Thinking about thinking in policy decisions: the need for new approaches

Sara McPhee-Knowles, PhD candidate, Johnson-Shoyama Graduate School of Public Policy, University of Saskatchewan
Abstract

Policy decisions related to the economy, health, and policy reform all involve complicated decisions – changes in elements of these systems can trigger cascading, unintended outcomes that may affect Canadians for years to come. These complex issues generally fit into the framework of unstructured problems, where problem boundaries are fuzzy and there is limited consensus on values, norms, and knowledge. Unstructured problems require a framing process in order for individual decision-makers to pare them down into manageable pieces. Doing so, however, tends to push decision-makers into positions of win or loss, which influences the way they will respond. These underlying problem frames are seldom consciously considered or discussed. As the decisions facing government increase in scope and complexity, there is a need to explicitly address problem structuring in our decision making systems. This paper will introduce some of the theory behind problem structuring and apply it to the case of organ donation in Canada.
A number of policy subjects are an almost daily feature in the news: issues such as economic reform, endemic poverty, and health spending never seem to stay ‘fixed.’ Why? These, and many other pressing issues facing the Canadian government, are interconnected and complex. Most of these problems that never seem to be permanently out of the news and off of the political agenda are very difficult to structure, meaning the development of appropriate, long-term solutions is difficult. These ‘wicked problems’ require structuring in order for individual decision-makers to successfully grapple with them.

Complex problems require structuring in order for policy makers to make decisions, and structuring can affect the way that information is interpreted. This is where framing comes in. A move to considering frames and structuring is an important transition for policymakers, for whom the dominant assumption involves the rational actor model. In this model, individuals are presumed to have stable, well-defined preferences and can rationally weigh the best course of action. When problems are well-structured, they have clearly defined boundaries, rules, and norms, so the rational actor framework works well for predicting people’s behaviour. However, when dealing with wicked problems, we need to move past the rational actor model, bring subconscious framing processes to light, and incorporate realistic assumptions in order to make more accountable policy choices. Decision-makers need to understand the theory behind problem structuring and framing and apply this knowledge to create sound public policy.

Horst Rittel and Melvin Webber first described what they termed “wicked problems”, using “the term 'wicked’ in a meaning akin to that of ‘malignant’ (in contrast to ‘benign’) or ‘vicious’ (like a circle) or ‘tricky’ (like a leprechaun) or ‘aggressive’ (like a lion, in contrast to the docility of a lamb).”¹ They state that policy problems are inherently wicked ones; these problems can only be defined through one’s idea for solving them, as they have unclear boundaries and are defined in terms of good or bad, rather than true or false.² As such, these problems are never truly solved, in the sense of thoroughly handling all aspects of the problem from all perspectives, but are instead structured by paring down the problem into something more manageable and by defining boundaries.

Robert Hoppe, in his 2010 book The Governance of Problems, expands on Rittel and Webber’s work. Hoppe describes a useful typology for analyzing problems: problems can be structured, semi-structured, or unstructured. This typology is fundamentally normative; problems are defined as the discrepancy between what is and what ought to be. However, ‘what is’ and ‘what ought to be’ vary considerably among interest groups, politicians, and policymakers.³ In this model, structured problems are those where decision-makers perceive consensus on norms and values, as well as the validity of the knowledge base that defines the current state of the issue.

---

² Ibid., 162.
Most issues that can be fully addressed through technical and administrative knowledge are structured problems; one example is building and paving roads.\(^4\)

Unstructured problems exist when the majority recognizes the status quo as a problem, but there is a lack of confidence with respect to knowledge and a lack of consensus over values and norms. These problems are interdependent clusters of problems that are difficult to break down into easily-solved parts. For example, issues brought on by research and innovation, such as preventive screening through genomics technology, fall into this category.

Finally, there are two categories of moderately structured problems, where there is either consensus on norms and values (ends) but little consensus on the knowledge required for solving the problem, or where there is certainty on the types of knowledge required (means) but little agreement on norms and values.\(^5\) Obesity is one example of a moderately structured (ends) problem – there is a general consensus that reducing obesity rates is an appropriate goal; however, there is uncertainty surrounding the best way to resolve the issue.

Hoppe refers to the process of structuring problems as ‘domesticating’\(^6\) them; making them less unruly and easier to handle. This process inevitably means that certain aspects of the problem are left out of the decision-making process, leading to wicked problems only being settled, not solved. This means that, eventually, certain interest groups or individuals will want to re-open pieces of the settled problem, leading to problems that are constantly discussed but never seem to go away. This course of structuring, or domesticating, is further complicated by a number of cognitive processes that limit our abilities to reason through and see all sides of complicated issues.

There are a number of underlying concepts in behavioural and cognitive theories with important underpinnings for decision-making and policy. One is the different types of cognitive systems underlying reasoning, referred to as thinking fast and thinking slow,\(^7\) or more formally, as System 1 and System 2 thinking.\(^8\) System 1 is a set of subsystems that is considered to be a universal form of cognition, shared between humans and animals, which is largely innate and instinctive. This system is responsible for fast, automatic responses. System 2, on the other hand, is what sets humans apart from animals. System 2 thinking is slower, more reasoned, and more conscious than System 1 thinking. While System 1 thinking produces lightning-fast automatic responses, System 2 thinking can produce abstract thinking informed by past experiences and hypothetical mental models.


\(^{6}\) Ibid., 9.

\(^{7}\) Daniel Kahneman, Thinking Fast and Slow (Canada: Doubleday, 2011).


\(^{9}\) Kahneman, Thinking Fast and Slow.
When faced with new problems that we have never seen before, we cannot turn to experience to inform our decisions, and must instead think hypothetically. This ability to think hypothetically is crucial when dealing with complex policy decisions, as many of these situations fall into this category; dealing with climate change is one such example. Although the distinction between System 1 and System 2 thinking may seem obvious, in the rational actor model it is assumed that System 1 thinking can always be over-ruled by the more rational, reasoned System 2. But there is ample evidence that automatic responses often determine our choices.

The second concept is framing. As Daniel Kahneman and Amos Tversky explain, “risky choices, such as whether or not to take an umbrella and whether or not to go to war, are made without advance knowledge of their consequences.”10 We all make choices involving some element of uncertainty in our everyday lives, as do policymakers. In the case of policy, the social element of risky choice is amplified, since choices that may result in unexpected, poor outcomes can affect many people. Framing effects result in individuals changing their preferences from risk aversion in the domain of gains to risk seeking in the domain of losses. For example, individuals in a win framing prefer a sure bet over a gamble, even if the mathematical expectation of the gamble is higher; the reverse is true for those in a loss framing.

Framing has interesting implications for public policy, as the way that information is presented will influence the response of decision-makers. Kahneman and Tversky, in a well-known experiment, outlined a hypothetical scenario whereby the USA was preparing for an epidemic expected to kill 600 people. Two programs were proposed: if the first were adopted, 200 people would be saved, and if the second were adopted, there would be a 1/3 probability that 600 people would be saved and a 2/3 probability 600 people would die. Presented as such, decision-makers responded in a risk-averse manner – the majority of the respondents preferred the first option. However, when the way the information was presented was changed, the responses changed. When it was explained that if the first program were adopted 400 people would die, and if the second program were adopted there would be a 1/3 probability that no one would die and a 2/3 probability that 600 people would die, the respondents preferred the second scenario: they gambled on saving everyone.11 This simple experiment highlights the significant differences in outcomes that can result from flipping the way information is presented. In their work, Kahneman and Tversky found that risk aversion and risk seeking were present in decisions with grave outcomes, as well as when consequences were relatively mild.

A third concept, related to framing effects, is status quo bias. William Samuelson and Richard Zeckhauser have found that decision-makers exhibit a preference for the status quo, particularly when faced with many alternatives.12 This bias has important consequences for policy: if

---

11 Ibid., 342.
decision-makers are pulled toward sticking with the current policy, particularly when changing course could incite losses, it seems feasible that a less than optimal policy could be sustained over long periods of time. Additionally, status quo bias helps to explain the influence of defaults, which will be discussed below.

How can these lessons about human behaviour be taken out of the lab and applied to Canada’s policy challenges? To illustrate the applicability of these theories to the Canadian context, this paper will use a case study describing organ donation and health care costs. Organ transplantation has garnered more attention recently, as the media took note of 21-year-old Hélène Campbell’s fight with pulmonary fibrosis, successful dual lung transplant and advocacy for organ donation in the summer of 2012.\(^{13}\)

Specifically, the case of organ donation in Canada is an example of a moderately structured (ends) problem. The need for more cadaveric organ donors is widely recognized and public support for the issue is high; however, many who have expressed support have not signed donor cards, and calls for action have not made a significant difference. Is this an issue of not communicating well with the public, or something else?

The interplay between health policy and disease rates is complex. Increases in obesity rates and an aging population have led to a dramatic increase in the incidence of kidney failure; most of those on the transplant waiting list are awaiting a kidney.\(^{14}\) At present, approximately 38,000 Canadians are living with kidney failure, an increase of 27,000 from twenty years ago. The number of people on the waiting list for a kidney transplant has doubled, but the number of transplants performed each year has not risen to match demand.\(^{15}\) Should the incidence of kidney disease continue to accelerate, organ donation and dialysis costs will be a considerable policy concern in the near future.

The sustainability of health care spending is a looming crisis – currently, the provinces spend approximately 40% of their budgets on health care.\(^{16}\) An increase in kidney donations would present significant cost savings: dialysis costs about $60,000 per year per patient, whereas a transplant costs $23,000 plus an additional $6,000 per year for anti-rejection drugs.\(^{17}\) The Canadian Institute for Health Information estimates that the cost savings for each patient who receives a transplant instead of dialysis at $250,000 over five years. The high cost of dialysis is

---


\(^{15}\) Ibid.


accompanied by lowered quality of life for patients, who are typically required to be in hospital three times a week for four hours to receive treatment.

Canada has one of the lowest rates of organ donation – approximately 14.5 per one million population. Polling data show that approximately 90% of Canadians support the idea of organ donation. However, only 40% have actually signed donor cards. These figures stand in stark contrast to many European nations, which have similar levels of support for organ donation, but also have much higher percentages of potential donors; for example, Austria, France, Hungary, Poland, and Portugal all have consent rates above 99%. These figures are a puzzle for policy-makers – why are Canadians much less likely than their European counterparts to sign donor cards?

The answer to that question is deceptively simple: it comes down to default settings in policy. As Eric Johnson and Daniel Goldstein explain, the majority of policy choices have a “no-action default, that is, a condition is imposed when an individual fails to make a decision.” In Canada, the no-action default is that no one is an organ donor without signing a donor card. The European countries mentioned above operate under presumed consent, where people are organ donors unless they explicitly opt out. The authors remark that defaults may be interpreted as suggestions from policy-makers that imply a recommended action. Also, decisions to move from the default may involve costs, such as time, effort, or money (for example, mailing letters and filling out forms). A notable example took place in the Netherlands in 1998 in an attempt to increase the number of opt-ins. The government undertook an exhaustive public relations and education campaign to try to increase consent rates for organ donation, including sending 12 million letters in a country of 15.8 million. Despite the government’s heroic efforts, the consent rate remained effectively unchanged. This example illustrates the strong pull of the status quo as represented by defaults, where changes involving a trade-off may incite loss aversion due to framing effects. Johnson and Goldstein’s research shows that changing defaults, in the case of organ donation, has a significant effect on cadaveric donation rates. In short, as the authors note, defaults can save lives.

In the context of cadaveric donation rates, default settings are particularly important; decisions that individuals perceive as occurring in the future are treated differently than those occurring in the present. For example, I may plan to set up a retirement savings plan or start a diet on January 1st of next year, but by the time that date rolls around, I would prefer to postpone any unpleasant constraints on my spending or eating habits. This phenomenon is known to economists as

---

20 Ibid., 1338.
21 Ibid., 1339.
hyperbolic discounting, and it affects many areas of our lives where future self-control and commitment is needed. Given that most of us perceive our death as occurring in the distant future, hyperbolic discounting means that default settings for cadaveric organ donation rates are especially important. In contrast, Alvin Roth’s Nobel Prize winning work on pairwise matching of live kidney donors and compatible transplant recipients, which has dramatically increased kidney transplants in New England, uses a completely different decision system, since these live donors are making a present-day decision and will not be affected by hyperbolic discounting.

It is worth mentioning that two types of errors arise out of defaults: if the default is to opt in, willing donors may not be identified, and if the default is to opt out, some may become donors against their wishes. These errors raise important ethical questions. Kerry Bowman and Shawn Richard raise the issue of cultural diversity and organ donation in Canada; some cultures find the concept of organ donation abhorrent, and a movement toward presumed consent could be traumatic to surviving family members who were unaware of the policy. Furthermore, the authors note that a presumed consent policy could be vulnerable to challenge, given the protection of diversity under the Charter of Rights and Freedoms. It is important to balance these questions with the potential for increased quality of life for transplant recipients and reduced health care costs. Aging baby boomers and increasing obesity rates are trends that are unlikely to reverse any time soon. Given these challenges for organ donation policy, this paper recommends that provincial governments move to a presumed consent model for organ donation, but they should do so carefully, and conduct further research into issues surrounding cultural differences and organ donation. Combining presumed consent with Roth’s pairwise matching of live donors could prove to be especially effective for raising donation rates.

One issue not yet addressed is that of paternalism. By changing the structure of problems to change decision outcomes, are governments overstepping their bounds? Richard Thaler and Cass Sunstein argue for what they call libertarian paternalism, where policies are designed to preserve freedom of choice by not removing any options, but to structure choices in such a way that choosers will be better off, as they judge for themselves – to ‘nudge’ them predictably towards better choices through framing.

---

26 Ibid., 275.
that people make their own decisions. If the idea of nudging is taken beyond bringing out tacit consent, as in the case of organ donation where polls have indicated a high level of public support, to manufacturing consent, there may be negative implications for state legitimacy. In the case of presumed consent for organ donation, careful consideration of these ethical questions is necessary.

This paper has discussed problem structuring and behavioural theories in relation to public policy, specifically commenting on their application to organ donation rates. The ethical, legal, financial and social ramifications and consequences of policy decisions are far-reaching and not always entirely predictable, but understanding cognitive and behavioural theories such as System 1 and System 2 thinking, framing, status quo bias, and hyperbolic discounting can improve our ability to make policy decisions. Using these theories to understand our subconscious framing and problem structuring processes could help avoid unintended consequences and poor outcomes. In the case of organ donation, a simple change in the default setting could dramatically affect many lives. Organ donation is just one of many examples where thinking about thinking in policy systems can enable governments to better handle Canada’s current, and future, policy challenges.
References:


