

DOCTORAL CANDIDACY EXAMINATION

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Dissertation Topic:

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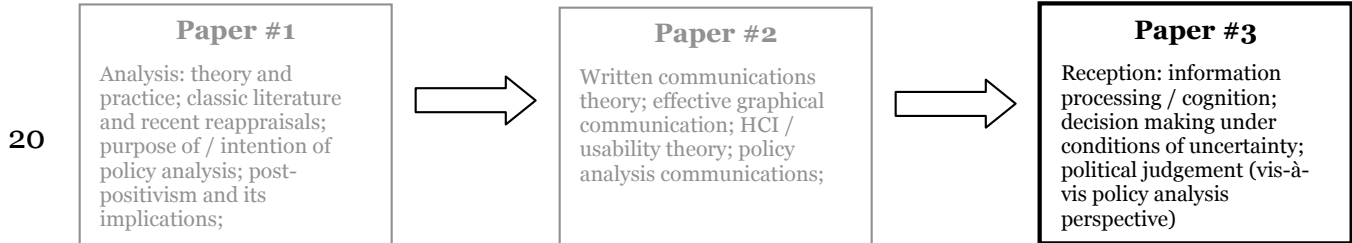
From Briefings to e-Briefings in the Pursuit of Effective Support of Public Policy Decisions

The study of public policy is broadly concerned with the processes of identifying and analysing public issues, the means by which a course of action (or inaction) is taken in response to perceived public problems, how effect is given to that course of action, and what affect the entire process has on the issue or problem being addressed. This set of three papers is narrowly focussed on the “early” aspects of the public policy cycle centring on the questions of whether and how to address (or not address) the issue at hand, specifically those aspects dealing with policy analysis (paper #1), its communication from analyst to decision maker (paper #2), and the ways that analysis interacts with political decision making (paper #3). While these aspects are dynamic and interactive, figure 1 simplistically illustrates the heuristic sequence of the three papers.

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Figure 1: Organisation of the Three Literature Reviews



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Two related documents serve to contextualise the candidacy examination. These documents can be found at:

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A proposed rationale and outline for candidacy exams:

<http://web.uvic.ca/~jlongo/committee/comps.pdf>

An initial dissertation proposal outline:

<http://web.uvic.ca/~jlongo/committee/dissertation.pdf>

Literature Review #3

30 ***Reception and Use of Policy Analysis in Decision Making***

In this sequence of surveys, the emphasis thus far has been on the purposive objective of policy briefings, first from an overall systemic perspective through to the perspective of the analyst. Paper #1 adopted a post-positivist model in arguing that the role of the analyst is to persuade a decision maker that, having analysed the problem and considered appropriate responses to it, the analyst believes that the recommended course represents the best solution to the problem. This ‘persuasion perspective’ led to the focus in paper #2 on the effective communication of that analysis: the use of rhetoric skill grounded in the accumulation of evidence, the interpretation and synthesis of that evidence in the form of a logical argument, and the coherent and effective communication of that argument to affect the attitude of a particular receiver or audience. Paper #2 concluded that an understanding of what the audience believes and how they might respond to an argument was an essential element in persuasive communication. In the specific context of these surveys – the ‘briefing process’ in policy analysis – I argued that this attempt to understand the audience, or ‘know the mind of the minister’, could be accomplished through two routes: by specific appeal to what is known about the particular recipient (i.e., the traditional ‘insider’s profile’ of a particular decision maker’s preferences and biases), and by general appeal to what is understood about the way that political actors¹ process information and make decisions.²

¹ While the focus of this review is on political actors, e.g., elected and appointed decision makers operating in public governance environments, the insights will be generally applicable to decision makers not normally considered political or governmental (e.g., participants in public consultation forums, or even private citizens making personal decisions).

² In paper #1, policy was defined as “the processes of identifying and analysing public issues, the means by which a collective course of action (or inaction) is taken by an authoritative decision making body in response to perceived public problems, how effect is given to that course of action, and what affect the entire process has on the issue or problem being addressed.” To be clear about what constitutes ‘decision making’, it is not limited to the point at “which a collective course of action (or inaction) is taken”, but extends throughout the public policy process: from problem definition and agenda setting, through information gathering and analytical framework, to implementation, evaluation and termination. Thus in our briefing process model, a decision could include: whether to attend to the analysis; whether to approve further investigation; and / or whether to accept the recommendations contained in the briefing. As Simon (1957: 1) argues, “The task of ‘deciding’ pervades the entire administrative organization.”

Understanding this second route to persuasive writing for a generalised political
50 decision maker is the subject of this paper. The central premise here is that an
understanding of the rational, socio-cultural, organisational, psychological, political and
other decision-making forces that interact with the reception and processing of
information, and an appreciation of the ways that decision makers make use of
information, are essential elements in formulating a persuasive argument.

55 This series of papers rests on a model of the policy advice process that has been
simplified in order to provide a manageable analytical framework. While it is true that
the process of providing policy advice is often iterative (within the analytical community
– e.g., amongst the analyst, their colleagues and superiors), dynamic (between the
analyst and decision maker – e.g., where the analysis is presented orally and
60 supplemented by questions) and deliberative (amongst a group of decision makers
acting collectively – e.g., where the analysis is subject to advocacy, critique and debate
with a decision making group such as a governing cabinet), this simplified model allows
us to focus at a particular point in the process: the unidirectional, passive moment of
transference of analysis to a decision maker receiving the material in isolation. Thus, the
65 question becomes: what happens when the policy analysis leaves the analyst’s hands and
is seen by the decision maker – where the rubber (or briefing) hits the road (or desk), as
it were. Conceptualising the transfer of policy analysis in this way allows for the
isolation of the effect of the briefing instrument, created in the realm of policy analysis
but deployed in the realm of decision making. By focusing on the political realm in
70 isolation, we also bring to the fore direct consideration of the “paradox of policy
analysis”: the observation from theory, research and anecdote that policy analysis is
often “not used by policymakers to make better policy” (Shulock, 1999; 226). Why there
exists a ‘blocked channel’ between scientific inquiry (and its derivative, policy analysis)
and policymaking has been widely discussed in recent years, a concern variously
75 expressed as the ‘science-into-policy’, ‘information-into-decision-making’ or
‘knowledge-into-action’ problem. And by looking at the decision maker in isolation, we
tightly focus that part of the decision making literature dealing specifically with the
individual. Adopting the simplified approach taken in this survey offers one way of

80 looking at why the scientist's/analyst's apparently clear and present argument does not automatically translate into an equivalent choice by the decision maker.

Echoing a comment made in the first two papers in this series, the framing of this review and the context for their writing requires that the literatures that are surveyed and highlighted be rationalised lest the attempt become unmanageable. There is a rich scientific tradition underlying the study of how the mind processes signals, reflected in 85 literatures that are vast and complex. For example, Elder's introductory survey across the psychological and neuroscientific landscape of social communication "incorporates over 1,800 scientific and humanistic sources" (Elder, 1999; 1). Clearly, such a formidable literature is beyond the bounds of an interdisciplinary survey of this kind.³

This present paper surveys the literature bearing on the questions of how 90 information affects the receiver, how decision makers make use of information, and how organisational environments mediate the interaction of analysis and decision making. The heading under which the range of disciplinary perspectives illuminates these questions that is used here is decision making⁴, especially where the decision problem exhibits complexity and uncertainty. The concern here is with both the study of decision 95 making processes – how individuals and institutions make decisions – and how knowledge is used *in* those processes.

³ Even a comprehensive survey of that landscape may be a chimera. For example, consider the thesis that Fauconnier and Turner (2002) advance, that the actions that humans carry out with apparent ease and simplicity belie an astoundingly complex origin:

The unconscious mental processes we take for granted deliver products and performances to our conscious minds that seem completely simple but whose invention is much too complicated for feeble consciousness to begin to apprehend. Just as talking, walking, seeing, grasping, and so on have come to be recognized as involving astonishingly complicated and dynamic unconscious processes, so the simplest feats we learn to perform, like using the computer desktop, are the hardest to analyze... Only really big brains connected in special ways, and doing a lot of dynamic work as trained by their cultures, can even begin to handle these feats, and even those big brains cannot know consciously what it is they are doing. (p. 33).

⁴ An alternative term of 'decision analysis', often reserved for the structured process of analysing how a decision will lead to a result, is not used as it creates a possible miscommunication. Thus, instead of meaning 'an analysis of a problem by a decision maker' (a common definition of decision analysis), my interest here is in 'the analysis of decision makers'.

As Allison (1971) noted in his study of the Cuban missile crisis, the perspective or 'lens' that one brings to the analysis of a decision affects one's interpretation of what transpired. In attempting to make sense of the theoretical literature on decision making from an inter/multidisciplinary perspective, the following 'lenses' will be used to categorise and survey the different approaches: economic; sociological; psychological; and political.⁵ Expanding on this final category, I then survey the observations and lesson from the interaction of policy analysis and political decision making. I conclude with comments on the challenges that policy analysis faces in seeking to persuade decision makers operating in a political environment.

Frameworks for Decision Making

Decision making involves the process of choosing a preferred option or course of action from amongst alternatives. Both formal and informal decision making processes involve information gathering, estimation of likely outcomes, deliberation, and finally, choosing. While decision processes will differ in the amount of care afforded to each of these steps, an understanding of decision making begins with an assumption of rationality, broadly defined. Plato argued that no intentional action can be internally irrational, following from the Socratic argument that no one willingly acts counter to what they know to be best. Instead, actions that work against one's interests result from mistakes or ignorance or, in the extreme, insanity. This premise, however, leads to a 'paradox of irrationality': people routinely commit *akratic acts* (actions taken in spite of the actor's judgement that another course of action would be preferable). If we limit Plato's rationality principle to reasoning only, however, we reduce and perhaps eliminate this paradox. People may act irrationally, but they never intentionally operate against their interests. Rather, an occasional 'weakness of will' is revealed in a disconnect between reason and action (Davidson, 1982).

⁵ Much of the literature in decision making is cross-disciplinary and interdisciplinary, thus a disciplinary categorisation is suspect, yet is employed here as a plausible organising framework. However, what will become apparent is that it is difficult to compartmentalise the various theories: there will be overlap where a broad concept (like prospect theory) is discussed in more than one section, and other cases where a concept is discussed in one category but could have more accurately been discussed under another heading.

Under a tighter definition of rationality that envisions decision making as a higher order information gathering and estimation process, bounded rationality (Simon, 1957) is used to designate models of rational choice that take into account the limitations of both knowledge and cognitive capacity. This approach, concerned with the ways in which the actual decision-making process influences decisions, applicable across the range of disciplinary perspectives surveyed here, is discussed below in the section on political perspectives.

Finally, two concepts which are also useful in understanding decision making are the *types of reasoning* that a decision maker might employ, and distinguishing the concepts of *risk and uncertainty*. Types of reasoning include causal, inductive, deductive, abductive, and analogical reasoning. Causal reasoning centres on the understanding of what makes some sequences of events causal, leading to inferences involving similar events, and other sequences non-causal. Inductive reasoning involves moving from the specific to the general, based on experience or observation. Deductive reasoning begins with the general and ends with the specific and is usually based on laws or norms. Abductive reasoning seeks to explain a phenomenon through the formation of a plausible hypothesis and the interpretive determination of theories or explanations through inference. Analogical reasoning (and the more methodical case-based reasoning) involves a comparison with similar, previous, situations to draw conclusions.

Uncertainty and risk are key characteristics in decision making, first explicitly distinguished by Knight (1921). A decision involves *risk* when the probability of a future event is precisely known. *Uncertain occurs* when the probabilities are not precisely known. Under uncertainty, while the probabilities are not precisely known, the decision maker can form beliefs about probabilities. If people are definitely not able to form any beliefs about probabilities, this special case is termed complete ignorance or ambiguity (ambiguity can be defined as uncertainty about probability created by missing information that is relevant and could be known). Robinson (2003) identifies uncertainty as a function of our lack of knowledge about system conditions and underlying dynamics, the prospects for innovation and surprise, and the intentional nature of human decision-making. 'Deep uncertainty' presents a fundamental challenge to policy making in the 21st century, requiring a new policy analysis paradigm (Walker,

2000). I will return to the concept of decision making under uncertainty throughout this paper and dissertation research.

155 1. *Economic*

The contribution of economic theory to the study of decision making rests primarily in the concept of economic rationality: that ‘economic man’ – *homo economicus* – arrives at a decision that selects amongst competing alternatives, after having acquired all possible information and analysed that information across different options, that will
160 maximise his interests as measured in terms of ‘utility’. Rational economic behaviour then means that individuals maximize some target utility function under the constraints they face in pursuit of their self-interest, as reflected in the theory of subjective expected utility.⁶

In the late nineteenth century, economic theory attempted to follow the natural
165 sciences in conceptualising utility as measurable in cardinal units called utils (Henderson and Quandt, 1980). von Neumann and Morgenstern (1947) introduced the fundamental elements of subjective expected utility theory, and presented axioms of rational choice in uncertain circumstances:

170 complete-ordering or comparability: for any two prospective outcomes A and B, a decision maker can unambiguously state whether A is preferred, B is preferred, or he is indifferent between A and B.

transitivity: if A is preferred to B and B is preferred to C, then A must be preferred to C.

closure: if A and B exist, then the decision maker is capable of conceptualising a

⁶ As a forerunner to expected utility theory, expected value theory sees decision makers as actors who calculate the potential value (a function of the known probability of obtaining an anticipated amount times the anticipated amount) of each option and then select the option with the highest expected value. Comparing expected value and expected utility helps to explain why people play lotteries. The expected value of a lottery with a one-in-fourteen-million chance of winning \$5 million is approximately \$0.38, yet people will pay \$1 for a chance to win. From an expected utility perspective, however, the low expected utility of \$1 and the high expected utility of the prize (in addition to the ‘fantasy value’ of thinking about winning, and the insurance against regret from not buying a ticket) outweighs the low probability of winning.

175 probability mixture of A and B as also existing.

continuity: if A is preferred to B, and B is preferred to C, then there is some probability P such that the decision maker is indifferent between B and the probability of A or C.

180 unequal probability: if the decision maker prefers A to B, for two lottery tickets ($L_1=(P_1,A,B)$ and $L_2=(P_2,A,B)$), the decision maker will prefer L_2 to L_1 only if $P_2 > P_1$.

independence: assume the decision maker is indifferent between A and B, and that C is any outcome. If one lottery ticket (L_1) offers outcome A (with probability P) and C (with outcome $P-1$), and another lottery ticket (L_2) offers outcome B (with probability P) and C (with outcome $P-1$), the decision maker is indifferent
185 between the two lottery tickets. (Henderson and Quandt, 1980; Dawes, 1988)

Nothing in the expected utility system requires a decision maker to satisfy the normative axioms listed above, but a dominant theme in decision theory that has followed defines rationality as a choice that is consistent with these axioms (Dawes,
190 1988: 147). As Shafir (2003) writes: “the rational agent model ... assumes agents’ views are well informed and calibrated, their preferences are well ordered and stable (and mostly about tangibles), and their behavior is generally controlled, selfish, and calculating. People, according to this view, know what is knowable, exploit what is exploitable, and maximize their preferences with great success.”

195 By the late 1970s, economic rationality was the orthodox view and – combined with the positivist approach in policy analysis – heavily influenced economic policy in America and the United Kingdom. Decision theory emerged from this framework, and formal analytical techniques were developed to deal with management decision problems, especially series of linked decisions. Decision theory aims at reaching optimal
200 decisions through the rational analysis of each stage in a decision process. The techniques developed in decision theory include means-ends analysis, subjective probability, algorithms, Bayesian analysis, linear programming, modelling, simulation, decision matrices and decision trees (Parsons, 1995: 411-413). These approaches generally dealt with uncertainty by ignoring it or making assumptions about the future.

205 More sophisticated approaches to modelling and simulation have since attempted to deal explicitly with uncertainty (e.g., Robinson, 2003).

However, while the theoretical foundations were being undermined (e.g., through insights such as the Allais Paradox⁷), the disintegration of rational expectations theory (the keystone of the orthodoxy) and the failure of markets as efficient mechanisms
210 during the 1980s further challenged the hegemony of rational choice theory. These failures opened the door to theories that took account of irrational behaviour – such as the stock market crash of 1987.

Out of this reappraisal has emerged the *behavioural economics paradigm*. Behavioural economics employs insights from psychology to undermine the idea of
215 *homo economicus* as a rational, utility maximising, being. Behavioural economics research has shown that people, contrary to the basic assumptions of the standard approach, do not always behave rationally – at least not when rationality is narrowly defined as utility maximising behaviour. While the insights employed in behavioural economics emerge primarily from psychology (and many of the concepts now covered
220 under behavioural economics are discussed in the third category in this survey, below), some of the key implications of this new subfield of economics are discussed here.

Traditional economic thinking viewed values – such as wealth – in absolute terms, but research has shown (and common sense would seem to indicate) that people are often more concerned with how an outcome differs from some reference level than to
225 the absolute level of the outcome itself. A key implication of this finding is that losses are weighted more heavily than gains^[J3]. Tversky and Kahneman (1991) find that where

⁷ One particular problems with expected utility theory is the violation of the independence axiom as revealed in the Allais Paradox, which involves the choice between two alternatives:

A.	89% chance of unknown amount x	B.	89% chance of unknown amount x
	10% chance of \$1 million		10% chance of \$2.5 million
	1% chance of \$1 million		1% chance of nothing

The choice between A and B depends upon the unknown amount (a large x leads to a preference for A; a small x leads to a preference for B), even though it is the same unknown amount independent of the choice. This violates the independence axiom, i.e., that a rational choice between two alternatives should depend only upon how those two alternatives differ.

sizes of losses and gains can be measured, people value losses to be roughly twice as important as equal-sized gains. The psychological concept underlying this – ‘prospect theory’ – represents a fundamental revision to expected-utility theory, and its impact on economics was significant enough to earn Kahneman part of the 2003 Nobel Prize (had Tversky not died in 1996 he would have shared the award). Prospect theory is based on the empirical results from many experiments in which people have been presented with pairs of gambles (unlike the mathematically-based expected-utility theory). These experiments have shown that people get less utility from gaining an amount than they would lose if they lost the same amount. While it is consistent under the rational actor model to be ‘risk averse’ if one is consistent about it, the prospect theory experiments show that people are loss averse but do not measure risk consistently. (I will also discuss prospect theory below under *political perspectives*, below.)

Prospect theory has given rise to a number of related concepts in loss aversion. The *endowment effect* (Thaler, 1980, 1985; Kahneman, Knetsch, & Thaler, 1990) shows that once a person possesses a good, they value it more than before they held it. A related phenomenon is the *status quo bias*, related to an individual’s willingness to trade one object for another. People tend to prefer the status quo (the object they start with) to changes that involve losses in some directions, even when these losses are coupled with gains in other directions (Knetsch, 1989, Samuelson & Zeckhauser, 1988).

Other investigations and theorising have found that people’s treatment of money and their mental accounting does not follow standard economic assumptions (Shafir, 2003). Rather than using broad categories of wealth and spending, people use distinct budget categories and separate mental accounts (Thaler, 1985; 1992). Other money and budget related findings show that people often will follow lost sunk costs with further investments, fail to consider opportunity costs when deciding between alternatives (Camerer et al. 1997), and exhibit ‘money illusion’, where the nominal value of money interferes with a representation of its real worth (Shafir, Diamond, & Tversky, 1997).

Rescuing Rationality?

A common response of supporters of *homo economicus* is to claim that apparently irrational behaviour can in fact be effectively analysed using the rational paradigm.

Nobel laureate Gary Becker, for example, is credited with “almost single-handedly creating the economics of discrimination, human capital theory, the economics of crime and punishment, and the economic theory of the family” (Elster, 1997: 749). Rather than seek alternatives to the rational paradigm, Becker has sought to apply “literally, 260 relentlessly, and often dogmatically, the idea of rational, utility-maximizing behavior within constraints” (Elster, 1997: 749), arguing “that the economic approach provides a valuable unified framework for understanding *all* human behaviour (Becker, 1976 (1986): 119; emphasis in the original).⁸ While Becker acknowledges that other fields like 265 psychology will make useful contributions, he is representative of critics of behavioural economics who accuse the subfield of lacking a consistent or rigorous scientific approach that is demonstrably more useful than the economic approach. The supporters further argue that there is no clear evidence that people’s failure, at least some of the time, to behave rationally should disqualify the neoclassical model. *Homo economicus* 270 survives because, because of the belief that, ‘at the margin’, decision makers behave more or less ‘as if’⁹ they are rational.

It is unlikely that *homo economicus* will be discarded by the discipline in favour of the behavioural approach or any other overarching framework. While there is a long tradition in economics that understands the limitations of the rational model,¹⁰ the 275 discipline has always gravitated towards the rational model because it makes the analysis of economic behaviour feasible. *Homo economicus* can be seen as simply an heuristic device, designed to make the analysis of complex phenomenon practicable.

⁸ Of course, Becker also has a tendency to make egregiously ridiculous claims, such as “*most* (if not all!) deaths are to some extent ‘suicides’ in the sense that they could have been postponed if more resources had been invested in prolonging life.” (Becker, 1976 (1986): 114; emphasis in the original).

⁹ The Chicago School’s ‘as-if’ approach (see Friedman, 1953) does not require that the assumptions be plausible but rather that the implications be testable. Therefore, economics treats firms and consumers ‘as-if’ they are profit maximisers and utility seekers.

¹⁰ Hosseini (2003) documents how the behavioural approach in economics has a much longer history. However, it was the dominance of the rational model in the mid 20th century that caused this view to be downplayed until recently. These shifts in some ways parallel the positivist / post-positivist tension in policy analysis (see paper #1); e.g., “A collateral contribution of the behavioral economics enterprise is to remind economists how little is truly known about the basic facts needed to shape policy.” (Camerer, 2003: 3).

Elster (1986: 4) argues that the dominance of neoclassical economics and the overarching assumption of rational behaviour has a “staying power [that] may be due
280 more to the lack of a viable alternative than to sustained predictive or explanatory
success.” The disagreements that the behavioural approach introduces are also more
nuanced than might be suspected. As Camerer (2003: 2) notes, the concept of bounded
rationality in economics “is not in genuine dispute. Since Simon defined bounds on
rationality as the antithesis of hyperrationality, and hyperrationality was never taken
285 seriously as a cognitive model, the concept of bounded rationality should not be
controversial. The debate is therefore not about whether people are hyper-rational or
not. The debate is about precisely how ideas from psychology can inform economic
models.” Thaler (2000: 140) holds out hope “that Homo Economicus will evolve into
Homo Sapiens”, slowing shedding some of the unrealistic assumptions about human
290 behaviour that underlie the rational model. One approach to is to understand that
“individuals are intendedly rational. Although decision makers try to be rational, they
are constrained by limited cognitive capabilities and incomplete information, and thus
their actions may be less than completely rational in spite of their best intentions and
efforts” (Marsh, 1994: 9).

295

2. Sociology

Much of the sociological literature on decision making is concerned with the effect of
group dynamics and inter-subjective effects on individual decisions.¹¹ Long established
insights into the ‘madness of crowds’ (MacKay, 1841) and the feeling of invincibility of
300 the ‘collective mind’ of the large group (Le Bon, 1895), however, should not be misread
to conclude that small groups are more rational. Subsequent research over the past fifty
years has shown the influence that even small groups can have on individual attitudes,

¹¹ This characterisation is not meant to diminish the work of sociological pioneers like Weber and Blau in their studies of organisations. But the contemporary literature tends to equate the sociological approach to decision making with group dynamics; e.g., Harrison’s (1999) textbook on managerial decision making devotes most of the chapter on “the sociology of decision making” to group decision making processes.

behaviours and decisions. However, to recapitulate a point made in the introduction, this survey is focussed on the decision making process of individuals considering policy advice in isolation. While the effect on the individual from being aware of and considering group norms, rules and conventions will be discussed in this section, as will some socially-oriented motivators of behaviour and decision making, the dynamics of group decision making are not dwelt upon.¹²

The previous section reviewed the rational paradigm in economic analysis, which rests upon the concept of *homo economicus* as a utility maximising entity driven by self-interest – the ‘self love’ of Adam Smith’s butcher, brewer and baker. Research and common sense reveal this model as an inadequate description of motivation and behaviour. “Virtually every researcher to examine behavior in experimental settings has concluded that preferences depart from pure self interest in non-trivial ways” (Rabin, 1996: 16). That economic behaviour might be driven by social rather than personal goals can be found in the frequent occurrence of cooperative solutions to common property problems, the provision of public goods, and the presence of externalities.

Social capital – an overarching framework denoting the trust and co-operation between individuals and within groups, norms of behaviour expected from community members, networks of interaction, and actions taken for reasons other than financial motives or legal obligations (Longo, 1999) – has existed as a concept in the sociological literature for some time, while its refinement in recent years is generally credited to Loury (1977), Coleman (1988), Burt (1992), Portes and Sensenbrenner (1993) and Portes (1995).

Trust as a required component of transactions, and is a key facilitator of co-operation (which, through its successful action engenders continued trust). In the absence of a personal or social relationship that can give rise to a trust relationship,

¹² ‘Groupthink’ – the “drive for consensus at any cost that suppresses dissent and the appraisal of alternatives in cohesive decision-making groups” (Janis, 1982: 8) – is a particularly important concept in policy making. Also, group dynamics supported by ICTs (commonly referred to as ‘computer supported cooperative work’ – or CSCW – technologies) have emerged as an important research area.

norms of reciprocity (Fukuyama, 1995) and networks of civic engagement (Putnam, 1993) can act as sources of social trust. Norms evolve as a way of lowering transaction costs and facilitating co-operation, with the most important type of norm being based on reciprocity. In addition to the forces promoting trust and cooperation, there are the rules, conventions, habits, and values that both reflect and shape the preferences of actors (Hollingsworth *et al.*, 2002), influence decision making (Shepsle, 1989), and serve to organise and regulate human activity (Burns and Carson, 2002).

The willingness to cooperate, share resources or provide unrecompensed assistance to others is not a universal position for a person. A person's concern for another depends on the actor's perception of the past behaviour of that other person. Axelrod (1988) has investigated the conditions under which such 'reciprocal' or 'strategic' altruism will emerge in a world where people seek to maximise their own interests and no authority can be exercised by the state. 'Strategic reciprocity' has been found to be one of the most powerful forces that leads to co-operation, while fear of retaliation also is a strong constraint on defecting. In a setting of indefinite iterations of a prisoner's dilemma game, a defector would face punishment in successive rounds, as their opponent / partner bases their decision on past experience. Theoretical and empirical inquiry by Axelrod and others has revealed that a winning strategy for an iterative prisoner's dilemma game is 'tit-for-tat': co-operate in the first round, and respond to all plays by your counterpart in future rounds.

Reciprocity is also informed by the actor's perception of their counterpart's motives and a sense of fairness. Reciprocal altruism is more likely where an actor perceives another's actions as having been motivated by freedom of choice and a conscious will to act, and is less likely where the previous 'positive' action was an automatic outcome from a situation offering no freedom of choice. Even where the counterpart is unknown and the actor's long-term strategy is irrelevant, actions and decisions are also strongly effected by a sense of fairness (Dawes & Thaler, 1988). A sense of fairness is strongly

355 formed by a perception of justice (not just a state or outcome), leading people to make judgements about the fairness of outcomes for ‘deserving’ and ‘undeserving’ others.

A sense of fairness is vividly illustrated by the often replicated ‘ultimatum game’.¹³ This two-player game consists of a Proposer and Responder splitting an amount of money according to the following procedure: the Proposer is given an amount of money
360 (e.g., \$10) and offers to proportionally share the amount with the Responder. If the Responder accepts, the two players share the money in accord with the proposal. If the Responder rejects the proposal, both players get nothing. Under the rational self-interest model, the equilibrium proposal is one cent – a Proposer has no reason to offer more than that, and the Responder would accept any offer greater than zero. A wealth of
365 experimental results has clearly refuted this model: Proposers tend to make fair offers; but where their offer is perceived to be unfair (less than 20% by most results), Responders routinely punish the Proposer (and, simultaneously, harm themselves) by rejecting the offer (see, e.g., Camerer and Thaler, 1995).

In contexts where the parties to a transaction do not know each other and have no
370 knowledge upon which to base their trust, failure to co-operate does not require that one act irrationally. In a *prisoner’s dilemma*, co-operation is impossible because there is no communication between players and no opportunity to make threats or commitments. In the *tragedy of the commons*, self-maximising behaviour leads to a destruction of common property. *Public goods* are under-produced leading to general welfare loses.
375 And in the *logic of collective action*, opportunities slip away as no one risks losing through leading. In each of these contexts, every party would be better off if they would co-operate. Without a credible commitment, the rational strategy is to defect.

However, these theories tend to under-predict co-operative behaviour that quite often emerges in real life settings, perhaps because in real-world community settings,
380 interactions are iterative and the capacity for reciprocity and threats can often produce the conditions necessary for co-operation. Even in a single play prisoner’s dilemma (a

¹³ The ultimatum game was first developed by Guth, Schmittberger, and Schwarze (1982).

situation that, arguably, happens quite often), co-operation based on altruism often emerges. It is not rational, for example, that one leaves a tip at a restaurant in a city one is leaving and never intending to return to – but it is commonplace (Frank, 1994).

385

3. Psychological

Research in social psychology is primarily focussed on the factors that “shape, reinforce, or change the responses” of the decision maker (Stiff and Mongeau, 2003; 4), ultimately resulting in an effect on a person’s attitudes and decisions. This section
390 presents a range of insights from research in social psychology amassed over the past half century that can inform an understanding of how attitudes and decisions are affected and formed.¹⁴

The shift from the dominant behaviourism paradigm (based on the idea that people make predetermined responses to objective experience) to a cognitive approach (where
395 a stimulus is conceptualised as being mentally construed, interpreted, and understood) represents a fundamental change in psychological research over the past fifty years. The essential implication of this shift is that people do not make decisions based on an objective state of reality, but rather on their subjective interpretation. This change has had important implications for understanding decision making.

400 Decision Making in Uncertain Conditions

The economics model described above assumes that people deal with uncertainty in decision making by subjectively assessing the probability of different future states. Psychological research has been instrumental in documenting how people systematically deviate from this rational model when making decisions under conditions
405 of uncertainty. This research shows that people are intelligent and purposeful in their

¹⁴ Much of this present review reveals that differing disciplinary perspectives on decision making draw heavily on the insights from social psychology into how humans react to an external stimulus. The following discussion can unfortunately read like a laundry list of psychological theories, and many entries could have been included in the surrounding disciplinary-specific subsections of this review. Where a concept is included in this section and another, the theoretical foundations are discussed here and the applied implications of the concept are discussed in the relevant section.

decision making, and typically rely on a limited number of heuristic principles that are useful in reducing a complex probability assessment and predicting values to simpler judgmental operations but which nonetheless cause systematic and routine errors in judgement (Benjamin and Laibson, 2003). Tversky and Kahneman (1974) and
410 Kahneman, Slovic, and Tversky (1982) are important readings in this 'heuristics and biases' paradigm.

The *representativeness heuristic* refers to assessments of the likelihood that one event belongs to a particular category based on the similarity of that event to typical members of that category (Tversky and Kahneman, 1974). The representativeness
415 heuristic explains the tendency of people to over-use 'representativeness' in assessing future probabilities. The influence of representativeness contributes to the violation of the conjunction rule in probability theory: given two events A and B, the probability of the conjunction or intersection of A and B cannot exceed the individual probability of either A or B. (Kahneman and Tversky, 1982). Representativeness also leads people to
420 be persistently over-confident: if asked to answer a straightforward factual question, then asked to give the probability that their answer was correct, people typically overestimate this probability.

The *availability heuristic* refers to the tendency of people to focus their attention on a particular fact or event because it is more visible, familiar, vivid, or salient, even where
425 better sources of information are readily available (Tversky and Kahneman, 1974).

When forming estimates of uncertainty, people tend not to make significant adjustments away from arbitrary initial values. This third type of judgmental heuristic is called *anchoring and adjustment*. Evidence shows that initial values have a disproportionate impact on final estimates. The influence of an anchor value is
430 illustrated in an experiment in which one group of subjects were given five seconds to estimate the product of $[8*7*6*5*4*3*2*1]$, which produced an average value four times higher than for another group given five seconds to estimate the product of $[1*2*3*4*5*6*7*8]$ (Tversky and Kahneman 1974: 15). Anchoring also shows that people are often overly influenced by external suggestion, even where they know that the
435 suggestion is not made by someone who is better informed. The practical implications of anchoring are important: once a person forms a strong hypothesis, they pay less

attention to relevant new information that supports or contradicts their belief, making it difficult for an advisor or analyst to convey new evidence.

Psychology of Decision Making

440 Psychological research in rhetoric and persuasion has led to investigations of *inter alia* the effect of logical versus emotional appeals, one-sided versus two-sided arguments, receiver evaluations of source credibility, audience characteristics, and the medium of communication. These studies have lead to the development of theories and approaches such as cognitive dissonance and the derivative concepts of selective
 445 exposure, forced compliance and counter-attitudinal advocacy, and self-persuasion. The following table outlines the steps in the persuasion process and some of the psychological forces that stand in the way or promote each step (Zimbardo and Leippe, 1991: 134-201). These concepts are discussed in the text that follows.

Steps in the Persuasion Process	Barriers and Bridges
1. Exposure to message	selective exposure: the tendency to seek information that supports one's current attitudes
2. Attention to message	a function of a listener's limited mental processing capacity selective attention: the tendency to seek information that supports one's current attitudes
3. Comprehension of message	a function of the level of complexity of the message – has implications for the effective formatting of the message (e.g., textual or visual; print vs. television).
4. Acceptance of its conclusions	"the biggest hurdle" (Zimbardo and Leippe, 1991: 149); a receiver can understand an argument without accepting or believing it. Highlights the importance of audience analysis (especially their prior knowledge and attitudes) Validity and strength of the message – as perceived by the receiver – becomes crucial; assessed through systematic processing (central route), or where attention or motivation is low, biases and heuristic rules (peripheral route) are used (Petty and Cacioppo, 1986). "sleeper effect" can turn seemingly unpersuasive messages into persuasive ones at some future point.
5. Retention of changed attitude	Enhanced through repetition (however, diminishing and possibly negative returns). Also enhanced through systematic analysis and self-persuasion
6. Translation of attitude into behaviour	Theory of reasoned action (Ajzen and Fishbein, 1980): attitude combines with existing subjective norms to predict a behavioural intention. Theory of planned behaviour (Ajzen, 1985): added "perceived behavioural control as a key element" (i.e., 'if I can, I will'). Impact of others' opinions. Special circumstances (e.g., lack of time or resources).

450 Cognitive dissonance theory explains situations in which people “find themselves
doing things that don’t fit with what they know, or having opinions that do not fit with
other opinions they hold” – holding a belief plainly at odds with the evidence, usually
because the belief has been held and cherished for a long time [Festinger, 1957: 3]¹⁵.
Cognitive dissonance causes people to avoid viewpoints that contradict their own, seek
455 reassurance after making a difficult decision, and change private beliefs to match public
behaviour when there was minimal justification for the action. Self-consistency, a sense
of personal responsibility, or self-affirmation can explain dissonance reduction (Griffen,
2003). Cognitive dissonance theory has given rise to a number of related concepts such
as selective exposure, forced compliance and counter-attitudinal advocacy, and self-
460 persuasion.

The selective exposure hypothesis states that people will prefer to be exposed to
information that is supportive of their opinions and beliefs rather than to contrary
information which would arouse dissonance and challenge firmly held beliefs (Cotton,
1985). When people are evaluating issues, they would rather see supportive
465 communications and avoid information that they find conflicts with their beliefs.

Forced compliance and counter-attitudinal advocacy are related concepts involving
not physical force *per se*, but influence that leads a person to do or advocate something
at odds with their beliefs. Forced compliance is said to occur when an individual is
induced to act in a way discrepant with his or her beliefs and attitudes. Counter
470 attitudinal advocacy is a special case of forced compliance, which occurs when a person
is led to advocate a viewpoint opposed to his or her own position.

Self persuasion identifies the process of attitude change that can result from self-
created thoughts and ideas. Self-generated thoughts can have a more powerful effect on
attitudes than externally sourced ideas. Just what constitutes self-generated thoughts

¹⁵ Apparently, the concept of cognitive dissonance, as both a buzzword and a unifying framework, has
fallen out of favour among psychologists in recent years, replaced by the concept of motivated cognition
(Rabin, 1996).

475 and external ideas is unclear: “virtually all persuasion effects can be thought of as self-persuasion” (Petty and Cacioppo, 1981: 213).

Cognitive psychologists have developed a number of theoretical concepts to explain how readers process and understand information as a prelude to making a decision. These concepts are ‘schema theory’, ‘activated semantic contexts’, and the ‘levels effect’.

480 *Schema theory* develops the simple idea that a receiver’s prior knowledge of a subject increases the comprehension of new, related, information. The theory holds that people develop schema (also called ‘frames’ or ‘scripts’) based on their experience. Where a receiver and sender share similar schema, communication is enhanced beyond the text itself. Where the sender and receiver do not share schema *a priori*, an equivalent

485 schemata can be created through the use of metaphor, analogy and examples. The *activated semantic contexts* concept holds that in order for a schema to be brought consciously into the receiver’s mind, the text will have to be placed in a semantic context (e.g., through the use of headings, subheadings, topic sentences, etc.) or through the use of graphical representations. Lastly, the *levels effect* reflects the understanding of how

490 readers process information hierarchically according to how important they perceive different information to be. Information considered to be of high-level importance takes longer to absorb but is understood better.

The Elaboration Likelihood Model (Petty & Cacioppo, 1986) has important longer-term implications for the persuasiveness of information. The ELM framework delineates

495 two routes to persuasion: a *central route* whereby a person is persuaded based on a careful consideration of the merits of the information presented, and a *peripheral route* where persuasion hinges more on secondary cues such as the attractiveness of the source. Attitude changes can be induced via either route; however, the ELM postulates that attitude changes resulting from the central route “will show greater temporal

500 persistence, greater prediction of behaviour, and greater persistence to counter-persuasion.” (Petty and Cacioppo, 1986: 21).

The decision making process of political actors is often marked by a high volume of possible information inputs, frequent situations requiring immediate decisions, and a limited amount of time in which to consider the issue. Also, political actors vested with

505 the authority to make governmental decisions are bound by principles embodied in

regulations, statutes and constitutional rules. In these and other respects, political decision making bears some similarity to judicial decision making. Thus, a study of bail decisions made by judges (Dhimi, 2003) is of relevance here.

Judicial decisions are guided by formal rules, are bound by the requirement of due process, and – especially in the context of this study – “the fast and frugal nature of judicial decisions” (p. 177) as a result of the brevity of bail hearings and the immediacy required of the decision has an important effect. Dhimi’s study compared the ‘matching heuristic’¹⁶ of decision making with more formal analytical approaches¹⁷ and found that the matching heuristic providing a useful predictor of decision making, greater than the predictive validity of other simple heuristics or more complex regression models. Specifically, the study found that judges used simple heuristic rules when deciding, principally relying heavily on decisions made by the police, prosecution, and colleagues. The author identifies several possible conditions that may explain the usefulness of the matching heuristic: the heavy caseload and overwhelming amount of information judges were required to consider¹⁸; since judges make decisions as a representative of ‘the bench’, group decision making issues enter into play¹⁹; and the significant discretion judges have in considering evidence.

¹⁶ The matching heuristic depicts judges as basing decisions on one cue, relying on the decisions made by the police, previous bench, and prosecutor. Employing a matching heuristic runs contrary to the ideals of due process.

¹⁷ Including ‘Franklin’s rule’ (originally described by Benjamin Franklin). an informal regression model that involves the combination of multiple differentially weighted cues, and is limited in its inflexible cue use. Dawes (1988: 202-204) describes Franklin’s “moral or prudential algebra” as the process of deriving a linear model with an intuitive “*weighted average* of reasons for or against a particular course of action.”

¹⁸ The author cites “evidence that people switch to simple non-compensatory strategies that use few cues as the number of cues increases and as time pressure increases (e.g., Payne et al., 1993; Rieskamp & Hoffrage, 1999)” (p; 178).

¹⁹ E.g., Dhimi (2003) cites Weldon & Gargano (1985) to argue that, in situations of shared responsibility, groups will consider less information than if acting alone.

4. Political

525 Early in the development of the policy approach, the psychology of decision making
figured prominently (e.g., Lasswell, 1930). For Lasswell – whose research in the
psychology of political behaviour was specifically focussed on the use of propaganda by
elites to shape the ideas of the masses – political leaders were seen as usually exhibiting
psychopathologies (primarily a lack of self-esteem) that explain their quest for political
530 power; these private motives then shape their beliefs about what constitutes ‘the public
interest’ (Lasswell, 1948)²⁰. After Lasswell, with the emergence of economics as the
dominant frame for policy analysis in the 1960s (see paper #1 in this series) and the
ascendancy of the rational paradigm, the psychological dimensions of decision making
in a policy context, and the non-rational responses of individuals to policies, were
535 downplayed. While perhaps an overstatement to say that “policy analysis is mostly
social psychology” (Thorngate, 2001: 85), the essential argument of this paper is that an
understanding of the insights from social psychology as they pertain to decision making
will greatly strengthen the effectiveness of the policy advice function, as well as support
policy analysis in the development of policies that – having accounted for the probable
540 or likely responses of individuals acting as autonomous policy agents – are more
resilient in implementation.

Despite the persuasiveness of the psychological approach, the general literature in
political explanations of decision making offers useful frameworks for considering the
reception and processing of policy analysis in the political environment. Primary among
545 these political explanations are models that investigate the effect of power structures on
decision making. Following that, I briefly discuss explanations of political decision
making such as Simon’s ‘bounded rationality’ and Lindblom’s incremental approach.
Next I review the concepts of rational choice theory and prospect theory, alternative
approaches for explaining political behaviour and decisions.

²⁰ Payne *et al.* (1984) describes numerous interviews with politicians around the world, indicating (from at least the politicians’ perspectives) that politicians can be more accurately described as compulsive, rather than psychopathic.

550 There is a long tradition of the analysis of power structures in political science, and
the effect of power on decision making is central to this tradition. Within this wide
theme, a number of approaches are described here: elitist, pluralist and professional /
technocratic. Elitist models focus on the concentration of power in the hands of elite
groups and persons, where decision making is seen as serving the interests of those
555 elites. This descriptive theory originally reveals a pessimism about the *real world*,
unmitigated by any pretence about democracy serving the public interest. Later versions
have ameliorated this by positing an ‘economic theory of democracy’ (Downs, 1957) that
held that democracy requires that elites compete in the democratic marketplace for the
votes of the citizen-consumer. This public choice model (see below) continues to have
560 great appeal in both economics and political science.

Harold Lasswell’s approach to elitism was to argue for the greater influence of
analysis and information in decision making – i.e., the policy approach – and is
characterised as a pluralist approach (Lasswell, 1936). This normative approach to
acknowledging the presence of elites analyses how policy decisions *ought* to be made.
565 Representative of this approach are classic works such as Dhal (1961), Lindblom (1959)
and Galbraith (1953).

Finally under the concept of power, two related concerns are the influence of
professionals and technocratic expertise on decision making. Related to power
approaches, the professionalism approach focuses on how professional elites influence
570 the decisions of elected representatives in liberal democracies. And the technocratic
approach involves both normative and positive views on scientific rationality as the
driving force in decision making. Robert McNamara’s tenure as U.S. Secretary of
Defence and the rise of the rational analytical approach in policy analysis represents the
normative approach to technocratic decision making. From a critical perspective, Ezrahi
575 (1990: 1) cites the tendencies of liberal democracies towards the “uses of science and
technology to augment their power to ameliorate, reconstruct, control, and manipulate.”

Simon (1945 (1976): xxvii) attempted to rationalise the “preposterous omniscient
rationality” of *homo economicus* and the Freudian tradition of behaviour as purely
unconscious reaction through the concept of ‘bounded rationality’. While real decision
580 making does not mirror the economist’s definition of rationality, people generally intend

and attempt to act rationally, though their limited rationality sometimes results in mistakes and biases. Because of the significant limits on human rationality, the most satisfactory alternative solution should be found in the cousin of economic man, “administrative man” who seeks “satisficing criteria” such as “satisfactory or ‘good enough’” (Simon, 1945 (1976): xxix). Simon strongly supported the notion that decision making could be improved through analytical techniques and, in later years, through the use of computer-supported decision making (e.g., 1983).

Jones (2001) places the bounded rationality literature within the context of the modern governance environment and observes that people are ‘disproportionate information processors’: received information is transformed in the process of thought, and the context in which information is received has a significant influence on what reaction it provokes. This “disproportionate information processing means that inputs into a decision-making process do not link directly to outputs” (Jones, 2001: 9).

Related to the concept of bounded rationality and satisficing is the research finding that people make choices by finding a plausible reason for choosing one option over another. Simonson and Tversky (1992), for example, find that in comparing options A and B, and if option B is clearly dominated by A, then the inferior option B provides a reason to choose A.

Lindblom’s concept of ‘muddling through’ (e.g., Lindblom, 1959) describes his descriptive objection to the idea of rationality in decision making, and his prescriptive approach to improving decision making. In his criticism of the rational model as typified by economics, Lindblom’s analysis was similar to Simon’s; however, he disagreed with the managerial / technological solutions offered by Simon and the policy approach of Lasswell, arguing that making more rational the decision making process was “not workable for complex policy questions” (Lindblom, 1959: 81). ‘Muddling through’, while it can be read to offer limited support to decision support where appropriate, essentially argues for the engagement of political discussants aimed at reaching agreement.

Although Dror (e.g., 1989) accepted Lindblom’s argument that the policy making process was too complex to model, he rejected the incrementalist argument and advocated a modified rationalist model. His synthesis of systems analysis and policy

analysis made his 1968 work (subsequently re-published in 1989 incorporating practical experience in government) a standard textbook at the time. And Etzioni's 'mixed-scanning model' also carves out a middle ground between rationalism and incrementalism, explicitly "combining (a) high-order, fundamental policy-making processes which set basic directions and (b) incremental ones which prepare for fundamental decisions and work them out after they have been reached" (Etzioni, 1967: 385).

Rational choice theory applies the theories of economics to issues of politics: the state, voting rules, voter behaviour, party politics and bureaucracy. Under this approach, self interest is the key factor in understanding political behaviour (Mueller, 1989). Elster (1986) contains an edited collection and guide to the vast literature on rational choice. This remarkable collection, containing chapters by at least three Nobel laureates, reviews basic concepts of rational choice theory, emerging questions about the status of the theory, some limitations and failures of rational choice theory, and the contending alternatives. Elster introduces the volume by noting that rational choice theory is explicitly normative in that it describes how we *ought* to decide. But unlike moral theory, rational choice theory is not concerned with aims or ends; rather, its *conditional imperatives* are only concerned with the proper means to achieving whatever the decision maker determines is the objective.

As a response to the criticisms levied against the utility maximising model in economics, Elster attempts to highlight the democratic procedural aspects of rational collective decision making by introducing two substantive revisions to the rational choice model: 1) besides acknowledging actors' strategic behaviour which is directed by an individual's preferences and oriented towards consequences, *norm-regulated behaviour* – which lacks an orientation to expected outcomes, and is instead a function of social expectations which contribute to trust and co-operation – is included; and 2) moving beyond the bargaining and negotiated compromise approach to collective decision making, Elster views such bargaining as combining not only rational calculations but rational argumentation and persuasion as well. In this process of argumentation, participants are able to rationally change their preferences in coming to an agreement about collective decisions. Habermas cites the Elster volume as a

fundamental revision of rational choice theory. Elster's description of the democratic process as a mechanism that changes preferences through public discussions is "an unexpected rehabilitation of the concept of deliberative politics" (Habermas, 1996, p. 336).²¹

Lastly, Kahneman and Tversky (1979) formulated 'Prospect Theory' in response to the experimental evidence that people systematically deviate from the subjective expected utility theory (see the description above). Here I briefly review the implications that prospect theory has for understanding political behaviour and decision making.²²

- A decision maker's 'status quo bias' will make them wary of proposals that challenge the status quo.
- Leaders take greater risks to avoid potential losses than they do to enhance their position.
- Voters punish leaders more for losses than for the failure to make gains.
- Losers take risks to recover losses (sunk costs); winners take risks to defend the new status quo.
- Errors of commission or action are treated as more blameworthy than errors of omission or inaction.
- Social norms against hurting another are more compelling than norms to help another.
- Political actors more readily cooperate in the distribution of gains than in the distribution of losses.

²¹ As is often the case, not every political scientist is aware of or necessarily shares Habermas' view. E.g., Levy (2002: 273) comments on the irony that "experimental economists have increasingly begun to question the descriptive validity of expected utility theory" at the same time that rational choice theory has emerged as the most influential paradigm in political science. And Green and Shapiro (1994) provide a critique of the application of rational choice theory in political science, but they acknowledge that their efforts amount to more of a rearguard action than a frontal assault.

²² These points are from Levy (2003).

- ‘Losers’ in who outperform low expectations are better off than ‘winners’ underperform, leading political actors to try to lower expectations.

665 Finally, the growing body of literature that shows the potentially role of the ‘framing’
of decisions. ‘Framing effects’ looks at the way in which decisions may be affected
merely by the way in which a question is posed. The related phenomena of ‘preference
reversals’ and ‘context effects’ raise even more fundamental doubts about the economics
670 model of choices reflecting stable, well-defined preferences (Rabin, 1998). The
implications of the effect of different framing on decision making has significant
implications for the development of policy advice.

The Influence and Impact of Policy Analysis on Policy Making

Thus far in this series of three papers, over 46 000 words have been turned loose on
675 the subject of policy analysis, ranging from how it used to be done, to how it might be
done, to how it should be done, to what might be done with it. And the preceding review
has not painted too sunny a picture of what impact all of the reports and memoranda
and briefings might have on their purported target – policy decisions made by
politicians. If the preceding has shown that the human mind, its institutions,
680 organisations and structures can conjure up numerous ways to ignore, challenge,
dismiss, circumvent or otherwise nullify the blood, sweat, tears and toil of countless
well-meaning scientists and policy analysts, what reasonable response can the field
have?

One response is to conclude that the act of doing policy analysis – when one is aware
685 of its likely fate – a futile and irrational act, condemning the policy analyst to
occasionally lament: “I have measured out my life with coffee spoons”²³ Perhaps we
should all just declare it a day, roll the steel shutters down on the policy analysis

²³ Eliot, T.S. 1917. *Prufrock and Other Observations*. London: The Egoist. (Hypothesis for future investigation: the “policy analyst’s poet” can be delineated along nationalistic lines: Shakespeare and Wilde (in the U.K.), Frost and e.e. cummings (in the U.S.), and Eliot and Whitman (in Canada). Australians, of course, don’t read poetry.)

enterprise and leave the elites or public or technologies or markets or whoever-else-is-in-charge to sort it out for themselves?

690 Perhaps, as Kirp (1992) does, we can blame policy makers and the public for bringing about ‘the end of policy analysis’. We might long for the golden age of rational policy analysis, seek to drive out “the postmodern sensibility in the domain of policy” (p.694) and attempt to re-establish substance, reason, and informed analysis to the domain of reasoned political discourse. Or we can rail against the manifest obtuseness
695 and irresponsibility of politicians for failing to act upon clear conclusions reached by an international panel of scientists, as one of Canada’s leading climate scientists did recently (Weaver, 2001).

If the problem does not rest with the receivers, then perhaps we should blame the production end of policy analysis (if there is low demand for a product, it does not help
700 to blame the consumer). That the traditional policy approach fails to have an impact could be a function of the reliance of policy analysis on a positivist framework and a disengagement from political discourse – what Shulock (1999: 239) calls “an over reliance on a positivist framework and an antidemocratic tendency.” This path leads us back to the post-positivist framework presented in paper #1 in this series.

705 In this section, I review the contributions to the middle ground, a compromise between the instincts of flight or fight. This is not a vast literature; for policy analysts to question the role and usefulness of policy analysis in decision making is perhaps too self-conscious a question for policy analysts to ask – something that would appear either narcissistic, or reticent, or risk revealing their doubts to others when it might not have
710 occurred to anyone that there wasn’t a clear reason for doing policy analysis. This self-consciousness has limited the range and depth of inquiry in this area. However, the following review surveys the literature on this question in order to sketch an impression of how policy analysis interacts with the real world of decision making.

Shulock (1999) writes from a post-positivist policy analysis perspective in seeking to
715 make sense of the ‘paradox of policy analysis’: that societies invest significant resources in policy analysis despite a lack of evidence that policy analysis makes a commensurate contribution to the solving of policy problems and contrary to “common wisdom,

political science theory, and years of empirical research [which] suggest that analysis is not used by policymakers to make better policy” (p. 226).

720 The background assembled for this study provides a useful sketch of the literature. Shulock cites numerous references that reveal that policy makers do not use policy analysis in their consideration and design of policies. The empirical research on how policy analysis is used within legislatures is also presented: this literature shows that legislators use policy analysis more for its ‘strategic and conceptual’ value rather than
725 for ‘substantive and concrete’ purposes; that ‘insider information’ is more useful than ‘outside expertise’; that while policy makers allocate significant resources to policy analysis support, the use of it falls below most expectations²⁴; policy analysis is handicapped because competing jurisdictions fragment and the attention given to policy issues; the questions policy analysis are prepared to answer (e.g., cost-benefit analysis)
730 are not the questions policy makers are interested in; written analysis does not appeal to the preferred communication mode of politicians; and policy analysis must compete with many other sources of information competing for the attention of the policy maker, even suffering a competitive disadvantage the more salient an issue is to the public. The theoretical literature that describes the processes of decision making in legislatures also
735 questions the value of policy analysis: ‘distributive theory’ holds that legislators are not rewarded for the probable outcomes of policies but for the positions they take on current controversies; in this competitive environment, the effect of a policy on social welfare is less important than knowing the positions and of other legislators.²⁵ Finally, the literature on the policy process offers little solace: with problems and solutions
740 following different time paths, the coincidence of solutions and problems is largely a

²⁴ E.g., Starling (1979) reported on 204 interviews with policy makers, indicated their generally positive attitude towards policy analysis but a simultaneous inability to identify many instances where they used such analysis in reaching a decision.

²⁵ In Rich and Oh (2000), the authors examine whether rational actor theories – specifically the assumptions inherent in the theory that concern information acquisition and processing in individual decisionmaking – offer an appropriate theoretical framework for explaining the use of information in decision making. The authors find that decision makers do not conform to the assumptions put forward by the rational actor theorists, citing instead ‘organizational interest’ and communications perspectives as more promising explanations.

matter of luck. And decision maker's central beliefs are unaffected by policy information with external forces (e.g., inflation and elections) prevailing over analysis.

745 Kingdon (1995) does offer a glimmer of hope that Shulock (1999) builds upon: the impact of policy analysis on policy outcomes is possible, but only over the long term. She also draws in the literature on decision making under conditions of uncertainty²⁶, the social aspects of politics²⁷, and the importance of information for mobilising political interests²⁸ to propose an 'interpretive perspective' on how policy analysis is used:

- (a) as language for framing political discourse,
- 750 (b) as legitimate rationalization for legislative action where prospective rationality is inhibited by "garbage can" decision environments, and
- (c) as a symbol of legitimate decision processes that can increase support for governance processes in a society that values rationality. (Shulock, 1999: 229)

755 This view does not require substantial changes to the policy process, rather that policy analysts, decision makers and observers of the process acknowledge that policy analysis already serves an important and useful function in the process. The measure of an analyst's success should not be whether a decision maker accepts a specific recommendation; rather, contributing the analyst's perspective to an environment of informed deliberation is the un-measurable objective.

760 The literature in policy analysis has revealed two *kinds* of use: instrumental and enlightenment. While instrumental use is the common expectation, especially from a positivist / rationalist perspective, it is the less common form of use. Weiss (1979) represents the origins of the observation that the use of analysis in decision making is a complex process, requiring an understanding of the social, political and organisational setting in which the policy research is undertaken and deployed. Weiss (1998: 323)
765 argued that one function of policy analysis is 'enlightenment', defined as "the long term

²⁶ E.g., Cohen, March, and Olsen (1972); Dryzek (1993), Kingdon (1984), March and Olsen (1976, 1989).

²⁷ E.g., Dryzek (1990); Hill (1992); Stone (1997).

²⁸ E.g., Stone (1997).

incorporation of evaluation results into professional knowledge, public opinion and taken for granted common sense.” Her characterisation of policy analysis as having an ‘enlightenment function’ has fundamentally rescued the usefulness of policy analysis out of the instrumental dead-end. Rather than use policy analysis as a tool to reach a
770 solution, policy analysis serves to orient them towards a problem, to formulate problem definitions and to set the agenda for future action. Often, a decision maker will not be aware of the origin of their idea (leading the policy analyst to experience some satisfaction when they hear their previously dismissed idea being quoted back to them in the future).

775 Barker and Peters (1992) examines the transmission of scientific advice to decision makers in several western European political environments. A number case studies reveal that the post-modern impulse requires greater public openness in the revealing the relationship between scientific evidence and policy making – i.e., political actors are required to make clear the evidence behind their decisions. Peters and Barker (1993)
780 follows this up with a cross-country comparative assessment of how governments use policy advice to legitimate preferred solutions. The recent British controversy surrounding the possible political manipulation of the government’s dossier outlining the case for going to war in Iraq would appear to bear these conclusions out.

785 Finally, I address here (albeit superficially) the important and complex subject variously referred to as ‘the science-into-policy’, ‘information-into-decision-making’ or ‘knowledge-into-action’ problem. The study of global climate change and the international and national response to the science compiled by the Intergovernmental Panel on Climate Change (IPCC) has provided very fertile ground for inquiry into this question.

790 The perception that science can “speak truth to power” and “power” will hear (or listen) has been found to be lacking (Jasanoff, 1990). Decision makers do not process scientific advice as automatons, instead operating from a position of *strategic* or *politically motivated rationality*. Jasanoff and Wynne (1998) discuss *inter alia* how scientists attempt to persuade others of the credibility of their findings, and how
795 decision makers across jurisdictions use scientific knowledge to arrive at consensus decisions in international forums. They criticise the reductionist framework of science-

policy interaction, arguing that scientific findings do not lead simply to rational choices. Instead, “extra-scientific factors” determine which findings are used and which are discarded.

800 Boehmer-Chistiansen’s two-part 1994 article in *Global Environmental Change* clearly framed the problem in the context of the IPCC / FCCC setting. The incompatibility between the inherent uncertainty of knowing the future of the world’s climate and the needs of policymakers for greater certainty are fundamental characteristics of the science and politics of climate change.

805 Lastly, Gifford (2002) describes the psychological reasons for the slow infiltration of scientific discoveries into wider acceptance and the reasons why decision making does not automatically mirror policy advice. Acceptance is slow due to the effect of uncertainty (when those discoveries are subject to uncertainty and ambiguity, acceptance is further delayed), influence of doubters on credibility, and the unconscious
810 social memory of previous mistaken discoveries. The assumption that policy makers should automatically translate science into policy fails to recognise that policy makers are usually not scientists, but rather non-expert public representatives. If a political leader accepts a scientific conclusion, thus endorsing the conclusion as fact, the politician takes a great risks if the discovery turns out to be false.

815

Conclusions

Under the transmission model sketched in paper #2 in this series, communication is a process in which meanings are transported from sender to receiver. Having surveyed the means by which decision makers process information received, and arrived at a
820 conclusion that the limitations of capacity pose challenges for the effective communication of policy messages from analyst to decision maker, it would appear that – having already addressed the issue of the transportation mechanism in paper #2 - we are faced with a choice between two options: fix the receiver (by which I mean, train decision makers to make better decisions, perhaps to reduce their use of heuristics and
825 irrationality), or change the message (i.e., adapt the policy advice approach to

acknowledge and capitalise on the understanding that decision makers exhibit biases, use heuristics and make ‘irrational’ decisions).²⁹

830 While politicians will likely resist being seen as “a problem in need of fixing”, can decision makers learn to be better? In the first instance, it is unlikely that a political leader will agree that it is appropriate that they be enrolled in decision theory seminars as a condition of their position. While the ‘freshman seminars’ for new members of congress and parliament enjoy some popularity, their success is partly based on a fundamental respect for the capacity of the newly elected decision maker. Even if elected leaders were required to learn decision making principles, and could be required to
835 apply them to decisions, there is no guarantee that this would eliminate decision errors: “many people who *do* learn general principles do not apply those principles in particular situations. Kahneman and Tversky (1982a, p. 495) call such errors *errors of applications*.” (Rabin, 1996: 37; emphasis in the original).

840 With the receiver off limits, we are then left to focus on the composition of the message, one that acknowledges and strategically responds to the understanding that

²⁹ These two options cover the ‘communication to decision makers’ implications of the preceding review. But as noted previously, ‘decision makers’ does not only apply to political leaders. Everyone is a decision maker at some level, and everyone is subject to the decision making forces described above. So at the policy analysis stage, analysts should acknowledge and internalise the ways in which individual decision makers will respond non-rationally to policies. A related approach is ‘benign paternalism’ (Benjamin and Laibson, 2003) or ‘libertarian paternalism’ (Thaler and Sunstein, 2003), which argues for policies which guide people towards decisions which are in their best interests but does not coerce or unreasonably limit their options.

Gifford (2001) argues that effective policymaking involves understanding the myriad complexities in human thinking and behaviour. The rational paradigm in policy analysis assumed that individual actors responded rationally, but the foregoing has shown this is unlikely. In the face of such non-rational behaviour, what can be done?

Acknowledge that significant change will only occur slowly (e.g., non-smoking policies; impaired driving policies).

Recognise and adapt to the likely behavioural responses to policy interventions.

Recognise that social outcomes are the summation of individual actions, while policies are generally crafted around reaching objectives framed in the global sense. Aiming policies at individual behaviour can be more complex, but potentially more effective.

Acknowledge how individuals rationalise behaviour that is inconsistent with their beliefs, and how we often fail to identify our own contributions when railing against the behaviour of others.

the receiver is not a rational automaton, but a human decision maker operating within a social, political, organisation and personal environment. Crafting policy analysis the decision maker and their environment has a higher likelihood of achieving the persuasive objective of policy advice.

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