Wicked problems revisited

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I revisit Rittel and Weber's essay on the 'wicked problem,' and relate it to more recent theories about rationality and professionalism. Perhaps the most provocative challenge comes from Deleuze and Guattari's difficult commentary on 'the rhizome,' which has currency within much design studio culture. I posit the controversial conclusion that 'wickedness' is not aberrant. It is formulations of professionalism which pay homage to the idea of formal rules, goal setting, and calculation as representing the norm of rationality, that present as deviations.

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Design tasks are commonly regarded as wicked or ill-structured, characterizations that pervade design research and practice (Kunz and Rittel, 1970; Rittel and Weber, 1973; Buchanan, 1995). The intractable nature of design is so accepted into the canon of design thinking that it is easy to lose sight of the radical edge of the original proposition, at least as presented by Rittel and Weber. Here I wish to revisit the concept of the wicked problem, positioning it within the context of contemporary phenomenological and postructuralist design thinking.

1 Wickedness defined

It seems as though some problems are tame, such as factoring a quadratic equation, traversing a maze, and solving the tower of Hanoi puzzle. The latter consists of three rods mounted on a board onto which are stacked coloured disks of various sizes. The goal is to move the disks from one rod to another to achieve a pyramidal stack in the shortest number of moves. The problem is well defined, with a single goal and a set of well-defined rules: disks must be relocated on a rod one at a time, and a disk cannot be placed above a disk that is smaller (Newell and Simon, 1972). But problems of importance, such as

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designing a building or deciding on a transportation policy, are invariably 'wicked.' They are only loosely formulated. There is no 'stopping rule.' Wicked problems persist, and are subject to redefinition and resolution in different ways over time. Wicked problems are not objectively given but their formulation already depends on the viewpoint of those presenting them. There is no ultimate test of the validity of a solution to a wicked problem. The testing of solutions takes place in some practical context, and the solutions are not easily undone.

Rittel and Weber's (1973) article was an appropriate antidote to Herbert Simon's *The Sciences of the Artificial*, which appeared about four years earlier. Simon had followed the path of Bertalanffy (1969) and others in proposing a 'science of design, a body of intellectually tough, analytic, partly formalizable, partly empirical, teachable doctrine about the design process' (Simon, 1969, p. 58), with empirical science, mathematics, logic and algorithmic methods as the models (Meadows et al., 1972). Rittel and Webber joined a chorus of dissenters from such attempted rationalisation and argued persuasively, and in terms understandable to the systematisers, that the design process, and any other professional task, is only very poorly explained in terms of goal setting, constraints, rules and state-space search. The skill of the professional is better expressed in the actual framing of the problem to be addressed. Problems of any professional interest (wicked problems, such as deciding a public health policy) are already 'solved,' and the hard professional graft is already committed by the time the problem is identified, conjectured, and defined. Problem setting is a contingent, fraught, and sometimes consensual process for which there is no authoritative set of rules, criteria, or methods.

Simon subsequently advanced his own account of the problem of wicked problems, suggesting that some problems are after all ill-defined (Simon, 1973). Further arguments against a rigid systems view were advanced by Donald Schon (1963) and Polanyi (1967) at around the same time. In all, the focus was on the role of the professional and a looming crisis in the credibility of the professions. Where does the authority of the experts reside if not in their participation in rationality, best exemplified by a scientific approach to their discipline? There were similar machinations in science, well represented by Thomas Khun's (1962) *The Structure of Scientific Revolutions* (Kuhn, 1970) and Peter Winch's (1958) *The Idea of a Social Science* (Winch, 1988). Not only was the right of the professions to a foothold in science under question, but the authority of science itself. All disciplines, including those of the hard sciences, depend on modes of practice, tools, techniques, communities,