Chapter 3
Pragmatism, Public Deliberation and Technology Ethics

3.1 Introduction

In the previous chapter I asserted that the participatory assessment of socially and ethically contentious technologies (SECT) must pay attention to three meta-ethical considerations. Firstly, that a technology ethics must pay attention to the influential role of technological artefacts in shaping social moral values, and in inhibiting and enabling the moral actions of individuals embedded within complex actor-networks. Secondly, that the application of normative ethical theories in a classical metaphysics-down-to-practical matters way is insufficient to ensure a balanced range of judgements that reflect the broad plurality of moral perspectives present within society. And thirdly, that the judgements of experts, be they scientists or moral philosophers is contested, as they possess no special insight into moral matters and hence the control of technology policy through expert judgement represents an alternative form of technocratic control.

By asserting that we should adopt a bottom-up, citizen-led assessment of technology ethics we are presented with a challenge. We must find a way to facilitate deliberation on ethics in a manner which is both philosophically robust, in the sense of not simply being based upon knee-jerk reactions to moral problems, but also pluralistic, in that it incorporates a range of different perspectives, values and experiences. This chapter begins by discussing some potential solutions to these meta-ethical problems, and then ends with the presentation of a model of ethical deliberation grounded in the philosophy John Rawls's concept of "Reflective Equilibrium". In chapters 5, 6 and 7, this reflective equilibrium approach forms the basis of a methodology or decision-procedure for participatory-deliberative evaluation of technology ethics.

3.2 Resolving the Problem of Technocracy, Beginning with Habermas

The meta-ethical or *discourse ethics* of Karl–Otto Apel and Jürgen Habermas have been deeply influential in the theory and practice of deliberative democracy, and

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more recently, the design and implementation of participatory processes in civil society. Habermassian discourse ethics presents a theoretical effort to reformulate the insights of Kant's principles of deontology (concerning the moral obligations of the individual) in terms of the analysis of communicative structures. Kant believed that objective moral truth could only be deciphered within the rational cognitive processes of the moral agent, whereby, "…[everyone] must concede that the ground of obligation here must not be sought in the nature of man or in the circumstances in which he is placed, but sought *a priori* solely in the concepts of pure reason" (Kant 1785/1998). The Habermassian tradition asserts that the validity of a moral norm cannot be justified in the mind of an isolated individual reflecting on the world. Whereas Kant asserted that moral principles are extracted from the necessities forced upon a rational subject reflecting on the world, Habermas suggests that moral principles are extracted from the necessities forced upon individuals engaged in the discursive justification of validity claims, from the inescapable presuppositions of communication and argumentation (Habermas 1993). Discourse ethics concerns the externalising of what Kant termed the *dialogue interieur,* whereby the validity of a norm is justified not through the rational thought processes of the individual, but inter-subjectively in a process of argumentation between individuals as part of an interactive public deliberation or dialectic (Habermas 2002; Apel 1984; Habermas 1993), exchanging propositions and counter-propositions (between theses and antitheses) resulting in a synthesis of the opposing assertions.

The critical component of this Habermassian tradition is that of rational argumentation. Habermas asserts that moral actors are in possession of *communicative rationality.* Communicative rationality is the unconstrained, unifying, consensus-building force of argumentative speech; in which different participants overcome their 'subjective' views. In doing so, owing to the mutuality of rationally motivated conviction, they then assure themselves of both the unity of the objective world and the 'inter-subjectivity of their life-world' (Habermas 1984; Ajzner 1994). The individual's communicative rationality allows consensual moral action to be decided upon. Habermas believes that the roots of co-operation between moral actors in a deliberative process lie in the very structure of language itself. Built into language is the assumption that any speaker can evaluate, validate and defend his or her statements if needed. This ultimately amounts to an implicit commitment between one speaker and another to co-operate as without such rules the structure of language itself would be meaningless: agreements could never be met, jokes would not be funny and lies would be indistinguishable from truths. Perhaps paradoxically, if we did not assume that the utterances of someone speaking to us were true, then there would be no purpose in attempting to lie.

For Habermas, the language for political and moral decision-making occurs in the public sphere, "a discursive arena that is home to citizen debate, deliberation, agreement and action" (Villa 1992). In the public arena, such as that provided by

deliberative decision-making processes, Habermas's meta-ethical position is founded upon creating an *ideal speech situation* founded upon a set of language rules. The following summary is derived from Habermas (1987):

1. Every subject with the competence to speak and act is allowed to take part in a discourse.
2. Everyone is allowed to question any assertion.
3. Everyone is allowed to introduce any assertion into the discourse.
4. Everyone is allowed to express his attitudes, desires and needs.
5. No speaker may be prevented by internal or external coercion from exercising his rights as laid down in 1, 2, 3 and 4.

3.3 Discourse Ethics and Participatory-Deliberative Decision-Making

Habermas's philosophy has been influential in a range of social sciences, and his theories have been consistently applied in the practice and analysis of deliberative decision-making. Webler in particular applies the theory of ideal speech to participatory approaches to environmental and technology decision-making, and introduces two supplementary concepts of *fairness* and *competence* in the evaluation of participatory-deliberative processes (Webler 1995). The concept of fairness implies that everyone should be provided with an equal opportunity to have a say in the process, decide upon its agenda, the rules of discourse and the discussion and also have equal and unrestricted access to knowledge and interpretations. Competence by contrast, is the so-called "meta-yardstick" of evaluating the discourse; it refers to the participants using all of the relevant information that is available at the time the decision is made (ibid).

In practical terms, the discourse ethics of this tradition presupposes that individuals can realistically remove political bias inherent to speech acts between moral agents. In deliberating upon technology choices and effects the Habermassian speech model assumes that the communicative rationality of the individuals (and the rules of their deliberation) within the ideal speech situation will allow consensual agreements to be made. Habermas's concept of rationality differentiates between *communicative* and *strategic* aspects. Communicative rationality is an understanding and acceptance of the better argument through co-operative use and understanding of language structures within a collaborative discourse. Strategic rationality, by contrast, is the ability to manipulate discourse through deploying strategies to influence the actions and understanding of other communicative actors. The distinction ultimately resides between action oriented toward mutual understanding (communicative rationality) and action oriented toward success (strategic rationality) (Johnson 1991).

Communicative rationality has been challenged by Habermas's opponents, notably Foucault. Foucault's (2002) critique of Habermassian notions of rationality is that a discourse can never be singularly defined as communicative, as it will always involve certain strategic elements; i.e. the content of a political or

moral discourse is influenced by different actors deploying one or more strategic options or choices to their own advantage. Foucault insists that the very basis of Habermas's concept of language situations and communication is flawed and that the removal of strategic elements from (in this case ethical) discourse is impossible. The fact that this theory of communicative action is an idealistic deliberative theory is not, however, necessarily problematic in and of itself. Trying to develop rational discourse unhindered by the strategic manoeuvring of political actors is a laudable goal that reflects Habermas's commitment to the Enlightenment tradition; the striving of human nature for progressive improvement in moral character. The ideal speech situation is posited as a normative ideal, not a description of existing political practice, and these ideals provide a useful starting point for examining a deliberative process for ethical evaluation in Technology Assessment.

If we are to take the fostering of communicative rationality as one of the ultimate goals of a deliberative process involving citizen actors, then it is clear that as more strategic elements creep into the deliberative process then this will disempower them, as their influence wanes in the face of political power. At some point, therefore, public actors will logically cease to initiate change or additional communicative actions when they repeatedly lose out to strategic bargaining. As mentioned previously, if a governing organisation sets up a supposedly participatory-deliberative process that promises to facilitate communicative rationality and provide citizen and stakeholder actors with the opportunity to make decisions based solely upon the strength of rational argumentation, and then manipulates public discourse over technology to suit their own strategic ends, this may cause citizens to "feel that it is impossible to resolve political problems with the help of 'sincere' democratic debate" (Skolleerhorn 1998). In the context of the participatory-deliberative turn the notion of transparent, unbiased and open communication amongst stakeholder actors has become an intrinsic part of Technology Assessment. If however, as Foucault argues, it is impossible to truly achieve communicative rationality, how then can we realistically encourage open, fair and effective deliberation on ethical issues? Perhaps more fundamentally than that, however, is a meta-ethical question over the underlying assumption that actors possess a universal communicative rationality that is binary in nature. Communicative rationality is binary in the sense that individuals possess basic communicative rationality grounded in linguistic competence, implying that people are either rational or irrational, as if these were simple in/out descriptive categories. The second question then becomes, who can be considered rational and how is this decided upon?

3.4 Competing Rationalities

Within decision-making processes it is important to distinguish between different forms of rationality. In particular we must consider the difference between the *social rationality* of non-specialist citizen actors and the *bounded rationality* of experts (Perrow 1999). To return once more to the nuclear power example, engineers and risk managers planning a siting process for a new nuclear power

station would likely adopt a somewhat utilitarian position basing their judgements upon available physical evidence, risk modelling and safety assessments to present a solution that is both rational and morally valid in that it reduces overall risks to the aggregate population in the immediate vicinity of the proposed site. However, local citizens affected by this siting process are likely to protest at such an imposition, and in turn, would highlight egalitarian and deontological normative principles, focussing upon the inequity of risk distribution between communities and the injustice of being forced to accept risks and other social and environmental burdens when other neighbouring communities are not. It is therefore 'rational' for them to criticise a policy that expects individuals to accept risks without clearly defined rewards. We are then presented with two rationalities, defined in one instance by an appeal to scientifically defined safety and the other upon procedural aspects of environmental justice. Deciding which form of 'rational argumentation' should win out between these two groups of deliberators is not easily resolved by appealing to the communicative rationality of participants, because the problem involves finding some way to choose between irreconcilable ethical principles.

Habermas sought to find solutions to such problems by generating consensual 'truth' from the communicative action of rational deliberative actors. The final goal of his ideal specch situation is *Verständigung* or 'shared understanding', as opposed to objective universal 'Truth' from meta-physical *a priori* moral rules. Rationality is the central pillar of this theory. A norm (ethical or otherwise) can only be accepted if *all* those affected can accept the associated consequences, to the extent that those consequences can be known (Habermas 1991; van Es 1998; Parking 1996). The questions is, whether Habermassian speech rules can alleviate deliberative conflict and allow competing sides to reach consensus. In practice within a deliberative decision-making process, we see Foucault's criticisms of Habermas played out, as competing rationalities will likely lead to entrenchment as each side seeks to convince the other of the superiority of the argument they propose. This is related to the aforementioned problem of negotiation and the inherent strategic aspects of communication - seeking a means with which to reduce political conflict and yet strengthen ethical legitimacy requires us to admit that rationality alone is insufficient to achieve a consensual outcome. I suggest that a potential solution to this problem may be to dispense with the notion that rationality is a pre-requisite for all forms of ethical evaluation; thus breaking from a paradigm that has long dominated Western moral philosophy. However, to do so requires significant meta-ethical justification.

3.4.1 Rationalism and Moral Emotions

There have been some serious challenges to rationalism in ethical deliberation. *Reason* has been the central tenet of moral philosophy since Plato. He presented a model of a divided self in which reason is firmly ensconced in the head where it rules over the passions, which rumble around in the chest and stomach (Plato 1949). Aristotle similarly conceived of reason as the wise master and emotion as the foolish slave whereby, "anger seems to listen to reason, but to hear wrong, like

hasty servants, who run off before they have heard everything their master tells them, and fail to do what they were ordered, or like dogs, which bark as soon as there is a knock without waiting to see if the visitor is a friend" (Aristotle 350 B.C./2000). From the foundations of these early philosophical writings, Western philosophy has tended to focus upon moral reasoning, whereas the moral emotions have been regarded with a degree of suspicion (Solomon 1993; Haidt 2003).

Notable critics of rationalist ethics such as David Hume were convinced that moral judgements were always mediated by emotional considerations, and are therefore non-rational, though Hume did not ascribe any normative weight to the emotional reactions of moral agents. The attribution of normative weight to emotions has occurred more recently, with prominent figures in modern philosophy such as Leon Kass (former US presidential advisor on bioethics) who writes of the importance of disgust, repugnance or yuckiness that people feel towards certain actions or policies (particularly in regard to biotechnologies) as being implicit elements of a type of moral wisdom. To Kass some technologies such as stem cell research or synthetic biology, violate the moral dignity of agents, and thus their reactions of disgust are indicators of a means to make ethically valid decisions. Critics of Kass, notably Harris (2004) and Evans (2010) suggests that such thinking rests upon an ontological mistake, as it simply conflates Hume's Is/Ought distinction. Kass confuses what people believe to be right or wrong with an evaluation of what ought to be right or wrong based upon sound moral premises.

Though easy to dismiss such category errors in moral thinking, there a number of significant challenges to the idea that ethics must be implicitly rational if it is to be trusted. The first challenge I present to the accepted role of reason in ethics, comes not from philosophy, but from the cognitive sciences, social and moral psychology, and evolutionary biology. Normative ethics asserts that the reasoned individual performs (or should perform) moral decision-making via a conscious application of meta-physical principles. However, recent research in the cognitive science of moral reasoning suggests that the mental processes of moralising are in fact very different. Researchers have shown not only that much of human cognition (overall) occurs automatically and outside the scope of consciousness (Bargh and Chartrand 1999), but also that people are often not very adept at describing the process of how they actually reached a particular judgement (Nisbett and Wilson 1977).

3.4.2 Automaticity

An important psychological concept to our understanding of how people arise at ethical judgements, is that of "automaticity". Automaticity describes skilled actions that people develop through repeatedly practising the same activity – an obvious example being how individuals learn to drive a car. The repetition of physical actions result in the capacity to effortlessly complete everyday tasks with low interference of other simultaneous activities and without conscious thought to

step-by-step process (Schneider 2003; Schneider and Chein 2003). Some skills can therefore appear to emerge subconsciously after a period of practice. The concept of automaticity has been applied by cognitive moral psychologists to describe the mind's ability to 'resolve' many moral problems, and produce moral judgements, unconsciously and automatically (Greene and Haidt 2002). Haidt (2001) suggests that instead of accepting a deliberative or dialectical model of moral cognition, we adopt a *social intuitionist* model of moral 'automaticity'. Social intuitionism stresses that ethical judgement is somewhat like aesthetic judgement; we see an action or hear a story and we have an instant feeling of approval or disapproval. Moral judgements on an individual level are conceptualised as affect-laden intuitions - they appear suddenly and effortlessly in consciousness with an affective 'valence'; i.e. certain actions, situations and beliefs feel 'right' or 'wrong', but the individual arrives at the judgement without any feeling of having gone through the steps of searching, weighing evidence or inferring a conclusion.

This theory of a socially intuitive moral psychology proposes an interesting challenge to the traditional rationalist theories coming out of the 'cognitive revolution' of the 1950's and 1960's. During this period, the dominant behaviourist and Freudian theories of the early 20th century gave way to 'mental models' and information processing as the preferred framework in psychology. Notably the works of Piaget (1965) and Kohlberg (1969) deal with how humans developed their cognitive reasoning about ethical issues and concluded that human moral psychology develops in a progressive fashion; in three principle stages of moral progression.

The first stage is Kohlberg's (1984) notion of a 'pre-conventional' level of moral thinking. This first stage, he argued, is that generally found in children at the primary school level. In pre-conventional moral psychology, individuals behave according to socially acceptable norms simply because they are instructed to do so by an authority figure such as parent, carer or teacher. Obedience to these moral norms is compelled by the threat or application of punishment if the individual transgresses. The morality of an action is judged in relation to its direct (and immediate) consequences. The concept of self is composed in an egocentric manner, as the individual has not yet adopted or internalised societal conventions regarding on right or wrong, but instead focuses largely on external consequences that certain actions may bring. Thus progression within this preconventional level is characterised by a view that 'right' behaviour involves acting in one's own best interests.

The second 'conventional' level of moral thinking is that generally found in the general 'society at large'. Individuals within the conventional level adopt an attitude which seeks to do what will gain the approval of others, generally either peers or superiors, and so the fulfilling of social roles and what it means to be perceived as 'good' or 'bad' dominates moral thinking. Progression within this second stage involves the individual orienting their moral thinking towards abiding by laws, rules and social conventions and thus responding to the

obligations of duty that these entail. Most active members of society remain at this stage, whereby morality is still predominantly dictated by an outside force (Kohlberg 1973). The third level of 'post-conventional' moral thinking is one that the majority of adults never reach. The preliminary stage of post-conventional moral thinking is an understanding of social mutuality and a genuine interest in the welfare of others. The world is viewed in terms of value pluralism, an understanding that different people hold different opinions, rights and values and that each must be mutually respected as being held unique to the individual holding such values and the culture from which those values stem. Laws, rules and regulations are thus regarded as necessary social contracts rather than monolithic edicts. Those rules that are contrary to the welfare of society (or indeed for the welfare of minorities within the general populace) should be changed when necessary. Progression within this stage leads to an individual's respect for universal principle and the demands of individual conscience (Kohlberg 1984). This last stage is similar to the ideal of communicative rationality suggested by Habermas – at this stage the individual develops a truly 'philosophical' understanding of ethical principles, whereby logic and rational argumentation shape moral deliberation and understanding, rather than uncritical acceptance of whatever dominant discourse of ethics influences the individual at the time.

The social intuitionist model differs from Piaget and Kohlberg. Although it allows for higher cognition it nevertheless suggests that moral judgements are produced primarily by emotional and 'non-rational' processes rather than deliberative, dialectical and rational ones; a fact that Kohlberg's work overlooks. More significantly perhaps is that in the social intuitionist model, the process of moral reasoning is relegated to the role of making *posthoc* justifications for antecedent moral judgements (Pizarro and Bloom 2003). An individual's moral judgements emerge on an affective or emotional level and are then later justified within a framework of rational moral reasoning in order to provide external validity. The affective and emotional facets of moral cognition present a challenge for normative ethics. Social intuititionism appears to confirm the empiricist philosopher David Hume's argument that moral beliefs are ultimately psychological rather than logical or empirical, an expression of emotion; of "the passions". To Hume there is nothing logical, teleological, rational or divine about morality; it is so reducible to human feeling alone, that; "…'tis not contrary to reason to prefer the destruction of the whole world to the scratching of my finger" (Hume 1739). In respect to normative moral philosophy, however, it is important to reflect upon critiques of this position.

Held (1996) and Miller (2000) argue that normative ethics should not be subsumed into descriptive ethics by way of the assertion that morals are simply controlled purely by subconscious cognitive processes. To do so, implies that moral philosophy lacks critical value for encouraging individuals to arrive at morally reflective judgements, and would conflate the normative with the empirical. Moral values should not be defined solely as personal preferences, or conflated with other non-ethical cultural, religious and political values. Though

the psychological research shows that we are not entirely rational moral actors when making decisions, this does not mean that we should accept an extreme relativist position that reduces all moral assertions to simple statements of personal taste or reflections of dominant cultural discourse. In some respects the naturalisation of ethics and the growing influence of moral psychology undermines the role of philosophical thinking. To adopt the social intuitionist position wholesale would diminish the critical and evaluative edge that moral philosophy provides, but it is important to understand that though these two ways of understanding morality remain distinct, they can be complementary. The purpose of the latter is not simply to describe morality but to facilitate critical reflection in order to *improve* the ethical validity of decision-making for the individual, thus improving the underlying quality of individual judgements that appear to emerge from the subconscious mind. I argue, therefore, that it is important to find a reflective balance between these two aspects, the descriptive and the normative (a problem lying on well-trodden ground from Hulme's Is-Ought conundrum onwards). In doing so, we can develop a PTA process that satisfies both the philosophical criteria for ethical acceptability and the political requirement for widespread engagement and public decision-making support.

3.4.3 Incorporating Rational and Non-rational Ethical Judgements

In searching for this balance, we have on the one hand, the assertion that moral judgements are simply the unconscious processing of our reactions to the world around us; that particular technological strategies are morally wrong because they *feel* wrong. Any ontological justification that a particular strategy is 'right' or 'wrong' is construed as being merely coincidental to the moral judgement itself. On the other hand we have the guiding normative principles of ethical theory that assert there are absolute 'rights and wrongs' on the basis of meta-physics and rational deliberation, argumentation and justification. The conceptual framework informing this book is based upon a search for balance between these two positions - between emotion and rationality, relativism and absolutism, and between descriptive and normative ethics. In finding the means to balance these aspects, I suggest a framework based upon the concept of reflective equilibrium.

3.5 Reflective Equilibrium and Its Critique

Reflective equilibrium originated in the work of Goodman. He proposed an approach to the 'justification by balance' of rules of inductive logic that involve justifying the rules of inference in inductive or deductive logic by bringing them into reflective equilibrium with what we judge to be acceptable inferences in a broad range of particular cases (Goodman 1955). The term was introduced and applied to moral philosophy, and then broadly popularised by John Rawls. He

applied it as a complementary theory to the *Original Position* in his work '*A Theory of Justice'* (Rawls 1999). Reflective equilibrium involves an individual working back and forth between considered judgements about specific instances or particular cases, the normative principles or moral rules that are believed to govern them and the theoretical considerations believed to bear on accepting these considered judgements, principles, or rules; revising any of these elements wherever necessary in order to achieve an acceptable coherence among them (Cohen 2004). The goal is to find coherence among judgements, principles and theoretical considerations. It is ultimately the end-point of a deliberative process in which an individual reflects upon and revises their beliefs about an area of moral inquiry. In practical terms, it involves the specification, reciprocal weighing, testing, revising, and balancing of principles, rules, background theories, and particular judgements. It must be noted, however, that this reflective equilibrium need not remain stable, as individuals undergoing the process may modify it as new elements arise in their thinking (Schroeter 2004).

Reflective equilibrium balances judgements that are 'bottom-up' (which in this case could be those judgements expressed by citizens or stakeholders) without critical or theoretical evaluation and principles that are theory driven, based in meta-physics and essentially 'top-down' in nature. It has been developed as a methodological instrument for ethical theory development, in order to obtain a *coherent* ethical theory that is sensitive to the 'facts of moral life'; standing in direct opposition to a top-down applied ethics approach which essentially tries to plug facts into principles (Daniels 1996a). Reflective equilibrium is by contrast a flat-structured ontological position. The relationship between principles, theories and judgements must be one that balances according to the relevance of principles to inform the case and the specificities of the case to amend the principles used. This is the reflective aspect of the equilibrium - one thinks about which judgement a principle might require of them and about which principle could accommodate a particular judgement or stance on a particular issue, and then cycles between the two, refining both iteratively.

The procedure involves considering variations on the particular case, testing the principle against them and then refining and specifying the principle to accommodate judgements made about these variations. Those deliberating might also revise their judgements about certain cases if the initial views do not fit with the principles they are inclined to accept. As Daniels (1996a) argues, such a revision may constitute a moral surprise or discovery, implying that it is a learning process as much as an analytical one. By synthesising new moral positions the procedure allows some creativity into the moral evaluations, rather than the conservative tendencies inherent to applying top down normative ethical theories.

In practice, individuals clarify their particular moral judgements about an issue by looking for the coherence of those judgements with their beliefs about similar cases and about broader moral and factual issues, thus they have sought reflective equilibrium as a way of clarifying for themselves what they ought to do (Daniels 2003). It is 'reflective' in the sense that one knows to what principles one's judgements conform, and 'equilibrium' in the sense that principles and

judgements coincide. This process creates what is termed 'narrow' reflective equilibrium, one that coherently balances moral judgements and the theoretical underpinnings that support or contradict those judgements.

Though the model of reflective equilibrium shows great promise for the development of a decision-procedure that balances between citizen moral judgements and broader ethical principles in PTA, it has been subject to significant critique. Some, such as Hare (1973) and Brandt (1979), have argued that the considered moral judgements or intuitions that people bring to the reflective process lack initial credibility. These critics have questioned whether judgements which are not based upon a priori principles provide a sufficient epistemological basis or grounding on which we can seek justification within ethical decision-making. They suggest that an act of simply making a set of beliefs (that lack this initial credibility) into a coherent balance cannot produce justification, because the pre-theoretical intuitions (what I term bottom-up moral judgements) upon which they are based are simply a product of social, political and cultural indoctrination and so they reflect bias, superstition, or mere historical accident. Similarly, judgements lack evidential force regarding a moral order and so coherence in reflective equilibrium is dependent only upon a kind of persuasiveness, one that comes from coherence among many elements being more convincing than the conviction that comes from any of its parts (Brandt 1990). Brant, in essence argues for a process of formulating moral judgements that is based upon the interrogation of moral principles based upon 'facts and logic' rather than feelings, intuitions and fallible social values. Lyons (1989) takes a similar line of argument:

> "… The justificatory force of coherence arguments is unclear. Suppose one assumes that there are such things as valid principles of Justice which can be justified in some way; suppose one believes, moreover, that a coherence argument explicates our shared sense of justice, giving precise expression to our basic moral convictions: one may still doubt whether a coherence argument says anything about the validity of such principles."

These two criticisms are founded on an inherent ontological position that intuitions are fallible and thus cannot be considered as indicators of moral truth. In essence, by starting from a point of intuition, the whole process is founded on subjective beliefs and is thus unreliable. Defenders of Rawls, most notably Daniels (1979), have argued that reflective equilibrium's value lies not in its ability to justify intuitions as the foundations of moral truth (what might be termed 'pure intuitionsim'), rather its value lies in the variety of alternative viewpoints enlisted to encourage the examination and possible revision of initial judgements (see also Wood 2012). It is therefore a form of procedural or deliberative ethics that encourages personal reflection upon moral judgements in relation to established principles and has the capacity to re-contextualise and reconfigure principles in light of intuitions. A rather practical and common sense defence of Rawls's model is simply to state that no individual begins moral inquiry from a

perspective outside of their established belief system, norms and pre-existing values. Ethical inquiry (like its scientific counterpart) is never value free and performed in a social and political vacuum. Prior moral judgements are always influential in the development of any ethical theory or the application of principles to cases, and removing these elements completely is impossible. In defending the coherentist approach one could simply state that it would be fruitless to build an ethical decision-model that pretends otherwise, and so the 'strong' epistemic critique of intuitionism falls down in relation to practical ethical decision-making contexts.

3.5.1 Wide Reflective Equilibrium

Critique of the coherentist reflective equilibrium model is further complicated by the distinction between *narrow* and *wide* reflective equilibrium. When we focus solely upon specific cases or issues and a group of selected principles that apply to them, and do not subject the views we encounter to extensive criticism from alternative moral perspectives, we are seeking only *narrow* reflective equilibrium (Rawls 1974). *Wide* reflective equilibrium by contrast, is the process of bringing to bear the broadest evidence and critical scrutiny we can, drawing on all the different moral and non-moral beliefs and theories that are arguably relevant to our selection of principles or adherence to our moral judgements (Daniels 1996a). It aims for maximal coherence or 'fit' between an individual's considered moral judgements, a set of moral principles and relevant background theories (including non-ethical ones). In defending reflective equilibrium, Daniels argues that this process provides a method for constructing or selecting the ethical theory that is authoritative and superior to its competitors because the process of broadening out reflective equilibrium from universal theories and moral judgements to real world situational ethics provides solid justification for accepting the coherentist approach.

Essentially *narrow* reflective equilibrium operates on a practical level, it is a process through which individuals can reflect upon particular issues or cases; whereas *wide* reflective equilibrium is essentially meta-ethical, it is the justification of which norms and principles can be used within the narrow reflective equilibrium. Reflective equilibrium in a more general sense, is an iterative and highly inductive form of reasoning used in building a coherent balance between moral judgements, theories and principles by considering a particular considered judgement in a particular situation; one tries to develop a more general rule and to link that both to other practical judgements and to a higher level background theory. Daniels's answer to reflective equilibrium's critics is to 'put it into action… and let it be judged by its results' (Daniels 1996b). This focus upon the practical value of reflective equilibrium is important, because we are asked to assess the model not only from the basis of a priori principles and norms, but from its use as a practical tool to make ethically informed decisions. With this in mind, I take the reflective equilibrium model and assess it through the

lens of philosophical pragmatism: a philosophy concerned with the practical values of ideas in real-world decision-making.

3.6 Pragmatism, Reflective Equilibrium and Technology Assessment

All of the difficulties, antagonisms and dichotomies that have been presented so far, share one common underlying feature; they are all, in essence, ontological problems that stem from a set of fundamental dualisms. Philosophy is littered with such interrelated dualisms, going back to Descartes's distinctions between mind and body, fact and value, object and subject. They are thoroughly integrated into what we might term a Western understanding of the physical and social world, reflecting the way different theorists believe social reality and knowledge production is (or should) be created, evaluated and applied. In this last part of the chapter, I question whether these ontological dualisms are necessary in defining a robust technology ethics. I argue that it is appropriate and necessary to break apart such dualisms in order to reveal something new about ethical decision-making.

The underlying epistemological position within this book is that an ethics-centred PTA utilising a monistic ethical framework is fundamentally flawed, both conceptually and practically in terms of implementing politically legitimate and publicly acceptable technology decisions. I have thus far presented a model of applied ethics characterised as an application of 'top-down' theories to real world contexts; but it is important to note that this is by no means a universal feature of the applied ethics literature. Indeed, philosophers such as Alasdair MacIntyre and Tom Beauchamp have questioned whether this is a useful conceptualisation at all. They argue that it is a mistake to think of ethics as a body of theory that can be brought in, when necessary, to sort out any particularly 'real world' dilemma (MacIntyre 1984; Beauchamp 1984). Though to many philosophers the concept of applied ethics implies a separation of theory and practice - that theorising takes place first and is then put into practice - there are others that have sought to move towards a system of applying ethics in a manner that operates as more of a 'two-way street'. Such an ethics involves using theory to inform practice and crucially, to allow practice to inform theory: in essence replacing a dualism with a dialectic. To justify such an applied ethics I turn to the tenets of philosophical pragmatism for support.

3.6.1 Pragmatism

In its broadest and most familiar sense, the term 'pragmatism' refers to the usefulness, workability and practicality of ideas as being the central criteria of their merit. The term 'pragmatic' in common use has both positive and negative connotations. A term often used to describe people and their actions; a pragmatic person is one who is level-headed, down-to-earth, a doer rather than a thinker. To

a normative ethicist this could arguably be a hindrance rather than a benefit. Focus upon the practicalities of ethical problems rather than reasoning, abstraction and logic is perhaps unusual in moral philosophy. Pragmatism in everyday parlance is often perceived as a beneficial quality. A pragmatic person is one that focuses upon 'what is' and 'what can be done' rather than (perhaps fruitlessly) reflecting on what 'should be'. If we were, however, to follow this definition to the extreme, we would advocate a type of pragmatism that is simply unreflective practice, or a type of anti-intellectualism. *Philosophical pragmatism* is neither of these things.

Pragmatism as a branch of philosophy is rather different to its commonly used definition. It could be considered a uniquely North American tradition in philosophy. The original pragmatists of the late 19th Century such as Charles Sanders Pierce, William James, George Herbert Mead and John Dewey had extensive influence on American and later international philosophy, influencing the works of Willard Quine, Donald Davidson, Hilary Putnam, Richard Rorty and Jürgen Habermas. It was not, however, well received in Europe as a whole, as it was broadly perceived as opportunistic and superficial, partly due to the tendency towards consequentialism and meliorism (holding a general belief that the world tends to become better over time and that humans can aid its betterment). Though initially unpopular in European philosophy, pragmatism has made something of a resurgence, particularly in the fields of environmental and technology ethics. This resurgence is due to an understanding of the complex and uncertain nature of new threats that the world faces. Issues such as climate change, ecosystem conservation, sustainable agriculture, risk bearing technology management and natural resource use require practical action informed by, but not substituted with philosophical deliberation (Light and Katz 1996).

In relation to the novel environmental and technological risk challenges of the late modern 'risk society' (Beck 1996) there has been a tendency among philosophers to turn to standard ethical theories and principles for guidance in solving new challenges – and as the need arose, to apply the theories to practical matters (Des Jardins 1997). Pragmatism by contrast is concerned with a search for new ethical theories and approaches; and has been particularly influential within debates over the ethical assessment of environmental and technological risks at a time when the traditional normative approaches of rights or utility have been frequently criticised for their anthropocentric bias (Wenz 2001; Sylvan 2003; Minteer 2001). Pragmatism by contrast, focuses on the meaning and value of an idea in relation to the practical consequences of its implementation (Rosenthal 1994); breaking down the dichotomies that pervade philosophical arguments. The divides between objectivity/subjectivity, fact/value, deontological/utilitarian ethics etc. are broken apart in order to find practical solutions to philosophical problems and thus avoid the trap of conservative normative ethical analysis principally concerned with which corpus of moral rules to choose and then apply. As William James suggests, "…there is no such thing as

an ethical philosophy dogmatically made up in advance" (James 1979), the goal of pragmatist ethics, therefore, is to make normative ethical theory open to modification when the appearance of novel moral problems in practice demands it (Parker 1993).

For the pragmatist, ethical thinking takes place in the context of moral practice — in intelligent, shared, and imaginative engagement with actual situations, attentive to the details and to the new possibilities they may open up, rather than seeking a metaphysically justified 'final' analysis. Thus, pragmatism is primarily focussed upon the meta-ethical considerations surrounding the processes of moral inquiry rather than simply in the products of normative reasoning (Caspary 2000). A pragmatically justified course of action is discovered empirically, though this may be in the form of 'trial and error' rather than the formal experimental models of positivist scientific inquiry. This empiricist stance construes ethics as specific only to the particular situation, within particular temporal and spatial horizons of action. A pragmatic method of ethical reflection may influence decision-making by utilising a complex network of scientific, economic and normative judgements to generate practical solutions to moral problems. It does not assume that those solutions are generalisable to all situations, or that the judgements are fixed, abstract and immutable. To the pragmatist, moral decisions are by contrast specific, particular and open to reinterpretation and change. In deciphering these moral solutions to complex ethical issues, normative theories may indeed prove useful, but only as tools to be used to evaluate the situation, not as ends in themselves (Farber 1999).

Light and Katz's volume on environmental pragmatism is of particular note in this respect, as it focuses upon achieving what they term meta-theoretical pluralism aimed at opening environmental policy-making to the "plausibility of divergent ethical theories working together in a single moral enterprise" (Light and Katz 1996). In terms of practical application, Thompson (1996) and Varner et al. (1996), within the same volume, argue that pragmatists might endorse ethical decisions based upon rights or utility although the philosophical justification will be procedural, and hence not an endorsement either of rights-based or utility theory; as the application of ethics to practice is not a question of applying the correct theory to a specific situation. Within a pragmatist framework of evaluation, ethical theories can be used as tools to sharpen and clarify positions and clearly delineate the terms of the debate. Pragmatist ethics can therefore be summarised as a means to construct new possibilities for moral action through highlighting the creative character of finding solutions to moral problems (Joas 1993) rather than the application of pre-given normative rules to a 'real world' situation. Thus pragmatists argue that philosophy should be used as a force for practical political change to the way that individuals engage with their social, natural and technological environments and make decisions about how to proceed.

3.6.2 The Tenets of Philosophical Pragmatism

William James's work, 'Pragmatism: a new name for some old ways of thinking' (1907) presents a coherent outline of the defining features of a pragmatist philosophy. To summarise he states:

Pragmatism is a method of justification, not a theory with a fixed content.

- It is an empiricist tradition i.e. it lies predominantly on empirically given phenomena.
- Philosophical reasoning and scientific reasoning share a common structure – i.e. both represent a grounded search for useful generalisations and explanations.
- Pragmatism is non-reductionist i.e. takes into account a broad array of phenomena without reducing it down to one or two core notions.
- It attempts to do justice to the variety of human experience
- Pragmatic justification is coherentist, and consists in an ongoing process of integrating new assumptions into a larger body of knowledge.
- There is no fundamental difference between thinking and other human activities – whether it is the truth of thinking or the rightness of moral action at stake, in all cases it is the practical success of the activity that is its criterion of acceptability.

Pragmatism is essentially consequentialist. Analysis tends to focus upon the outcomes of ethical actions rather than the specific moral intentions of ethical actors. It is not, however, synonymous with the consequentialism of the utilitarian philosophers; the consequentialism of pragmatism is based upon action while utilitarianism emphasises usefulness as the primary criterion of ethical validity. Its consequentialism is meta-theoretical rather than normative. It is concerned with the context of putting theories into practice rather than generating a substantive set of new concepts for defining the rules of the social and moral world, hence it is a very broad church.

Pragmatism is a means of clarifying one's position through focus upon the end point of moral reasoning, thus it is broadly a method of moral reasoning rather than a doctrine, principle or corpus of rules. Despite the diversity of pragmatism, there are a number of shared underlying epistemological assumptions. In particular there is a focus upon the consequences of ideas to the practice of moral action; an assertion of the importance of an experimental attitude - testing the practical implications of applying philosophical tenets to real world cases; a fallibilist stance – accepting that our convictions are of a provisional nature and are in principle susceptible to repeal or review; and an anti-sceptical stance - understanding that the value of knowledge is based upon its practical application rather than its ontological validity. Pragmatism focuses upon grounding knowledge upon a series of postulates rather than universal 'truths', we must therefore rely upon a set of propositions that are accepted as true in order to provide a basis for logical reasoning.

A central tenet of a (general) pragmatist philosophy is therefore that something is true if it useful to believe; so there is an insistence upon practicality as a component of meaning and truth. According to James, to say that a belief is true, is to say that the belief succeeds in making sense of the world and is not contradicted by experience (James 1978). Pragmatism rejects the view that human concepts and intellect can solely and accurately represent reality, and so it stands in opposition to positivism and rationalism: asserting that only through the struggle of intelligent organisms with the surrounding environment can theories acquire significance and that only with a theory's success in this struggle does it become true.

Technology assessment is a prime example of how a pragmatist philosophy can benefit practice. One of the key 'concrete problems' in the assessment of SECT, is that of uncertainty in both its technical and social dimensions. To the philosophical pragmatist there are no fundamental moral truths that will remain unchanged; hence striving for an absolute and immutable ethical ideal is fruitless. We must get along without certainty, by solving practical, not theoretical problems and by adjusting the ends we pursue with the means available to accomplish them. Otherwise "method becomes an obstacle to morality, dogma the foe of deliberation, and the ideal society we aspire to in theory will become a formidable enemy of the good society we can in fact achieve" (Sagoff 1988). From a pragmatic perspective, we cannot make up our theories and rules in advance, they must be open to modification when we are faced with novel practical moral problems. The idea that technology produces novel moral problems is important. With an ever-changing and developing technological culture the issues of moral importance will continue to shift and interact. An absolutist, top-down applied ethics is fallible in this respect because abstract ethical maxims are unresponsive to socio-technological change. Pragmatic ethics seeks to provide this flexibility.

3.7 Conclusions

In the last two chapters I have presented a range of meta-ethical challenges to the notion that non-specialist citizen actors can evaluate the ethical issues inherent to the assessment of SECT. The epistemological position presented in this book prioritises the evaluation of ethical issues from the 'bottom-up'. We must find the means to elicit the moral judgements that citizens and stakeholders hold, assess them in light of a range of moral principles and then provide the means to balance between these different facets in a manner that is both coherent, contextually situated and practically relevant to technology policy and development. Rawls's model of reflective equilibrium is precisely this form of balancing approach. By starting from a position of outlining moral judgements, it draws upon an intuitionist model of ethical assessment, trusting in the practical rationality of individuals to imagine and envisage a course of action that is ethically legitimate. In guiding this process of ethical decision-making Rawls's model employs ethical

principles in concert with judgements. The iterative process of comparing considered judgements in light of principles and reconfigured and situated principles in light of case-specific contexts and moral intuitions is a fruitful model of ethical decision-making that is, I would suggest, entirely compatible with a pragmatist epistemology. The emphasis upon practice however, requires us to develop this theory into a useable model. What we require are 'ethical tools' – procedures that encourage individuals with no background or training in ethics to critically reflect upon their judgements; judgements that are affect-laden, emotional positions. We must then create the means to allow them to reflect upon the validity of those positions and then relate them back to real-world problems, where they can develop and recommend potential practical solutions to socio-technical problems. Wide reflective equilibrium is the approach through which this outcome is sought because it requires a commitment by participants to utilising iterative and inductive reasoning and reflection upon the ethical aspects of the problem, whilst helping to frame their deliberations procedurally. Ethical justification within the proposed pragmatist framework emerges through coherent deliberation amongst participants about judgements and principles rather than the application of normative rules. Reasoning about ethical issues requires reflection upon the technical, political, legal and socio-economic contexts and policy practices currently in place; the affected stakeholders both human and non-human - currently alive and in the future; the theoretical frameworks and principles that govern our understanding of right and wrong action; the issues and their conceptualisation as being morally contentious; and the personal moral reactions and judgements of the participants. This presents a complex and challenging picture, not only from a philosophical perspective, but also a practical and methodological one.

In the next chapter, I turn from the meta-ethical considerations of an ethical PTA procedure, towards more practical matters – namely, the techniques needed to simplify, clarify and organise these different, and often-times opposing, aspects. As Kaiser et al (2007) and Beekman and Brom (2007) suggest, what we require in such complex situations is a 'toolbox' of practical ethical procedures or techniques that make ethical judgements and the subsequent advice they give amenable to quality assurance and deliberative democratic transparency. Such a toolbox in this context would take the form of a series of participatory-deliberative methods designed to elicit, analyse and contextualise moral principles, judgements, theories and the issues to which they relate, presented in the framework of a structured discussion amongst citizen actors. In doing so, the following chapter assesses this emerging field of 'ethical tools' that have arisen primarily in the fields of bioethics and healthcare ethics. I then reflect upon their practical application to achieve the meta-ethical goals I have outlined here and in the previous chapter. Following this, I then synthesise a new methodological approach to ethical assessment based upon the strengths and limitations of these existing tools and those of more conventional participatory-deliberative methods.

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