being asked to switch to lifestyles of self-denial. It does mean, however, that they are being asked to become aware of, and to cooperate in, environmental dilemmas of the kind that have been studied in the survey. Indeed, a major aim of this book is to assess the success of the social self-regulation approach.

In chapter 9, we focus on our three cases of the dilemma, this time to show the extents to which citizens actually accept policies of self-regulation. While this again depends on the cases at hand, we find a decidedly positive attitude towards the idea that the government should be engaged in holding citizens to account in the environmental matters of daily life. This is compared to the acceptance of legal regulation on the one hand, and to the acceptance of informal peer group pressure among citizens on the other. Governmental self-regulation policies turn out to be the most widely accepted, in all three cases.

Chapter 10 enters into a detailed analysis of the content of the general message underlying the official ethos of environmental responsibility. At the time of the survey, in 1994, that message had been quite widely disseminated in society. In large part, the results of our survey can therefore be interpreted in the light of this environmental ethos. What we propose, in this third part of the book, is to grade the motive and preference responses to environmental dilemmas in accordance with the extent to which they are consistent with the twin notions of 'internalization of environmental value' and 'internalization of environmentally responsible conduct'. In particular, we argue that the first of these notions aims at creating common objectives of voluntary collective action. As mentioned in section 1.4, this is measured on the motive dimension of 'Valuation'. The second part of the environmental ethos concerns the responsibility to act on common objectives, always noting that in an environmental dilemma, people are aware of the fact that their individual actions, taken separately, are causally insignificant. Indeed, as we shall see in chapter 10, the canonical statement of the environmental ethos, which was included in the first national environmental policy plan of 1989, enjoins citizens to 'recalculate' their behaviour, by bearing in mind the important joint consequences for the environment of these many insignificant individual acts.

The internalization of environmentally responsible conduct is measured by looking at the responses concerning common objectives, as well as the individual willingness to cooperate in working towards such objectives in the different cases. This involves putting together the responses on the two dimensions of Valuation and Willingness, and checking the combined motive response against the preference responses, given our test of consistency between motives and preferences. As is confirmed by scale analysis, responses in the easy cases of the dilemma (Chemical Waste and Energy Saving) are much in line with what the environmental ethos demands. As could be expected, Holiday Destination is the hard case again, and in this instance we find that a significant proportion of the motive response rejects the notion that environmental restrictions on recreative travel should be considered a common objective among citizens. Chapter 9 also shows, moreover, that this case of the dilemma is also the one registering a definite lack of acceptance with respect to any type of regulation: legal or social, by way of governmental campaigns or through peer pressure.

1.7 Moral commitment in environmental dilemmas: conditional or unconditional?

Our line that self-regulation policies are instruments of 'moral reform' should not be misunderstood. It is not as if black-frocked emissaries of the Environment Ministry are appearing on television every week with sententious messages of exhortation. Increasingly, the Ministry has also been trying to devolve policies

of self-regulation to local government, firms, and voluntary associations, as the four-year environmental policy plans move further into what government calls the 'phase of implementation'. Moreover, the tone of official campaigns is often light-hearted and somewhat wistful, as in the slogan directed to car owners that 'the car can do without you once in a while'. How that slogan is taken up, it is recognized, will in part depend on what employers may arrange in the way of variable working times, and other facilitating measures that their businesses are legally obliged to be reporting on, within the framework of 'environmental impact assessments'. It is also recognized that good environmental behaviour of consumers chimes in with lifestyle choices. This brings marketing approaches into the arsenal of social instruments, and thus takes some of the moral weight off the shoulder of the individual *persona* of the citizen. But nonetheless, what all of this amounts to in the end is, we maintain, the systematic use of a social ethos of environmental responsibility.

Since we are trying to measure the impact of the environmental ethos within the general framework of rational choice theory, there is some need to clarify a theoretical issue involved in describing the rationality of moral commitment. In chapter 11, we take this up. The aim is to show that our consistency format of motives and preferences extends Amartya Sen's concept of a 'moral meta-ranking' of preference orderings. Sen has done much to argue that before individuals get down to making a rational choice, they are often confronted with an antecedent problem of fixing on the preference ordering that best captures their interests, all things considered. This antecedent problem requires taking into account all relevant aspects of the decision problem, as they perceive it. In particular, if moral considerations enter into an individual's understanding of the context of choice, within an interdependent decision problem, then moral commitment can be modelled as follows: the individual decides to adopt a preference ordering expressing some moral social code, while simultaneously repudiating the preference orderings that express narrow self-interest, or represent conceptions of limited group interest. The upshot is that while rational choice of a moral nature naturally involves acting so as best to satisfy the preferences dictated by a socially prominent morality under the circumstances, this choice is additionally characterized on the basis of the agent's reasons for refusing to act upon non-moral preferences of the kind that are dictated by a conception of personal interest. This is the thought underlying the notion that rational choice is to be analysed in terms of a moral 'meta-ranking' of preference orderings, in which an ordering corresponding to a code of morality is ranked first, and the narrowly self-interested ordering is ranked last.

Sen has most explicitly applied this idea to the game form of two-person 'Prisoner's Dilemmas'. As we shall be working out in some detail, however, the decision structure of the environmental dilemma, conceived as a collection of many 'Individual vs The Others' game forms (see section 1.3 above) is different

in some crucial respects. To put the issue in the context of self-regulation policies, the notion of personal interest that the individual would need to reject, in order to consciously embrace the environmental ethos that the Dutch policy-makers want to promote, is a specific one. It is the one that rationally prescribes non-cooperative behaviour from the point of view that refuses to accept environmental improvements as a valid common objective. With this point understood, we construct an 'environmental meta-ranking' in the space of motives. This is a ranking of the possible positions on the two dimensions of Valuation and Willingness, and it captures the respondents' gradations of assent with the environmental ethos, as they have been previously identified in chapter 10. By applying the test of motive-preference consistency, the corresponding meta-ranking of preference orderings is then obtained. Our environmental meta-ranking is put to good use in the final chapter.

To understand the different responses of citizens to the environmental ethos, however, there arises a large issue which will be discussed in chapter 12. In this introductory chapter, that issue has been waiting patiently in the wings. It concerns the important contrast between conditional and unconditional cooperation in environmental dilemmas. To see what is involved here, just imagine that you have become convinced that toxic household waste should be collected separately, and then safely carted off to a recycling facility, rather than being absorbed in some noxious landfill, while messing up the environment along the way. You are thus well-disposed, let us assume, to cooperate in the local recycling scheme. But you still want to know what the others will be doing. If they are reasonably likely to cooperate, then surely, so will you. But if they massively defect on their responsibilities, then why should you cooperate? What's the use of doing so? In that case, reluctantly no doubt, you will go back to dumping your batteries in the garbage can and pouring your old paint down the kitchen sink. Obviously, that attitude is not inconsistent with the ethos of environmental responsibility. You wholeheartedly affirm the common objective, and what is more, you do not want others to shoulder the burden of cooperation by taking a free ride on their efforts yourself. What you are refusing is to end up as a sucker, quite understandably. Does the environmental ethos ask you to be suckered? Surely that would not only be asking too much, but the ethos would also seem to be requiring you, and for that matter everyone else, to make irrational sacrifices. So we face two theoretical problems here. The first one is this: in studying responses to environmental dilemmas, how do we discriminate between attitudes of conditional and unconditional cooperation in our research design?

To see just how, let us refer back to the survey results of part II. As noted in section 1.3, many different preference orderings have been reported in the three cases of the dilemma. Among those, there is the well-known Assurance Game-ordering (so coined by Sen, long ago). It faithfully represents the attitude of conditional compliance to the social ethos of responsibility, in the present

context. By the letter code we use, the Assurance Game-ordering is QPRS. This ordering places the universally cooperative outcome Q = (C,C) at the top, and the sucker outcome S = (C,D) at the bottom, putting the universally non-cooperative outcome R = (D,D) in third place. It also shows up the refusal to act as a free rider, since Q is preferred to P = (D,C). As a result of all this, the aspect of assurance is expressed by the fact that Individual's best response is to defect when he is sure the others will defect (R > S), and Individual's best response is to cooperate when the others are sure to cooperate (Q > P). Note that there are other possible preference orderings that a conditional cooperator may adopt. The Assurance Game-ordering is simply the most common of these. Note also that, compared to the preferences of someone who follows the logic of collective action (ordering PQRS), the first and second outcomes have been reversed (P and Q), while compared to the decidedly environmentally friendly ordering QPSR, the two last outcomes (S and R) have been reversed, in the Assurance Game-ordering. This is of some interest, because it tells us that the conditionality of the Assurance Game-attitude should make us locate this attitude in an intermediate position, in motive space, on the dimension of Willingness to cooperate. This property is indeed satisfied by the motive-preference consistency test of chapter 6.

So far, this goes to show that the contrast between conditional and unconditional cooperation is properly incorporated in the conceptual framework of our survey design. But what do the respondents in the three dilemmas report, concerning this contrast? Two main things emerge. First, and most importantly, unconditionally cooperative motives and preferences predominate in all three cases of the dilemma over conditionally cooperative ones. Secondly, the hardest case, Holiday Destination, has a significantly smaller ratio of unconditional to conditional cooperators, both in motive and preference space.

And here we encounter the second of our theoretical problems. The finding that unconditionally cooperative responses predominate needs to be critically examined, for the following reason. As we shall explain in chapter 12, there is a strong consensus in recent literature on rational choice that in so far as recurrent collective action problems get solved non-coercively, consistently with rational behaviour, this will be by mechanisms that involve trust-building, monitoring, sanctions on various kinds of observed non-cooperative action, and investment in forming a reputation as a trustworthy person who will not stand for being suckered. On this view, which is supported by ample evidence in different fields of social inquiry, a morality of reciprocal cooperation tends to get reinforced when these mechanisms operate successfully. On the same view, a morality of unconditional cooperation would seem to be powerless against predatory behaviour and free-ridership, and in consequence it would tend not to be reinforced. But in our survey, in apparent contrast to the view, unconditional morality seems to be quite common.

These arguments about reciprocity have been forcefully summarized in a detailed review by Elinor Ostrom. In examining them, we point out that our cases are located at the far end of a *size continuum* of social dilemma situations. And at this far end, it can not be expected that mechanisms of trust and reputation have any purchase to speak of. In environmental dilemmas of the kind we are looking at, the morality of reciprocal cooperation may even be an inefficient one to entertain, if a person is well-disposed to cooperate in the first place. The reason is simply that on the logic of the Assurance Game, one has to be continuously engaged in seeking assurance of others' good behaviour, in order to decide whether or not to cooperate. But it is not always easy to predict what others' behaviour will be, and moreover it is almost always impossible to retaliate selectively against the non-cooperators whose nasty behaviour one can sometimes observe. In many ways, the most efficient response would be just to cooperate as a matter of routine, and to switch to the stance of conditional non-cooperation (or perhaps outright rejection of the whole idea that there is a common objective to worry about) only when the others give conclusive evidence of behaving badly all the time *en masse*.

Of course, as we also suggest, this will be a sensible line to take only when it is more or less a matter of common knowledge that the individual cost of cooperating in the dilemma is not that high, and can on the whole be borne easily by most. If people expect others not to be able to bear this cost, then – still on the assumption that they themselves are well-disposed to cooperate – they will find it more reasonable to adopt the stance of the conditional, rather than the unconditional cooperator, in large-scale social dilemmas. Now that is exactly what we do find in the survey. For as mentioned above, the ratio of unconditional to conditional cooperators in the preference and motive response of the hardest case of Holiday Destination is much smaller than it is in the two easier cases of Energy Saving and Chemical Waste.

1.8 Determinants of cooperation in environmental dilemmas and policy design

This brings us to the concluding chapter of the book, where the main strands of the preceding chapters are woven together. As we argued above, the notion that Holiday Destination is the 'hardest case in which to cooperate' is one that can be made more precise by means of scale analysis. The object is to find out whether or not the three cases of the environmental dilemma figure as three 'items' on a unidimensional continuum, with respect to some observed variable that indicates a cooperative stance in the interlinked spaces of motive, preference or strategy choices. But intuitively, the very notion of the 'hardest case' also quite

naturally suggests the presence of certain reasons militating against voluntary collective action on behalf of the environment. In reporting our hardest case findings above, we noted that few will consider it a big deal to learn that someone in the real world, who is aware of environmental issues, is more likely to cooperate in a recycling scheme, or economize on hot water, than to forgo the use of a private car to go to work in favour of public transport, or to refrain from participating in periodic mass migrations by air in the summer vacation. Common sense tells us that the last two of these environmental dilemmas are usually harder than the first two, given the considerable downside of acting cooperatively they so evidently involve.

The survey findings, as reported so far, make it easy for us to concede this triumph of common sense. But as noted before, the logic of collective action represents a powerful and conflicting common-sense point of view, according to which every single case of an environmental dilemma will prevent rational agents from cooperating, whatever the magnitude of the personal cost may be. In view of this, it seems best to keep on course in analysing the data we have collected, while always casting a sensitive eye on what various intuitions of common sense may suggest, when questions of interpretation arise. Moreover, in part III of the book, we are not merely trying to explain what is going on in the three cases. Our search for explanations is crucially guided by our aim of policy assessment. We want to be in a position to say something of interest about the viability of environmental policies of self-regulation.

Our final strategy in this chapter, therefore, is to look for the most reliable indicator of a cooperative stance which reflects the impact of the official ethos, since that ethos is being invoked by means of the 'social instruments', in Dutch environmental policy. Given the model of practical reasoning outlined above, the indicator we have in mind is a composite response of the following kind. A respondent whose attitude fully complies with the environmental ethos is someone who reports motives of positive Valuation and Willingness, and who rationally chooses to cooperate in the dilemma, from a preference ordering that is consistent with these motives. To put it less forbiddingly technical, this is a response that reflects someone's wish to act unhesitatingly on the thought that one ought to participate in collective action for the sake of a less polluted environment, whenever this is called for in a given area of behaviour. Hence we call this response 'consistent ethical cooperation'.

It turns out, first, that the three cases of the dilemma form a scale with respect to consistent ethical cooperation, and secondly, that the cases of Chemical Waste, Energy Saving and Holiday Destination compare (in percentages of consistent ethical cooperators in the total of respondents) as 60 : 50 : 10, respectively. This last figure gives a rough indication of just how difficult it is for respondents to comply fully with the dictates of the environmental ethos in

each case, on the very exacting standard of compliance that we have chosen to use.[11]

As noted above, the survey provides no direct evidence of the factors that explain the non-equivalence of environmental dilemmas. One thing that does emerge from the policy setting is that cases differ with respect to how much the behaviour in question has become subject to the norms invoked in public discussion, and how intensively it is being focused on by policies of self-regulation. As will be explained in chapter 9, the case of Holiday Destination is a relatively unregulated one, whereas people have become used to the fact that their behaviour is publicly scrutinized for its environmental effects in the cases of Chemical Waste and Energy Saving. Thus it would be possible to argue, as some environmental analysts have done, that there is a 'normalizing' effect at work, which may make it easier for people to accept what environmental norms require of them in well-regulated cases. We think, however, that this can be only a very small part of the explanation of the differences we record in respect of consistent ethical cooperation. Indeed, the fact that behaviour in some cases has become 'normalized' by public intervention, while other cases have remained relatively free of such intervention, suggests that in the latter cases, people are just more resistant to the behavioural implications of paying attention to the *content* of public norms about the environment. For various reasons, people who respond to hard cases of the dilemma may think that the public norms, while generally acceptable, are simply inappropriate, because they regard their behaviour in these areas as a matter of private discretion. They may therefore hold that it is legitimate to keep a free hand in those areas, unrestricted by the dictates of the environmental ethos.

Our hypothesis is that cases of the dilemma, as they are perceived in the real world (rather than in the deliberately stylized reflection of the world within our survey interview), can be ranged on a 'dimension of private significance'. A given area of behaviour in the real world is of 'private' (as opposed to 'public') significance in three respects. For the area in question, the values and norms of the environmental ethos (1) have a low salience, and furthermore, they present

[11] Just how exacting that standard is may be appreciated by the following three considerations. First, it is by no means easy for respondents to pass both of the consistency tests that link motives to choices, via preferences. Secondly, we have focused upon rational choices from preferences (QSPR and QPSR) that are consistent with motives of positive Valuation and Willingness, rather than on rational choices from any other preference ordering that induces a dominant strategy to cooperate. Finally, we have not counted among the relevant cooperators those whose motives signal conditional willingness to cooperate, and whose preferences, accordingly, will not have a dominant cooperative strategy. This means that we exclude from our comparisons those reporting a cooperative choice who endorse the ethos conditionally (positive Valuation, and intermediate Willingness, hence the Assurance Game-ordering QPRS), who are therefore prepared to cooperate if others do, and who apparently believe that others will reciprocate. Taken together, these considerations show that the indicator of consistent ethical cooperation is a highly discriminating and conservative one, as far as measuring assent with the ethos is concerned.

(2) high individual costs of compliance, as well as (3) a low perceived gain of collective action.

We shall leave the details of our policy assessment for the reader to peruse, in the final sections of chapter 13. Our main conclusion is that self-regulation policies are effective at the public end of the dimension, and should be avoided at the private end, both because they are ineffective and because they run the risk of backfiring. We also have some suggestions for striking the appropriate balance for hard, but still tractable, cases located in the middle of the dimension. The arguments we advance depend for their plausibility on showing in some detail that the three environmental dilemmas which are studied in this book can be readily understood in terms of the dimension of private significance, and we adduce additional survey evidence to back this up, in a comparison of the polar cases of Chemical Waste and Holiday Destination. Our strategy will be to decompose the scores of each case of the dilemma on the variable of consistent ethical cooperation into two component parts: the share of ethical motives (positive Valuation and positive Willingness) and the degree of ethical consistency, which is the percentage of those with ethical motives who satisfy consistency on both of our tests. The aspect of salience in the dimension of private significance, we argue, is measured by the degree of ethical consistency, while the aspects of compliance cost and perceived gain of collective action are measured by the share of ethical motives.

The dimension of private significance is utilized in the final three sections of this concluding chapter, in which we comment on the strengths and weaknesses of the Dutch self-regulation approach.