



## The Rise of ‘Wicked Problems’—Uncertainty, Complexity and Divergence

**Abstract** Rittel and Webber argued that scientific and technocratic approaches for tackling the difficult issues of social policy and urban planning were bound to be inadequate. A ‘scientific’ approach to understanding the nature of these problems necessarily overlooks the significance of different stakeholder perspectives in the framing or constituting of social problems. Recognising these differences is thus crucial for developing acceptable solutions to the policy challenges. Science and engineering approaches produce reliable knowledge but are appropriate only for technical issues where the key variables are measurable, and optimal solutions can be agreed. These are the ‘tame’ or ‘benign’ problems, with clear boundaries and agreed solutions. By contrast, modern social problems are ‘wicked’ problems, because stakeholders disagree about the nature of these problems, about possible solutions, and about the values or principles that should guide improvements. Hence, policies addressing social problems can never be optimal in the engineering sense, but robust policies could incorporate insights from stakeholder engagement. With the growing popularity of ‘wicked’ terminology, recent scholarly analysts have worried it has become a catchword rather than a critical concept. They have also wished to reconsider the stark contrast between ‘tame’ and ‘wicked’ problems, calling for refinement of the ‘either/or’ dichotomy. And other writers have raised epistemological issues about the respective contributions of scientific, political and stakeholder knowledge for understanding and resolving difficult issues.

**Keywords** Policy controversies · Tame problems · Wicked problems · Scientific methods · Rational problem-solving · Stakeholder engagement

## INTRODUCTION

Horst Rittel and Mel Webber's paper 'Dilemmas in a general theory of planning' (1973) introduced the core concept of 'wicked problems' to a wide audience of academics and practitioners. This chapter considers the development of their concept, in the context of the 1960s and 1970s literature on policy and planning. The later sections note the subsequent debates about the enduring legacy of the concepts championed by Rittel and Webber, the influence of their approach on policy analysis and policy governance, and some recent criticisms and perceived limitations of their framework. More nuanced approaches to understanding and managing intractable issues are emerging.

The concept of 'wicked problems' has now entered the mainstream lexicon of policy discussion. However it took many years to achieve such widespread attention. The term 'wicked problems' did not feature in 1973 in either the title or the key words listed in their paper. Indeed, the term itself was not closely analysed or widely cited for more than two decades. After a slow start, the term gradually became more widely known, perhaps driven by emerging concerns with complex, interconnected and contested problems such as social equity and environmental sustainability. The phrase also had to overcome a common mis-perception that 'wicked' problems must be about ethical choices and moral values, whereas in actuality they were about unruly and intractable problems:

As you will see, we are calling them 'wicked' not because these properties are themselves ethically deplorable. We use 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). We do not mean to personify these properties of social systems by implying malicious intent. (Rittel & Webber, 1973, p. 160)

Thirty years later the article was gradually being cited at an accelerating pace, achieving over 100 annual citations (Scopus metrics) for the first

time in 2008; and this growth pattern has continued with well over 500 annual citations in recent years. It became the most highly cited paper in *Policy Sciences*, and by 2021 had achieved over 7000 citations in academic journals (Scopus) and over 17,000 citations in the broader database of Google Scholar. The terminology has attracted a wide cross-disciplinary uptake spanning a broad range of social sciences, especially in environment and sustainability, systems and design, public policy, social policy and urban planning (citations in <http://citations.springer.com/item?doi=10.1007/BF01405730&years=>). Some critics thought it had become a fashionable or faddish concept, but devoid of precise meaning. Perhaps ‘wicked’ must inevitably lose its lustre, as often occurs in the ‘hype cycle’ of optimism and disillusion identified in the literature on innovation (Fenn & Raskino, 2008)?

The origins of this 1973 paper, and its links to the academic debates of the late 1960s, have been sketched in several reflections published by the colleagues and students of Rittel and Webber. It is clear that Horst Rittel (1930–1990) was the principal architect of the ‘wicked problem’ conceptualisation (Churchman, 1967; Crowley & Head, 2017a; Protzen & Harris, 2010). A professor of design studies at the Institute of Urban and Regional Development, University of California, Berkeley, Rittel had arrived in the USA in 1963 from a career in Germany, and he maintained close affiliations with Stuttgart and other German universities. While teaching design and architecture, he also had broader interests in planning, engineering and policymaking. As a ‘design planner’ and team leader, he intuitively linked the fields of design and politics, using methods that drew attention to the politics of design and the processes of political argumentation needed to manage wicked problems (Rith & Dubberly, 2007).

Rittel first proposed the notion of wicked problems in a public seminar in 1967, describing wicked problems as ‘that class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing’ (Churchman, 1967, B-141). He presented these ideas to students and colleagues in various courses and seminar presentations, including a key paper to the Panel on Policy Sciences at the American Association for the Advancement of Sciences (AAAS) in December 1969, and again in Norway in 1971. He published an important paper in German on planning crises, design methods and wicked problems in 1972 (Rittel,

1972), soon to be followed by the classic co-authored paper in *Policy Sciences* (Rittel & Webber, 1973). Melvin M. Webber (1920–2006) was a fellow professor at the University of California, Berkeley. Mel Webber had participated in the 1967 seminar, and contributed to the 1969 AAAS conference paper. According to Skaburskis, Webber spent years trying to nudge Rittel into publishing the wicked problems paper in a US journal, leading eventually to finalising the classic article in 1973 (Skaburskis, 2008, p. 277). For a list of Rittel’s writings, see Rith et al. (2007).

Webber had independently concluded that rationality was a comforting myth of scholars and practitioners in the planning profession. As he wrote in two later papers:

The attractiveness of the idea of scientific planning has been hard to resist, for it has held out the promise of right answers, of revealing what we should want, and of saying what we need to do. It seduces with the prospect of certainty, and thus with the prospect of relief from the discomforts of ambiguity and of having to decide things in the face of conflicting evidence and competing wants. (Webber, 1978, p. 152)

The classical model of rational planning is fundamentally flawed. It assumes widespread consensus on goals, causal theory sufficiently developed as to permit prediction, and effective instrumental knowledge. None of these conditions pertains...[Central planning should constrain itself]... to constituting the rules for deciding and to promoting open debate. (Webber, 1983, p. 89)

In the late 1950s and early 1960s Rittel had initially joined in developing and refining the orthodox rational approach to design and planning methods utilising a rigorous, scientific, systems-based approach. However, by the late 1960s, he had shifted towards a ‘second generation’ design approach based on social networks, communication and feedback processes (Protzen & Harris, 2010; Rith & Dubberly, 2007). The turbulent US socio-political context of the early 1970s caused many commentators to reflect on the fundamental contradiction between the achievements of technological systems (where rationality, order and control had allowed NASA to put a man on the moon) and the evident social complexities and policy chaos of the USA in the face of relentless social challenges (Nelson, 1974; Wildavsky, 1973). These dilemmas and paradoxes informed the knowledge framework for wicked problems analysis.

The seminar at which Rittel proposed the notion of wicked problems was organised by systems theorist West Churchman (1967), who at that time was exploring ways to transfer any ‘lessons’ from space technology program management into the contrasting ‘world of urban problems’ (Skaburskis, 2008, p. 277). Rittel had listed ten differences between scientific and social problems in his 1967 seminar. With minor adjustments these formed the framework for the complex definition of wicked problems in ‘Dilemmas in a general theory of planning’. The *Abstract* of the 1973 article announces their core arguments:

The search for scientific bases for confronting problems of social policy is bound to fail, because of the nature of these problems. They are ‘wicked’ problems, whereas science has developed to deal with ‘tame’ problems. Policy problems cannot be definitively described. Moreover, in a pluralistic society there is nothing like the undisputable public good; there is no objective definition of equity; policies that respond to social problems cannot be meaningfully correct or false; and it makes no sense to talk about ‘optimal solutions’ to social problems unless severe qualifications are imposed first. Even worse, there are no ‘solutions’ in the sense of definitive and objective answers. (Rittel & Webber, 1973, p. 155)

Rittel and Webber became well known for developing these distinctions between significant social problems—especially ‘wicked’ problems characterised by differences in values and perspectives—and more technical problems (typified by contemporary challenges in engineering, operations research and computational science). Whereas wicked problems could only be advanced through stakeholder engagement, technical problems (‘tame’ or ‘benign’ problems) could in most cases be solved by relying on existing forms of knowledge such as the operating logics of engineering and computation. Although Rittel and Webber made contributions to a richer form of systems theory, by emphasising social complexity and social interconnections, their primary intellectual legacy rested upon their characterisation of wicked problems as confounding the rational approach to problem-solving and social improvement.

## DILEMMAS IN A GENERAL THEORY OF PLANNING

Rittel and Webber rejected the suitability of rational-systems (data analysis) approaches to policy development, arguing instead that all the professions concerned with social analysis and planning should focus on

understanding the aspirations and values of the people rather than developing expert-led comprehensive plans. A reconsideration of the fundamentals of policy and planning theory and practice had been prompted in the 1960s and 1970s by widespread sources of social dissent—especially the many protest movements that radically disrupted America and Europe. In criticising the rational planning approach, Rittel and Webber argued that:

the classical paradigm of science and engineering – the paradigm that has underlain modern professionalism – is not applicable to the problems of open societal systems..... The kinds of problems that planners deal with – societal problems – are inherently different from the problems that scientists and perhaps some classes of engineers deal with. Planning problems are inherently wicked. (Rittel & Webber, 1973, p. 160)

While rational-systems theory had been useful as an analytic approach in the 1950s and 1960s, it was clear to Rittel and Webber that analysis should be broadened to account for diverse ‘systemic networks’ that are ‘interacting, open’ and ‘interconnected’ (1973, pp. 156–159). They argued that social problems cannot be successfully addressed by following a traditional computational-engineering approach which assumes that social problems can be defined, dissected and solved as if they were ‘tame’ and ‘benign’. Wicked problems, which include ‘nearly all public policy issues’ (1973, p. 160), are indeed the opposite of being precise and manageable. They are ‘ill-defined’ and ‘malignant’. They cannot be definitively ‘solved’. Instead, they are dependent on ‘elusive political judgment for resolution...over and over again’ (1973, p. 160). Furthermore, social upheavals reflect the politicisation of numerous ‘subpublics’ that pursue ‘a diversity of goals’ inspired by different ‘valuative bases’, thereby representing a shift away from a unitary conception of the ‘American way of life’ towards ‘numerous ways of life that are also American’ (1973, pp. 156, 167–168).

They summed up the distinctive features of wicked problems in ten propositions (see Box).

**Wicked Problems Defined**

Proposition 1. There is no definitive formulation of a wicked problem.

Proposition 2. Wicked problems have no stopping rule.

Proposition 3. Solutions to wicked problems are not true-or-false, but good-or-bad.

Proposition 4. There is no immediate and no ultimate test of a solution to a wicked problem.

Proposition 5. Every solution to a wicked problem is a 'one-shot operation'; because there is no opportunity to learn by trial-and-error, every attempt counts significantly.

Proposition 6. Wicked problems do not have an enumerable (or exhaustively desirable) set of potential solutions, nor is there a well-described set of permissible operations that may be incorporated into the plan.

Proposition 7. Every wicked problem is essentially unique.

Proposition 8. Every wicked problem can be considered to be a symptom of another problem.

Proposition 9. The existence of a discrepancy representing a wicked problem can be explained in numerous ways. The choice of explanation determines the nature of the problem's resolution.

Proposition 10. The planner has no right to be wrong.

(Rittel & Webber, 1973, pp. 161–167).

This framework has much to say about the deficiencies of the orthodox 'scientific' approach of previous generations and has less to say about alternative methods for addressing wicked problems. They identified the 'dilemmas' and paradoxes of scientific social planning but they had few recommendations about alternative ways to manage and reconcile social complexities and political diversity. It is clear, however, that the fundamental principle is to recognise plural perspectives and to work with this pluralism rather than suppress it. Pluralism is seen as an inherent feature of modern societies, and as a positive feature to be celebrated (Webber, 1978, 1983; Rittel & Webber, 1973) rather than an inconvenience to be suppressed through technocracy and scientific decision-making.

In rejecting 'rational' expert planning, they emphasised the need to support processes 'fostering...multiplicities of potential outcomes compatible with the wants of plural publics' (Webber, 1983, p. 89). Fischer adds that since the 1960s the technocratic version of social planning and policy analysis, which sought to imitate the physical sciences, had become more oriented to 'the principles of prediction and control

of behavior rather than the values of human dignity, critical reflection, and democratic participation' (Fischer, 1990, p. 345). Schön argued that the distinction between means and ends is fundamental for understanding these different orientations. Decision-making is quite different when values and objectives are in dispute. Schön noted that 'technical rationality' assumes there is agreement on clear goals and ends. In that case, decision-making can treat the problem as an 'instrumental' choice about methods or means to achieve the agreed ends.

But when ends are confusing or conflicting, there is as yet no 'problem' to solve. A conflict of ends cannot be resolved by the use of techniques derived from applied research. (Schön, 1983, p. 41)

As understood by the students and colleagues of Rittel and Webber, the process of 'argumentation' they advocated came to be seen as the main method for managing wicked problems (Rith & Dubberly, 2007, p. 73). Having rejected the more technocratic versions of planning and policymaking, the alternative was stakeholder engagement and dialogue. In short, policy argumentation, through inclusive and trustworthy processes of democratic debate and stakeholder dialogue, seemed the most appropriate way to overcome unproductive dissension and to improve policy outcomes. Webber (1983) argued that 'decentralised' decision-making that is 'pluralistic and responsive' is more likely to produce 'acceptable outcomes' and to permit adaptations to change (Webber, 1983, p. 99). This approach was consistent with the frameworks developed through the 1980s and 1990s by the advocates of participatory policymaking and planning, civic engagement and conflict resolution (e.g. Forester, 1993; Fischer, 1993; Schön & Rein, 1994; Innes, 1995; Healey, 1997, part 3; Conklin, 2006; Innes & Booher, 2010). In recent years, with the development of more sophisticated artificial intelligence systems, planning practitioners have begun experimenting with techniques which can combine participatory discussion of scenarios with digital learning system techniques, thus integrating the benefits of stakeholder inclusion and information science (Geertman & Stilwell, 2020).

## THE DIFFUSION OF THE CONCEPT

Recent research on policy framing and agenda-setting has confirmed there is a wide spectrum of policy challenges. At one end, some relatively straightforward issues can be defined and understood with reasonable clarity, and can be resolved with a reasonable level of agreement. Much of

the literature of the late 1960s and early 1970s took computational logic as a yardstick for judging whether problems were well-specified (Simon, 1973). Under those criteria, some problems were seen as ‘ill-structured’. Rittel and Webber, and many other authors, rejected this simple logic-based and rule-based approach to problem structuring in order to focus on the human dimension of entangled and ambiguous problems.

The proposition that some policy problems can be seen as relatively straightforward (‘tame’), while others can be seen as inherently intractable (‘wicked’), proved to be very attractive. Many authors concerned to tackle tough problems developed similar conceptions, but often used such synonyms as ‘unstructured’ or ‘contested’ or ‘unruly’ or ‘fuzzy’ problems. Many took up the challenge of analysing problems whose features and connections were ‘messy’ or ‘turbulent’ (Ackoff, 1974; Ansell et al., 2016; Horn & Weber, 2007; Mason & Mitroff, 1981; Ney, 2009; Roe, 2013). Gradually, the language of ‘wicked’ problems accelerated markedly, as shown by the massive increase in citations of Rittel and Webber’s paper. Fischer (1993), one of the first analysts to apply the wicked problem concept, arguing that ‘wicked’ or ‘intractable’ problems ‘seem only to respond to increased doses of participation’ (p. 172). Fischer aligned wicked problems with ‘recalcitrant’, ‘undisciplined’, ‘uncontrollable’ and ‘unmanageable’ problems (p. 175), and he suggested that collaborative inquiry involving both citizens and experts could hold the key to resolving contemporary policy problems.

There is now a lively scholarly debate about whether the wide diffusion of the concept of wicked problems has made it compelling and persuasive, across a broad sweep of disciplines—economic, social, health and environment. The alternative view, discussed in a later section of this chapter, is that the uncritical usage and generalisation of the concept has undermined its analytical value (Peters, 2017), and that more precise conceptual distinctions are needed. Indeed, wicked problems have been identified and described across a vast range of disciplines and policy domains (business, cybernetics, ecology, agriculture, urban design, energy, transportation, health, socio-economic sciences and political-administrative sciences). In the field of management studies, and business strategy in particular, a vast literature continues to explore how business leaders develop strategies for successfully navigating risk and uncertainty (Cunha & Cunha, 2006; Power, 2007; Raynor, 2007; Stacey, 1992). Here, the language of wicked problems has provided a way for leaders to

make sense of rapid changes, disruptive conditions and divergent perspectives, by reflecting on adaptive management scenarios, supported by good information and strong networks:

Wicked problems often crop up when organizations have to face constant change or unprecedented challenges. They occur in a social context; the greater the disagreement among stakeholders, the more wicked the problem. In fact, it is the social complexity of wicked problems as much as their technical difficulties that make them tough to manage. (Camillus, 2008, p. 100)

By the 2000s, the ‘wicked’ context of contemporary social problems was becoming widely acknowledged and appreciated. Constructivist interpretations on problem framing and policy strategies had become well established in the literature (e.g. Hajer & Wagenaar, 2003), paving the way for a new wave of reflective analysis that remains increasingly important today. The debate has intensified between those favouring scientific quantification and those anchored in more contextualist analysis that takes seriously the frames and narratives of stakeholders. As one of the leading critics of scientism has suggested, it is important to develop ‘a social science which effectively deals with public deliberation and praxis, rather than being stranded with a social science that vainly attempts to emulate natural science’ (Flyvbjerg, 2001, p. 129).

## LINKING PROBLEM TYPES AND POLICY RESPONSES

How do the important differences in types of problems impact on the design challenge for developing more effective policy and governance arrangements? Scholars in the policy sciences have developed several typologies for analysing the different dynamics of various policy challenges. Most of these typologies distinguish between various policy actors, their power and resources, specific policy issues within broader policy fields, the choice of relevant policy instruments, different venues for deliberation, and so forth.

Some of this literature has emerged from a practitioner-oriented setting, rather than a technical-experts inquiry process. For example, analysis of problem situations and developing action responses is a common focus of multi-stakeholder workshops facilitated by management consultants; similarly, management education courses on strategic

problem-solving often examine case studies and scenarios which challenge practitioners to analyse the underlying issues and design appropriate responses. Two of the best known approaches were developed independently in the Harvard Kennedy School by Ronald Heifetz (1994) and by Mark Moore (1995).

Heifetz proposed that three types of problem situations need to be distinguished. (1) In situations when the nature of the problem and the nature of the solution are both agreed by relevant actors, the work of policy implementation and oversight can be left with the professional managers and relevant holders of expert knowledge. (2) In situations when the nature of the problem is widely agreed but there is uncertainty about the appropriate solution, a wider circle of stakeholders and experts need to be involved to identify effective practical actions and provisional solutions, while allowing for further revision and adaptation as collective learning increases over time. (3) Where both the nature of the problem and the appropriate policy response are uncertain, there needs to be a highly adaptive ongoing approach to clarifying uncertainties, with strong reliance on feedback and continuous discussion among stakeholders and knowledge experts to improve outcomes (Heifetz, 1994, chap. 4). On the other hand, Mark Moore developed executive education courses which encouraged public managers to consider more open and creative processes for developing policy improvement options. Such options should be developed in conjunction with stakeholders and political leaders. The capacity to create 'public value' through such developmental exercises depended on three considerations. Firstly, public managers and leaders should ensure that policy proposals are seen as 'valuable' (that is, solving a problem effectively and efficiently in the public interest). Secondly, the reform proposals need to be seen as authorised by relevant authorities and consistent with public governance standards. Thirdly, the proposals should be feasible and practicable—that is, within the implementation capacities and resources of public agencies and their partners (Moore, 1995).

When such distinctions are applied to complex and controversial problems and policy responses, these approaches can be summarised as in Table 2.1 which maps three levels of stakeholder complexity against three types of problem complexity.

Thus, rather than persist with the 10-point frame in Rittel and Webber (1973), the more recent literature reviewing wicked problems analysis suggests some broad themes for analysing the distinctive features of

**Table 2.1** Typology of problems

	<i>Actors willing to cooperate or avoid conflict</i>	<i>Multiple actors each with relevant useful knowledge</i>	<i>Multiple actors with conflicting values and interests</i>
<b>Both problem and solution known</b>	Tame problem	Communicatively complex problem	Politically complex problem
<b>Problem known, solution not known</b>	Analytically complex problem	Complex problem	Wicked problem
<b>Neither problem nor solution known</b>	Cognitively complex problem	Wicked problem	Very wicked problem

*Source* adapted from Head and Alford (2008, p. 10); for a more detailed account see Alford and Head (2017, pp. 405–406)

‘wickedness’ or intractability, including levels of agreement about the nature of the problem and about relevant knowledge for improvement. For example, Head (2008) defined wicked problems as those issues featuring high levels of complexity, uncertainty and divergence. This acknowledges that multiple stakeholders are engaged with these issues with varied institutional roles, knowledge levels, expectations, personal interests, values and ideologies, resulting in conflicts and contradictions in preferred solutions. To the extent that robust solutions emerge from their debates, these solutions are likely to be only ‘good enough’, not comprehensive and enduring. Long-term monitoring and evaluation are needed to assess their impacts and improve effectiveness; while poor choices and underperformance can only exacerbate the problem (Head, 2008; see also APSC, 2007; Head & Alford, 2015; Danken et al., 2016; Lönngren & van Poeck, 2021).

Social, economic and political factors are all important in explaining why complex and contested problems are poorly formulated or misaligned. In conceptualising wicked problems as the convergence of uncertainty, complexity and value divergence, Head suggests that failures to adequately respond to wicked problems may be due to several factors, such as:

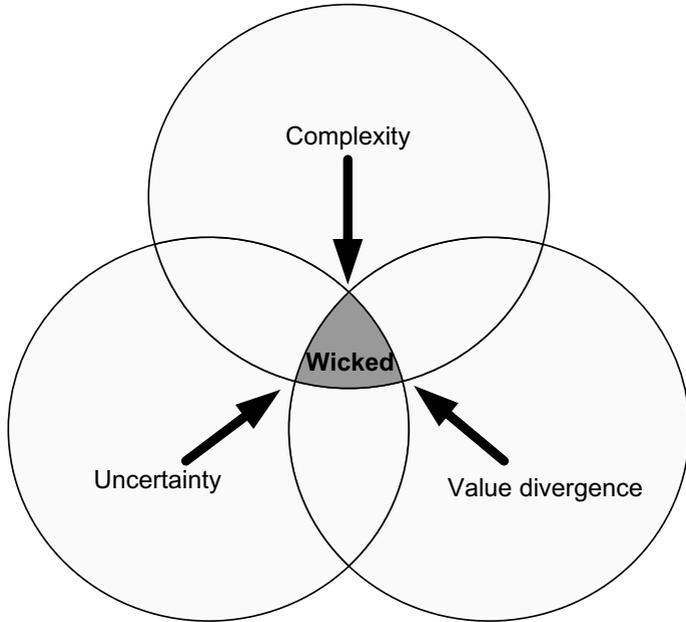
- the ‘problems’ are poorly identified and scoped
- the problems themselves may be constantly changing

- solutions may be addressing the symptoms instead of the underlying causes
- people may disagree so strongly that many solution-options are unworkable
- the knowledge base required for effective implementation may be weak, fragmented or contested
- some solutions may depend on achieving major shifts in attitudes and behaviours; however, such shifts may be too difficult owing to lack of incentives or points of leverage (Head, 2008, p. 106).

### ARGUMENTS FOR A SLIDING SCALE—DEGREES OF INTRACTABILITY

An important debate centres on whether the original distinction between tame and wicked problems is analytically robust. The dichotomy between tame and wicked can become exaggerated and misleading. Critics have commented that the tame/wicked conception has set up a binary choice that is dichotomous. An alternative argument, in contrast to the binary choice of wicked *or* tame problems, is that the wicked characteristics (complexity, uncertainty and value divergence) can be more-or-less intensive, and that in combination these three characteristics can produce extremely turbulent, intractable and unmanageable policy challenges. In principle, issues can be mapped in terms of low-medium–high levels of complexity, uncertainty and divergence (Head, 2008, p.103; see also Alford & Head, 2017; Newman & Head, 2017a) (and see Fig. 2.1 below).

Instead of the sharp contrast implied by the tame/wicked distinction, there is a case for making the wicked problems framework more nuanced and useful. It is more realistic to propose ‘a continuum upon which all problems can be based, scientific and design alike’ (Farrell & Hooker, 2013, p. 701). Taking this approach, problem analysis could be based on ‘degrees’ of wickedness, or ‘tendencies’ towards wickedness (Daviter, 2017; Head, 2008). Alford and Head (2017, p. 407) proposed a ‘contingency’ approach which recognises that complex problems vary in the extent of their ‘wickedness’. The key dimensions include the cognitive complexity of the problem (the incomplete and contested knowledge base) and the diversity or perhaps irreconcilability of the values and



**Fig. 2.1** Complexity uncertainty and value divergence dimensions (*Source* Head, 2008, p. 104; 2010b, p. 22)

perspectives of key stakeholders and institutional agencies. This contingency approach is arguably consistent with Rittel and Webber’s notion that each problem is unique—owing to the different problem situations or configurations that can emerge across time and place. This approach is also consistent with a focus on analysing how leaders and stakeholders may develop more congruent understandings of a policy problem and consider pathways for improvement. Newman and Head (2017, p. 416) argue in similar fashion that variations in stakeholder perceptions and in their capacity for cooperation give rise to different dynamics in how issues are handled. Therefore the ‘tendencies’ towards wicked intractability are shaped by actors’ behaviour in specific situations as well as shaped by their underlying interests. Standardised solutions cannot deal with the underlying complexities and differences. To the extent that specific types of complexity and diversity can be identified and appreciated, it becomes

more feasible to apply specific forms of intervention (or non-intervention) to different parts of the problem.

Hoppe and colleagues, however, argue that introducing a sliding scale does not ‘save’ the concept, and does not remedy the fundamental defect in the concept itself. Hoppe urges scholars to abandon the concept of wicked problems, arguing that the political behaviour of actors is the key variable affecting intractability rather than intractability being a feature of the problem itself. Well-structured problems reflect a higher level of consensus about values and information (Hisschemöller & Hoppe, 1995, p. 44). Drawing on the public policy literature, Hoppe (2010) distinguishes between ‘unstructured’ problems (which are low on knowledge certainty and low on alignment of values and norms) and ‘structured’ problems where there is higher knowledge certainty and higher agreement on norms and values (Hoppe, 2010, pp. 72–77). Tackling policy problems is likely to be much more straightforward in the second instance, and the political process should be about shifting problems towards more structured or manageable forms. Hoppe suggests that the core focus for managing difficult or intractable problems should be on the politics of inclusion and the methods for overcoming partisan distance or gridlock. Policies can be improved through democratic debate leading to iterative and partial solutions (albeit not comprehensive and enduring solutions). Turnbull and Hoppe argue that practitioners can seek to mediate differences and address the policy puzzles through a series of discussions to explore various ‘sub-questions’ that lead to partial ‘answers’ (Turnbull & Hoppe, 2019, p. 315). The key question then becomes whether stakeholder engagement processes are effective in fostering improved levels of mutual learning and better integration of competing representations of the problem (Hoppe, 2010, p. 27).

In conclusion, it would be widely agreed that identifying suitable policy processes to address ‘wicked’ problems has become the most important challenge for public governance in the modern era. Rittel and Webber criticised the tendency for policy and planning professionals to reframe policy problems as ‘tame’ and manageable—as in a game of chess where goals and rules are well-defined, and where solutions can be achieved through applying established knowledge and deductive reasoning. Rittel and Webber accepted that data, logic and expertise were useful and essential, but these were seen as insufficient for understanding wicked problems that are contested by stakeholders. They argued that improvements could only be achieved through participatory engagement processes which recognised the multiple values co-existing in a pluralist society.

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