

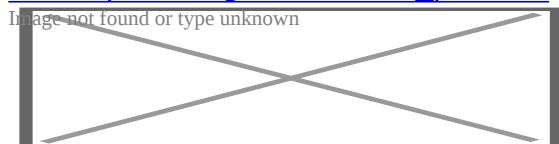
Wicked problems: The “halting problem” in the social domain

Description

<http://cognitive-liberty.online/wp-content/uploads/Labyrinth-8989.mp4>

In planning and policy, a wicked problem is a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize. It refers to an idea or problem that cannot be fixed, where there is no single solution to the problem; and “wicked” denotes resistance to resolution, rather than evil. Another definition is “a problem whose social complexity means that it has no determinable stopping point”. Moreover, because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other problems. Due to their complexity, wicked problems are often characterized by organized irresponsibility.

en.wikipedia.org/wiki/Wicked_problem



Lönngren, J., & van Poeck, K.. (2021). Wicked problems: a mapping review of the literature. International Journal of Sustainable Development and World Ecology

Plain numerical DOI: 10.1080/13504509.2020.1859415

[DOI URL](#)

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“The term ‘wicked problems’ is today widely used in the sustainability literature, but there is no consensus on its theoretical underpinnings or its utility for research. this paper reports on a mapping review of the wicked problems literature for which we analyzed a sample of 55 papers regarding 1. whether and how the term ‘wicked problems’ is used as a theoretical concept, 2. what meanings are associated with the concept, 3. what epistemological assumptions are stated, and 4. what rhetorical functions the concept performs. the results indicate that the concept is not always consistently applied as a theoretical concept; that authors ascribe many different meanings to the concept; that authors use diverse epistemological assumptions that are not always made explicit; and that the concept performs a wide range of rhetorical functions. the results provide a vocabulary that enables sustainability researchers to more clearly position their work in the dispersed wicked problems literature.”

Grewatsch, S., Kennedy, S., & Bansal, P.. (2021). Tackling wicked problems in strategic management with systems thinking. Strategic Organization

Plain numerical DOI: 10.1177/14761270211038635

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"Strategy scholars are increasingly attempting to tackle complex global social and environmental issues (i.e. wicked problems); yet, many strategy scholars approach these wicked problems in the same way they approach business problems—by building causal models that seek to optimize some form of organizational success. strategy scholars seek to reduce complexity, focusing on the significant variables that explain the salient outcomes. this approach to wicked problems, ironically, divorces firms from the very social-ecological context that makes the problem 'wicked.' in this essay, we argue that strategy research into wicked problems can benefit from systems thinking, which deviates radically from the reductionist approach to analysis taken by many strategy scholars. we review some of the basic tenets of systems thinking and describe their differences from reductionist thinking. furthermore, we ask strategy scholars to widen their theoretical lens by (1) investigating co-evolutionary dynamics rather than focusing primarily on static models, (2) advancing processual insights rather than favoring causal identification, and (3) recognizing tipping points and transformative change rather than assuming linear monotonic changes."

Alford, J., & Head, B. W.. (2017). Wicked and less wicked problems: A typology and a contingency framework. Policy and Society

Plain numerical DOI: 10.1080/14494035.2017.1361634

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"This paper addresses shortcomings in the scholarship about 'wicked problems', and suggests ways of tackling them. firstly, accounts of these problems tend to 'totalise', regarding them as intractable masses of complexity, so conflict-prone and/or intractable that they defy definition and solution. by contrast, we put forward a more nuanced analysis, arguing that complex problems vary in the extent of their wickedness, via such dimensions as their cognitive complexity or the diversity and irreconcilability of the actors or institutions involved. we propose a typology of different forms of wicked problems. a second shortcoming, linked to intractability, is that the favoured means of tackling wicked problems has tended towards 'one best way' approaches, most commonly collaboration with key stakeholders. moreover, particular forms of collaboration tend to be routinely applied in 'one-size-fits-all' fashion to a variety of situations – notably with a plethora of actors, and a focus on governance rather than implementation management. we put forward a contingency framework, based on our typology, proposing which types of collaboration are suitable for which types of problem. finally, we argue for a more realistic standard of success in dealing with wicked problems, especially the most difficult ones. to call for the 'solving' of these problems is to set up a standard which is not only impossible but also perhaps unnecessary. we argue that we do not so much 'solve' wicked problems as make progress towards improvement or towards better managing them. we spell out a more realistic version of 'progress'."

Schiefloe, P. M.. (2021). The Corona crisis: a wicked problem. Scandinavian Journal of Public Health

Plain numerical DOI: 10.1177/1403494820970767

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"The aim of this paper is to analyse the current corona crisis from the perspective of the theory of wicked problems. the analysis is based on a combination of observation of national and global effects of the pandemic and a study of relevant theoretical contributions. the findings confirm that the crisis is of a kind that corresponds to the main characteristics of the wicked problems theory. the conclusion is that the pandemic cannot be approached by standardised analytical techniques, because it, like other wicked problems, represents a unique challenge and because all possible solutions may lead to unknown negative consequences."

Termeer, C. J. A. M., Dewulf, A., & Biesbroek, R.. (2019). A critical assessment of the wicked problem concept: relevance and usefulness for policy science and practice. Policy and Society

Plain numerical DOI: 10.1080/14494035.2019.1617971

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"The concept of wicked problems has served as an inspiration for research in a variety of research fields but has also contributed to conceptual confusion through the various ways in which it has been defined and used. in this special issue, a number of ontological, theoretical and methodological issues are discussed. first, while its use as a buzzword has undermined precise conceptual definition, recent work goes beyond the wicked versus tame dichotomy and conceptualizes wickedness as a matter of degree, differentiates between dimensions of wickedness and emphasizes the relational character of problem definitions. second, new and existing governance approaches have often been unproblematically proposed as ways to solve wicked problems, while only imperfect solutions, partial solutions or small wins are achievable in practice. third, the concept of wicked problems has had little direct impact on policy theories, and while some argue that the analysis of wicked problems should be mainstreamed in public policy thinking, others propose to reject the concept and rely on existing policy theories. fourth, as a concept used in policy practice, wicked problems tend to provoke either paralysis or an overestimation of what policy can do about wicked problems. possible ways forward include (1) leaving the concept behind; (2) using the wicked problems literature as knowledge base to understand when and why policy and governance approaches fail; and (3) developing dimensions of wicked problems (i.e. conflict, complexity and uncertainty) into more analytically precise research tools and linking them with more closely with contemporary policy science developments."

Hoffman, J., Pelzer, P., Albert, L., Béneker, T., Hajer, M., & Mangnus, A.. (2021). A futuring approach to teaching wicked problems. Journal of Geography in Higher Education

Plain numerical DOI: 10.1080/03098265.2020.1869923

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"This paper investigates how the teaching and learning about 'wicked' environmental problems may be fostered through an educational approach premised on futuring—the active imagination of the future. the growing academic interest in possible and desirable futures provides a promising starting point for restructuring education as coupling knowledge to imagination and teaching to policy practice can open up new, experiential ways of learning. empirically, this paper draws upon research on an experimental futuring course employing a 'mixed classroom' formula in which students and policy-makers learn together about sustainability challenges. drawing on the notion of inquiry, this course is set up with the aim to foster a critical engagement with the ways futures are imagined in political debates and decision-making. through complementary activities, the students were pushed to imagine possible futures around a central theme, the transition to a circular economy, in interaction with the policy-makers and other practitioners. this culminated in a 'museum of the future'. from our action-research-based investigation of the learning experiences in the course, we conclude that a futuring approach to teaching wicked problems results in a more active attitude of students towards the space in which wicked problems and solutions are collectively imagined and deliberated."

Walls, H. L.. (2018). Wicked problems and a "wicked" solution. Globalization and Health

Plain numerical DOI: 10.1186/s12992-018-0353-x

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"Background: 'Wicked' is the term used to describe some of the most challenging and complex issues of our time, many of which threaten human health. climate change, biodiversity loss, persisting poverty, the advancing obesity epidemic, and food insecurity are all examples of such wicked problems. however there is a strong body of evidence describing the solutions for addressing many of these problems. given that much is known about how many of these problems could be addressed – and given the risks of not acting – what will it take to create the 'tipping point' needed for effective action? main body: a recent (2015) court ruling in the hague held that the dutch government's stance on climate change was illegal, ordering them to cut greenhouse gas emissions by at least 25% within 5 years (by 2020), relative to 1990 levels. the case was filed on behalf of 886 dutch citizens, suing the government for violating human rights and climate changes treaties by failing to take adequate action to prevent the harmful impacts of climate change. this judicial ruling has the potential to provide a way forward, inspiring other civil movements and creating a template from which to address other wicked problems. conclusion: this judicial strategy to address the need to lower greenhouse gas emissions in the netherlands is not a magic bullet, and requires a particular legal and institutional setting. however it has the potential to be a game-changer – providing an example of a strategy for achieving domestic regulatory change that is likely to be replicable in some countries elsewhere, and providing an example of a particularly 'wicked' (in the positive, street-slang sense of the word) strategy to address seemingly intractable and wicked problems."

Peters, B. G., & Tarpey, M.. (2019). Are wicked problems really so wicked? Perceptions of policy problems. Policy and Society

Plain numerical DOI: 10.1080/14494035.2019.1626595

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"The concept of wicked problems has become widely used in policy analysis. the popularity of the concept has led to its overuse, and has produced significant conceptual stretching. this paper investigates the extent to which this stretching has led to the application of the concept to issues which are not 'wicked' in any meaningful sense. based on a survey of policy experts, we find that few, if any, policy problems are perceived to have all the attributes of wicked problems. although the concept does not appear useful in categorizing problems in a strict manner, the presence or absence of certain attributes can still be used in understanding the problems and in designing solutions for them." Peters, B. G.. (2017). What is so wicked about wicked problems? A conceptual analysis and a research program. Policy and Society

Plain numerical DOI: 10.1080/14494035.2017.1361633

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"The concept of wicked problems has become a fad in contemporary policy analysis, with any number of problems being labeled as 'wicked'. however, if many of these problems are analyzed using a strict definition of the concept they do not meet the criteria. building on this analysis, i have developed a research program to investigate the extent to which even those problems usually thought to be wicked are actually that difficult."

King, R.. (2021). On Europe, Immigration and Inequality: Brexit as a 'Wicked Problem'. Journal of Immigrant and Refugee Studies

Plain numerical DOI: 10.1080/15562948.2020.1821275

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"In this paper i attempt a novel interpretation of brexit as a 'wicked problem'. wicked problems are those which are unique and complex, full of internal contradictions, and defy solution, instead only creating other problems. after reviewing the lead-up to the 2016 brexit referendum, particularly the role of immigration, the core of the paper takes the main criteria for the specification of a wicked problem and applies them to brexit. special attention is given to two propositions: that every wicked problem is a symptom of other problems; and that every attempted solution to a wicked problem produces irreversible consequences. both are seen to apply to brexit. in the conclusion, i explore 'wicked synergies' between brexit and the coronavirus pandemic."

Dentoni, D., Bitzer, V., & Schouten, G.. (2018). Harnessing Wicked Problems in Multi-stakeholder Partnerships

. Journal of Business Ethics

Plain numerical DOI: 10.1007/s10551-018-3858-6

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“Despite the burgeoning literature on the governance and impact of cross-sector partnerships in the past two decades, the debate on how and when these collaborative arrangements address globally relevant problems and contribute to systemic change remains open. building upon the notion of wicked problems and the literature on governing such wicked problems, this paper defines harnessing problems in multi-stakeholder partnerships (msps) as the approach of taking into account the nature of the problem and of organizing governance processes accordingly. the paper develops an innovative analytical framework that conceptualizes msps in terms of three governance processes (deliberation, decision-making and enforcement) harnessing three key dimensions of wicked problems (knowledge uncertainty, value conflict and dynamic complexity). the roundtable on sustainable palm oil provides an illustrative case study on how this analytical framework describes and explains organizational change in partnerships from a problem-based perspective. the framework can be used to better understand and predict the complex relationships between msp governance processes, systemic change and societal problems, but also as a guiding tool in (re-)organizing governance processes to continuously re-assess the problems over time and address them accordingly.”

Niskanen, V. P., Rask, M., & Raisio, H.. (2021). Wicked Problems in Africa: A Systematic Literature Review. SAGE Open

Plain numerical DOI: 10.1177/21582440211032163

[DOI URL](#)

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“The theory of wicked problems, originating from western academic discussion, has evolved since the 2000s toward a universal diagnostic of societal challenges. in this article, we employ a systematic literature review to investigate the application of the concept of wicked problems in studies focusing on the african context. our aim is to understand the additional value and limitations of using the concept in a non-western frame of reference. we conclude that the concept remains underutilized in studies concentrating on africa; moreover, when it is used, it is mainly by academics of western or anglophone origin. overall, the concept of wicked problems is mainly applied descriptively rather than theoretically. based on the analysis of the themes and issues characterized as wicked, we elaborate toward a typology that takes account of the concrete ‘manifestations’ (e.g., health issues such as aids/hiv and its treatment history) and ‘mechanisms’ (e.g., historical path dependency) that condition the presence of wicked problems in the african context. the article contributes to the theory of wicked problems by developing a typology that distinguishes between interlinked and contextual problems (often characterized through the concept of ‘dual wickedness’), and proposes that problems can become exacerbated when the two dimensions are simultaneously present.”

Turnbull, N., & Hoppe, R.. (2019). Problematizing ‘wickedness’: a critique of the wicked problems concept, from philosophy to practice

. Policy and Society

Plain numerical DOI: 10.1080/14494035.2018.1488796

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"The concept of 'wicked problems' is a major current in the fields of policy analysis and planning. however, the basis of the concept has been insufficiently examined. this re-examination of its conceptual basis explains the origins of the limitations and flaws in the wicked problems concept. this paper analyses and rejects the notion of 'wicked problems' on philosophical and practical grounds. we argue instead that the policy sciences already had better conceptualizations of public problems before rittel and webber's flawed formulation. we return to this literature, and build upon it by reframing 'wickedness' in terms of higher and lower levels of problematicity in problem structuring efforts. in doing so, we offer an alternative, novel combination of the philosophy of questioning and the policy work approach to policy practice. 'wickedness' is re-conceptualized as problematicity, conceived as the distance between those who question or inquire into a policy problem. this is primarily a political distance, articulated in terms of ideas, interests, institutions and practices. high problematicity arises only when wide political distances are explicitly maintained, such that partial answers cannot be reached. practitioners deal with problematicity by a dual practical strategy of balancing closing-down and opening-up sub-questions to the problem in order to structure them such that they become amenable to action through partial answers. this simultaneously incorporates a politics of negotiating political distance via partisan adjustment and serial strategic analysis. the argument constitutes a theoretically and practically superior alternative to the 'wicked problems' perspective."

Head, B. W.. (2019). Forty years of wicked problems literature: forging closer links to policy studies. Policy and Society

Plain numerical DOI: 10.1080/14494035.2018.1488797

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"Rittel and webber boldly challenged the conventional assumption that 'scientific' approaches to social policy and planning provide the most reliable guidance for practitioners and researchers who are addressing complex, and contested, social problems. this provocative claim, that scientific-technical approaches would not 'work' for complex social issues, has engaged policy analysts, academic researchers and planning practitioners since the 1970s. grappling with the implications of complexity and uncertainty in policy debates, the first generation of 'wicked problem' scholars generally agreed that wicked issues require correspondingly complex and iterative approaches. this tended to quarantine complex 'wicked' problems as a special category that required special collaborative processes. most often they recommended the inclusion of multiple stakeholders in exploring the relevant issues, interests, value differences and policy responses. more than four decades later, however, there are strong arguments for developing a second-generation approach which would 'mainstream' the analysis of wicked problems in public policy. while continuing to recognize the centrality of complexity and uncertainty, and the need for creative thinking, a broader approach would

make better use of recent public policy literatures on such topics as problem framing, policy design, policy capacity and the contexts of policy implementation."

Termeer, C. J. A. M., & Dewulf, A.. (2019). A small wins framework to overcome the evaluation paradox of governing wicked problems. *Policy and Society*

Plain numerical DOI: 10.1080/14494035.2018.1497933

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"The evaluation of policy strategies to tackle wicked policy problems inevitably involves a paradox of trying to judge solutions for problems that have no solutions and for which additional efforts might increase the chances of finding better responses. this paper analyzes how the concept of small wins can contribute to evaluating progress in wicked problem areas in a way that energizes a variety of stakeholders instead of paralyzing them and embraces complexity instead of reverting to taming and overestimation. it presents a small wins evaluation framework that is rooted in the underlying policy perspective of making progress through accumulating small wins. it comprises three steps: 1) identifying and valuing small wins; 2) analyzing whether the right propelling mechanisms are activated so as to accumulate into transformative change; 3) organizing that results feed back into the policy process to activate new small wins. this framework will inevitably clash with unrealistic expectations of addressing wicked problems rapidly, radically and comprehensively."

Head, B. W., & Alford, J.. (2015). *Wicked Problems: Implications for Public Policy and Management. Administration and Society*

Plain numerical DOI: 10.1177/0095399713481601

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"The concept of 'wicked problems' has attracted increasing focus in policy research, but the implications for public organizations have received less attention. this article examines the main organizational and cognitive dimensions emerging from the research literature on wicked problems. we identify several recent approaches to addressing problem complexity and stakeholder divergence based on the literatures on systems thinking, collaboration and coordination, and the adaptive leadership roles of public leaders and managers. we raise some challenges for public management in some key functional areas of government—strategy making, organizational design, people management, and performance measurement. we argue that provisional solutions can be developed, despite the difficulties of reforming governance processes to address wicked problems more effectively."

Thollander, P., Palm, J., & Hedbrant, J.. (2019). *Energy efficiency as a wicked problem. Sustainability (Switzerland)*

Plain numerical DOI: 10.3390/su11061569

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"Together with increased shares of renewable energy supply, improved energy efficiency is the foremost means of mitigating climate change. however, the energy efficiency potential is far from being realized, which is commonly explained by the existence of various barriers to energy efficiency. initially mentioned by churchman, the term 'wicked problems' became established in the 1970s, meaning a kind of problem that has a resistance to resolution because of incomplete, contradictory, or changing requirements. in the academic literature, wicked problems have later served as a critical model in the understanding of various challenges related to society, such as for example climate change mitigation. this aim of this paper is to analyze how the perspective of wicked problems can contribute to an enhanced understanding of improved energy efficiency. the paper draws examples from the manufacturing sector. results indicate that standalone technology improvements as well as energy management and energy policy programs giving emphasis to standalone technology improvements may not represent a stronger form of a wicked problem as such. rather, it seems to be the actual decision-making process involving values among the decision makers as well as the level of needed knowledge involved in decision-making that give rise to the 'wickedness'. the analysis shows that wicked problems arise in socio-technical settings involving several components such as technology, systems, institutions, and people, which make post-normal science a needed approach."

Sediri, S., Trommetter, M., Frascaria-Lacoste, N., & Fernandez-Manjarrés, J.. (2020). Transformability as a wicked problem: A cautionary tale?. Sustainability (Switzerland)

Plain numerical DOI: 10.3390/SU12155895

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"Transformability is increasingly promoted as a way of moving societies toward more sustainable futures in the era of the anthropocene, mostly because the concept of resilience has fallen short in many instances where impacts on social-ecological systems are continuous, varied, and usually unknown. while such transformations can play a crucial role in improving the sustainability of social-ecological systems, they may lead to unexpected and undesirable outcomes. this literature review on social-ecological transformability and wicked problems seeks to shed light on and acknowledge some of the limitations of transformability regarding unforeseen conditions. we argue that wicked problems arise in transformation initiatives in the presence of high complexity, deep uncertainty, deep conflicts, and divergence among stakeholders, as well as scale mismatches concerning spatial, temporal, and institutional processes. our findings may explain why some transformation initiatives fail to generate expected changes on the ground, mainly in two cases: (a) a polarized configuration that maintains the status quo of the system to be transformed and (b) an unforeseen transformation that causes the system to lurch from crisis to crisis. to conclude, we recommend using diagnostic questions to prevent wicked problems in social-ecological transformations."

Frey-Heger, C., Gatzweiler, M. K., & Hinings, C. R.. (2021). No End In Sight: How regimes form barriers to addressing the wicked problem of displacement.

Organization Studies

Plain numerical DOI: 10.1177/01708406211044869

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“Wicked problems are complex and dispersed challenges that go beyond the capacity of individual organizations and require a response by multiple actors, often in the form of transnational regimes. while research on regimes has provided insights into such collective responses, less is known about how such regimes may form barriers that hinder and block appropriate responses to addressing wicked problems. exploring the problematic role of regime-level responses is timely given that many of today’s wicked problems are far from being alleviated and in many instances appear instead to be intensifying. we draw from complementary insights of regime theory and research on institutional barriers to explore our research question: how do regimes form barriers to addressing wicked problems, and which mechanisms sustain such barriers? we explore this question with a longitudinal case study of the transnational regime for refugee protection and its response to displacement in rwanda. from our findings, we develop a model of dissociation that explains how actors move further away from addressing a wicked problem. we identify four dissociative mechanisms (discounting, delimiting, separating, and displaying) that each create a distinct regime-level barrier. these barriers are distributed and mutually reinforcing, which makes it increasingly hard for actors to find alternative ways of responding to an escalating problem. our study provides insights for research on regimes and wicked problems as well as studies on institutional barriers. we conclude with policy implications for overcoming those barriers, in line with the wider concerns and motivations of this special issue.”

Mason, T. H. E., Pollard, C. R. J., Chimalakonda, D., Guerrero, A. M., Kerr-Smith, C., Milheiras, S. A. G., ... Bunnefeld, N.. (2018). Wicked conflict: Using wicked problem thinking for holistic management of conservation conflict. Conservation Letters

Plain numerical DOI: 10.1111/conl.12460

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“Conservation conflict is widespread, damaging, and has proved difficult to manage using conventional conservation approaches. conflicts are often ‘wicked problems,’ lacking clear solutions due to divergent values of stakeholders, and being embedded within wickedly complex environments. drawing on the concept of wicked environmental problems could lead to management strategies better suited to tackling conflict. however, it is unclear whether managers are embracing ideas from the wicked problems concept. there is currently a lack of guidance for applying strategies to tackle particular wicked problems, such as conservation conflict. we explored the suitability of wicked problems-inspired management, using eight contemporary conflict case studies. conservation conflict was managed predominantly using conventional approaches suited to tackling single objectives in simple environments, rather than balancing competing objectives in complex environments. to deal with different characteristics of wickedness, we recommend that managers develop strategies combining distributed decision-making, diverse opinions, pattern-based predictions, trade-off-based objectives,

and reporting of failures. recent advances in conservation conflict research have focused on improving interactions among stakeholders. we believe that such stakeholder-focused approaches would dovetail with the whole-system focus of a wicked problems framework, allowing conservationists to move toward a holistic strategy for managing conservation conflict."

Daviter, F.. (2017). Coping, taming or solving: alternative approaches to the governance of wicked problems. Policy Studies

Plain numerical DOI: 10.1080/01442872.2017.1384543

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"One of the truisms of policy analysis is that policy problems are rarely solved. as an ever-increasing number of policy issues are identified as an inherently ill-structured and intractable type of wicked problem, the question of what policy analysis sets out to accomplish has emerged as more central than ever. if solving wicked problems is beyond reach, research on wicked problems needs to provide a clearer understanding of the alternatives. the article identifies and explicates three distinguishable strategies of problem governance: coping, taming and solving. it shows that their intellectual premises and practical implications clearly contrast in core respects. the article argues that none of the identified strategies of problem governance is invariably more suitable for dealing with wicked problems. rather than advocate for some universally applicable approach to the governance of wicked problems, the article asks under what conditions different ways of governing wicked problems are analytically reasonable and normatively justified. it concludes that a more systematic assessment of alternative approaches of problem governance requires a reorientation of the debate away from the conception of wicked problems as a singular type toward the more focused analysis of different dimensions of problem wickedness."

Crosby, A., Dunn, J. L., Aditjondro, E., & Rachfiansyah. (2019). Tobacco Control Is a Wicked Problem: Situating Design Responses in Yogyakarta and Banjarmasin. She Ji

Plain numerical DOI: 10.1016/j.sheji.2019.09.001

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"Tobacco use is a persistent social issue worldwide. the world health organization has found that policy change and regulation are the clearest paths to resolution. in indonesia, where smoking is increasingly common, tobacco control has become a wicked problem, plagued by conflicting stakeholder interests, public mistrust of science and government, and the lack of a clear path to a nationally applicable approach. at the local level, however, social change can take many forms, and involve diverse communities, individual citizens, businesses, ngos, and multiple levels of government in dynamic stakeholder configurations. by treating tobacco in indonesia as a wicked problem, and taking an iterative, collaborative approach to resolution, we demonstrate how locally-organized, youth-focused anti-tobacco campaigns are less about finding a single solution to tobacco use and more about identifying, connecting, and supporting local stakeholders working together towards preferred futures. we argue for the inclusion of locally-focused design research programs when rethinking complex

issues such as tobacco control in places where national regulation is failing."

Smith, K. J.. (2022). Wicked Problems in Pharmacy Education. American Journal of Pharmaceutical Education

Plain numerical DOI: 10.5688/ajpe8491

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"Wicked problems are unstructured, cross-cutting, and relentless. while problem-solving is an expected outcome of pharmacy education programs, are we, as pharmacy educators, acknowledging the 'wicked' problems we have in the academy? this commentary provides examples of wicked problems in pharmacy practice and education and suggestions for engaging with wicked problems in an effort to solve them. pharmacy educators must hold a summit on wicked problems in pharmacy education in order to address the complex problems we are currently facing in order to shape the profession for the future."

Zhang, J., & Kim, Y.. (2016). Digital government and wicked problems: Solution or problem?. Information Polity

Plain numerical DOI: 10.3233/IP-160395

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"The theme of the 16th international conference on digital government research (dg.o 2015) – "digital government and wicked problems" – drew attention to the increasingly complex global problems we are facing today. in the late 1960s, the term "wicked problems" was coined to refer to societal and public planning problems that had no definitive solutions [1,2]. many problems, such as those identified in the theme of the conference – climate change, urbanization, and inequality – often exhibit the characteristics of "wickedness" in the sense that they are both difficult to define and solve. the selection of this theme for dg.o 2015 reflects the digital government research community's ambition and dedication to achieve a degree of understanding necessary to address some of the most intractable of these problems with the aid of emerging technologies. this special issue includes seven of the best papers from the dg.o 2015 conference. in this editorial, we highlight the characteristics of ' "wicked problems" briefly, and the way in which the term is relevant in digital government research. we then introduce the articles selected for this special issue. lastly, we provide suggestions to foster future research that addresses the nature of ' "wickedness" in digital government initiatives."

Jentoft, S., & Chuenpagdee, R.. (2009). Fisheries and coastal governance as a wicked problem. Marine Policy

Plain numerical DOI: 10.1016/j.marpol.2008.12.002

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"Inspired by rittel and webber [dilemmas in a general theory of planning. policy sciences 1973;4:155-69], it is argued that fisheries and coastal governance is confronted with problems that are inherently 'wicked.' problems are wicked (as opposed to 'tame') when they are difficult to define and delineate from other and bigger problems and when they are not solved once and for all but tend to reappear. wicked problems have no technical solution, it is not clear when they are solved, and they have no right or wrong solution that can be determined scientifically. instead, for wicked problems governance must rely on the collective judgment of stakeholders involved in a process that is experiential, interactive and deliberative. in this paper, the wicked problem is identified as a governability issue, recognizing that there are limitations to how rational and effective fisheries and coastal governance can possibly be. the paper offers a framework which could help us locate the wicked problems within the fisheries and coastal governance system, as well as examine their governability. © 2008 elsevier ltd. all rights reserved."

Category

1. General

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