Chapter 7
Judging and Deciding

7.1 Introduction

The previous chapter describes the details and outputs of a hexagon mapping method to draw out a series of ethically informed questions and responses in relation to a participant-constructed (albeit simplified) actor-network. This provides the starting point for the consideration of individual reactions to the ethical content of these actor-network relationships. The second phase of the workshop stimulates reflection and discussion of individual judgements and intuitions that relate to the ethical questions and ideas generated in the hexagon mapping phase of the workshop. Critical to this process of reflecting on moral judgements is the stimulation of moral imagination in the participants, and this chapter details the methods by which this can be achieved. Particular emphasis is placed upon the role of imagery as a stimuli to moral reflection, and the operationalisation of Rawls's reflective equilibrium concept as a means of evaluating moral judgements in relation to a series of principles and vice versa.

7.2 Moral Imagination and the Elicitation of Judgements

The aim of the second phase of the workshop is to elicit a series of considered moral judgements that arise in response to the ethical questions and concerns identified in the first stage. The making of moral judgements requires the elicitation of a response in people, and hence the use of some form of stimuli to provoke a reaction and to draw upon the moral imagination of the participants. As discussed previously, there are difficulties with approaching ethics solely upon reason (grounded in a rationalist perspective), when disconnected from intuition and emotion. This is because when individuals are presented with a series of moral rules, principles or theoretical frameworks to apply in making a decision, they can nevertheless make moral mistakes. Such mistakes stem from what Werhane (1999) calls moral amnesia – a habitual inability to remember or learn from one's own and others' past mistakes and a failure to transfer that knowledge when fresh challenges arise. Moral amnesia is caused by a lack of moral imagination.

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Thus, I suggest that ethically informed decision-making must involve a careful balancing of real world context, evaluation, projection of moral standards and imagination. As Dewey, the pragmatist philosopher argues, ethics has a dramatic quality in the sense that it is concerned with *character* – the manifestation and interaction of personalities; with *plot* – creative descriptions and new narratives; and with *suspense* – the open-ended nature of moral debate (Dewey 1938; Caspary 2000). Dewey insists upon reflection in relation the intellectual habits through which we interrogate moral problems, because failing to do so will allow the metaphors that underpin our thinking and imagining to come to us mechanically, up to the point where we can no longer free ourselves from their influence upon us (Fesmire 2003), and hence a recurrent moral amnesia. I argue, therefore, that stimulation of moral imagination can alleviate this problem.

At the core of pragmatic ethical evaluation (particularly within a Deweyan vein), is a concern with the capacity of an individual with a highly developed moral imagination to perceive the nuances of a situation, challenge the framework or scheme in which an event, action or process is embedded and the capability to imagine how it might be different (Alexander 1993). In this way moral imagination can be defined as "a reasoning process thought to counter the organisational factors that corrupt ethical judgement" (Moberg and Seabright 2000). Moral imagination is posited as the key to developing sound ethical judgements in the reflective ethical mapping process because it facilitates (rather than replaces) moral reasoning. Moral judgements require cognitive reasoning processes and a measure of impartiality that are not merely imaginative. However, moral imagination helps one to disengage from a particular process, evaluate the situation and the mindsets which it incorporates, and think more creatively within the constraints of what is morally possible. Without this, one might remain mired in a particular situation, but without moral reasoning one could slip into fantasy (Werhane 1999, 2002). An imaginative ethics model would contrast with rational, empirical and calculative models of ethical decision-making that tend to involve the identification of alternatives, the estimation of advantages, disadvantages, costs and benefits; followed by the offsetting of these against each other in estimating which alternative is most advantageous or least harmful overall (McVea 2007). The advantage of reflective equilibrium as a model of ethical decision-making is in its ability to coherently balance these two aspects. The construction of moral judgements is stimulated by moral imaginative processes and the application of principles grounds the judgements in moral reasoning stemming from cognitive and analytical processes. The primary goal of this second stage of the workshop, therefore, is to find ways to stimulate ethical discussion of judgements and values in a way that is creative and stimulates moral imagination, followed by critical, theoretically informed reasoning applied to those judgements in an iterative hermeneutic circle.

In relating moral imagination to moral reasoning, one arguably important relationship is that between morals and aesthetics. Moral judgements are often claimed to be made by reference to general rules and principles whereas aesthetic judgements are made by reference to the particular features of what is judged. Therefore a moral matter involves acting towards some end whereas an aesthetic matter involves experiencing something for its own sake (Collinson 1985). However, within the field of moral psychology the growing popularity of social intuitionist models of ethical judgement such as the automaticity espoused by Haidt (2001, 2003), ethical judgement is akin in many respects to aesthetic judgement, in the sense that one reacts instinctively and emotionally to moral issues with a sense of approval or disapproval without having gone through an explicitly deliberative process of weighing facts and values. Judgements emerge complete within the moral consciousness with an affective valence. What Haidt argues is that moral judgements emerge instinctively, and attempts to then justify such positions involve a post hoc rationalisation of the judgement that is reached, rather than as result of going through sequential stages of philosophical reflection. They are in essence, to use the Deweyan term, moral habits. By stimulating an affective or emotional response to an issue, I posit that one can encourage participants to reach such judgements instinctively and then discuss them, formulating ways of explaining their position, though these explanations may be post hoc rationalisations of unconscious or perhaps more accurately, pre-conscious judgements. However, as a philosophical endeavour it is important not to stop there. The moral judgements espoused then present opportunities to record and critically evaluate the positions expressed. This has advantages for the empirical study of individuals' moral values, but more importantly they become the objects of an explicit deliberative process which reformulates such judgements in light of theoretically grounded principles. The seemingly reactionary, bottom-up elicitation of methods becomes carefully considered in light of common sense principles drawn from the wealth of ethical theory perspectives available.

7.2.1 Judgement Elicitation through Visual Stimuli

The question of how to stimulate and elicit moral judgements can be resolved by turning to methodologies within the social sciences. It must be noted that the intention is not merely the elicitation of values in the sense of drawing out innately-held attitudes, as if they were fixed, perfectly expressed internal representations of an individual's thoughts and feelings. The term elicitation is used here in a different sense, to imply a methodological tool designed to stimulate discussion and personal reflection, and hence encourage judgements to emerge through a discursive process. Various methods to stimulate such elicitation of affective responses have been discussed in the social science literatures, primarily facilitated by the

use of visual, auditory or written stimuli. One method that has gained popularity in anthropology, sociology and cultural geography is an image-based research tool called the photo-elicitation interview. The method uses a photograph (or series of photographs), bringing them in to the process of a research interview, focus group or other qualitative data collection activity. By doing so, the photo is used as a device to frame participant responses, elicit affective, aesthetic or moral values, and to draw out rich descriptions from respondents in a way that talk or text alone may not. The subjective difference in responses between interviews using images and text and interviews using words alone lies in the ways we respond to these two forms of symbolic representation. As Harper (2002) suggests:

> "…this has a physical basis: the parts of the brain that process visual information are evolutionarily older than the parts that process verbal information. Thus, images evoke deeper elements of human consciousness that do words; exchanges based on words alone utilise less of the brain's capacity than do exchanges in which the brain is processing images as well as words… these may be some of the reasons the photo elicitation interview seems like not simply an interview process that elicits more information, but rather one that evokes a different kind of information."

Visual stimuli have proved effective in generating creative ideas, particularly when compared to verbal or text based stimuli (McFadzean 1997). This is because language can at times be a barrier to creative problem solving, and there is evidence to show that people when thinking creatively are more likely to use imagery than words (Proctor 1997). The use of picture-based stimuli can improve upon creative input to problem solving techniques when compared to text-based methods such as brainstorming or mind mapping (Vidal 2004; Higgins 1994); and the use of images, even when unrelated to the topic area, can stimulate useful associations and improve the creative aspects of problem solving or decision-making (Michalko 2006). The specific goal in using image-based methods is to develop a multi-staged process to elicit personally held beliefs and intuitive responses around areas relevant to the SECT in question, by stimulating deliberation and encouraging participants to express judgements about the ethical problems involved. Thus, the use of photographs and other images (cartoons, sketches, paintings) have been used as tools to expand upon questions or ideas in interviews and to allow participants to communicate dimensions of their lives, their environments and personal histories (Clark-Ibáñez 2004; Epstein et al. 2006); and can be of particular use in enhancing or complementing other qualitative research techniques (Hurworth 2003). Images have been used extensively either as an empirical data collection resource or else as symbolic representations and stimuli in qualitative anthropology and sociology (Prosser 1998). Their use is firmly established in participatory action research traditions aimed at empowering marginalised communities, especially those communities where text-based methods are unfamiliar

or impractical due to language-barriers or differing levels of literacy (Heinonen and Cheung 2007; Smith and Emmison 2000).

Image-based research can complement text-based elicitation methods by stimulating imagination and visual memory, deepening the descriptions, values and associations discussed in the types of qualitative data collection that these workshops aim to promote. Satterfield (2001) in particular supports this ethos, critiquing the standard attitude assessment models prevalent in environmental valuation and technology assessment, arguing that speaking and thinking about different values, particularly ethical expressions of value, is ill-matched with the affectively neutral, direct question-answer formats standard to willingness-to-pay and survey methods. She asserts that morally resonant, image-based, and narrative-style elicitation allows new opportunities for respondents to express ethical values, articulating a broad range of non-cost and non-utilitarian values. These values are particularly pertinent to the group deliberations occurring within workshops structured around the reflective ethical mapping approach. In summary, I suggest that the use of imagery can be a useful means to stimulate discussion of ethical judgements because it provides a symbolic or proxy representation of an object, person or process that encourages reflection, discussion and a deeper consideration of the underlying issues than if text or discussion-based methods were used alone.

7.2.2 Developing an Image-Based Elicitation Tool

When using images as stimuli for ethical reflection, it is necessary to produce a broad palette of visual styles and a range of foci in order to stimulate personal and group deliberation and hence access the types of thinking that lead to personal moral judgements about the issues under consideration. In the workshops, single images were presented on a series of cards, each holding a simple descriptive caption. Examples of the captions and image themes are shown in Table 7.1. The choice of images is an important consideration, but range and breadth is the principal consideration. The images and captions are chosen to illustrate issues, objects or activities that are relevant to the case. They must be congruent with the types of information provided at the start of the workshop and the problem of the decision-making process. In short, they must be relevant to the case in hand, broad in their subject matter, and visually and discursively stimulating. These images are used as a device to identify the technical, social and ethical elements, thus expanding upon the deliberative exercises of the hexagon mapping phase. As the selected images are used as a framing device to structure the ethical discussion within the group, care must be taken to ensure that the bottom-up nature of the process remains intact. This is partly based upon the range of options and the capacity for individual choice. By allowing the participants opportunities to browse the images

and to choose the ones that resonate with their personal reflections on the topic in hand, then the degree of individual autonomy and freedom from researcher/facilitator bias is reduced. When choosing images for display and selection by the participants, it is necessary therefore to sample such images from broad range of potentially stimulating aspects. One means to do this is to create a series of categories ex ante, which encompasses the range of actants and perspectives identified as related to the subject matter of the workshop. These can then be sampled (randomly or purposefully) to create image groups with an equal number image captions in each. In the workshops the range of images were categorised as follows:

- Technological and design components – e.g. design schematics, maps, objects, formulae, engineers and scientists
- Environments and spaces – landscapes, urban, peri-urban and rural places, local landmarks, architectural examples
- Symbols and designs – corporate logos, religious icons
- Famous individuals – e.g. politicians, religious leaders, celebrities
- People and relationships – young children, older people, relationships
- Emotive or unsettling – depictions of illness, wastelands,
- Non-human and biotic communities – rare animals, forests, oceans
- Conceptual and imaginative elements – future scenarios, future generations, artistic representations of the other elements

It must be noted that this is not an exhaustive list, and other aspects can be chosen depending upon the situation, the policy context and the decision framing of the workshop. This aspect requires careful attention to the details and specificity of the case, so pilot testing of images is a useful means to select a broad array of stimuli. The value of the method is in the selection, discussion and application of these images by the participants themselves in relation to the topic under discussion, and so images must be evocative of a diverse array of themes. The bottom up nature of the process can therefore be further enhanced by participant led image selection and/or capture. For example local environments and spaces can be captured by participant photographers or artists, thus enhancing the involvement of community stakeholders in the research/decision-support process.

In the workshop, images from these different categories can be displayed around the room in a gallery format. Participants are allowed time to view and reflect upon the images prior to forming a group discussion. Before the discussion begins, the participants must each choose a selection of image cards that are placed in the centre of a board or flip chart, choosing the cards that represent issues that they believe important to the discussion and have particular relevance to the issues discussed in the previous phase. Participants examine the different images and discuss the selection based upon the relevance of the images to the topics of discussion under consideration from the hexagon mapping phase. In the work-

shops this process was repeated for two different issues, thus allowing a breadth of images and discussion topics to be considered.

The use of images relates to the pragmatic goals of the workshop; to ground discussion and reflection of personal moral perspectives in something tangible that prompts or stimulates an affect-laden response. Images thus work as tools to aid memory and imagination, providing a point of reference upon which to move to more abstract philosophical concepts, and crucially providing methodological balance in the workshop by using a combination of text, image and verbal stimuli.

Some caveats remain. The process of image selection must be designed to ensure maximum group control and to foster equality amongst participants. They must agree upon a selection and post them up for further discussion. This has the advantage of encouraging group reflection on the purpose of the task through the transferral of individual image captions into a grouped selection; intended to counter the top-down aspect of pre-labelling the images. Group selection and organisation of the images adds a further level of subjective meaning, supporting the bottom-up problem framing necessary for the deliberative process.

7.2.3 Practical Summary of the Image Method

- Total time allowed: 1 hour 30 minutes.
- Group browsing of images, informal discussion and clarification of image themes (10-15 minutes)
- Group selection of images based on topic themes identified in previous hexagon mapping phase (10-15 minutes)
- First round discussion on emergent theme with most votes from the previous round. Facilitated small group discussion (6-8 participants), images placed down the left hand column of flipchart paper. Discussion is recorded by notation in the right hand column (20 minutes)
- Second round of image selection (including images already selected in the first round), repeat of step 3 for second theme (20 minutes)
- Final group plenary discussion of potential ethical issues emerging. Participants suggest what the ethical issues might be. These are recorded on a flip chart paper (20 minutes)

7.3 Practical Examples

In the following section I present a short sketch of some outputs from two of the workshops, giving examples of the different images that were chosen and the ways in which they were used to frame the discussions. Table 7.1 shows the discussion themes (drawn from the voting procedure of the previous hexagon method), and the caption labels of the images chosen.

Table 7.1 Chosen images representing safety and security

Workshop 1 – Leiston	**Workshop 2 - Hartlepool**
Trust and safety - discussion 1	**Fear and danger - discussion 1**
Coastline Deep geological repository Dirty bombs Future generations High level waste Intermediate level waste Radiation poisoning Rail transportation of wastes Road transportation of wastes Scientists and technical experts Sea level rise Sea transportation of wastes Suffolk coastal region The prime minister The world	Deep geological disposal Deep geological repository Farmland Future generations Future society Hartlepool town square Heavy industrial areas Nuclear fuel reprocessing Nuclear site security Nuclear weapons testing Radiation poisoning Road transportation of wastes Terrorism The prime minister Warfare
Compensation - discussion 2	**Local issues & public opinion discussion 2**
Compensation/community benefits package Conservation Journalists and the media Lakes Marshland Plants and trees Sites of historic interest Sites of special scientific interest Teachers, schools and education Teenagers and young people Woodland	Climate change England Ghost ships & Local councils (linked) Hartlepool local M.P. (Ian Wright) Journalists and the media Local businesses Nuclear protest Onshore wind power Rioting Teenagers and young people The public The World Voting

7.4 Some Emergent Themes

Brief sketches of the discussions are outlined below where there were overlapping issues emerging in both Leiston and Hartlepool workshops. Emergent themes are discussed with reference to the relevant images listed in Table 7.1.

7.4.1 Safety, Hazards and Risk

The most notable aspect of the safety issue was that it was primarily framed in anthropocentric terms, i.e. towards protecting communities living close to radioactive waste facilities, rather than upon environmental or ecological protection. Inference to safety issues was drawn from a series of human failures either technical and engineering errors, or operating errors, and participants in the Leiston workshop made reference to the images on rail and road transportation of wastes, whereas in the Hartlepool workshop they made reference to heavy industrial areas. The risks of technical and system error were linked with a lack of information provision to local communities with existing radioactive wastes. This was prompted, in part, by highlighting Chernobyl as a lesson in human error-related nuclear catastrophe, and hence radiation poisoning in both the Leiston and Hartlepool workshops. In Hartlepool there was also a suggestion that scientists sought to control a technology that is inherently dangerous and unpredictable. Additional risk factors were identified, such as waste transportation at sea (with analogies to oil tanker disasters, the Hartlepool 'ghost ships' and the MSC Napoli off the Devon coast), and transportation was discussed as one of the key risk factors in finding a suitable site. The waste management issue was also related back to the broader 'safety culture' in the UK; specifically to how risks are managed by technical experts and how the public has a lack of trust towards these authorities, with reference to nuclear site security. Also the issue of human risks was generally considered to extend beyond human error to the possibility of sabotage and terrorism in Hartelpool and dirty bombs in Leiston, prompting concern over the safety of radioactive waste management facilities. The nature of terrorist activities was also seen to be changing, with terrorists no longer concerned for their own personal safety; arguably making them more dangerous if personal risk was not a factor in their actions.

A number of other common themes were raised, specifically regarding the uncertainty involved in managing the wastes over long time-scales, and so future generations were chosen in both workshops and the importance of 'getting the science right' was stressed – incorporating knowledge about (for example) climate change and coastal erosion in evaluating waste management strategy safety. As such, 'external' risks do not fall into the category of 'human error' based safety concerns. At times participants expressed distrust in scientific and technical authority and at others, asserted that adequate scientific evaluation was a prerequisite to guarantee long-term public safety.

7.4.2 Compensation and Community Decision-Making

This discussion around the ethical issues of compensation/community benefits package was, to some extent, framed in terms of the relationships between corporate interests and communities. To some participants, the waste issue stemmed from industry and thus the liability should be owned by the producer, as the majority of wastes are produced by profit generating nuclear power stations. Thus, the idea of a compensation/community benefits package was framed in terms of individual and community rights being infringed by corporate actions involving pollution. To some, the issue involved an explicitly ethical standpoint, an issue as fundamental as environmental and community protection should not be decided on the basis of further material consumption, i.e. buying or building a new set of material goods does not outweigh the risks and costs (both economic and environmental) of waste management. In the Leiston workshop a range of natural environment images were selected and referred to: Lakes, Marshland, Plants and Trees, and Conservation. To others, the question of the ethical validity of a compensation/community benefits package came down to the manner of administration, in particular the stage in the process at which it was offered to the community. If it is offered before a siting proposal is made then this was deemed to be bribery, and only when administered after site selection could it be considered compensatory. The established themes of waste reduction resurfaced in the discussions; avoiding material consumption and contextualising the waste issue in broader terms of reducing consumption locally and globally, with a general rejection of the idea that economic measures could ever morally compensate for environmental degradation.

The issue of community roles in decision-making was raised in the Hartlepool workshop. Little faith was expressed in the power of local people to influence decision-making processes and there was broadly a consensual distrust in the authority of local councils and their competency in decision-making, and also in national level consultation processes. Participants felt that despite consultation, final decision-making power would rest in a top-down ministerial decision, with reference to The Prime Minister, and this undermines any partnership-type role for local people. Parallels were drawn with recent government consultations on the future of the local hospital, which all participants felt had been a waste of time, with local viewpoints being ignored in decision-making. This lack of faith in consultation and community partnership was also seen to undermine an adequate ethical assessment of the issues, as ethics was seen to be absent from centralised decision-making processes. The status of ‘the local people’ as a homogenous group was also in dispute. Participants recognised that there was no consensus among them about who should represent a community, given their lack of trust in local councils or how this representative could stand on behalf of their interests. This related to the issue of compensation and community benefits, as without consensus on what this should look like, it would make an inadequate measure to alleviate the risks of RWM in the local area. Without adequate community representation it was noted that protest actions and even rioting would become a problem, though even this

was considered morally preferable to a technocratic, top-down decision from central government that the local community would be unlikely to support.

7.5 Reflections on the Method

These brief sketches of discussion themes, give an idea as to the use of image captions in providing a contextual frame for deliberation to develop. They help the process by maintaining topic focus throughout, and hence encourage the participants to 'stay on course' in reaching the decision-support portion of the workshop in later phases. In practice, participants tended to utilise the images in different ways, in some cases to explain or justify a particular point they wished to make by referencing the image caption whilst explaining their argument, pointing to or gesturing at the images when speaking about particular issues, or else they discussed the choice of image that one another had selected, thus strengthening the dialogic quality of the process. There is also evidence that these images have an effect on stimulating moral imagination, where images are used as anchoring devices - reference points upon which to justify specific responses to issues raised, and encouraging them to consider a range of different viewpoints and perspectives. For example:

> Leiston participant: I put [former Prime Minister Gordon] Brown's image up there because people like him, the likes of him, they can change their mind just like…. I've got to quote this, the people in England would like a referendum and he says "no", so there's your power struggle there, he's the one who'll decide, it doesn't matter what you say. That's my problem with the top.

Or to give another example:

> Hartlepool participant 1: I chose the image, it wasn't about Christchurch [a local church in the town centre] it was just an image of Hartlepool and …
>
> Hartlepool participant 2 : ….local issues?
>
> Hartlepool participant 1: local issues, yeah, I'm a great believer in the number one priority, all I've said today is look after your own look after the people on your door step. And the other image is about the future, what is the future going to be? It's a very uncertain place. And the decisions we've been asked to make is really our problem and it's difficult for us. If you go to various meetings and the nuclear industry will tell you it's a community's waste. It's not a community's waste its

> British Energy's waste or it's industry waste, therefore, just the uncertainty there for the future and the uncertainty about making a decision on where we go and who's responsibility it is
>
> Hartlepool participant 3: Is that what they say, "it's a community's waste"? If it's a community's waste why don't they pay for us to accept it?

Though by no means a comprehensive qualitative analysis, these brief exchanges reveal some of the potential benefits of using images in structuring dialogue, advancing the discussions of the previous hexagon mapping phase by providing concrete visualisations of the ethical issues under consideration. As shown in these utterances, the imaginative stimulation of these visual representations provides a particular kind of discursive space through which participants can question motives, examine trust relationships and make judgements about individuals, organisations and the actions that they take. This helps to move discussion towards the consideration of specific judgements in relation to these issues in the following workshop phase.

7.6 Eliciting Judgements Using a Charrette

Image-based framing of the discussions aims to identify areas in which imagination could play a part in encouraging individuals to make judgements about the issues under consideration. It then becomes necessary for them to explicitly state what these judgements are, and to make this transparent to the group and to third party evaluation of the process. The recording of judgements can then be elicited through the use of listing methods, whereby judgements can be sequentially recorded and discussed by participants. One such method of listing is termed a charrette (origin from the French for 'cart' or 'chariot' – in reference to student architects at French design schools working up to a deadline, whereby a cart or charrette would be wheeled amongst them to pick up the work for review. Those still working to apply the finishing touches were said to be working *en charrette*, in the cart). Charrettes are structured deliberative methods conducive to collaborative development of scenarios, and used in planning, design and group problem solving activities. They provide an iterative review process of idea development and refinement, involving rounds of discussion in small groups with addition of new ideas in each round. The key facets are the emphasis on group working, iterative development of ideas and the imposition of a time limit on discussion and design activities.

In the previous image method, problems are framed in terms of emergent ethical issues. Once this stage is complete, the charrette aims to allow groups to discuss one issue for a fixed period of time and through discussion draw out individual judgements about the ethical issues presented – 15 minutes for the first round, then 10 minutes for each subsequent round. After each allotted time period the groups swap and discuss the second issue, the third and so on, until all issues

have been discussed by all groups. At each stage the participants record the judgements on sticky notes (using a specific colour - in this case yellow) and put them up on a board, posted sequentially as the discussion progresses. A facilitator can help to record these and thus keep the flow of the discussion going. At each successive round the new group can only add new judgements, they cannot change or amend anything that had been discussed before. At each swap, one member of the previous group outlines the main points of their discussion with the new group before moving on to the next issue.

Throughout the process participants are instructed to frame their expressed judgements in terms of a specific normative or value statements such as "I believe we should do this", or "an institution/actor ought to do this", "this action is right," or "this policy is unjust". The ethical judgements in question are intended as subjective statements with a normative value, which can later be assessed in relation to a series of ethical principles in order to stimulate a reflective equilibrium. The use of these statement forms forces participants to consider basic moral binaries and to put forward judgements as statements of intent. It was made clear that the point of the exercise was not to criticise or comment upon individuals' personal beliefs, but to consider how they fit into a wider pattern of moral principles and see where the relationships lie. Following the completion of the charrette, the post-it notes are reorganised by clustering them into contiguously related categories and weighted according to participant views on their importance for evaluation, using the nominal group technique seen in previous rounds.

7.6.1 Practical Summary of the Charrette Technique

- Total time, approximately 1 hour, 15 minutes.
- Divide participants into groups, give each individual a set of post it notes.
- Set ethical 'topics' emergent from voting process in previous stage.
- Each group discusses the first issue recording judgements sequentially (15 minutes).
- Groups switch topics – one participant describes outcomes of first round (5 minutes).
- Second round of discussion and judgement recording (10 minutes).
- Groups switch topics again – one participant describes outcomes of second round (5 minutes).
- Final round of discussion and judgement recording (10 minutes).
- Plenary discussion of outcomes (20 minutes).

7.7 Examples of Ethical Judgements

Below I give some examples of the groups of judgements that were contiguously related around common themes of ethical issues in relation to the long-term management of radioactive wastes, using the issue of compensation/community benefits to highlight the types of judgements and intuitions that emerged.

The issue of compensation is crucial to the management of radioactive wastes. Current UK policy strategy for long-term radioactive waste management involves a process of providing community benefits packages (universally described as either compensation, or bribery by participants in the workshops). The notion of when compensation or benefits should be provided, as well as the form it should take and who the beneficiaries should be, are key ethical issues that were explored in the workshops. In the Leiston workshop in particular, the issue of compensation was central to their understanding of radioactive waste management facility siting as an ethical issue. Compensation/community benefits as a title category emerging from previous rounds of discussion was then subdivided into linked subcategories of judgements related to personal gain and greed, reducing energy consumption, costs, and siting. Examples of the written judgements emerging from the charrette procedure are displayed below:

7.7.1 Community Benefits

- Community benefits should be ongoing
- Benefits should be distributed globally, not just locally
- Nuclear gives clean air – less CO2. We all benefit and individuals should accept this
- Compensation/benefit is a must
- Compensation should benefit both the individual and the community
- Compensations should include insurance assistance in the case of accidents
- It must be a community benefit – ensuring that all affected have access to rewards
- Personal gain/greed
- Bribery is just another form of control and corruption and must be avoided
- Unfortunately, people will usually think of their own personal gain over the greater good of all
- Bribing communities to take on nuclear waste does not sort the long-term complex problem of waste, it only satisfies the short-term greed of a few individuals
- Human greed will be the downfall of the entire planet, we need to stop taking
- Compensation is just a way for large organisations to make 'the small people' change their views and opinions. It is BULLYING PEOPLE!

7.7.2 Reducing Energy Consumption

- Compensation should be aimed at reducing overall energy consumption for the good of the planet

- I think if compensation is to be used, it should be given to businesses and individuals who reduce their consumption
- Costs
- How can compensation in whatever form even compensate the community who suffers nuclear disaster
- We shouldn't pay twice – as a consumer of nuclear electricity and later as a tax payer funding waste management

7.7.3 Siting

- Finding a site for a waste dump should be done solely on geological grounds
- It should not be in my back yard!

Across these examples there are clear themes emerging. Firstly, the institutions that would be providing the compensation remain nameless, it was unclear to participants who would be compensating whom, and so they remained distrustful of organisations that might provide such incentives. There was also clear disparity amongst participants about the ethical values and motivations held by those that offered compensation/community benefits packages. The two primary themes were, firstly, a position that compensation was unconditional bribery reflecting immoral societal 'vices' such as corporatism, greed and excessive materialism; and secondly, a somewhat more pragmatic approach that community benefits were a just exchange for the acceptance of new environmental risks. For some, the issue of siting a waste facility was only considered ethically valid when based primarily upon objective scientific criteria (i.e. the geological suitability of a location) without any form of incentive. For others, they unconditionally would not accept waste in 'their back yard', implying a NIMBY or more accurately, NIABY (not-in-anyone's back yard) position whereby responsibility for waste management should never be held by individuals to bear excessive technological risks for a power generation source that they did not personally support. In contrast, some participants expressed what could be considered utilitarian positions, asserting that national safety is the primary concern that overrides all other community-based concerns. Some even advocated stronger centralised institutional control to 'force' planning for RWM facilities into geologically suitable sites if the techno-scientific 'safety case' (their term) was strong enough to justify this. Some saw the benefits of RWM facility builds and new build nuclear power locally, in terms of local employment and wider benefits from CO_2 reduction and hence climate change mitigation, but had no specific requests in terms of local benefits. Issues of cost were raised with a concern about having to essentially pay for the waste twice, firstly as an electricity consumer and secondly as a tax payer, and the moral implication being that this would hurt the poorest the most.

From these sketched examples, the elicitation process is shown to produce a fairly diverse range of judgements and intuitions around specific categories of ethical issues. To broadly categorise the tenor of these responses, the judgements tended to fall into the following three groups:

1. Express dissatisfaction with current institutions, behaviours, policies and practices
2. Suggest potential strategies, policies or practical recommendations that should be carried out
3. Express concerns, personal values or comments on broader public and moral social values.

These judgements and intuitions are variably prescriptive and descriptive depending upon the context in which they are put forward. At times normative ethical judgements are stated, implying specific actions should be taken. At other times, descriptive and reflective judgements about human behaviour, policies and actions are expressed. It is important, therefore, in subsequent phases of the workshop to examine the diverse array of judgements and their interaction with similarly diverse principles, in order to assess their interaction might influence the quality and ethical substance of the deliberation, and how judgements are contextualised as courses of actions that branch out as different principles are applied in action.

7.8 Applying Principles

In practical terms, once the judgements have been elicited and recorded and a break has ensured, a second stage of the reflective equilibrium model is initiated. Participants are presented with a list of pre-selected principles which is then placed to one side where all can read the definitions, and a further selection of square sticky notes (green) is stuck to the side of a display board each containing a single word category label to represent each principle. The ethical principles used in the workshops were identified as a list drawn from an examination of the literature on principlism in applied ethics. Examples include the aforementioned Beauchamp and Childress (2001) principles – Autonomy, Utility, Beneficence and Non-maleficence, which were used alongside others idenitifed from academic sources (Kaler 1999; Schmidt-Felzmann 2003; Grassian 1981; Rachels 1993). The initial list included the following:

- Autonomy – The right of individuals to make free and informed choices
- Utility – The greatest good to the greatest number
- Fairness – Treating everyone equally. Addressing the imbalance between those with more and those with less
- Honesty – Being truthful, not telling lies or misleading others
- Fidelity – Keeping agreements and upholding promises, contracts and oaths
- Beneficence – Helping others and doing good

- Non-maleficence – Not harming other, avoiding wrong-doing
- Duty – the golden rule, 'do unto others as you would have them do unto yourself'
- Justice – Individuals receive that to which they are entitled. Good actions are rewarded and bad actions punished.

This list is not intended to be exhaustive. Alternatives can and should be identified where appropriate to the case; and the reflective ethical mapping process encourages not only the expansion of this list of principles, but also a re-evaluation of the meaning and context of these principles in relation to context-specific reflection on the case in hand. Though guided by the philosophical grounding of a principlist approach, the opportunities for amendment provide a degree of bottom-up context validity. It must be stated that from the workshop process, a number of new principles emerged from the participants' discussions along with accompanying definitions:

- Transparency – the need to be not only honest but forthcoming about decision-making processes
- Sustainability – The long-term balance maintaining the future environment. The need to survive.
- Precautionary Principle – trying to reduce potential harm to people and the environment from dangerous technologies.
- Legal justice – the laws of the land, enforceable in court
- Natural justice – laws of nature, higher than government legislation
- Inherent value – that all beings are valuable in and of themselves

Each principle must be presented with a concise definition (such as the ones shown in the above list). However at any point during the discussions, participants are encouraged to question these definitions and make amendments based on whether they seem relevant to the case. They are also encouraged to suggest other principles that have bearing on the problems that they identify. Like previously mentioned methods such as the ethical matrix, this approach is primarily principlist, based upon Beauchamp and Childress (2001) dialectical approach; achieved by placing the clusters of identified judgements from the previous stage and instructing participants to discuss these judgements in relation to principles. The recorded judgements from the previous phase on yellow sticky notes are arranged on the board, and they are then asked to consider the range of principles that are described on the sheet on the wall, and to decide between them which principles the judgements were invoking. This requires careful facilitation – encouraging participants to choose the ones that they think are relevant and to explain where the link lies and why. Care must be taken not to criticise choices of principle selection, and even those that may not intuitively link together can nevertheless produce surprises of moral reasoning amongst participants.

By then placing the relevant principle (for example on green sticky notes) next to the judgement they are asked to join principle and judgement together and discuss the implications of applying the principle to the judgement, i.e. what would be the logical outcome of applying the principle in a course of action, or what strategy would be implied by following the principle. These are then annotated with additional contextual factors that emerge in the discussion of the outcome of principle-and-judgement comparison. These broader contextual factors are recorded on a third coloured sticky note (in the workshops pink was used). By arranging these together, using a multiple branching system of judgements (yellow), principles (green) and other contextually relevant factors (pink) they work to produce a conceptual map that is representative of coherentist ethical reflection in the wide reflective equilibrium approach. The judgements can branch out into new territory when new principles are applied, and similarly the principles themselves can be compared by drawing relevant practical examples and the discussion of moral questions and contexts emerging through group deliberation.

7.8.1 Practical Summary of Reflective Equilibrium Technique

- Arrange elicited judgements into related groups with participant input (5-10 minutes)
- Introduce range of ethical principles, discuss alternative definitions and new principles not currently included (10-15 minutes)
- Discussion and principle selection, application and reflection (10 minute cycles – overall 45-60 minutes)
- Plenary feedback and discussion of reflective equilibrium map (10-15 minutes)

7.9 Example of Reflective Equilibrium Technique in Practice

In the explanation below, and in figure 7.1, I present a reflective equilibrium-based conceptual map that draws on the issue of risk in relation to nuclear power and radioactive waste management. At the centre of figure 7.1 is the category label ‘nuclear risk ’. Within this cluster were a range of judgements that related to concerns over cancer risks (for example drawing on the Chernobyl catastrophe, and cancer clusters near nuclear power stations), concerns over the destructive ethos of nuclear technologies, and the concept that not all of the risks are ‘real’ in the sense that some are pursued as legitimate and others are not. Using the sticky notes, participants branched out the ethical issues into three main trajectories. The first concerned ‘keeping the power on’ similar to the expression ‘keeping the lights on’, terminology used as a succinct descriptor of a (perhaps moral) imperative to bridge a growing energy gap between the decommissioning of nuclear facilities, reducing overall supply and projections of constantly rising energy demand (Patterson 2007; Makansi 2007). Secondly, there was a group of issues

related to cancer, particularly cancer clusters and the pervasive, invisible risks of radionuclides. Thirdly, the branched judgements concerned the issue of honesty about risk, who is responsible for researching nuclear risks and communicating risk information to the public. I've broken down these issue groups into three sections below:

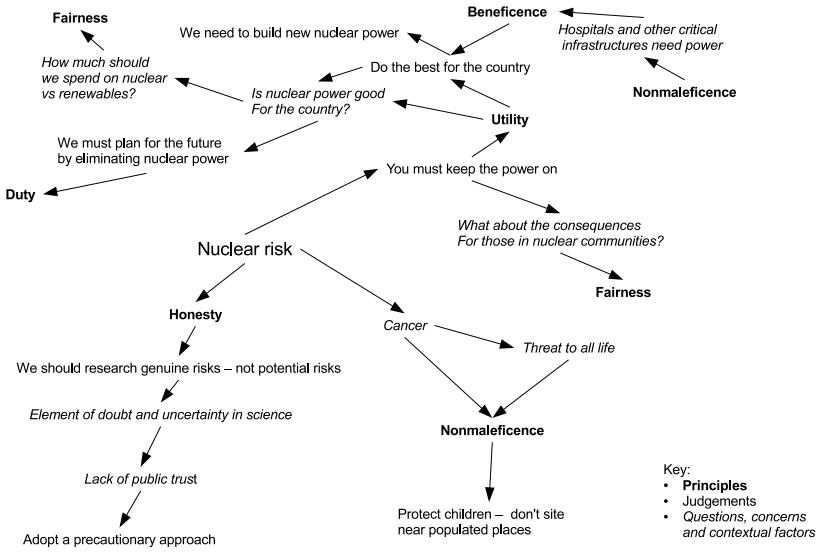

Fig. 7.1

7.9.1 Keeping the Power On

The principal ethical motivation for new nuclear build and hence continued radioactive waste production, was construed as a position on keeping the power on, in reference to concerns over blackouts affecting vulnerable infrastructures such as hospitals. The framing of these judgements was construed as one of utility, itself branched into two lines of ethical thought. In one exchange, the participants' discussion evoked concepts of welfare utilitarianism (Goodin 1995), in that (one of the few) positive goals of nuclear power is to provide the necessary conditions in which to live comfortably, i.e. by reducing the vulnerability of the ill and injured in hospital from further suffering under conditions of energy scarcity/blackouts. This welfare issue was discussed in relation to the twin principles of nonmaleficence and beneficence, thus the ethical principle of utility in relation to nuclear technologies was contextualised in relation to notions of harm reduction and welfare promotion. In another linked exchange, the concept of utility was applied to the notion of the 'public good' – whether nuclear powered electricity was beneficial or harmful to the UK population as a whole. Through the counter principles of duty and fairness (invoking a tension between deontological and egalitarian ethics

on one side and utilitarian ethics on the other), the group decided that the elimination of nuclear new build was desirable, because nuclear power expenditure was construed as having a zero sum relationship with renewable energy technology investment, and thus was unfair. They posited that the UK had a duty to phase out nuclear power and instead invest in renewables. Though a preference for nuclear opposition was clearly expressed in these exchanges, participants realised that to take a purely utilitarian position would lead to a decision to support new nuclear build. We therefore see some evidence of social learning through the process of deliberation, by comparing principle perspectives and how they logically entail different courses of action. This encouraged participants to engage in ethical reflection, clarifying the terms by which they made policy choices in relation to the technology.

7.9.2 Cancer Risks

The second branch concerned the issue of cancer. This was discussed in relation to concerns over cancer clusters in areas close to nuclear reactors (and linked to the third branch around the question of honesty). In these exchanges the principle of non-maleficence was discussed, the notion that 'first do no harm' should be the guiding principle around waste management and the development of nuclear energy policy. It was recognised that there were different scales to the harms that could occur. Chernobyl was mentioned as an example of the global scale of harms resulting from nuclear risks, and the localised risk of cancer clusters around nuclear sites was posited as a local harm. At the heart of the ethical principle guiding nuclear technology development and implementation was the protection of children (construed as future generations in this context). The siting of waste facilities near populated areas, particularly in areas close to schools, was considered morally undesirable, and should be a primary criterion of nuclear waste repository siting.

7.9.3 Risk Communication

The third branch concerned honesty in relation to the concept of risk communication. Participants questioned what counted as real risk and what didn't, in relation to the preceding discussion on cancer clusters around nuclear waste sites. It was agreed that there was not enough information coming around the 'real' risks of nuclear power, not simply because of information availability, but also a lack of independence. Risk information from nuclear industry sources was not trusted, independent scientific information was not accessible (concern over the suppression of independent scientific research into nuclear risks was also mentioned). Because of the lack of public trust and scrutiny of the nuclear industry, the concept of the Precautionary Principle was mentioned as a new addition to the list of principles displayed. Though there was some facilitator led discussion as to whether this was

an ethical principle per se, participants agreed that it should be a guiding principle for radioactive waste management organisations, and thus had ethical significance for their planning processes and day to day operations.

7.10 Reflections on the Method

This brief example and the map of judgements and principles shown in figure 7.1, give a flavour as to the use of the method in practice in structuring the deliberation of ethical issues in line with a reflective equilibrium approach. The content of the application of principles to judgements in this sketched out case, is perhaps to the eyes of a trained philosopher, rather simplistic. However, there are pragmatic benefits to the exercise, both for decision-making and for the participants themselves.

Partly given resource constraints, these workshops took place on a single day without prior participant involvement, training or expert-level information provision as might be expected in Government-run community and stakeholder engagement processes such as GM Nation?. This poses challenges in terms participant knowledge (from pre-workshop personal research on the issues, and the involvement of expert testimony in framing the terms of the deliberative engagement). It also raises issues of competency for novice deliberators to 'do' practical philosophy. This was one of the primary experimental outcomes of these workshops, to test whether lay participants could deliberate on ethics in a satisfactory and philosophically sound manner, without input from expert ethicists. Dreyfus and Dreyfus (2004) discuss the competency of individuals to undergo the evaluation of ethical issues. Under their terminology, the participants were novices, in the sense that they lacked prior experience of the necessary maxims or rules (i.e. knowledge of ethical principles, or the terminology of normative ethical judgements) needed to evaluate the issues that they were deliberating upon without help and active facilitation. As ethics terminology was unfamiliar to most participants, their wielding of these principle concepts was perhaps not complex or philosophically sophisticated, though it did involve reasoned opinion expression, was relevant to the source materials and topic focus, and involved exchange of ideas around ethical issues in a logical and structured manner. Although it cannot be expected that an individual's ethical competency should improve dramatically throughout a single day workshop, it was recognised that the quality of deliberation is partly related to issues of comfort and participant satisfaction in the process (Halvorsen 2001); and relaxed social interaction amongst participants. If participants are comfortable discussing issues amongst their peers and the facilitator, with their personal needs catered for, a sense of joint ownership in the process and fair consideration of their perspectives as equals, then there is evidence to suggest that this improves their level of confidence with expressing themselves in deliberative forums; engaging in technical (and thus also ethical) issues and hence improving the quality of the dialogue (Lindskold 1983).

The fact that topics of ethical interest identified by the participants closely matches that identified in the academic (Hadjilambrinos 1999, 1990; Shrader-

Frechette 1991; Shrader-Frechette 1999; Cotton 2009; Brook 1997) and grey literatures (Damveld 1992; Timmerman 2003; Blowers 2006; Rawles 2000; Rawles 2004) on RWM ethics such as compensation/community benefits, the fairness of health risk burdens and decision-making involvement, is some testament to the competency and 'deliberative capacity' of diverse groups to engage with relevant ethical issues in a logically structured manner, maintained by the 'talk-centric' (Bohman and Rehg 1997) combination of participant-led judgements and principle selection. There is also evidence that participants displayed commitment and engagement in reflecting upon the relative value of one another's ideas, and this is an issue central to the success of ethical deliberation. In the workshops there was sufficient evidence of exchange of ideas rather than simply the 'top-of-the-mind' offhand views characteristic of shorter focus groups. The outcomes of the workshops are not just bottom-up policy objectives, but also better informed judgements illustrated by a qualitative transformation in the direction of the dialogue. With successful facilitation, the reflective ethical mapping process allows opportunities for collaborative learning, rather than encouraging one viewpoint to override another. In this regard, the moral decisions that emerge as a context of these discussions take into account both theory driven principles as well as emotions, values and personal beliefs. Thus they can be considered truly deliberative, as Gracia (2003) attests - deliberation is the process in which those concerned by the decision are considered valid moral agents, obliged to give reasons for their own points of view and to listen to the reasons of others:

> "…in many cases the members of a group deliberation will differ in the final solution of the case, but the confrontation of their reasons will modify the perception of the problem of everyone… Our moral decisions cannot be completely rational, due to the fact that they are influenced by feelings, values, beliefs, etc., but they must be reasonable, that is, wise and prudent. Deliberation is the main procedure to reach this goal. It obliges us to take others into account, respecting their different beliefs and values and prompting them to give reasons for their own points of view."

Though in some respects the judgements remain philosophically simple and straightforward, the goal is not just to display expert competency in ethical analysis, and hence build a consensus on what should be done. Rather it fulfils the goal of enriching the individual participants' own point of view with that of the others, increasing the maturity of the decision in and making it more wise or prudent. Though the deliberation on ethics has value for encouraging collaborative learning on the ethical issues, the final phase of the workshop provides greater clarity for third party evaluation of the decision options presented in light of the deliberative analysis of ethical issues.

7.11 Turning Issues into Courses of Action

The final phase of the reflective ethical mapping process involves closing down the deliberation to bring the philosophical reflection and group discussion back into the participatory-deliberative decision-making process and ensure the strong social democratic control of technology. Issue identification and action planning is the aim of the final phase.

7.11.1 Issue Identification

The identification of issues is proposed first as a listing or brainstorming exercise to draw out potential strategies for policy and practice that are contextually relevant to the foregoing discussion of ethically informed courses of action. In practice, participants are instructed to re-read the outputs of the reflective equilibrium stage of the workshop (coherently balanced judgements in light of principled perspectives and situated principles in light of case specific judgements). They are then charged with discussing how the ethical reflections drawn from the discussions might be borne out in a real decision, creatively imagining potential solutions to the ethical problems that have been identified and the steps that can be taken to ensure that technology decisions are ethically robust, thinking specifically about the involvement of different stakeholder groups.

The process begins with the identification of problems, which are listed along the left hand side of an action planning table. These problems can be summaries of the ethical issues identified in previous rounds, or else move beyond the previous discussions to present new ideas or problems. When listing the ideas, however, each participant must state why it is chosen, with reference to the preceding discussions. This helps to maintain a coherent link between prior rounds of discussion and the final options for consideration.

Following the listing exercise, a second brainstorming idea generation activity is designed to stimulate discussion of options and strategies that provide potential solutions to the problems identified. Again, these must have an ethical quality to them, when individuals state what the solutions could be, facilitators can then encourage the group to reflect upon the ethical character of these options in relation to the previous discussions. Participants are instructed to identify a list of those that might be responsible and those that might be affected by these problems and the potential solutions, followed by two further columns giving positive and negative justifications for putting the action into practice. This simplified model of identifying ‘goods’ and ‘bads’ allows encourages participants to reflect upon the implicit ethical foundations of policy strategy and political agency – requiring them to imagine the futures that they create through their actions and plans, and how these might affect different individuals within society. This has its roots in the Deweyan concept of teleological moral empathy, in the sense that it involves imaginative deliberation on the outcomes of particular courses of action. It also bears similarity with Rawls’s Original Position, in that participants must consider the outcomes of strategies not in terms of personal gain, but rather from the

perspective of others in civil society that might be affected. Once this is complete, the proposed actions are given a label and assigned a letter or number to delineate each option, followed by a 'weight' column which is initially left blank. Thus the table columns follow this format:

- Problems
- Options/strategies
- Who is responsible and who is affected
- Positive aspects
- Negative aspects
- Label
- Weight

The brainstorming and listing exercise is valuable in that it lays bare the outcomes of the decision-making process, opening up the ethical deliberation to reflection on practical matters. This has pragmatic value, as it lays the groundwork for action planning, and is likely to be persuasive to policy-makers due to the grounded policy-facing nature of the ethical assessment (see for example Light 2003).

7.11.2 Weighting Target

A further closing down mechanism is then needed in order to choose between the different options and identify the solutions that are desired by participants on the basis of the evaluation of ethical content and context throughout the workshop. This requires weighting and deciding mechanisms to reduce the number of potential options for further examination and implementation in policy. The basis for including a final set of methods to close down the workshop is conceptually grounded in multi-objective decision support (MODS) analysis. Simply put, MODS facilitates identification of an option or alternative from those that meet a range of different objectives (Hajkowicz and Prato 1998), rather than assessing the criteria that meet a single objective (Nijkamp 1989). With the focus upon multiple objectives, MODS are compatible with exploratory, bottom-up ethical deliberation intended in these workshops because they identify and then realise the means to achieve a range of options, rather than appraising different criteria for preselected options (which would produce bias through a framing effect on the decision-making process). From Howard (1991), and Hajkowicz and Prato (1998) it is possible to identify a generic model of MODS as:

- Defining the objectives
- Choosing the attributes
- Specifying the alternatives
- Transforming the attribute scales into commensurable units
- Assigning weights to the attributes which reflect their relative value to the decision maker
- Selecting and applying an algorithm for ranking the alternatives
- Choosing an alternative

The tool presented in this final phase is a simple weighting and scoring model that shares some similarities with the above approach:

- Discussion, suggestion and recording of ethically informed objectives or alternatives
- Identification of responsible or affected stakeholder groups/decision bodies
- Identification of positive and negative implications of implementing objectives
- Assign category labels
- Score objectives
- Calculate scores
- Reflect upon highest (and lowest) scoring objectives

The intention in implementing this method is to get participants to identify a range of ethically informed strategies, options or objectives that they consider worthy of further investigation in future workshops or other deliberative engagement forums. By asking them to consider the discussions they have had over the day, they are then asked to put forward what they feel were viable means to achieve the ethical goals identified throughout the session. The use of numbered weights to then prioritise amongst these different strategies, options or objectives has its roots in a number of other multi-criteria type approaches. Although comparatively simple when compared to other scoring approaches used in the various methods for choosing amongst radioactive waste management options (for example Atherton and French 1998; Chilvers et al. 2003; Burgess et al. 2004; Greenberg et al. 2002), a simplified visual weighting system first identifying the perceived benefits and drawbacks of each strategy and then scoring it, provides a simple tactile and visual approach that can easily be implemented with novice practitioners.

One means to achieve this is to use a target approach. The ideas/options are assigned letters and these are copied onto a 5 ringed target, which is intersected into the number of slices equivalent to the number of letters (options/ideas). Participants are again given a number of sticky dots equal to the number of letters and then asked to vote on each issue from 1-5 and place the dot closer to the centre to represent an idea meriting further exploration by decision-makers and dots on the edge for those deemed less important or impractical. There was no specific rank ordering process, participants were free to put them all on '5' or all on '1', but each was only allowed one vote per idea/option. The targeting method provides a clear, visual alternative to nominal group technique or Likert-scale type questionnaires or other similar voting or ranking procedures. It allows any number of options to be considered and provides the means for transparent dissemination by the participants. The target scores are used as a means for defining weights to the different options/ideas, whereby those with the highest weighting are taken

forward to the final closing down session of the workshop, giving participants an opportunity to reflect upon the group's chosen ideas/options and feedback about their experience of the workshop, the development of the discussions (and their own understanding of the issues) after completion of the process.

7.11.3 Practical Summary of the Issue Identification and Weighting Target

- Total time taken for method 1 hr 20 minutes.
- Draw up the table and introduce the aims (10 minutes).
- Identify through group discussion and brainstorm a long list of potential options/strategies (20 minutes).
- Discuss in groups the stakeholders involved, and evaluate the positive and negative implications (20 minutes).
- Introduce the weighting target and hand out sticky dot 'votes' (10 minutes).
- Use nominal group technique voting on weighted target (15 minutes).
- Add up scores and identify 'winners' (5 minutes).

7.12 Example of the Method in Practice

Table 7.2 shows an example of the listing table that draws together the identified strategies and the evaluation of their feasibility in light of practical and ethical criteria. Table 7.3 shows the weighting of each of the options. In this workshop there was a clear consensus that emerged, as options H, I and J were equally scored with maximum weighting, implying that these three were the issues deemed most important for future options scoping and deliberation. What is interesting to note is that the three highlighted strategies all concerned political decision-making processes for radioactive waste, namely the power of community veto (termed a right of withdrawal), a concern for community rights and the examination of the impacts of a non-consultative decision on local communities, and thirdly concerns over political stability over long time frames, and finding ways to ensure the rights of future generations. Together these issues represent a concern with procedural fairness in decision-making, an issue which has been shown to heavily influence community perceptions of the acceptability of project siting outcomes (Gross 2007). Their appearance here reinforces the need for radioactive waste management organisations to ensure fair and transparent involvement of project site communities in decision-making processes over siting, not just now, but over multi-generational time frames (Fuji Johnson 2006).

Table 7.2 Options and weighting scheme

	Option/strategy	Who is responsible? Whom does it affect?	Evaluation		Weight (from target)
			Positive aspects	Negative aspects	
A	Reopen the disposal options debate, specifically focusing upon disposal of encased wastes in shallow, under sea mine shafts off the Hartlepool coast	Safeguarded by water, and so in nobody's 'back yard'.	No individual is affected	No means of checking if the waste has leaked It's potentially everyone's problem	17
B	Examining 'best practice' among radioactive waste management organisations internationally and following their example	International collaboration between scientific agencies	Get the best available advice Waste can be exported to countries where they can manage it more safely	Exporting the problem UK waste, UK should deal with it	23
C	Base siting decisions entirely upon the input of impartial scientific experts	Scientists and other experts drive the decision – discarding the local people's views Decision made on the best scientific evidence	Avoids community competition Money thrown at the problem will solve/alleviate it	It's tax payer's money – what else could we spend it on?	23
D	Destroy the waste – advance research into partitioning and transmutation and other possible waste reduction measures	Physicists Future generations	No more problem	Costly, can it ever be achieved?	19
E	Engage in protest actions due to mistrust of the local decision-making authorities (specifically the local council)	Local council is not trusted (spineless, incompetent)	Community voices heard	We will be ignored	16

Table 7.2 (*continued*)

F	Engage in a local referendum exploring and voting upon potential waste management strategies among community members	Local people Politicians	Understand the views of the community, not what politicians think they are	Goes around political representatives, so is it legitimate? Can the government override a 'no' decision?	24
G	Volunteerism – define the boundaries around which 'a community' is defined and establish who can be included in a volunteer decision	"Teesside city region" Which group should make the decision? The North East Regional Assembly	Needs a substantial cash incentive/benefits package	Size of the problem may change Location and geographical regions might not be the best/safest for waste disposal	15
H	Veto powers - establish the stage at which a right to withdraw from siting decisions is possible	Local people	Not forced to accept something we don't want	At what point does it 'click in'/become available?	35
I	Examine the impacts of top-down central government decision without consultation versus local decision-making control and the strengthening of legal protection/community rights	Politicians promising to uphold the consultation process outcomes	Views of the people are listened to	Could be overridden in the future with a change of government	35
J	Examine the feasibility of attempting to create long-term political structural stability in UK society and the host community – also educate future generations about RWM options and the ethical responsibilities of long-term waste stewardship	Future generations	Educating future generations to find the most adaptable solution to their needs	Impossible to do! Cannot be guaranteed.	35

Table 7.3 Scoring and weighting of options

Idea	1	2	3	4	5	Total score
A	4	0	1	0	2	17
B	1	2	0	2	2	23
C	2	1	0	1	3	23
D	1	3	1	1	1	19
E	4	1	0	0	2	16
F	1	0	2	3	1	20
G	5	0	0	0	2	15
H	0	0	0	0	7	35
I	0	0	0	0	7	35
J	0	0	0	0	7	35

7.12.1 Reflections on Issue Identification and Weighting Target

The value of this method lies in the ability to close down the discursive element of the workshop, and to once again ground the discussion of ethics in the context of real world decision-making. By thinking back on the day's discussions, re-examining the output sheets and further facilitated discussion, participants are able to think creatively around the ethical challenges presented throughout and suggest ideas that could remedy problems or implement ethically informed objectives. By then scoring these items this provides a clear indication that their input was valuable, whilst providing fair and balanced outputs. Crucially this method doesn't involve rank ordering; the weighted scores for each option can be as high or low for each option as the participants feel is appropriate (between 1 and 5). Thus, if participants feel that all objectives are equally important (or unimportant) for further investigation, they can use the votes accordingly. The weighted scores are intended to be discussed and reflected upon; they present a snapshot of the group's valuation of each of the ideas presented, rather than a formal mathematical model for deciding between options. The scores are therefore intended to be illustrative for further group discussion and reflection, rather than factor weights for an

MCDA type approach. This is coherent with the primary objective of the REM approach to improve the quality of ethical deliberation, rather than simply trying to select an option from a predefined set, or to enforce a consensus when none emerges.

7.13 Conclusions

Together these methods describe a process of ethical evaluation that is both deliberative and evaluative in scope. By using image based methods to structure imaginative scenarios and problem formations, charrette techniques to elicit judgements and the conceptual mapping of judgements to principles and vice versa, it is through this process that reflective equilibrium is achieved.

References

Alexander, T.: On Dewey and the Moral Imagination: Beyond Putnam and Rorty Toward a Postmodern Ethics. Transactions of the Charles S. Peirce Society 29(3), 369–400 (1993)

Atherton, E., French, S.: Valuing the Future: A MADA Example Involving Nuclear Waste Storage. Journal of Multi-Criteria Decision Analysis 7, 304–321 (1998)

Beauchamp, T.L., Childress, J.F.: Principles of Biomedical Ethics, 5th edn. Aufl. Oxford University Press, New York (2001)

Blowers, A.: Ethics and Decision Making for Radioactive Waste. Committee on Radioactive Waste Management, London (2006)

Bohman, J., Rehg, W.: Introduction. In: Bohman, J., Rehg, W. (eds.) Deliberative Democracy: Essays on Reason and Politics. MIT Press, Cambridge (1997)

Brook, A.: Ethics of Wastes: The Case of the Nuclear Fuel Cycle. In: Cragg, A.W., Koggel, C.M. (eds.) Contemporary Moral Issues. McGraw Hill Ryerson, Toronto (1997)

Burgess, J., Chilvers, J., Clark, J., Day, R., Hunt, J., King, S., Simmons, P., Stirling, A.: Citizens' and Specialists' Deliberate Options for Mapping the UK's Legacy Intermediate and High Level Radioactive Waste: A Report of the Deliberative Mapping Trial. CoRWM PSE Working Group (June-July 2004)

Caspary, W.R.: Dewey on Democracy. Cornell University Press, Ithaca (2000)

Chilvers, J., Burgess, J., Murlis, J.: Securing Public Confidence in Radioactive Waste Management: Developing a Vision for a Process and Stakeholder Engagement. University College London, London (2003)

Clark-Ibáñez, M.: Framing the social world with photo-elicitation interviews. American Behavioural Scientist 47(12), 1507–1527 (2004)

Collinson, D.: Ethics and aesthetics are one. British Journal of Aesthetics 25(3), 266–272 (1985)

Cotton, M.: Evaluating the 'ethical matrix' as a radioactive waste management deliberative decision-support tool. Environmental Values 18(2), 153–176 (2009)

Damveld, H.: Nuclear Waste and Ethics (1992), http://www.mfgroningen.nl/Nuclearwaste.htm (accessed November 2011)

Dewey, J.: Logic: The Theory of Inquiry. Rinehart and Winston, New York (1938)

Dreyfus, H.L., Dreyfus, S.E.: The Ethical Implications of the Five-Stage Skill-Acquisition Model. Bulletin of Science, Technology & Society 24(3), 251–264 (2004)

Epstein, I., Stevens, B., McKeever, P., Baruchel, S.: Photo Elicitation Interview (PEI): Using Photos to Elicit Children's Perspectives. International Journal of Qualitative Methods 5(3), 1–9 (2006)

Fesmire, S.: John Dewey and Moral Imagination: Pragmatism in Ethics. Indiana University Press, Bloomington (2003)

Fuji Johnson, G.: Deliberative democracy and precautionary public reasoning: exploratory thoughts. Les Ateliers de l'ethique: la Revue du CRÉUM 1(1), 81–87 (2006)

Goodin, R.E.: Utilitarianism as a Public Philosophy. Cambridge University Press, Cambridge (1995)

Gracia, D.: Ethical case deliberation and decision making. Medicine, Health Care and Philosophy 6(3), 227–233 (2003)

Grassian, V.: Moral Reasoning: Ethical Theory and Some Contemporary Moral Problems. Prentice-Hall, Wilmington California (1981)

Greenberg, M., Burger, J., Powers, C., Leschine, T., Lowrie, K., Friedlander, B., Faustman, E., Griffith, W., Kosson, D.: Choosing Remediation and Waste Management Options at Hazardous and Radioactive Waste Sites. Remediation, 39–58 (2002)

Gross, C.: Community perspectives of wind energy in Australia: The application of a justice and community fairness framework to increase social acceptance. Energy Policy 35(5), 2727–2736 (2007)

Hadjilambrinos, C.: Nuclear Power as an Ethical Issue: Utilitarian Ethics and Egalitarian Responses. Bulletin of Science, Technology and Society 10, 286–288 (1990)

Hadjilambrinos, C.: Toward a Rational Policy for the Management of High-Level Radioactive Waste: Integrating Science and Ethics. Bulletin of Science, Technology & Society 19(3), 179–189 (1999)

Haidt, J.: The emotional dog and its rational tail: a social intuitionist approach to moral judgment. Psychological Review 108, 814–834 (2001)

Haidt, J.: The moral emotions. In Handbook of affective sciences. In: Davidson, R.J., Scherer, K.R., Goldsmith, H.H. (eds.) Handbook of Affective Sciences, pp. 852–870. Oxford University Press, Oxford (2003)

Hajkowicz, S., Prato, T.: Multiple Objective Decision Analysis of Farming Systems in Goodwater Creek Watershed. University of Missouri-Columbia, Missouri, Columbia (1998)

Halvorsen, K.E.: Assessing Public Partcipation Techniques for Comfort, Convenience, Satisfaction, and Deliberation. Environmental Management 28(2), 179–186 (2001)

Harper, D.: Talking about pictures: a case for photo elicitation. Visual Studies 17(1), 13–26 (2002)

Heinonen, T., Cheung, M.: Views from the Village: Photonovella with Women in Rural China. INternational Journal of Qualitative Methods 6(4), 35–52 (2007)

Higgins, J.M.: 101 Creative problem solving techniques. New Management Publishing, Florida (1994)

Howard, A.F.: A critical look at multiple criteria decision making techniques with reference to forestry applications. Canadian Journal of Forest Research 21, 1649–1659 (1991)

Hurworth, R.: Photo-Interviewing for research. Social Research Update: Sociology at the University of Surrey (40) (2003)

Kaler, J.: What's the Good of Ethical Theory? Business Ethics: A European Review 8(4), 206–213 (1999)

Light, A.: Moral and Political Reasoning in Environmental Practice. MIT Press, Boston (2003)

Lindskold, S.: Conflict and Conciliation with Groups and Individuals. In: Blumberg, H.H., Hare, A.P., Kent, V., Davies, M.F. (eds.) Small Groups and Social Interaction. John Wiley & Sons, Chichester (1983)

Makansi, J.: Lights Out: The Electricity Crisis, the Global Economiy and What it Means to You. John Wiley and Sons, London (2007)

McFadzean, E.: Improving Group Productivity with Group Support Systems and Creative Problem Solving Techniques. Creativity and Innovation Management 6(4), 218–225 (1997)

McVea, J.F.: Constructing Good Decisions in Ethically Charged Situations: The Role of Dramatic Rehearsal. Journal of Business Ethics 70, 375–390 (2007)

Michalko, M.: ThinkerToys: A Handbook of Creative Thinking Techniques. Ten Speed Press, Berkeley (2006)

Moberg, D., Seabright, M.: The Development of Moral Imagination. Business Ethics Quarterly 10, 845–884 (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)

Patterson, W.: Keeping the Lights On: Towards Sustainable Electricity. Earthscan, London (2007)

Proctor, T.: New Developments in Computer Assisted Creative Problem Solving. Creativity and Innovation Management 6(2), 94–98 (1997)

Prosser, J.: Image-Based Research: A Sourcebook for Qualitative Researchers. Routledge Falmer (1998)

Rachels, J.: The Elements of Moral Philosophy, 2nd Aufl. McGraw-Hill, New York (1993)

Rawles, K.: Ethical issues in the disposal of radioactive waste. United Kingdom Nirex Limited, Harwell (2000)

Rawles, K.: Ethical issues in the siting of radioactive waste management facilities: the role of local communities. United Kingdom Nirex Limited, Harwell (2004)

Satterfield, T.: In Search of Value Literacy: Suggestions for the Elicitation of Environmental Values. Environmental Values 10(3), 331–359 (2001)

Schmidt-Felzmann, H.: Pragmatic Principles - Methodological Pragmatism in the Principle-Based Approach to Bioethics. Journal of Medicine and Philosophy 28(5-6), 581–596 (2003)

Shrader-Frechette, K.: Ethical Dilemmas and Radioactive Waste: A Survey of the Issues. Environmental Ethics 13(4), 327–343 (1991)

Shrader-Frechette, K.S.: Expert Decision-Making in Risk Analysis: the Case of Yucca Mountain. In: Anderson, K. (ed.) Values in Decisions on Risk (VALDOR): A Symposium in the RISCOM Programme Addressing Transparency in Risk Assessment and Decision Making. Congrex, Stockholm (1999)

Smith, P.D., Emmison, M.J.: Researching the Visual: Images, Objects, Contexts and Interactions in Social and Cultural Inquiry. Sage (2000)

Timmerman, P.: Ethics of High Level Nuclear Waste Disposal in Canada. NWMO Background Papers (2003)

Vidal, R.V.V.: Creativity and problem solving. Economic Analysis Working Papers 3(14) (2004)

Werhane, P.H.: Moral Imagination and Management Decision-Making. Oxford University Press, Oxford (1999)

Werhane, P.H.: Moral Imagination and Systems Thinking. Journal of Business Ethics 38, 33–42 (2002)