Chapter 5
Reflective Ethical Mapping

5.1 Introduction

In the previous chapter I outlined a series of specifically formulated methodological tools to encourage reflection and deliberation on ethical issues in a real world decision-making context. My critique of these approaches has been both philosophical and practical in nature. In the case of the Ethical Matrix (EM) and Ethical Grid (EG) the constraints are based primarily upon their format. Matrix and grid structures inhibit the identification of a broad range of relevant public actors, stakeholders, environments, ethical principles and socio-technical concerns because these methods limit both the quantity of such factors for discussion, and in some cases, constrain the choice of these elements without sufficient meta-ethical justification.

What I propose in this chapter is to set out a practical model for ethical PTA that expands upon these pre-existing methods by opening them up to more effective bottom-up deliberation on these important elements. The EM and EG lack sufficient opening-up and closing-down mechanisms to first elicit ethical reflection by individual stakeholders upon a range of socio-technical issues and relevant ethical perspectives through open and lively discussion, and then later to bring these discussions to a decision-point, summary and evaluation. To be effective it is important to expand ethical deliberation to include not just the assessment of principles and stakeholder interests to specific cases, but also the justification of choices when selecting principles and stakeholders within cases. Crucially, as a point of pragmatic consideration, it is necessary to also relate ethical deliberation back to a specific policy context, and thus make it practically useful to PTA decision-making. I propose in this chapter that multiple ethical tools are necessary, not simply in the format of a tool box (implying different tools brought out for different purposes) but arranged as a sequential decision-support procedure, to better satisfy the opening-up and closing-down mechanisms necessary within PTA. In the following chapters I present a series of practical methods structured in sequence as a decision-making procedure. In each of the methods chapters I include some discussion of empirical examples drawn from participatory work surrounding the issues of technology development and decision-making in the decommissioning of nuclear power facilities and the long term management of radioactive wastes.

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5.2 The Features of Deliberative Decision-Making Methods

When beginning to develop novel participatory-deliberative decision-making tools it is important to begin with an understanding the nature and sequences of decision-making, both regarding ethical and non-ethical decisions; and the ways in which deliberative processes are structured in order to achieve specific goals. The first point of consideration is that decision-making processes are frequently multi-staged, sequentially constructed and iterative in nature. This is especially true of participatory-deliberative decision-making processes which are, in essence, problem-solving activities. They require participants to identify and then define a series of questions, difficulties and challenges pertinent to the problem situation in hand. They usually begin by collaborative identification and discussion of potential solutions whilst explaining and mutually challenging the underlying reasoning behind such solutions. Participants must then verify, accept or reject such solutions based upon some mechanism of evaluation. This evaluation is usually based upon a predefined criterion or metric against which to assess outcomes. The types of decision-making that commonly occur within PTA are usually formulated as multi-staged processes in this manner. They typically involve a searching phase to discover goals, followed by the formulation of objectives, selection amongst alternative options and then the formulation of strategies to accomplish the objectives and an evaluation of outcomes. Thus as a problem-solving exercise, participatory-deliberative decision-making in Technology Assessment follows a familiar pattern:

- Recognise a problem
- Identify a series of objectives
- Collect information and ideas
- Analyse the information and ideas
- Choose a specific course of action, i.e. make a decision
- Communicate and implement the decision
- Assess the outcome
- Evaluate and report on the outcome
- Recognise new problems and repeat the process where necessary

The literatures on deliberative tools to achieve PTA goals are rapidly growing both in the academic and policy literatures, and many such as Multi Criteria Decision Analysis (Nijkamp 1989), Multi-Criteria Mapping (Stirling 2001), Stakeholder Decision Analysis (Burgess 2006) and the hybrid Deliberative Mapping (Burgess 2007) share this type of structure. I propose that an ethical tool-based approach could benefit from the adaptation of the methods examined in the previous chapter in line with this model; separating into individual methods for each of the sequential stages.

5.3 Ethical Decision-Making

What is true of problem solving and participatory-deliberative decision making is, for the most part, also true of ethical decision-making. One common feature of the applied ethics literatures (especially common in the field of professional ethics such as medical or business ethics) is the development of ethical decision-making procedures. Broadly speaking, many of the decision-making frameworks that have emerged in business, healthcare, engineering and other professions, are commonly grounded within the act-deontology tradition of ethics: centred upon the role of the individual actor making a decision laden with ethical consequences and charged with making the right choice whilst considering a range of outcomes. Many methods of ethical decision-making are designed to facilitate and structure this process of moral reflection in order to consider different inputs, perspectives and eventualities before coming to a decision on how to proceed with a course of action.

Rather than detail all the available ethical decision-making models individually, it is clear that many of the models that have emerged within the applied ethics literatures share a common step-wise structure. Ethical decision models tends to be patterned in a checklist, decision-tree or similar sequential model, whereby the individual actor moves through a series of evaluation stages in order to reach a better informed and ethically robust decision at the end. Most of these models involve assessing relevant information followed by normative theoretically informed reflection that influences the moral actor in reaching a decision. Some recognise that by completing and evaluating the ethical implications of action, this in turn presents a self-perpetuating hermeneutic cycle. As one decision closes this raises new ethical questions for consideration and hence further rounds of questioning, exploring consequences and reaching conclusions. To give a basic overview, I suggest a general format of checklist approaches that can be broadly summarised in this way[1]:

1. Recognise an ethical question, issue or concern
2. Assess the relevant facts and values
3. Evaluate alternative actions from theoretical perspectives
4. Weight outcomes on the basis of ethical perspectives
5. Implement the decision outcome
6. Reflect upon and evaluate the outcome
7. Repeat step 1 as appropriate

A number of available ethical decision models can be found in the applied ethics literature, many of which are implicitly or explicitly grounded in the act-deontology tradition, holding that moral judgements are particular and case specific, tending to look towards the consequences of specific decisions in terms of whether that are beneficial or harmful, and then acting accordingly to what is

[1] For further details of each decision-making model, refer to (ERC 2004; Thomson 1999; Marshall 1999; Forester- Miler and Davis 1996; Van-Hoose 1980; Bowen 2005; Potter 1999; Jones 1991).

deemed to be right by the morally situated actor. Though care must be taken when generalising across all forms of ethical decision-making model, the preponderance with act-deotonlogy has emerged principally because much of the applied ethics literature tends to focus upon actor decision-making, particularly in specific professions such as business management, engineering or medicine. It also remains concerned with the ethical implications of personal action to other individuals (business owners, citizens, patients etc.) and the focus is largely upon the implications of an individual's actions within and amongst broader professional organisations.

In the context of this book, however, the notion of an ethical decision-making model incorporates two additional criteria against which an act-deontological model must contend. The first is that by focussing upon the individual's actions and behaviours, these models tend to bracket out the role of technologies, which as already mentioned, appears as a common feature within the literatures on normative and applied ethics. We must find a way to reassess a role for technology in shaping moral choices that is not present in a checklist approach. Secondly, the focus of this book is upon group deliberation and participatory-deliberative decision-support, rather than individual decision-making. Rather than trying to reach a specific conclusion on individual behaviour as I mentioned in chapter 3, the concern is with highlighting the realm of the ethical within a broader discussion of the socio-technical implications, governance and policy context of SECT. A key methodological difference between what is presented in this chapter and much of the ethical decision-making literature, is that deliberative decision-support must involve elements of iteration, facilitated dialogue between multiple participants and negotiation between competing values, judgements and principles. As I have established, deliberative methods allow for reflection, development and change in values amongst the participants. An iterative design would support this goal by allowing ideas to be expressed, evaluated and re-examined dialogically. Having shed the various forms of top-down applied ethics; the proposed reflective equilibrium-based model is a coherentist form of ethical reflection and deliberation. I suggest that this caters for the necessary iterative and reflective aspect, by allowing expressed moral judgements to be considered and amended or developed when appropriate within a discussion amongst deliberating actors.

5.4 The Structure of a Decision-Support Procedure

The first task is the formulation of a coherent theoretically informed structure. By explicitly adopting a pragmatist framework of ethical decision making, it is necessary to begin by establishing bottom-up problem framing by grounding deliberation on ethical issues within the practical techno-scientific and socio-political decision context. The first task is effective information provision to citizen participants in a participatory-deliberative process, and this involves a balanced range of information resources and opportunities to allow participants to assess their own information needs, question experts and to prepare for informed deliberative engagement. This phase is of critical importance, and one that theorists of deliberative democratic modes of governance often overlook. Deliberative

processes involve both internal reflection and public discussion, though deliberative theorists and practitioners tend to focus primarily on the discursive component. Goodin and Niemeyer's (2003) study of citizens' juries on Australian environmental issues show how jurors' attitudes changed more in the context of the 'information' phase of the jury proceedings, involving a large degree of 'deliberation within', than during the formal 'discussion' phase. Given the relative power that the information provision aspect has on deliberative quality and the transformation of participant values, the balance of information in terms of its type (scientific, ethical, political), source (from NGO, campaigner organisations, print media, scientific publication) and content (quantitative, qualitative, peer-reviewed, opinion piece etc), is highly important. Ensuring balance is an art rather than science, and elements of iteration and participant self-evaluation of information needs is a necessary component of ensuring deliberative success.

Within the discussion phase of the process deliberation around such aspects of SECT should involve techniques to elicit and record a (long) list, not only of identified stakeholder actors – which might include, amongst others, affected local communities, politically and economically marginalised groups, governmental and non-governmental organisations; but also other non-human components, including technological artifacts, designs, non-human organisms, ecosystems, and built and natural environments. This is what Actor Network Theorists term generalised symmetry, whereby technological artefacts and other non-human elements should be described in the same terms as human agents (Latour 1993). Thus the unit of reference is the 'actant', to borrow the ANT terminology. The task is then to identify the relationships between these heterogeneous actants. Tools such as stakeholder mapping (SM) (McElroy and Mills 2000) have frequently been used successfully to draw out the interests of different civil society actors, identify conflicting and collaborating interests and assess their roles at different stages in a decision-making process, and these will be discussed in further detail later on. SM focuses, however, solely upon the human elements of organisational relationships. The model could prove useful though when adapted to ethical PTA, because such a method encourages deliberating participants to examine synergistic relationships between different groups. The goal is to adapt this type of method to include other non-conventional elements, potentially including future-generational and environmental interests, and the technologies themselves. Also such methods could be adapted to ethical deliberation in a relatively simple manner by framing the analysis and mapping processes in terms of how the behaviours and structures of one group can be both ethically motivated and ethically consequential to other groups. Due to the complexity of the stakeholder categorisations that result from SM, it may be necessary to then cluster the results into conceptually contiguous groups for simplification and further ethical deliberation. Although this process is comparatively time consuming and complex, it is meta-ethically preferable to the simplified, arbitrarily selected and monolithic categories of 'stakeholders' presented in tools like the ethical matrix.

The next task is the identification of suitable principles. I have argued that meta-ethical justification of selected principles must be consonant with bottom-up deliberation. I intend a principlist approach that is applied in a manner congruent

with the perspective of Beauchamp and Childress. They articulate ethics as a dialectical relationship between ethical principles and concrete ethical problems, where the emergence of new ethical problems provokes a critical analysis and possible reformulation of existing ethical principles. Like a number of applied ethicists, they assert that understanding ethical theory (and by extension ethical principles) as having a dialectical relationship with human practices will lead to a reformulation of such theories and may provoke a modified view of actual ethical problems. I take forward Beauchamp and Childress's claim that the examination of ethical problems should be a process, not the application of rigid ethical principles (Beauchamp and Childress, 2001). In light of this, I suggested in chapter 3 that Rawls's concept of 'reflective equilibrium' provides a suitable basis for grounding the selection and justification of ethical principles in a process that is sensitive to competing, participant-led, bottom-up moral judgements.

In the reflective equilibrium-based approach a selection of principles grounded in theory-based perspectives (that have been developed within a community of expertise i.e. the top-down part) is deliberated upon in reference to the communicative, dialogic and reflective aspects of public and stakeholder formulated moral judgements (i.e. the bottom-up part). In this and the following chapter, I examine how such a reflective equilibrium model can be operationalised; in other words, reformulated as a set of practical tools through adaptation based upon qualitative and deliberative methods for clarifying individuals' moral judgements and values, followed by the elicitation of a long list of ethical principles in order to provide the evaluation criteria against which these judgements are to be critically revised. By applying the range of identified principles to the judgements elicited through group deliberation and subsequent reflection upon the context of the principles in relation to the judgements themselves (and the specificities of the case), the outputs would be a series of 'considered' judgements that are coherent with a set of participant-selected and adapted principles that are in turn, case-specific and relevant to the technology in question. By adopting this type of structure we can open-up ethical deliberation to creative and imaginative ethical reflection that is context specific and theoretically grounded.

I also propose that the 'outputs' of a reflective equilibrium-based deliberative process must then be formulated into a series of ethically informed policy options or alternatives, by reflecting upon the practical implications of their implementation. It is necessary to pragmatically re-contextualise the more abstract elements of ethical deliberation back within the political, social and techno-scientific context of decision-making in a manner congruent with philosophical pragmatism. I therefore also consider the use of valuation techniques to ascribe weight to different options identified through the deliberative process and hence 'close down' the discussion to either an agreement on ethically informed actions (resulting in a specific policy option), or else a narrowed range of policy options based upon ethical 'criteria' identified throughout. I propose that when such tools are used in concert, this provides a participatory ethical assessment of SECT which is both meta-ethically justified and compatible with the structure and processes of PTA.

5.5 Choosing the Right Deliberative Tools

Running an effective PTA process involves selecting the right methods to facilitate dialogue amongst participants. It is important to consider that method selection is something of an art rather than a science, and that finding the correct technique for a particular context is inevitably problematic. Technique selection must be in response to a specific situational, practical and theoretical context. This task is difficult, as I mentioned in chapter 2, because the motivations for engagement are complex and multi-faceted, ultimately dependent upon who is doing the implementing (Governmental, academic, community organisation or industry-led), the stage at which public actors are involved ('upstream' at the stage when technological programmes are being designed, or 'downstream' at the stage where they are introduced into society), and the degree of decisional influence that they have (are they simply being informed about developments, or are they being made partners in the process?). Defining this level of engagement is dependent upon various ethical, cultural and political influences from across a wide spectrum of interests including pressure groups, NGO's, governmental agencies, academia and local citizen groups, all of which have a stake in the decision outcome and have different expectations of involvement in any given circumstance. When designing an ethical tool based approach it is necessary to build in an element of flexibility in the design in order to maintain compatibility with a range of different decision-contexts and other forms of participatory-deliberative methods.

The problems of process design are exacerbated by the fact that there are no quantifiable means with which to select the right techniques to facilitate engagement and decision-making in any given situation. No single benchmark or metric for evaluating the effectiveness or usefulness of any specific deliberative method exists in the academic or policy literatures (Lowndes 1998; Rowe et al. 2005; Rowe and Frewer 2000). Consequently there is no one-size-fits-all technique that can be considered 'best' for use in all circumstances, nor is there an established toolbox of techniques that can be drawn upon. Selection of a suitable dialogue technique depends on the circumstances, the purpose of the process, and consequently the nature of the results expected or required. This is then dependent upon the numbers of people to be involved, the timescale of the process, the geographical spread of participants, the complexity of the issue, the involvement of specialists and the point in the policy process at which the engagement takes place. Deliberative methods can take place on any scale - from a dozen or so participants (e.g. a citizens' jury), hundreds (e,g, consensus conferences or deliberative polls), or thousands (such as citizens' summits, or deliberation days). A process may be a one-off event, or part of a series of activities running over several years. Each method has a specific design format involving different types of information provision, levels and types of knowledge, participant numbers and demographic characteristics. Many are designed for specific functions and the proprietary formats may not be translatable to ethics-specific deliberation. To keep things broadly generic and hence flexible in the face of these varying factors, I present an ethical evaluation process in the format of a deliberative workshop.

5.5.1 Deliberative Workshops

In its generic format a deliberative workshop denotes a qualitative approach that brings together a group of people usually for a single day. Workshops are collaborative processes where researchers and participants work intensively upon an issue or question. They combine elements of qualitative research, brainstorming and problem-solving; often involving larger numbers of participants than conventional focus-groups and using more than one moderator or facilitator. They allow time to explore the attitudes, values and beliefs of participants and also provide them with information and arguments in order to reach a critically informed position. As workshops often last longer than focus groups or interviews, this adds a level of flexibility because it is possible to vary the composition of the workshop depending upon the size of the participant groups, divide tasks throughout the day's deliberation and divide larger groups up where necessary. The longer time frame also allows moderators or facilitators to challenge the positions of participants as the day progresses, for example by introducing different types of information throughout the session, or by allowing time for presentations and plenary question-and-answer sessions.

Deliberative workshops have their roots in James Fishkin's (1995) work on 'Deliberative Opinion Polls' and more recently on Citizens' Juries (Fishkin et al. 2000; Smith and Wales 2000). Fishkin's work concerned the tendency of conventional opinion polls or focus groups to gauge 'what people think' about an issue, when they are responding essentially in an uniformed state. He sought to develop ways of allowing participants to not just state their preferences amongst a set of externally defined options, but to reflect on the core issues and creatively problem-solve to find suitable solutions. The work was instrumental in bringing deliberative methods into practical policy problems, and in showing how they provide both a richer picture of the participants' views and values towards an issue and can provide creative input to decision-making situations.

What distinguishes a workshop from a focus-group or group interview is that it involves a series of discussion activities, using different groupings, techniques and contexts, rather than simply 2-3 hour recorded small group discussions that often have no need for hands-on practical involvement, special materials or facilitators. This allows time to consider the details of an issue rather than encouraging participants to offer shallow, off-the-top-of-the-head reactions or beliefs in the way that attitude assessment methods such as surveys, opinion polls or focus groups might. In conventional attitude assessment methods, the response of participants is regarded as an indicator of something else - what they think, experience or do. This is a largely due to the theoretical legacy of behaviourism in sociology and social psychology, and is common in many psychological and social scientific research methods. Attitude assessments are often used as tools to gain access to some state of affairs which is deemed to exist independently of participants' verbal or textual representations of them; by contrast, deliberative workshops allow broader development of attitudes and values over a longer period of interactive dialogue. It also becomes possible to see whether and how these can change and what arguments and information have had the greatest impact. Crucially, deliberative workshops

also provide a forum for participants to be challenged by one another, thus encouraging the development of ideas and beliefs. The advantage of the deliberative workshop design is that it allows analysis of the richer, highly interactive and iterative process by which participants (ethical) values are constructed through dialogue. The point to take away from this is that deliberative workshops allow the progression and development of constructed values through dialogue and reflection, rather than categorising them as simple statements of 'preference' that can be 'elicited' as a static snapshot of their innermost thoughts (Fischhoff 1999, 1991; Gregory et al. 1993). In short, this is what differentiates a deliberative process from conventional attitude assessment methods: values are perceived as malleable, rather than static positions that can be drawn out of people by asking the right questions.

In light of these advantages, the aim is to design a deliberative workshop that facilitates ethical reflection, collaborative discussion and critical decision-support that is inspired by reflective equilibrium – transposing the concepts of coherentist ethical justification from an individual practice to a framework to facilitate group deliberation amongst citizens.

5.6 Conclusion

In the following chapter I turn to the method and practice of operationalising reflective equilibrium into a set of deliberative tools. My aim is to develop an approach that sequentially fleshes out the issues by first establishing the inter-related socio-technical aspects of the SECT problem in question through group deliberation; secondly to draw out the ethical issues that relate to the problems identified, by eliciting contextually relevant moral judgements; thirdly to establish a coherent set of principles against which to evaluate the judgements, followed by a deliberative process framing these principled judgements as alternative strategies and then to weight and score them in an iterative process that highlights future policy options, recommendations and areas for future research. The general pattern follows a fourteen stage process:

1. Establish a participant-led dialogue process concerning the socio-technical issues of the socially and ethically contentious technology under consideration
2. Draw up a list of questions and ideas around which to formulate group discussion of ethical issues
3. Identify a range of actants: technologies, social actors, affected organisations and environments
4. Assess socio-economic, political and techno-scientific information
5. Discuss the implicit and explicit ethical issues, concerns and questions raised
6. Discuss individuals' judgements and intuitions on these issues
7. Scope a list of related moral principles, and amend the principles where appropriate

8. Apply principle to judgement and judgement to principle
9. Assess principled judgement and assess situated principle
10. Repeat steps 8 and 9 until an equilibrium is reached
11. Evaluate the coherent positions and their applicability as decision-making options in technology policy
12. Attribute weights to the options through group voting (such as nominal group technique)
13. Encourage feedback on the outcomes of the decision-making process.
14. Assess further areas of related ethical inquiry

The model displays aspects of the step-wise decision-making structure of the checklist-type approaches to ethical decision-making combined with some of the principlist features of the ethical tools mentioned in the previous chapter. Participants move through a sequential decision-process, beginning with a general discussion, identification of issues, affected actors and artefacts, the drawing out of implicit ethical issues, reflection on relevant principles and personal reflections in the form of moral judgements, followed by a weighting and decision procedure that reintegrates the ethical deliberation to practice by highlighting practical steps for technology governance based upon the preceding steps.

When operationalising the reflective equilibrium procedure to technology assessment, the emphasis is upon examining the relationship between methodologies to facilitate ethical reflection and the broader field of participatory-deliberative decision-making processes. In the following chapter I focus upon the development of multi-staged iterative evaluation and reflection upon the values and judgements of the participants and the moral principles involved in a way that can be applied to the practice of PTA. What makes this process unique as an approach to ethics is that it is done as a group-based deliberative procedure that combines elements of issue and stakeholder mapping, reflective group discussion, evaluation and decision-support. Therefore, in reference to the combination of elements from reflective equilibrium and group based participatory-deliberative methods, the framework for a toolkit approach call a reflective ethical mapping (REM) procedure. The following chapter focuses upon the discussion and development of suitable ethical deliberative decision-support tools that can fit in to this procedural ethical participatory technology assessment process, with examples drawn from empirical work around public reflections on the ethical issues surrounding long-term radioactive waste management in the UK.

References

Bowen, S.A.: A Practical Model for Ethical Decision Making in Issues Management and Public Relations. Journal of Public Relations Research 17(3), 191–216 (2005)

Burgess, J., Clark, J.: Evaluating public and stakeholder engagement strategies in environmental governance. In: Peirez, A.G., Vas, S.G., Tognetti, S. (eds.) Interfaces Between Science and Society. Greenleaf Press, London (2006)

Burgess, J., Stirling, A., Clark, J., Davies, G., Eames, M., Staley, K., Williamson, S.: Deliberative mapping: a novel analytic-deliberative methodology to support contested science-policy decisions. Public Understanding of Science 16(3), 299–322 (2007)

ERC. 2004. PLUS - A Process for Ethical Decision Making (2004), http://www.ethics.org/plus_model.htm (accessed December 01, 2004)

Fischhoff, B.: Value elicitation: Is there anything in there? American Psychologist 46, 835–847 (1991)

Fischhoff, B., Welch, N., Frederick, S.: Construal processes in preference elicitation. Journal of Risk and Uncertainty 19, 139–164 (1999)

Fishkin, J.: The Voice of the People. Yale University Press, New Haven (1995)

Fishkin, J.S., Luskin, R.C., Jowell, R.: Deliberative polling and public consultation. National Centre for Social Research 53(4) (2000)

Forester- Miler, H., Davis, T.: A Practitioner's Guide to Ethical Decision Making (1996) http://www.counseling.org/docs/ethics/practitioners_guide.pdf?sfvrsn=2 (accessed September 10, 2012)

Goodin, R.E., Niemeyer, S.J.: When Does Deliberation Begin? Internal Reflection versus Public Discussion in Deliberative Democracy. Political Studies 51(4), 627–649 (2003), doi:10.1111/j.0032-3217.2003.00450.x

Gregory, R., Lichtenstein, S., Slovic, P.: Valuing Environmental Resources: A Constructive Approach. Journal of Risk and Uncertainty 7, 177–197 (1993)

Jones, T.M.: Ethical Decision Making by Individuals in Organizations: An Issue-Contingent Model. The Academy of Management Review 16(2), 366–395 (1991)

Latour, B.: We have never been modern. Harvester Wheatsheaf, Hemel Hempstead (1993)

Lowndes, V., Stoker, G., Pratchett, D., Wilson, D., Leach, S., Wingfield, M.: Enhancing public participation in local government: A research report. Department of Environment, Transport and the Regions, London (1998)

Marshall, J.: An Ethical Decision-Making Model: Five Steps of Principled Reasoning (1999), http://www.ethicsscoreboard.com/rb_5step.html (accessed)

McElroy, B., Mills, C.: Managing stakeholders. In: Turner, R.J., Simister, S.J. (eds.) Gower Handbook of Project Management, pp. 757–777. Gower Publishing Limited (2000)

Nijkamp, P.: Multicriteria analysis: a decision support system for sustainable environmental management. In: Archibugi, F., Nijkamp, P. (eds.) Economy and Ecology: Towards Sustainable Development. Kluwer, London (1989)

Potter, R.B.: The origins and applications of "Potter Boxes". In: State of the World Forum. San Francisco, CA (1999)

Rowe, G., Frewer, L.J.: Public Participation Methods: A Framework for Evaluation. Science, Technology & Human Values 25(1), 3–29 (2000)

Rowe, G., Horlick-Jones, T., Walls, J., Pidgeon, N.: Difficulties in evaluating public engagement initiatives: reflections on an evaluation of the UK GM Nation? public debate about transgenic crops. Public Understanding of Science 14, 331–352 (2005)

Smith, G., Wales, C.: Citizens' Juries and Deliberative Democracy. Political Studies Review 48(1), 51–65 (2000)

Stirling, A., Mayer, S.: A Novel Approach to the Appraisal of Technological Risk: a Multi-Criteria Mapping Study of a Genetically Modified Crop. Environment and Planning C: Government and Policy 19(4), 529–555 (2001)

Thomson, A.: Critical Reasoning in Ethics: a practical introduction. Routledge, London (1999)

Van-Hoose, W.H.: Ethics and counseling. Counseling & Human Development 13(1), 1–12 (1980)