Wicked problems and public policy

June 2013

Fact Sheet

For up-to-date knowledge relating to healthy public policy

What are wicked problems?

The term *wicked problem* is increasingly used in policy and public health circles and there is often some confusion about what it really refers to: are wicked problems the same as complex problems? How are they different from regular or "tame" problems? This fact sheet is designed to present the definitional characteristics of wicked problems as well as discuss how they may be addressed.

Wicked problems are a variety of particularly complex, persistent and resistant problems in public policy. Although the term has been used in a variety of ways and in distinct areas, the origins of the concept are almost always traced back to a 1973 publication by Horst Rittel and Marvin Webber in their work on urban planning and design. Rittel and Webber argue that the sorts of problems encountered in policy and planning are qualitatively different from those of 'science' and must be treated as such.

The foundation of their argument is that wicked problems have no definitive formulation and therefore cannot be treated like the classic problems of engineering or mathematics, for example (Rittel & Webber, 1973, p. 160). In other words, the approach often referred to as the scientific (or evidence-based) method (define the problem – gather data – analyze data – propose and implement solution) is not the best way to approach them, and is likely to fail.

In the very first step of most evidence-based approaches, for example, the problem must be defined. But, as Rittel and Webber show, a wicked problem is not defined until a solution has been proposed (Rittel & Webber, 1973; Conklin, 2006) thus making most linear scientific approaches inappropriate for these types of problems.

Wicked, complex and tame problems

Wicked problems are generally distinguished from "tame" and complex ones. With tame problems, the definition is fairly clear and agreed upon and the point at which they are solved is clear (but not necessarily simple to achieve). Solutions and policies can be readily applied to tame problems because they can often be solved in the same way that similar problems have been solved elsewhere. For example, building a bridge across a river is a tame problem (Christensen, 2009). Even if it is the widest river in the world, the task is clear and determining if the solution is a success is straightforward.

Nancy Roberts identifies a third kind of problem (or Type 2 in her terms): complex problems. Complex problems are ones where stakeholders agree on the nature of the problem, but not on solutions (Roberts, 2000). In contrast, wicked problems lack agreement on both a definition and a solution, while tame ones find agreement on both. These distinctions are important: many authors claim that attempting to "tame" wicked problems by, for example, locking down a definition, inevitably fails (Roberts, 2000; Conklin, 2006).

Table 1: Views held by stakeholders on tame, complex and wicked problems

	Tame	Complex	Wicked
Nature of problem	Agree	Agree	Disagree
Best solution	Agree	Disagree	Disagree

Source: (Roberts, 2000)

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Defining wicked problems

While there are differences between the various authors who have treated the concept of wicked problems, most agree on a few fundamental definitional criteria such as:

1. **Wicked problems cannot be defined until a solution has been proposed.**
   How the problem is defined is derived in part from what actions are proposed to solve it. For example, choosing to install metal detectors in schools to prevent violence defines the problem as the presence of metal weapons. On the other hand, the decision to embark on an awareness campaign about bullying defines the problem as one of lack of knowledge to be solved through education. In policy problems, this is often further exacerbated by the fact that different stakeholders may have vastly different ways of defining the problem.

2. **There is no precise stopping point for when a wicked problem is solved.**
   Even very complex problems have final solutions (the problem of how to allow human beings to land on the moon was enormously difficult, but was solved the moment they did so in 1969). With wicked problems, there is no such exact stopping point. In fact, the attempts to resolve them usually end when resources have been exhausted.

3. **There are no 'right' or 'wrong' solutions, only better or worse ones.**
   Unlike the classic problems encountered by science, wicked problems have no objectively correct solution which can always be applied. They are always partial and may often reflect the viewpoints of those attempting to solve them. There is one, or a few, right way(s) to fix a leaky water pipe; there is no such clarity in solving wicked problems.

4. **Each wicked problem is unique and specific to its context.**
   It is almost always a mistake to assume that solutions applied elsewhere to a wicked problem can be imported into another setting. They are embedded in the settings in which they occur. Context is always crucial.

5. **Each attempt to resolve a wicked problem is unique and may affect an infinite set of related problems.**
   Because they are confounded with technical and especially social complexity, wicked problems are most often intertwined with other problems and attempts to solve them will inevitably affect those as well. Each solution tried can and usually will have a series of unforeseen consequences on other related problems. Deciding if and where to put a new overpass in a city for example, cannot be based on trial and error. Each attempt will have consequences on the people and places around the new and old sites.

6. **Wicked problems are essentially unstable and resistant to policy solutions insofar as interventions involve multiple stakeholders.**
   One of the biggest challenges with wicked problems is the need to involve many actors, sometimes with wildly different viewpoints on the nature of both the solutions and the problem. Any fruitful attempt to tackle a wicked problem will of necessity be multisectoral (Rittel & Webber, 1973; Roberts, 2000; Blackman et al., 2006; Conklin, 2006; APSC, 2007; Horn & Weber, 2007).

Resolving wicked problems

In order to be successfully resolved, different types of problems must be approached differently. Grint (2010) argues that different forms of authority are most effectively used to resolve different types of problems. He identifies three types: authoritative, rational/management and leadership for collaboration. Critical problems, such as a natural disaster or population health crisis require the use of commanding or authoritative power where the answer is provided and applied. Most tame problems can be resolved using a management approach with a calculated, rational response whereby a known problem is identified, different solutions are considered and analyzed and one is chosen and applied. Wicked problems, he argues, require leadership where the role of leaders is to ask questions and collaborate with others on finding the best ways to approach the problem.

Virtually all of those who have discussed wicked problems agree that they can only be resolved through collaboration. This collaboration needs to be

not only between government sectors and with local populations, but often requires integrating different, sometimes competing, viewpoints and epistemologies. Browne et al. (2010) refer to the approach as a transdisciplinary one. Here, the focus is on "the collective understanding of an issue; it is created by including the personal, the local and the strategic, as well as specialized contributions to knowledge" (Browne et al., 2010, p. 4). A key to resolving wicked problems, according to most authors, is being able to come to a shared understanding (between sectors, between groups and between individuals) of what the problem is and how it is to be approached. One of the techniques developed for dealing with the challenges this engenders is Dialogue Mapping (Conklin, 2006). Dialogue Mapping seeks to bring groups of people tasked with a specific program to a shared understanding of how they will approach it and make decisions based on capturing and displaying their discussion. The goal with Dialogue Mapping is not necessarily to reach a consensus on what action is to be taken, but to reach a common understanding of the problem in order to make reasoned decisions on what to do about the problem. This is best done with dialogue (rather than debate or discussion for example).[1]

Health inequalities[2] as a wicked problem

Health inequalities clearly meet the definitional criteria of wicked problems. Indeed, we can see the discord in this area by the variety of terms used to describe the phenomenon (health disparities, inequalities, inequities). Health inequalities are clearly very multi-faceted in terms of both their causes as well as potential solutions to them. We should heed all of the cautions about taming wicked problems and about an over-reliance on experimentally proven means when we consider policies for reducing health inequalities. By now, most agree that differences in health status along the lines of race, gender, educational attainment and ultimately, income, are the result of forces far beyond individual choices and behaviours. Yet many public health programs and policies continue to be centred on changing behaviours, or simply making "better" choices available. Those looking at health inequalities as wicked problems (Blackman et al., 2006; Robert, 2008; Potvin, 2009) agree that collaboration and intersectoral approaches are the most promising in reducing them. Rather than attempting to tame a wicked problem like health inequalities, accepting the inherent wickedness and its implications may well be a first step towards resolution.

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1 For more on the distinction between debate, discussion and dialogue, see Morrison, 2012 at: http://www.ncchpp.ca/docs/FrederictonPlaceHealth_WickedProblems_En.pdf (slide 20 includes a chart adapted from Kachwaha 2000).

2 Health inequalities are described by the Public Health Agency of Canada as, "differences in health status experienced by various individuals or groups in society. These can be the result of genetic and biological factors, choices made or by chance, but often they are because of unequal access to key factors that influence health like income, education, employment and social supports" (Government of Canada, 2008, p. 5).

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