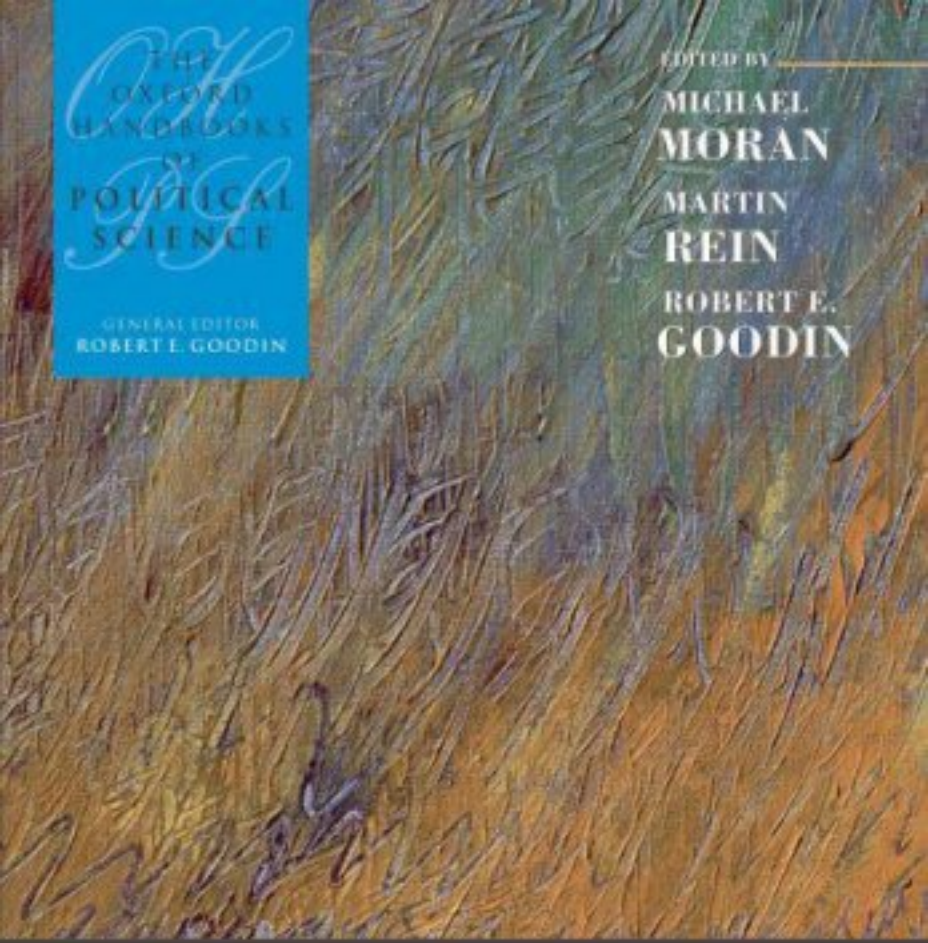

The Oxford Handbook *of* PUBLIC POLICY

PART III

MODES OF POLICY ANALYSIS

CHAPTER 5

POLICY ANALYSIS AS PUZZLE SOLVING

CHRISTOPHER WINSHIP

> Politics finds its sources not only in power but also in uncertainty men collectively wondering what to do.
>
> (Heclo 1974)

1. Introduction

In her book *The Struggle for Water: Politics, Rationality, and Identity in the American Southwest*, Wendy Espeland describes the incommensurability of both the world views and the goals of the United States Bureau of Reclamation and the Yavapai Indians. Over many years, the Bureau of Reclamation developed a plan to build the Orme Dam in Arizona. The dam, however, would flood the ancestral lands of the Yavapai Indians. Because of the considerable economic value of the dam, the Bureau of Reclamation was willing to pay almost any amount to the Yavapai to compensate them for their loss of land. The Yavapai, however, were not interested at any price. "The land is our mother. You don't sell your mother" (Espeland 1998, 183).

Conflicts over policy ends are ubiquitous. Most obviously, different groups give different priority to alternative goals. Some may see economic growth as deserving precedence, others, a clean environment. Some may prefer safer streets, others greater protection for human rights. Conflicts over ends may exist for single individuals or

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unitary actors as well (Schelling 1980). Schools may be committed to treating children equally, but recognize that equity, because there are differences in ability and familial resources, requires them to treat students differently (Jencks 1988). Hospitals, because of limited resources, may be forced to ration their services, but may lack a rationale for which individuals should be given priority (Elster 1993).

Traditional policy analysis with its focus on choosing the best means to obtain a well-specified end has little if anything to say about how to deal with conflicting ends (Thacher and Rein 2004; Richardson 2000).[1] Its unitary focus on appropriate or efficient means assumes that the policy analyst or society more generally has complete knowledge of what constitutes the social good. As the philosopher Elijah Millgram (1997) has argued, there is no reason to assume that actors, much less society, have fully worked out the comparative attractiveness of all possible alternatives. To quote Thacher and Rein (2004, 458): "When a policy actor encounters a new situation in which its goals conflict, it may find that its preferences are simply unfinished. Existing models of policy rationality have great difficulty accommodating such situations."

What policy analysis needs is a mode of analysis, an alternative to instrumental rationality, which can deal with conflicting policy ends. Policy scholars, however, have made only limited efforts in this regard. Some have attempted to deal with the problem of conflicting ends within the traditional instrumental framework examining value trade-off (Barry and Rae 1975; Bell, Keeney, and Raiffa 1977; Keeney and Raiffa 1976). In contrast, Schön and Rein (1994) examine situations where actors resolve "intractable policy controversies" by "reframing" their understanding of the policy problem. In the tradition of Habermas, Fischer and Forrester (1993), Forester (1999), Fischer (2003), and Hajer and Wagenaar (2003) argue for the importance of deliberative processes for resolving conflicts about ends. Thacher and Rein (2004) develop an empirical approach examining how policy makers in fact deal with conflicting ends. Specifically, they examine three strategies: cycling, where actors focus sequentially on different values; firewalls, where different institutions are assigned different value domains; and casuistry, where actors use specific and relevant past cases to suggest courses of action.

The goal of this chapter is to describe an alternative form of rationality that complements standard instrumental rationality. In doing so, I propose an approach to policy analysis for dealing with multiple and conflicting ends. However, rather than trying to develop an elaborate theory, I analyze the phenomena of puzzle solving—jigsaw puzzles, Scrabble, crossword puzzles, or Rubik's cubes.[2] These are all examples of puzzles that one tries to solve for fun. They have in common that the goal is to try to figure out a way to assemble a set of pieces into some type of coherent pattern. I primarily focus on the example of an individual or a group attempting to put together a jigsaw puzzle, though, as discussed below, in certain cases, other types of puzzles may have properties more consistent with the properties of particular policy problems.

[1] In negotiation theory this is thought of as the problem of deep value differences. The critical point is that interests, but not values, can be negotiated (Forester 1999).

[2] I am in debt to David Gibson for suggesting that I consider multiple types of puzzles.

I use the example of a jigsaw puzzle (and puzzles more generally) to demonstrate how conflicting ends might be dealt with. The different pieces of the puzzle represent different ends. The policy goal is to find a way to fit the pieces together forming a coherent whole. I describe this process as "puzzling."[3] The purpose of the example is twofold. First, it is to draw an analogy between a particular type of policy process and a much more familiar, easily understood, and concrete practice, putting a jigsaw puzzle together. The example, however, is both more and less than a metaphor. It is more in that I make the strong claim that the rationality involved in solving a jigsaw as well as other types of puzzles is an example of the rationality needed to deal with conflicting policy ends. It is less in that the similarity between a jigsaw puzzle and specific policy problems may be in some cases less than perfect. Other examples of puzzles (crossword puzzles, Scrabble, Rubik's cubes, etc.) can then be looked to that involve the same type of rationality. Second, I examine the different issues involved in assembling a jigsaw puzzle in order to elucidate their importance in policy analysis. That is, I analyze the specifics of putting together a jigsaw puzzle in order to help us understand the problems involved in the form of policy analysis that is of concern here.

Puzzling represents a type of rationality distinctly different from standard instrumental rationality. Although there is a specified end, with a puzzle, one may have no idea of what that end will look like. Puzzling conceptually precedes standard rationality. It is a process of determining what options, *if any*, there are.[4] Standard rationality then involves choosing among alternative options if in fact alternative options exist.

2. Puzzling about Policy Ends

What type of policy process should be pursued when ends conflict? Consider the example of a jigsaw puzzle with either a few or hundreds of pieces.[5] How does one attempt to put together such a puzzle? At the simplest level the answer is trial and error. But trial and error can work in a number of different ways. At one extreme, one

[3] As should be clear, I am not using the term "puzzling" in its usual senses, though the situations that I examine also may involve puzzling in more conventional terms. For example, the Orme Dam conflict, briefly described above, was certainly puzzling for the engineers in that they were baffled for many years about how the disparate ends of the Bureau and Yavapai Indians could be aligned. In addition, the engineers puzzled about this explicitly, in that they analyzed various options in detail. These are both examples of puzzling in a more conventional sense (*The American Heritage College Dictionary* 2002).

[4] Bardach (2000, ch. 3) and MacRae and Whittington (1997, ch. 3) discuss how policy analysis can generate options.

[5] Chase (1982) uses the metaphor of a jigsaw puzzle to suggest how multiple contests between chickens result in linear hierarchies. Bearman, Faris, and Moody's (1999) paper could also be thought of as an instance of puzzling in that there are linked events and the problem is how to see them as a coherent whole, a historical case. Grofman (2001) discusses scholarly analysis as a problem of puzzle solving.

may literally take a single piece and successively determine whether it mates with other pieces. Crossword puzzles are examples where this is often the sole strategy that is used. At the other extreme, one may guess at the overall properties of the puzzle. For example, if one assumed that the overall shape was that of a rectangle, one might pick out all of the pieces with at least one straight edge. An intermediate strategy would be to put together pieces that looked similar, for example, in either color or pattern. This might be done with or without an assumption of what those pieces would represent. For example, one might assume that the picture contained a sky and decide to sort out all blue or blue and white pieces and then attempt to fit them together. Alternatively, one might just sort all black pieces into a single pile.

A conventional puzzle that is easily put together, however, provides a poor analogy to a difficult policy issue in need of solution. But just as policy issues may be difficult to solve, puzzles can be particularly difficult to assemble, potentially for multiple reasons. What the assembled puzzle should look like may be unknown. Pieces may not fit together uniquely. This is the case with Rubik's cubes where all pieces potentially can mate with each other. Shape, color, and the observed patterns on individual pieces may or may not provide clues as to which pieces should be put together with which or they may not. A good guess about the correct organizing principles of a puzzle may be enormously helpful; a bad guess may lead one grossly astray.

There is also no reason why there might not be more than one way of assembling the puzzle; that is, there may be more than one solution to the puzzle/policy issue. The final assembled puzzle might also not be of a conventional shape—say a rectangle—or it may not even have smooth edges. In both cases Scrabble might be a better example than a jigsaw puzzle. In Scrabble there are multiple potential arrangements of letters into words, with different arrangements being of different shapes and representing different "solutions." However, that a jigsaw puzzle should have a single solution or be of a specific shape is simply conventional. If a puzzle does not have a unique solution or is not of a conventional shape, knowing when it has been completed or correctly assembled may be far from clear.[6]

Assembling a puzzle may be a particular challenge if there are missing or extraneous pieces. In the worst case, pieces from two or more puzzles may be mixed together. Here, beliefs about what pieces are in the puzzle and which are not will evolve and change over time. More generally, if pieces do not uniquely mate with each other, the puzzle may go through different stages of assemblage with different subcomponents appearing to cohere. If we fail to find a way to put the subcomponents together, we may discover that certain individual pieces that we thought matched, in fact do not. As a result, we may have to disassemble some subcomponents in order to assemble others. Similarly, we may find that pieces which appear quite different, in fact go together. As a consequence, our conception of what the puzzle will look like when it is fully assembled may change radically with time.

[6] This observation is due to a comment made on an earlier draft by Henry Richardson.

Different strategies for assembling a puzzle are also likely to work better or worse in different situations. If there are missing or extraneous pieces, attempting to fit a single piece to others may lead to a dead end if the initially chosen piece does not in fact belong to the puzzle. Attempts to match a single piece with others may also be ineffective if a single piece can mate with multiple other pieces. Here matching on color or pattern as well as shape may be critical. Alternatively, strong assumptions about what the overall structure or subcomponents of the puzzle consist of may be effective if they are correct or at least nearly so, but may be disastrous if they are wrong. Ideally, in the end, we should succeed in putting all the pieces together. Of course, if the puzzle is difficult, this may not be the case. Alternatively, if the final shape of the puzzle is complex we may not be certain about whether it is fully assembled. As such, a claim that the puzzle is complete may be provisional.

To stretch our example but make it more useful, individuals also may be differentially committed to having specific pieces in the puzzles, convinced that they belong or, as in a game of Scrabble, they may "possess" different pieces. As a result, there may be conflict about which pieces do in fact belong and, if individuals are inflexibly committed having to a piece in the puzzle that in fact does not belong, it may never be possible fully to assemble the puzzle. Thus, at any particular time, our puzzle will only be partially assembled and, in fact, it may never be fully assembled.

3. Searching for Coherence: An Alternative

Why is the example of assembling a difficult puzzle potentially useful? In his work on deliberating about final ends, the philosopher Henry Richardson has argued for a type of rationality that differs from and complements the standard model of instrumental rationality found in means–ends policy analysis. What I argue is that the model of assembling a puzzle, what I have termed "puzzling," represents a concrete, but general and generic model of just such a type of rationality. Although it is true that there is an end that is being pursued—to have an assembled puzzle—what the assembled puzzle will look like may be totally unknown. As such, there is no way to know what strategy, i.e. what means, represents the best approach to finding a solution.

The key idea in Henry Richardson's rich and insightful book, *Practical Reasoning about Final Ends* is coherence as an end. By coherence, he means the achievement of a situation in which multiple and potentially conflicting ends are in fact compatible.[7]

[7] Richardson's analysis of coherence has important connections to coherence theories of truth (Davidson 1984, 1986, 2001; Hurley 1989). Space limitations prevent me from analyzing these connections.

Richardson argues that when we have multiple conflicting ends that are incommensurable, the solution is not to choose among them and/or impose some metric that makes them commensurable, but rather to find a way that all the ends can be realized simultaneously. To quote Richardson, "Pursuing practical coherence among one's various commitments ... is the best way to discover what we ought to do" (Richardson 1997, 28). In colloquial terms, the goal is to find a way "for us to have our cake and eat it too."[8]

Richardson suggests that coherence may not be an ultimate end, but may be an intermediate end that is pursued for the sake of other ends. There may be specific ends that we are committed to and the search for coherence involves finding a way to pursue those ends simultaneously. Richardson argues that coherence is critical for two reasons. First, it is essential for effective action; that is, to create a workable situation. If a proposed solution meets everyone's end, we will not need to choose among competing ends, and action will be possible. Richardson states that coherence is also important in that it allows for consistency in one's actions. For example, if an academic department can successively hire individuals who are both strong teachers and strong scholars, it can avoid being seen as oscillating between the different values of research and teaching as it makes appointments.

A key component of Richardson's argument is Dewey's theory of holism. Richardson describes this as the recognition of and a commitment to a strategy that seeks coherence through analysis and evaluation at multiple levels. In seeking to make different ends compatible, one approach is to work on a dyadic level, trying to resolve the conflicts between pairs of ends. Alternatively, one may consider the problem more holistically, seeking an overall structure that will allow all or most of the ends to be simultaneously achievable. Finally, one may consider subgroups of ends, and seek ways to make them compatible. Having then worked at one level, one may then evaluate one's progress by examining the degree of coherence at another. For example, if one has been working by trying to mate a single piece to others, one may evaluate the success of one's efforts by examining the overall coherence of one's efforts. Richardson talks about this as bi-directionality or in Rawls's words "working from both ends" (Richardson 1997, 141).

Richardson discusses both the problem of a single individual deliberating about final ends and the more difficult problem of groups of individuals deliberating about shared final ends. It is the latter situation that is of interest to us. In this context, he points out that the goal of coherence is closely related to Rawls's idea of an "overlapping consensus" (Rawls 1987, 1989). The goal of aligning all ends across all individuals is almost certainly unachievable. What is desired, however, is finding areas of agreement or potential compatibility such that it is possible to have an

[8] There are important similarities between Richardson's model of coherence and the concept in negotiation theory of an integrative solution (Raiffa 1982; Bazerman and Neale 1992; Lewicki, Saunders, and Minton 1997). An integrative solution is one that turns a dispute into a win win situation as opposed to a zero sum game. Thus, parallel to Richardson's model, the goal is not to figure out appropriate trade offs between different goals, but rather to figure out how simultaneously to achieve all opposing parties' goals. Vickers's (1965) idea of 'integrative decisions' in public administration also is closely related.

"overlapping consensus." If this consensus is broad enough, it may be sufficient to support social life, i.e. there may be enough coherence in different individuals' and groups' ends that coordination of action and the pursuit of joint activities may be achievable.

4. Puzzling out Coherent Wholes

Return now to the example of a jigsaw puzzle. The different pieces should be thought of as specific ends. The goal is not to choose a single piece, but rather to see if it is possible to fit the pieces together. That is, the goal is to fit the pieces together into a coherent whole. What that coherent whole will look like in the end may well be unknown. Some pieces may be abandoned because it is eventually determined that they do not fit. We may, however, insist that particular pieces be included, and as such, the inclusion of these pieces will drive the process of assembling the puzzle. These pieces are final ends that we are inflexibly committed to. It is also possible that we may discover that to put the puzzle together we need to include new pieces/ends that have not been considered before and/or that we may need to look at the puzzle in a different way. Finally, it may or may not be clear when the puzzle is finally assembled.

The puzzle example is important for several reasons. First, it shows in a concrete fashion how we can pursue an end that is in great part largely unknown. At a general level the end is to put the puzzle together. We, however, may have little or no idea what the puzzle will look like when it is put together. In the process of assembling the puzzle we may believe that we know what the final assembled picture will look like. But, of course, as the process proceeds, our beliefs about what is the final end we are pursuing may well be revised as our understanding of what pieces fit together changes. In addition, as our thinking changes, our belief about which specific pieces belong in the puzzle or which pieces fit together may change. This is analogous to Richardson's discussion of the specification of ends (Richardson 1997). Thus, the puzzle example shows how in a quite rational deliberative process, both general ends and specific ends may come to be revised.[9]

Second, the puzzle example is useful in illustrating the variety of different strategies that we may use in trying to assemble a puzzle or evaluate our progress in doing so. In this way, it illustrates Dewey's theory of holism. As noted above, at times we may focus at the micro level of trying to find the pieces that fit with one particular piece. At other times, we may focus on placing pieces we believe are likely to go together into groups. At still other times, our assumptions about the overall structure of the picture may drive our strategy of how to sort pieces.

[9] See Wildavsky 1979 for a discussion of how policy objectives come to be revised.

If the puzzle example helps elucidate Richardson's model of deliberation, we need to also examine where it differs. For Richardson deliberation about final ends is explicitly about reasoning, as it is for Dewey (Richardson 1997, 83). Puzzling in the sense in which I mean it may or may not involve reasoning. When puzzling involves making and changing assumptions about the overall nature of the puzzle or its subparts, then reasoning is obviously involved. However, when puzzling is done simply by trying to fit a single piece to others, reasoning may be only involved in the most primitive sense—we use reason to recognize whether specific pieces fit together or not. Potentially, it is possible that intentionality, in the sense that we are actively seeking to assemble a puzzle, may not exist. We may simply recognize in passing that specific pieces fit together.[10] The difference between Richardson and the puzzle example is important. What the puzzle example points to is that blind action can lead to coherence. I illustrate this below in my discussion of the empirical case of the Ten Point Coalition.

5. Two Policy Examples

Water rights. As already briefly discussed, Espeland (1998) examines a many-decade dispute over the plan to build the Orme Dam in central Arizona. Her story is a classic example of conflicting non-commensurable ends that result from non-commensurable world-views, and the importance of flexibility and intransigence. I continue the discussion in more detail here.

The original site proposed by the Bureau of Reclamation was at the confluence of two rivers, making it most attractive from a design perspective. The proposed dam also would be appealing aesthetically, adding one more grand dam to the process of civilizing the southwest. However, if the dam were built in the proposed location it would flood the ancestral lands of the Yavapai Indians.

Because the dam would greatly benefit fast-growing Phoenix and local farmers, the Bureau was willing to pay the Indians handsomely for their land. The Indians, however, were not willing to sell the land at any price, as the land was intimately connected to their identities as Indians. Their view was summarized in their statement: "The land is our mother. You don't sell your mother" (Espeland 1998, 183).

Over time new engineers joined the Bureau. These engineers framed the problem of dam building differently (Schön and Rein 1994). Unlike the "old guard" engineers,

[10] Cohen and March's garbage can model could be thought of as a puzzling process. Here individuals with solutions search for problems, and coherence potentially can be achieved in windows of opportun ity when a solution fits to an available problem. In the garbage can model there is individual intention ality individuals trying to find problems for their solutions but there is no sense of group intentionality (see Cohen and March 1974; Kingdon 1984).

the new group was not particularly interested in building grand dams. Rather, they had been schooled in cost–benefit analysis and economic decision models. Because of their different orientation, they were willing to consider alternative plans that involved multiple dams in different locations. In this process they discovered a plan that avoided flooding the Yavapai's land, but that had the same cost–benefit properties, resolving the dispute. Eventually, it was this plan that was adopted.

Espeland emphasizes that the Bureau and the Indians did not come to any agreement about how to analyze or evaluate the problem of where the dam should be built. In fact, the Indians totally rejected the cost–benefit perspective that the engineers used, which assumed that all options were commensurable. The worldviews of the Indians and the engineers remained totally divergent. Rather what they agreed upon was a solution, although the solution was satisfactory for quite different reasons for the two groups. She also points out that resolution totally failed to satisfy the old guard engineers' desires for another grand dam.[11]

For our purposes, Espeland's story is of interest as it is explicitly about a conflict in which an attempt to create commensurability, i.e. buy the Yavapais at some price, fails. It is not possible to solve the problem by evaluating the different components of any solution along a single dimension, though one group, the new engineers themselves, precisely evaluated alternatives in this way. Rather what needed to be found was a solution that allowed the Yavapai Indians to keep their land and at the same time create the needed water resources for local farmers and a quickly expanding Phoenix.

Espeland's story nicely illustrates how coherence in the sense of Richardson (or similarly Rawls's overlapping consensus) can be a central goal. As Richardson points out and the puzzle example illustrates, a solution is only achieved by changing the components of the problem. The new cohort of engineers brought in a new way of thinking about the evaluation of dam sites with the result that new plans were considered. The goals of the original engineers for a grand dam, however, were abandoned. Coherence may often be partial. As a result of new and different perspectives, new pieces are put on the table and potentially added to the puzzle and other pieces, originally thought as essential components (e.g. that the dam be grand), are abandoned. The example also illustrates how the flexibility of one group and the inflexibility of another led to a solution, but a very specific solution.

Cops and ministers. In a series of papers Jenny Berrien and Chris Winship (1999, 2002, 2003; Winship 2004) describe how during the 1990s the Boston police department and a group of black inner city ministers known as the Ten Point Coalition put together a partnership to deal with the problem of youth violence in Boston's inner city. Initially, both groups had an extremely hostile relationship, particularly so between one key minister, the Reverend Eugene Rivers, and the police. By the late

[11] For discussions of the importance of partial agreements, see Sunstein 1995; Jonsen and Toulmin 1988; Forester 1999.