PARTICIPATION AND THE QUALITY OF ENVIRONMENTAL DECISION MAKING

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Participation and the Quality of Environmental Decision Making

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1. PARTICIPATION AND ENVIRONMENT

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The main subject to which this book seeks to contribute is the question of how and under which circumstances public participation can enhance the quality of environmental decision-making. This chapter outlines the issues addressed in the succeeding contributions. The core of the argument is that in the present age of ecology and in a society permeated by risk, ecological problems can wreak havoc with the social agenda. Environmental problems are not merely technical; they also raise inherently political questions and thus bear directly on long-standing challenges of democratic theory and practice. The theme of democratic governance is at the heart of environmental decision-making because the latter often requires a shift of resources and opportunities from some groups to others, and because finding solutions may necessarily require continuing and broadened participation - or so it has frequently been argued. Various solutions have been offered to deal with environmental problems, some stressing the need for a strong centralist state acting on the public's behalf, others favouring a more decentralised solution. In either case, the topic of public participation is central. Public participation is here approached from an analytic-functional perspective, meaning that the focus is on the maintenance of human society. This chapter introduces the criterion of competence to evaluate public participation processes. How well actual decision processes perform on this criterion can be assessed through the use of substantive and procedural considerations. Even if certain decision processes score well on the criterion in one setting or situation, it is important to assess carefully the cultural, institutional and physical circumstances under which the decision-making process is successful. In this fashion, a truly useful empirical theory of participation and environment can be developed.

F.H.J.M. Coenen, D. Huitema and L.J. O'Toole (eds.), Participation and the quality of environmental decision-making, 1-20.

1.1 An age of ecology, a society of risk?

1.1.1 THE AGE OF ECOLOGY

An outbreak of a 'Mad cow disease' on the British Isles, yearly floods on the European continent, soil polluted by illegally disposed hazardous wastes, a widening 'hole' in the ozone layer, international tensions over the division of water rights - it is virtually impossible to miss the regular drumbeat of news proclaiming that the planet is confronted with severe problems having to do with the natural environment and its capacity to sustain life and an acceptable social order. This context has stimulated a catchphrase label for the era: The Age of Ecology. It is said that environmental problems pose a special kind of social problem. '*We have never been confronted with such intractable problems, and such profound uncertainties over how to proceed*' (Press, 1994). Can we be certain the ozone hole actually exist? And if so, is its presence benign, 'nothing nature can't cure', or does it signal the start of potentially irreversible catastrophe? Is it being used, then, opportunistically by certain groups that have an interest in maintaining the salience of the issue on the public agenda? Environmental issues are especially tendentious, and they seem typically to exhibit characteristics associated with 'wicked problems' (Rittel and Webber, 1973), implying they are ill-defined, tightly coupled with other sectors and questions, and reliant on elusive and transitory political agreement for resolution. All three kinds of uncertainty that are distinguished by Friend and Jessop (1969) are helpful in understanding the nature of 'wicked problems'. In their opinion, uncertainty may relate to knowledge about the external environment (UE), to the future intentions in related fields of choice (UR) and to uncertainties as to appropriate value judgements (UV). Problems surrounded by these kinds of uncertainty inevitably raise the basic question as to whether their various depictions are actually accurate. Indeed, in this regard Wildavsky posed the question 'But is it true?' (1995) and concluded that many environmental 'problems' lack sufficient scientific justification or supporting evidence. Governmental policies to address these problems are supposedly based on complex mechanisms through which an array of actors, including the media, play roles. Scientists who question the existence or seriousness of the problems are not accepted in the scientific community, the argument goes, and bureaucrats and politicians in charge of making authoritative decisions prefer to err on the safe side, given career-based incentives.

Wildavsky attacks directly the so-called precautionary principle, which specifies that action is needed on certain possible problems even before their existence is a certainty. The burden of proof, he argues, is on government; and evidence should properly precede action. In particular, beneficial but pollution-generating economic activities should be halted only when it can be determined that the price is right: the benefits of doing so clearly outweigh the costs. Others regard this position as a formula for disaster. The controversy as to just how 'wicked' environmental problems typically are carries direct implications for the subject of participation and environment. This point can be driven home by considering George Bernard Shaw's well known aphorism that 'every profession is a conspiracy against the laity'. If it is fairly easy to get consensus on the

nature of a problem it is correspondingly relatively easy to assign the search for a solution to an expert or a professional. This option is efficient, at least in the narrow sense of conserving resources and inputs. But we can not handle (all) environmental problems merely in terms of narrow efficiency, partly because problem definitions depend not only on facts, but also on normative judgements. Therefore, Rittel and Webber (1973: 162) propose that wicked problems should be approached 'as an argumentative process in the course of which an image of the problem and of the solution emerges gradually among the participants, as a product of incessant judgement, subject to critical argument'.

1.1.2 THE RISK SOCIETY

Whichever position one might choose in the debate on the precautionary principle, it is clear that many environmental problems can be characterised in terms of 'high consequence, low probability', meaning that there is a chance they could trigger very serious difficulties, but the odds of this happening are slim. It is also clear that many environmental problems involve highly complex technical and scientific issues that are not always clear to the lay public. The German sociologist Ulrich Beck argues there has been a gradual shift of the predominant social conflict in this century. He asserts that the primary organising principle in the early 1900s was the distribution of wealth, which changed to a focus on the distribution of power in politics and economics after the second world war. Recently, he suggests, the major social conflict has become centred around the distribution and tolerability of risks for social groups, regions, and future generations. He has termed this emerging order the 'Risk Society' (see Beck, 1992). The essential argument, then, is that solving environmental problems requires appraising the consequences of scenarios. And this step in turn demands a consideration of how risks are distributed. Who would be victimised should ocean levels rise? Who pays the penalty for a global climate change? Hall's (1980) famous research into 'great planning disasters' is indicative in showing that uncertainty about the external environment may seem to be the most important at first glance, but that the real problem lies in uncertainties in related fields of choice or uncertainty about appropriate value judgements.

In this context, it is said that the problems that need to be faced may be complex, but not overwhelming in the technological sense. '*We probably had less of the requisite know-how for putting a craft on the moon in the 1950s than we do for solving environmental problems today*', claims one analyst (Press, 1994: 1). This assertion may be exaggerated, but Press does point to perhaps the most complicated aspect of the decision-making task: many environmental problems inherently pose democratic dilemmas. There are two main reasons: resources and redistribution, on the one hand, and the multiple loci for the relevant knowledge, on the other.

With regard to the former, many of the difficulties posed by environmental challenges do admit of technical solutions, but using the techniques often requires substantial resources. Furthermore, solving environmental problems is likely to result in a redistribution of wealth, within a national system certainly but also for instance

between North and South. The decades after the second World War have witnessed an increasing willingness of governments to address so-called externalities of the economic process and thus the issue of redistribution. This willingness may have waned somewhat during the most recent years of the now-dominant neoliberal paradigm, but still for instance Bardach and Kagan (1982) argue that the growth of regulation can only be stopped or slowed, not reversed. Others even claim that 'doing less' actually means 'doing more' when it comes to social regulation (paraphrasing Richardson, 1994). In any event, decision-making about environmental issues requires confronting (re-) distributional issues and, thus, questions posed by democratic theory. Furthermore, 'wicked problems' imply that decisions require assessing benefits of options against hazily specified costs, plus the somewhat unclear distribution of both benefits across social groups. The challenge, then, goes far beyond simply understanding the problem and solving it.

The second reason why dealing with environmental problems requires confronting questions of democratic governance is that some would argue the 'answers' to many environmental questions usually do *not* admit of answers that can be devised by a small cadre of technical experts. In the Risk Society, a residuum of uncertainty - and here the terms risk and uncertainty are being used in a loose sense, rather than in the strict notions of decision theory - often must remain. 'Answers' may be elusive. Or, more precisely, they may be best found in a *process* of continuing exploration and with a much broadened set of participating stakeholders, whether institutional representatives or individuals. Treating uncertainty seriously may mean major changes to the basic assumptions regarding where, when, and how often the perspectives and contributions of the broader public are integrated closely into decision-making. This aspect of the question is dealt with more thoroughly later in this chapter.

1.1.3 DEMOCRATIC DILEMMAS

An aspect of environmental problems, then, is that they pose democratic challenges - either in terms of standard redistributional and therefore power questions, or via the even more complicated issue of how 'correct' answers to environmental questions are to be sought, and determined. So the broader questions become: how to combine the desirable practice of democratic decision-making with the effective and efficient resolution of environmental issues? how to determine which decision-making procedures are robust enough to meet the tests of sustainability and comportment with democratic standards? and how to involve a large and diffuse public that may experience the consequences of certain decisions as detrimental to its interests - despite the conclusions of traditionally defined 'experts'?

Citizen participation is often discussed in the context of the crisis of representative democracy. This crisis may be said to result from the failure of periodic elections to indicate sufficiently the wishes of the voters and from the apparent failure of representative institutions to deal with long-term problems that may not immediately influence the outcomes of the next elections. These two factors are combined with a much smaller difference in education levels between representatives and voters that

exists currently as compared to the founding days of the modern systems of democracy. The attitude towards decisions of the administration changed. Decisions may be paralysed by reactions of the public, whereas in the past they could be more easily be implemented in society. Participation may be one way out of these problems, but given the nature of wicked environmental problems, could it also lead to *better* decisions?

The discussion here of the democratic dilemmas posed by environmental problems considers two different but complementary disciplines and their approaches to the question of how and under which circumstances public participation can contribute to the quality of decision-making. The two perspectives are: first, that of planning, which tries to improve decision-making technically; and second, that of political science, which is concerned with the need for democratic expression. Both capture part, but only part, of the needed perspective. Oversimplifying, one may state that planners emphasise rationality, which is essential, but use a very naive concept of democracy, while political scientists capture realities and realities of democratic theory and practice, while ignoring subtleties of the lessons from planning practice (Fagence, 1977). A combining of insights from both disciplines is envisaged in this book.

1.2 Centralists versus decentralists

The debate about the relative merits of centralisation and decentralisation is almost timeless. The broad theme reaches back millennia, while even the discussion within the context of modern environmental policy dates from the end of the 1960s. Two groups of theorists need to be considered. One, which can be labelled the 'centralist' thinkers, holds that ecological problems can be solved only by strong centralised control of human behaviour, thus making common resource decisions by central authorities and replacing democratic rule by 'ecological mandarins' with the 'esoteric' knowledge and public spirit required (Press, 1994: 14). The second group of analysts consists of decentralists, who argue that centralisation is a root cause of environmental problems and recommend decentralisation and participation as the basis for communicative and ecological rationality .

Press' comprehensive summary of the state of the debate is quite critical. On the centralist assumption, he writes: '*Why should an authoritarian state be a priori better able to cope with environmental problems? After all, centralised bureaucracies are not known for their flexibility, responsiveness, adaptability, or forward-thinking capabilities*'. In addition, he finds explanations as to why democracy and environmentalism should be logically incompatible are few and incomplete. On the other hand, one may wonder about the decentralists' theme that decentralised governance should lead directly to environmental health and sustainability: '*Aren't people in small communities just as capable of ransacking their resources and condemning land and water for waste disposal?*' (1994: 12).

Three reasons why democracy and sustainability may be incompatible can be sketched. These are what might be called the *social justice challenge*, the *technocratic challenge*, and the *economic challenge* to democracy (Press, 1994: 9-10). The social

justice challenge implies that environmental problems are too urgent, and the luxury of democracy must necessarily await their resolution. The technocratic challenge implies that even 'informed' citizens may not understand environmental problems and thus not take the 'right' decisions. Finally, economic realities may be such that many policy options are foreclosed because choosing them would be punished by market forces (see also Williams and Matheny, 1995). Are these challenges real and ever-present? Can they be overcome? And if so: how?

1.3 Participation and its purposes

1.3.1 DEMOCRATIC TRADITIONS

Here it is useful to avoid a lengthy debate on the meaning of the concept of democracy. A better option is to put forward the thesis that democracy essentially means rule by and on behalf of the people. It is a way of decision-making with roots in 'human adaptation-communication and social learning' (Dietz, 1995: xvii). There are many forms which democratic decision-making may take, but at the most basic level talking about democracy implies discussing the ways in which ordinary citizens and the organisations that they compose participate in the public debate. In modern history, participation has been a major topic of debate from the beginning of the nineteenth century. Since the French revolution citizens have been integrated greatly into the political system. The revolution brought an egalitarian voting system, which became transformed into radical one-party rule. After the restoration of the monarchy in many European countries, democratic reforms were gradually (re)introduced, including the incorporation of a bill of rights into national constitutions, division of power, equal access to voting privileges, establishment of independent parties and labour unions, along with many other democratising changes. A similar trend can be evidenced in the United States (US), despite the country's retaining the same basic constitution for more than two centuries.

Social movements and citizens' initiatives have advocated more direct influence since the early 1920s, but their protest is said to have not been particularly effective in producing results until the ecological movements of the 1970s, the road being prepared partly by the student campaigns of the late 1960s (see Webler and Renn, 1995: 17-18). More direct participation was a central tenet of the ecological movement, and this may explain partly why so many environmental regulations dating back to that era contain quite a few opportunities for participation of the wider public in environmental decision-making - including with land use regulations, regulations dealing with environmental impact assessments, and environmental licenses. Enthusiasm for direct participation has waned considerably since that time. Perhaps because of the three challenges described above, neither bureaucrats, politicians nor the broader public are currently very enthusiastic about participatory possibilities in environmental decisions. Participation has often been experienced as having been too complicated and lengthy, or essentially pointless - translated broadly from the Dutch: 'mustard after the meal'. But is this criticism justified? Does participation of the broader public only result in useless

outcomes? Naturally, part of the answer to this question depends on what is to be achieved by participation.

1.3.2 PARTICIPATION TO WHAT END?

The fundamental values of democratic rule include openness and accountability of government so that those who rule are responsive to the ones on behalf of whom they govern. Therefore, discussing the relationship between democracy and environmental problems implies taking a position on how people should and can be involved in the decision-making process, and more specifically what the *purpose of participation* is.

The uses of participation can be considered in terms of normative and also functional perspectives. The *normative* debate about the role of participation centres around elitist and egalitarian interpretations of democracy, with two competing theories of democracy behind them, direct democracy versus liberal democratic theory. Liberal democratic theory draws an analogy to private markets: different elites that make the decisions on behalf of the populace compete for the position behind the wheel. Broader participation enters, if at all, only in a secondary way. Schumpeter's famous definition of a constrained democracy fits perfectly: '*free competition (among elites) for a free vote*' (Schumpeter, 1950). Under direct democracy popular sovereignty is stressed, putting much more emphasis on direct involvement in substantive decision-making on the part of the wider public. Direct democratic theory also stresses political equality, which means levelling the playing field for citizens and implies that a population of socially capable and responsible citizens must be engendered (Webler and Renn, 1995: 22).

The purpose of participation from a *functional* perspective can be found in functional-analytic arguments for participation. Three strains of this type of argument can be found, each grounded in one of three theories: democratic elitism, rational choice, and structural functionalism. These perspectives stress that justifications for participation are to be found in the need for social system survival (Webler and Renn, 1995: 22-23).

The arguments given here are a recurring theme in the debate on participation in environmental decision-making. Some argue that participation in environmental policy is essentially about empowerment, or learning democratic skills. Through participation, people will learn of the problems that society faces and how to interact with others that have different opinions or interests (see for instance Kelman, 1992). Others stress the point that without participation, decisions taken will not be legitimate, will not reflect the will and values of the people. Still additional advocates emphasise that participation is a tool for improving the quality of decisions - through participation extra information is added to the decision-making process, and errors are detected.

1.3.3 THE FUNCTIONAL-ANALYTIC PERSPECTIVE

In this book, the focus is intentionally limited to functional-analytic arguments for participation. This perspective does not imply a denial of the strength of normative arguments. Rather, it might be observed that normative and functional arguments have a

complicated relationship, and they do not fit into a simple dichotomy. The fact that normative arguments for participation are strong but practice so frequently lags behind the normative standards compels close attention to the functional question.

An example can clarify the point. Ducsik (1987) is one of many who favour 'open' planning as a way of reaching decisions and has studied the reasons why an open planning process has not been used in decisions on the location of power plants. Utility executives fear open planning because of a variety of concerns - and these are rooted in functional rather than normative considerations (Ducsik, 1987: 97-100). The executives studied doubt that environmentalists could behave in a rational and constructive manner and are sceptical that the latter would be able to accept the fact that perfect solutions often do not exist. They also question the utility of participation by people lacking the skills and qualifications normally required of the technical professional. The executives express concern that the focus of the participation process be kept on site selection and not flow in the direction of much broader issues, and that in a participatory process they are likely to be the target of severe (perhaps even enhanced) critique in the end anyway - due to the impossibility of achieving general happiness with the outcomes. The concerns seem representative of doubts harboured by many public and private sector officials about participation. Such apprehensions may very well be part of the explanation for why participation opportunities are often constrained.

Accordingly, change may most productively be assisted not be restating the normative arguments time and time again, but rather by suggesting - with appropriate analytic justification - the possibilities and drawbacks of participatory decision-making techniques. The fundamental issue addressed here, then, is: how can participation by the wider public contribute to better environmental decision-making? This question needs elaboration, in several respects. The next sections specify how the quality of decisions is measured, which possible limitations should be investigated when focusing on participation, and which parts of the wide field of environmental policy and decision-making are worth sustained study.

1.4 The quality of decisions: substantive and procedural criteria

1.4.1 QUALITY AS EXCELLENCE

The notion of quality has roots in the Latin 'qualitas', a term originally referring to a state of being or a characteristic. The meaning evolved over time to indicate, as well, a subjective sense of good 'condition or characteristic', thus connecting the characteristic to a use or function (Bouwer and Groenenberg, 1991: 65). The meaning of the notion of quality as employed here is 'the degree of excellence which a thing possesses' for a designated purpose. The 'things' to be considered are decisions taken on matters of environmental policy and planning, and excellence here is interpreted as contributing to sustained societal survival. This definition is merely a beginning towards the development of a clearer vision of the ultimate objective of this volume. The conceptual point helps focus attention on the functional-analytic tradition. The approach is not

dissimilar to that developed by Dryzek (1987) in his treatment of 'ecological rationality' as a type of functional rationality focusing on the relationship between human activity and ecosystems - and thus based in anthropocentrism. Although environmental problems are suffused with uncertainty, they may indeed pose a threat to societal existence. From this starting point, criteria can be developed for use in evaluating the possible contributions of public participation to society.

1.4.2 FAIRNESS AND COMPETENCE

According to Webler (1995), two meta-yardsticks can be applied when evaluating participation processes; these are *fairness* and *competence* - the latter more closely related to functional-analytic arguments for participation, the former tied more to norms of direct democracy. Fairness is connected to the idea of equity: do all have a fair say in the decision-making process, is equal access guaranteed, and are the outcomes distributed equitably? Competence relates to the use of the information that is available at the time the decision is made. According to this vision, a good decision does not neglect relevant information in the possession of certain groups. Or, to put the point positively, decision-making improves in quality as more relevant information is considered, including (especially) information distributed across many groups. The relationship between competent environmental decision-making and public participation is at the core of this collection. If the term 'quality' is confined to the notion of 'competence', as just outlined, it can be useful to elaborate on the matters of rationality, information as well as the substantive and procedural criteria implied by this stipulation. Which kinds of information are needed for competent decision-making? What procedures should be applied to guarantee that these types of information enter the decision-making process appropriately? When is it possible to conclude that a decision actually improves the natural environment?

1.4.3 RATIONALITY AND PLANNING

By focusing on decision-making and information, this discussion links in to the well known debate about rational decision-making among scholars like Simon (1957), Etzioni (1967), Dror (1964) and Lindblom (1959). Based on different assumptions about the information processing capabilities of human beings and organisations, these authors have all devised 'ideal type' or empirical models of decision-making processes. For example, Lindblom's famous phrase 'muddling through' implies an aversion to 'holistic' approaches to decision-making. It asserts that administrators work, and should work, by incremental changes from existing policies (1959). In a way, when he argues against the precautionary principle, Wildavsky also pleads for incrementalism (1995). Others have warned against the practice of incrementalism, specifically in the context of 'wicked problems'. It is argued that incrementalism involves a bias against new and radical solutions for problems, and ignores the fact that problems may be changing so fast or so fundamentally that policies based on past experiences, would be inadequate as guide for future action. A third critique of the incrementalist approach is its inherent

reliance on policy agreement. Such a reliance would only have validity under conditions of stability (Dror, 1964). With high rates of change incrementalism could produce agreement on a catastrophic policy. '*The formula that "agreement equals high quality" is the more dangerous because of its appeal to a value highly regarded in democratic ideology, as attested to by the abundance of "administration by consent" literature and the recent upsurge in "participatory democracy". It is, therefore, highly necessary to emphasise that agreement should follow examination of the consequences of policy and not be substituted for it*' (Dror, 1964: 260).

One way to come to a careful examination of consequences of policy as intended by Dror may be planning, and a few interesting observations can be drawn from literature on the subject. Meyerson and Banfield introduced the so called *rational planning model*, based on completely rational actors that are able to determine all actions possible, identify their consequences, and order these according to a well defined set of preferences (see Banfield, 1959). The ideal envisaged by the rational planning model is the kind of technical rationality that has been criticised by authors like Simon (1957) and Lindblom (1959), and aiming for this type of rationality leads to two main problems which are relevant for this book. Firstly, the rational planning model does not specify how the ends that are to be achieved come into being, and is therefore not explicitly concerned with citizen participation in the decision-making process. Secondly, as we have seen, there is a very uneasy relation with uncertainty. Uncertainty threatens the validity of technical rationality because technical rationality depends on certainty and the perfect predictability of the future.

On this matter Altshuler (1965) pointed out that rational comprehensive planning neglected the problem of formulating the 'public interest'. He asserted that rational planning is based on very broad and abstract goals as a starting point for the planning process, usually stemming from a desire for efficiency. Rational planning assumes that 'the public interest' should be defined by representative democratic institutions, while planners would enhance the goals resulting from political decision-making in a value free manner. But in the end it appeared that planning and politics were much more difficult to bring in line than the rational planners expected (Van Vught, 1979). The biggest challenge to planning in the late 1960s became the search for legitimacy (see Arnstein, 1969). The history of social planning shows a gradual shift in the mode of justifying planning. It shifted from '*rational (the most efficient means to unquestioned ends), to consensual (the endorsement and support of vested interest groups) to participatory (a new regard for the "user")*' (Smith, 1973: 277). The legitimacy of consensual planning is that it takes into account that rational planning has political consequences. Consensual planning depends on bringing a broad range of people into the planning process with a variety of interests. This raises the question if there can be one singular public interest in environmental issues. Participatory planning is based on the legitimacy that plans are endorsed, supported and even created by the recipients. In advocacy planning as a specific form of participatory planing, a planner acts as an advocate for excluded recipients, to organise that they can enter the planning process (Davidoff, 1965).

Faludi has stated that given the various types of uncertainty surrounding planning it

may be better not to consider the rational planning model as a prescription for how to act in reality, but rather as a rule for testing decisions (1986,1987). He has argued that rationality is not an objective criterion of quality but a subjective one, relative to the definition of the decision situation. A decision is rational if it is the best out of all possible alternatives, taking into account all their consequences weighed in the light of a set of values, including, where relevant, equity. All alternative actions and their consequences have to be assessed within the definition of the decision situation. This decision situation is comparable with a verdict in court. In justifying a decision the question is, then: was it reasonable for the planner/defendant to know what he was doing, to be expected to find out, and so forth. Plans are an aid to help us in considering consequences and avoiding the tendency to consider decisions one by one.

But suppose that more rational, competent, decisions require testing proposals against information held by participants. How could we envisage the role of a lay public? Which types of information exist and which ones could lay people contribute as opposed to experts?

1.4.4 INFORMATION AND KNOWLEDGE

Information is a concept related to the notion of knowledge, and these terms are used interchangeably here.[1] From Lindblom and Cohen (1979) can be borrowed the distinction between scientific, ordinary and interactive knowledge. *Scientific knowledge* is knowledge that owes its origin, testing, degree of verification, truth status or currency to distinctive professional techniques. *Ordinary knowledge* owes its origin to common sense, casual empiricism, or thoughtful speculation and analysis. Finally, *interactive knowledge* is the knowledge that participating actors produce during the process, about the process as well as about other actors, their objectives, and related subjects. Although it cannot be known a priori which kind of actor possesses which type of information, it makes sense to assume that citizens are especially likely to inject ordinary knowledge into decision-making and that this kind of (often context-specific) knowledge can be a very helpful addition to increase decision quality.

Arguing that all information available at the time of decision should be used when decisions are made raises the subject of rationality. A few brief points are apropos. It seems clear that speaking of rationality implies discussing the modernist tradition of enlightenment and progress through the expansion of objective knowledge. This modernist tradition, or at least the narrowly positivist version of it, has given way to a post-modernism holding that there are various rationalities, and that events or actions can therefore be rational from one person's perspective while being simultaneously irrational from another's. Further, since rationalities are often closely connected to interests and restrictions that people perceive, different rationalities can be related in turn to political dialogue and positioning.

Habermas conceives of rationalisation as occurring differently in each of three independent domains: science/technology, law/morality, and art/criticism. He diagnoses the current problem of modern societies as one-sided, uneven rationalisation: '*scientific rationality seems to predominate, while the type he emphasises as most important -*

communicative rationality - must build on knowledge from all three domains' (Habermas, 1984). This critique mounted by Habermas is also partly targeted at the values that scientific rationality advances: efficiency and cost effectiveness. Rationalisation in other domains, such as the law and the arts, should complement that from science and infuse other norms in what Habermas calls discourses. Comparing Habermas' distinction among types of rationality with the knowledge typology described by Lindblom and Cohen shows that Habermas expands the others' array by adding knowledge of norms and of the arts as important contributors to rationality.

This point, which may seem at first peculiar, actually reaches to some important practical considerations in today's environmental decision-making. Consider, for instance, a situation in which a windmill park is to be built in a scenic area. Knowledge about the beauty of the area has to be weighed along with other considerations. Along these lines, several important questions can be asked; if all five types of knowledge mentioned above are important to the enhancement of rationality, what can be said about the contribution of public participation to the enhancement of rationality in environmental decision-making? Do citizens in practice supply 'merely' ordinary knowledge? Or can they contribute additional kinds of information?

1.4.5 PROCEDURAL AND SUBSTANTIVE YARDSTICKS

Judging decisions in practice in terms of their degree of competence is usually quite difficult. The subject of scientific uncertainty and its bearing on environmental decision-making has been sketched above, but it should be clear that similar shifts and uncertainties characterise knowledge about arts or norms as well. It is therefore exceedingly difficult to judge decisions in terms of their substance. Several scientists have argued strongly for applying only *process*-based criteria to decisions rather than substantive ones. Webler, for instance, proposes to evaluate the competence of techniques of participation by a set of the former kind (1995: 59):

- every potential discourse participant must meet minimal societal standards for cognitive and lingual competence.[2]
- every discourse participant must have access to the knowledge needed to make validity claims and criticise others.[3]
- speakers must verify the results of any attempt to translate expressive claims.[4]
- judgements about conflicting validity claims must be made using the most reliable methodological techniques available.

These types of criteria are useful, and analysts like Renn, Webler and Wiedemann (1995) have applied them to assess eight participatory techniques. And the authors of the chapters that follow consider, in many cases, such procedural yardsticks in their assessments. The argument here, however, is that additional assessment - of a substantive type - is also warranted. Although Webler explicitly addresses the concern that participation discourses can be hijacked by participants playing power games, he admits that there is a need for more study of the structural conditions that provide incentives for participants to behave morally. 'Moral' behaviour is not always to be expected, however, in the arenas of environmental decision-making, so the products of

decision-making discourse ought properly to be assessed by an outside substantive criterion or set of criteria.

Where possible in view of the evidence available, some studies in this book seek to develop and consider a pragmatic substantive criterion: sustainability. Note that a similar approach is adopted by Burns and Ueberhorst (1988). They argue that while there is some uncertainty regarding the existence of many environmental problems, the possible costs and benefits of actions should nevertheless be taken into account in decision-making. In this form, the principle was also accepted by the United Nations Conference on Environment and Development in Rio de Janeiro. Certainly when low-cost actions can prevent events which entail potentially enormous costs, it would seem rational to take the required steps. Following this line of reasoning, they suggest that the lowest cost options for achieving given environmental benefits can usually be achieved in the phase of technology design, where 'systemic alternatives' may still be available. They envisage a large role for participation in this phase, so as to make the 'test' for alternatives undergo careful scrutiny. The 'systemic' level seems similar to what Hall (1993) has labelled the level of policy paradigms. The paradigm is the most abstract level of ideas behind a certain policy. The paradigm of transportation policies in many Western countries has been accommodation and stimulation of increasing mobility for years. This paradigm has influenced both the instruments of the policy and many concrete decisions, for instance to enhance public transportation (an instrument to accommodate a growing desire for mobility) or a decision to built a particular road or not. Hall writes that shifts in policy paradigms are quite rare, while changes in policies at the instrumental or concrete level occur much more frequently. It is obvious that influencing the policy paradigm in a certain direction offers the greatest possibility to influence policy, and at each of the three levels, citizen participation may play a role to influence decisions. At the paradigmatic level, participation can facilitate opportunities for more rational decision-making more fundamentally than participation allowed only regarding choices at the first level. The risks of such substantial participation are also greater, nonetheless, because a policy that moves in a fundamentally wrongheaded direction is even worse than a less-than-optimal one regarding individual cases. In a fashion, therefore, the issue of uncertainty is reframed but not avoided.

Still, the choice of participatory level is consequential. Consider the issue of waste. Resistance to the location of waste facilities nearby certainly cannot be labelled irrational from the perspective of concerned citizens. The result of their 'individual rationalities', however, does not add up to collective rationality when the alternative is waste being dumped or stored using outdated techniques. What often happens is that local groups participating in a debate over the citing of an individual facility start discussing particular techniques of waste treatment and eventually the set of social relations that generated the sizeable quantity of waste to begin with. Source reduction is generally held to be preferable to waste treatment ex post. So it can be said that if participation contributes to source reduction the quality of decision-making has improved, ceteris paribus. Naturally, participation is not the only factor that can contribute to this type of shift. Market forces are generally considered to be much stronger influences on firms' behaviour in such cases. Nor can we say that participation