Understanding policy problems: a refinement of past work

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ABSTRACT
To better connect the concept of policy problems to policy solutions, this article builds on Guy Peters’ framework for identifying and applying ‘attributes’ of policy problems. It does so by applying the seven attributes of policy problems identified in Peters’ past work to a range of policy problems in the United States. The problems investigated include access to healthcare, the organization of public health services, and water pollution. By applying Peters’ attributes to these policy problems, we assess the range of the framework’s application to different types of policy problems. We also identify insights that can be used to enable improvements to the framework over time, which may enhance our ability to characterize policy problems in ways that guide policy design.

1. Introduction
For some time, policy analysts and scholars have been concerned with policy instruments and their use in addressing societal problems (Hood, 1983; LasCoumes & Le Gales, 2007; Peters & van Nispen, 1998; Salamon, 2000). Others have argued for aligning policy design approaches to the problems they are intended to address (Alm, 1992; Linder & Peters, 1984, 1989). What often has been missing from these discussions is an understanding of the key characteristics of problems linked in some clear fashion to policy design alternatives and the selection of policy instruments.

Just over a decade ago, Peters offered an initial identification and analysis of seven ‘attributes’ of policy problems (Peters, 2005; Peters & Hoornbeek, 2005). His objective was modest; to ‘establish a starting point’ for future research linking characteristics of policy problems to policy design and instrumentation alternatives (Peters & Hoornbeek, 2005, p. 77). In this article, we apply Peters (2005) framework systematically to several policy problems in the United States (US) to assess its utility in generating insights on a range of policy problems and to enable potential refinements for future work on policy problem analysis.

The paper begins with a brief review of Peters (2005) framework, followed by a brief overview of some recent literature on policy problems. We then briefly describe the policy
problems to be investigated and apply the seven attributes in the framework to them. We find that the framework does appear to generate insights on a range of American policy problems, albeit with some challenges. Examples of these insights and challenges – along with preliminary ideas to help address the challenges – are offered in the concluding sections of the paper. Our hope is that they enable useful refinements to this framework in the future.

2. Peters (2005) framework for understanding policy problems: a brief review

Peters (2005) framework suggests that policy problems can be understood in terms of seven ‘attributes’, and argues that understanding policy problems through those attributes can enhance the quality of policy designs and facilitate instrument choices. The first three of Peters’ attributes relate to the problems themselves and appear as though they may influence the selection of those policy instruments that focus more on process than on substance’ (Peters & Hoornbeek, 2005, p. 87). These attributes include ‘solubility’, 'complexity' and 'scale'. The second set of attributes relates more to the nexus or connection between problem characteristics and instrument choice, and these variables tend have more substantive implications’ (Ibid., p. 87). All seven of these attributes, or variables, are summarized in Table 1. More detailed discussions on each attribute can be found in past work (Peters, 2005; Peters & Hoornbeek, 2005), as the narrative discussions there provide more nuanced insight than is possible in a single table (including this one!). That said, however, the table does clarify key aspects of the Peters framework.

3. Recent literature on policy problems: a brief overview

‘Policy problems’ have received significant attention in the scholarly literature over the last decade (Bacchi, 2009; Head, 2008; Hoppe, 2010; Rein, 2006; Roe, 2013). Much of this recent literature has focused on ‘wicked’ policy problems, which – broadly speaking – are problems that are ‘complex, open-ended, and intractable’ (Head, 2008). This literature on ‘wicked’ problems builds on concepts first advanced by Rittel and Webber (1973). There has also been significant attention paid to the ways in which policy problems are constructed – or ‘framed’ – for processing by political systems (Bacchi, 2009; Veselý, 2007), and this literature also builds on previous work (including Baumgartner & Jones, 1993; Berger & Luckman, 1966; Kingdon, 1984). However, there appears to have been less attention paid to understanding the full range of problem characteristics that may confront policy-makers, and identifying means to address that range of problems (but see Hoppe on problem structuring – discussed below).

As is noted above, there has been a developing literature that has sought to advance understandings of alternative ways in which policy responses to ‘wicked’ problems can be managed and framed. Roe argues that policy problems in today’s world are often ‘messy’, and this means that they are ‘so uncertain, complex, interrupted, and disputed that they cannot be avoided’ (Roe, 2013, p. 3). This characterization is similar to that used to describe ‘wicked problems’ by Head (2008), Rittel and Webber (1973), and others. Roe suggests, however, that we must accept the reality of numerous analogous types of problems in the modern world, and devise management systems for coping with them (Roe, 2013).
Table 1. Peters (2005) policy attributes: definitions and implications.

| ‘Attributes of Policy Problems’ | Defining Questions for the ‘Attribute’ | For Policy-making | For Policy Instrument Choice |
|---------------------------------|---------------------------------------|-------------------|----------------------------|
| 1. ‘Core’ Attributes             |                                       |                   |                            |
| A. Solubility                   | Can the ‘problem’ be solved? Or, is the problem likely to reoccur over time? | High ‘solubility’ suggests that one time interventions may be able to address the problem, while low solubility suggests that ongoing efforts should be expected | Instruments used to address problems characterized by low solubility should recognize, and perhaps incorporate elements that address, the continuing nature of the problem |
| B. Complexity                   | How complex is the problem? Complexity has multiple dimensions, including political & programmatic. Within programmatic complexity, lie dimensions for causal & technical complexity | Political complexity suggests a need for common understanding of the problem while technical complexity suggests a need for expertise and/or research | Both political and programme complexity suggest needs to focus on processes, although in different ways. In the first, political engagement is required, while expertise is needed for the latter |
| C. Scale (of the problem)       | Is the problem a large one that is not subject to ‘dis-aggregation’? | Invest in big solutions commensurate with the problem at hand | Incremental use of targeted policy instruments can help small-scale problems, but not for large-scale problems |
| 2. Attributes directly tied to instruments |                                       |                   |                            |
| A. Divisibility                 | Are the policy solutions ‘divisible?’ Can they be disaggregated to the advantage of particular constituencies? | Policy-making regarding non-divisible policy solutions may suffer from collective action problems, making building support for the policy difficult | Divisible problems can be addressed with policy tools that build support from policy beneficiaries, while non-divisible policy solutions may require broader support |
| B. ‘Monetarization’             | Is the problem identified and/or solvable in terms of money? | For problems susceptible to ‘monetarization’, policy-making may revolve more around expenditures | The extent to which expenditures are an appropriate policy tool to address the problem |
| C. Scope (of activity contributing to the problem) | Are there large numbers of persons, organizations, or activities involved in creating the problem? | Problems of broad scope are likely to yield more complex policy-making processes that may stress government capabilities | Problems of narrow scope are typically more susceptible to regulatory solutions than problems of broad scope |
| D. Interdependence              | Can the problem be addressed well by a single agency or ministry? | Problems with low interdependence may be easier to address than problems with high interdependence. As ‘policy space’ becomes more crowded, interdependence exacerbates difficulties in policy-making processes | Instrument choice may be simplified by the preferences & experiences of a dominant agency or ministry. By contrast, interdependent problems may tend towards ‘lowest common denominator’ choices of instruments |
Hoppe (2010) responds to growing concerns about wicked policy problems by arguing that there is a need to structure problems to enable their ongoing governance. Problem structuring, as he sees it, becomes a means by which governments can develop ‘skills and institutions to prudently and democratically transform citizens’ experiences of problematic situations, and their ways of framing problem representations, in truly intersubjective but authoritative public definitions of policy problems’ (Hoppe, 2010, p. 19). At the root of his approach lies the recognition that problems vary in terms of the extent of agreement on values and norms, as well as the levels of certainty associated with required and available knowledge needed to address problems. In this context, ‘wicked’ problems are viewed as ‘unstructured’ problems characterized by low levels of agreement on predominant values and low levels of certainty about the knowledge needed to address the problem.

While the recent focus on wicked problems and appropriate responses to them is understandable in view of the difficult policy problems now being faced by governments, it does not necessarily address the need underlying Peters’ earlier work. Those efforts were intended to improve our understanding of the wide range of policy problems addressed by governments to enable improvements in policy design and policy instrument selection across a range of problem characteristics (Peters, 2005; Peters & Hoornbeek, 2005). This approach has not been used systematically for a full range of problems, so in the sections that follow, we identify several policy ‘problems’ in the US and apply the Peters framework to assess its applicability and to help refine it for assessing policy problems, informing policy design and guiding the selection of policy instruments.

Some approaches to policy problems, including the Peters framework, generally take an objectivist stance concerning problems – the problems are real and have relatively unambiguous characteristics. An alternative conception of policy problems is that they are the product of a political process of framing and, rather than being objective, represent social constructions (Bacchi, 2009; Berger & Luckman, 1966; Dery, 1984; Veselý, 2007). In the more constructivist tradition, problems do not have objective characteristics but are shaped by a political process that defines them and also attaches them to particular organizational and political interests in the public sector (Payan, 2006). While we will focus on a more objectivist treatment of policy problems in this article, we must remain cognizant of the importance of the political framing of issues for our broader understanding of policy problems.

### 4. Applying Peters’ framework to policy problems: a multi-problem assessment

Peters and Hoornbeek (2005) use water pollution and environmental problems to illustrate the application of Peters’ initial policy problems framework. This choice of problems was sensible because of the widespread experimentation that was taking place in the use of environmental policy instruments during the time period immediately preceding the writing and publication of that work. However, ultimately, the need is for a policy problem framework that applies to multiple policy sectors, not just water and environmental policy. Peters (2005) application of his framework to social policy and the European Union reflects recognition of this need. Here, we apply the Peters’ framework to two additional US policy problems: access to health care and the structural arrangements of agencies involved in delivery of local public health services. We apply Peters’ seven attributes to these policy problems comparatively, while we also develop a somewhat more systematic assessment
of the application of these attributes to water pollution – a carryover from the initial 2005 work (Peters & Hoornbeek, 2005).

While these three policy problems are not necessarily representative of the full range of policy problems that a government may encounter, they represent a broader attempt to apply the Peters framework than exists to date. In selecting these problem areas, we were guided by Lowi’s characterization of public policies (Lowi, 1972). In his framework, policies are divided into four categories: (1) distributive policy; (2) regulative policy; (3) redistributive policy and; (4) constituent policy. Lowi views these categories as determined by the likelihood of coercion (immediate vs. remote) and the target of that coercion (to individuals vs. the environment of conduct) (Lowi, 1972, p. 300). Environmental policy is typically thought to belong in the regulatory policy arena, as it applies to the conduct of individual persons (or organizations) and may also reflect an immediate likelihood of coercion. However, the initial (2005) work does not focus extensively on cases where the coercive powers of government are applied to the environment of conduct. By applying the framework to the problem of health care access and problems associated with the delivery of local public health services, we expand applications of the framework to redistributive and constituent policies, respectively.

Broadly speaking, any ‘problem’ can be viewed as a disconnection between a desired state and the current state of affairs. Hoppe, for example, defines a problem as a ‘deviation between an existing state (“is”) and a desirable one (“ought”)’ (Hoppe, 2010, p. 16). And the process of defining ‘policy problems’ involves ascertaining whether society and/or its political system define and frame particular disconnections between current conditions and desired states as appropriate for pursuit of resolutions by government(s). Indeed, this is perhaps the essential problem addressed through the literature on agenda setting for government (see Cobb & Elder, 1983, for example). Below, we briefly characterize water pollution, access to health care, and the fragmentation and duplication of local public health services in terms of disconnections between current conditions and desired states, and briefly summarize the framing of those problems as appropriate ones for government intervention in the US.

4.1. Water pollution in the United States

Water pollution can be conceived of as conditions in water bodies that are not consistent with the uses to which communities, or societies, want their water bodies put (Hoornbeek, 2011, pp. 28, 29). In the US, a rather high proportion of water bodies – about 40% – are contaminated to a degree that inhibits their use (United States Environmental Protection Agency [USEPA], 2000, 2007). This set of objective conditions limits the utility of water bodies for sustenance and recreational purposes in the US, and may inhibit economically productive uses of water bodies as well.

As a society, the US has established places for this problem on its policy agenda over time, and it has acted aggressively to address water pollution through its establishment of statutory goals and programmes in federal law. Since its enactment in 1972, the American Clean Water Act (CWA) has included goals suggesting that all US waters should be ‘fishable and swimmable’ (by 1983) and that all discharges of pollutants to waters of the US should be eliminated (by 1985). While the nation has clearly failed to achieve these ambitious statutory goals, the continuing existence of these goals in federal law provides evidence
that American society and the political processes that govern it see water pollution as an actual ‘policy problem’ worthy of government action.

Over time, however, conceptions of the complexity of the water pollution problem and the causal chains that give rise to it have evolved considerably. In the early 1970s, there was grave concern about industrial and commercial discharges of polluted waters to American waterways, as well as discharges of sanitary sewage from cities, villages and towns. In the first two decades that followed, the US Congress and the US Environmental Protection Agency (EPA) – in cooperation with state and local governments and others – adopted and implemented systems of regulatory control to address these ‘point sources’ of pollution. As this has occurred, there have been widespread reductions in pollutant loadings to US waters (Association of State and Territorial Water Pollution Control Administrators [ASIWPCA], 2004), but water pollution problems have continued in many American water bodies. Increasingly, water pollution problems in the US appear traceable not to concentrated point source discharges, but rather to diffuse ‘non-point’ sources arising from flows of rain waters over land that transfer pollution of various kinds to streams, rivers, lakes and coastal areas. As a result, the problem of water pollution remains, even though the characteristics that underlie it appear to have changed in the four-plus decades since the enactment of the 1972 CWA.

4.2. Access to health care in the United States

For decades, there have been concerns about access to health care, particularly for poorer citizens in the US. To some degree, these concerns have roots in the country’s historic reliance on private enterprise as a centerpiece of its economic system generally, and – to a significant degree – its health care system as well. In the US, private health insurance – often provided as a condition of employment – has been a primary means by which citizens gain access to health care services. These sources of insurance have been supplemented by government programmes targeted towards specific audiences, such as Medicare (the elderly), Medicaid (the indigent) and the State Children’s Health Insurance Program (SCHIP). In spite of these private and public sources of health insurance, many Americans have been without health insurance. In 2011, for example, an estimated 47.9 million non-elderly Americans were without health insurance, approximately 18% of the non-elderly population at that point in time (Fronstin, 2012; as quoted by Morrisey, 2014, p. 28).

The importance of the health care access problem, and the means to address it, have been matters of public debate in the US for decades now, at least since the Truman administration. Attempts to address the problem have developed periodically (and sometimes with substantial intensity), and – in 2010 – they culminated in the passage of the Patient Protection and Affordable Care Act (PPACA). The PPACA required individuals to purchase health insurance or face tax penalties. This policy change – along with additional public subsidies, including expanded Medicaid coverage – has resulted in enhanced availability of health insurance, even if the expansion has been subject to uncertainties and debate (for a summary of problems leading to the PPACA reform, including limitations on access to health insurance, and a report on progress, see Obama, 2016).

With the passage of the PPACA, the American polity has arguably begun to establish a stronger societal commitment to ensuring the availability of health care. However, this commitment – while enshrined to some degree in statute – continues to be the subject of
intense debate and strong opposition. Opponents of the PPACA tried to overturn the law in the federal courts, and Republicans in Congress have been seeking to repeal the law and/or alter it fundamentally.

4.3. The organization of local public health services in the United States

In the US, public health services are often provided by local governments, based on requirements established by state governments. Federal agencies, including the Centers for Disease Control and Prevention (CDC) and the Health Resources and Services Agency (HRSA) provide substantial funding to state health programmes, but primary responsibilities for the actual delivery of these services typically lie at the state and local levels of government. The services provided are multiple and variable, including the siting and management of septic systems for sanitary sewage, the inspection of restaurants for cleanliness, and communicable disease tracking and intervention.

In recent years, there have been questions about the adequacy of the current American system for public health service delivery. There are more than 2500 local health departments (LHDs) in the US, and many of these LHDs are small (Mays, 2008). Some LHDs have just a handful of employees. Recent research has suggested the Minimum Efficient Scale for the delivery of public health services is about 100,000 persons (Santerre, 2009), and additional research has suggested an enhanced potential for public health service delivery improvements at scales of 100,000–500,000 persons served (Mays et al., 2006).

There has also been a growing concern about the capabilities of LHDs in the US, and this has led the Public Health Accreditation Board (PHAB), a voluntary non-profit organization, to develop an accreditation programme for state and LHDs to demonstrate their abilities to provide essential public health services. With 62% of LHDs in the US serving 50,000 persons or fewer (National Association of County/City Health Officials [NACCHO], 2014), there is reason to question the ability of many existing LHDs to meet PHAB's accreditation standards.

This situation is viewed as a significant problem by many in the public health profession. In addition, the federal government, through pronouncements and financial support provided by the CDC, has been supportive of the PHAB accreditation process (Centers for Disease Control and Prevention [CDC], 2015). In this context, it appears reasonable to view this issue as one that has arrived on the agenda of problems to be dealt with by government, even though public awareness of public health service delivery issues at the local level is not particularly high.

5. Re-assessing the Peters (2005) framework: a refinement of past work

To apply the Peters (2005) framework to these ‘policy problems’, it is appropriate to ascertain how the attributes in the framework apply to each problem. This requires some form of measurement or judgement regarding the manner in which the attributes apply to different problem circumstances.

We use an ordinal scale that provides a rough measure of the extent to which the attribute is present and/or likely to be present over time and space to ascertain each attribute’s relevance to each problem. The scale considers two dimensions of each attribute in relation to the policy problems addressed – the clarity of its presence (or absence) in the problem
situation and anticipated variations in its presence or absence over time and space. Attributes which are clearly and continuously present within the problem situation are coded as high (H) in their relevance to that problem, and attributes that are clearly absent in the problem situation are coded as low (L) in their relevance to the problem. Between these two extremes lie the three other values in the scale – low-medium (L-M), medium (M) and high-medium (M-H). These three values in the ordinal scale are defined as follows:

- Low-Medium (L-M): the attribute is not clearly present now, but reasonably anticipated variations over time and/or space may make it relevant in the future.
- Medium (M): the attribute is present to some degree, but perhaps not completely and/or continuously so.
- High-Medium (M-H): the attribute is present now, but reasonably anticipated variations may alter this situation over time and space.

While this measurement relies on judgements with subjective elements that make it suspect in some ways, it nevertheless enables a broad comparative assessment of how the Peters’ framework can be used to assess different kinds of policy problems. In Table 2, we present a preliminary application of Peters’ attributes to the problems of water pollution control, health care access and local public health service delivery in the US. We describe the entries in that table below.

5.1. Solubility

The entries in Table 2 reveal variation across the problems with respect to ‘solubility’, which refers generally to the extent to which the problem can be ‘solved’ versus being continually re-addressed over time. For water pollution, Table 2 shows ‘high’ and ‘high-medium’ values for point source and non-point source water pollution, respectively. Point sources of water pollution flow through discrete conveyances, and can often be controlled through known treatment technologies. These treatment technologies are widely used to treat sewage and industrial wastewater before it is discharged to rivers, lakes, streams and other water bodies. Point source water pollution is thus a ‘solvable’ problem. Non-point water pollution is solvable in many, or most, cases through ‘best management practices’ (BMPs, including buffer zones of vegetation near water ways, alterations in pesticide and fertilizer use, etc.), but the diffuse nature of rainfall and subsequent flows of water over land present obstacles in ensuring that all sources of non-point source pollution are identified with sufficient certainty to ensure that BMPs can be applied successfully in all cases.

By contrast, health care access does not appear to be a readily solvable problem. In the largely market-based American economy, health care access is tied to the ability to purchase health insurance and this ability may depend on economic wealth. Efforts to re-distribute wealth and resources are thus often a central element in efforts to ‘solve’ this problem. The recently enacted PPACA reflects a major, even unprecedented, effort to ‘solve’ the American health care access problem, but the continuing challenges directed at that legislation provide evidence that it is likely to be subject to continuing debate and policy adjustment over time. While challenges to the PPACA may subside or change over time, the high likelihood that government subsidization and other issues will continue to be contested means that this problem is not likely to be fully solved. For this reason, the ‘low-medium’ rating shown in Table 2 seems appropriate.
The fragmentation and duplication in local public health service delivery does appear as a solvable problem. We have evidence of continuing collaborations among LHDs nationwide (NACCHO, 2014) and there have been at least 20 LHD consolidations in Ohio alone since 2000. LHD collaborations and consolidations can address gaps and duplications in LHD services structurally to enhance efficiency (Santerre, 2009), improve performance (Mays et al., 2006) and reduce local public health expenditures (Hoornbeek et al., 2015). For these reasons, Table 2 scores this problem with a ‘high’ value for the attribute of solubility.

### 5.2. Complexity

Complexity is a multifaceted concept, and water pollution, access to health care, and the fragmentation and duplication of local public health services all have complex dimensions. Peters’ framework recognizes both political complexity and programmatic complexity, and the latter has elements relating to both technical content and the underlying causal processes involved in creating the problem(s).

Water pollution is a rather complex problem, arising from many sources and it may involve multiple, synergistic, and even unknown impacts on persons and society. However, point source water pollution tends to be less complex than non-point source water pollution, both politically and programatically. Politically, point source water pollution comes from multiple sources and involves many actors, including city sewerage systems and numerous industries and commercial enterprises that discharge wastewaters to rivers, lakes and other water bodies. However, it is not as complex politically as non-point source water pollution.
because the latter includes virtually all landowners and users whose lands could be subject to rainfalls carrying pollutants to US waterways. Based on these considerations, Table 2 rates political complexity ‘medium’ for point sources and ‘high’ for non-point sources.

Programmatically, both point and non-point source water pollution have complex elements, but differ somewhat from one another. For point source water pollution, treatment systems designed to filter, biologically treat and remove nutrients or other toxic pollutants can be quite complex technically – perhaps more so than the best management practices used to treat many non-point sources. On the other hand, the causal processes associated with the discharge of wastewaters from point sources are generally well understood, while the causal processes associated non-point sources may be highly variable and situation specific. Because of these differences across programmatic complexity, Table 2 estimates programmatic complexity to be ‘medium’ for point sources and ‘high-medium’ for non-point sources.

Both access to health care and the fragmentation and duplication of local public health services are rated at the ‘medium’ level of complexity in Table 2, but the reasons for these ratings are different. Politically, there are many individuals and organizations with a stake in health care access. On the provider side in the US lie health insurance companies, health care professionals (doctors, nurses and a growing array of other kinds of providers), as well as hospitals and government agencies. Health care access problems also affect a wide array of citizens, including the elderly, immigrants and refugees, the working and the unemployed, and many others. All of this variability yields a rather complex set of political interests involved in dealing with health care access issues. Because of this multiplicity of stakeholders, Table 2 shows the political complexity of the health care access problem to be ‘high’.

From a political viewpoint, addressing fragmentation and duplication of local public health services is also somewhat complex, but perhaps not quite as much as health care access. Here, resolving the problem of multiple LHDs through consolidation and/or coordination of services involves multiple stakeholders, but the complexity of these stakeholder interests is probably not as great as the complexity involved in health care access. Here, however, there may also be ‘zero sum’ political considerations that introduce further complexities. In these kinds of ‘zero sum’ arrangements, one interest typically ‘wins’ and one or more other interests ‘lose’. This kind of political situation, while not explicitly addressed in Peters’ framework, can introduce greater intensity and conflict into the situation. For example, if two health departments are consolidated, there will be only one ‘health director’ position available. For these reasons, Table 2 estimates the political complexity of this problem to be ‘high-medium’.

Table 2 estimates programmatic complexity for the health care access problem and the local public health delivery service problem to be ‘low-medium’. The management processes associated with health care access may have technical complexities, but most of these complexities are known and successfully administered in US health care operations. Public health service delivery may also carry some complexities, particularly when multiple organizations are involved. However, these complexities are not overwhelming technically, when compared with other technical operations. Neither the health care access nor the local public health service delivery problems exhibit great causal complexity, assuming problems
of health care access are envisioned to arise from unequitable distribution of wealth and an excess of LHDs, respectively.\footnote{It is useful to note here that we have envisioned problems of health care access to arise from inequities of wealth, and there is substantial reason to conceive of the problem in this way. However, following Bacchi (2009), one could use a ‘What’s the Problem Represented to be’ (WPR) framework to arrive at other kinds of problem characterizations.}

### 5.3. Problems of scale

None of the policy problems investigated here are likely to suffer greatly from problems of scale, and – for this reason – they are all rated ‘low’ for this attribute in Table 2. As a result, all appear amenable to stepwise or incremental progress towards policy solutions. For water pollution, both point and non-point source water pollution problems can be disaggregated geographically, by type of problem (agricultural runoff, community runoff, etc.), or by other means. As a result, we see in current US policies a variety of incremental efforts, including the sequential promulgation of standards for point sources over many years, and separately developed and administered programmes for addressing non-point sources.

For health care access, there are multiple mechanisms that can be used to improve health care access. In the mid-1960s, for example, the US enacted the Medicare programme to improve health care access for older persons and the Medicaid programme to improve access for the indigent. In the late 1990s, enactment of the State Children’s Health Insurance Program (SCHIP) improved health care access for children. In 2010, these programmes were supplemented by the PPACA. Access issues have been addressed incrementally through other means, including requirements for emergency rooms to treat indigent patients, family planning programmes and targeted programmes to ensure treatment of persons with communicable diseases. Health care access problems can be disaggregated, and American response to health care access problems has been one of incremental expansion.

For local public health service delivery, we also see the potential for disaggregation of the key elements of the problem. LHDs can collaborate with one another incrementally on various kinds of health services, so productive collaborations can be seen as a step towards more long-lasting service and efficiency improvements that may be achievable through collaborations or consolidations. There are also opportunities for disaggregating problems geographically, as one region or state may address reform of public health service delivery institutions while others address other problems or issues.

### 5.4. Problems of divisibility

As we look at problems of divisibility, we turn to a set of attributes that have rather direct connections to particular policy instruments. In this case, that connection relates to the ability of the policy instrument selected to build and maintain political support associated with its continuation, a concept that is somewhat analogous to Patashnik’s (2008) concept of building positive feedback loops to foster the durability of policy reforms.

For water pollution problems, control actions for both point and non-point sources are potentially divisible, as funds or requirements for water pollution control initiatives can and are targeted towards specific beneficiaries. When the controls are regulations applied to point sources, citizens near waterways that benefit from these regulatory controls may
provide support for the wastewater controls. For non-point source water pollution, geographically co-located cause and effect relationships may be less clear (see discussion of programmatic complexity above), and this may give rise to questions about the geographic location(s) of pollution control benefits. However, even here, there are beneficiaries who may receive funds or assistance to implement non-point source water pollution controls, so there is often at least some divisibility in the policy instruments. For these reasons, Table 2 estimates problems associated with divisibility to be ‘low’ for point sources and ‘medium’ for non-point sources.

Policy instruments used to extend health care access often affect directly the organizations, groups, and individuals who gain that access. Those who receive subsidized health insurance under the PPACA, for example, are likely to support the programmes assuring that access, as will health providers who may benefit from access extended through Medicaid or other government interventions. For all of these reasons, Table 2 rates problems of divisibility for health care access to be ‘low’ (but see Gitterman & Scott, 2011).

By contrast, addressing fragmentation and duplication in public health service delivery has a ‘high’ rating for problems of divisibility. In general, eliminating duplication does little to build external support because the primary beneficiaries of that effort are government organizations or taxpayers broadly construed. There may be some greater divisible benefits achieved by addressing problems of fragmentation from enhanced public health services, but the enhancements often appear likely to come through improvements in coordination that may not be readily apparent to beneficiaries.2 As a result, external constituencies may have little obvious stake in enhancing service efficiencies or in addressing problems associated with organizational fragmentation.

5.5. ‘Monetarization’

Like problems of divisibility, ‘monetarization’ is an attribute of policy problems with direct connection to particular policy instruments – in this case, the use of money and subsidies. Water pollution problems can be viewed as ‘monetized’ because the allocation of funding can support construction and/or maintenance of wastewater treatment works for point sources, as well as financing projects to reduce non-point source water pollution. However, there are limits in the degree to which ‘throwing money’ at these problems yields viable solutions because doing so may reward practices that yield water pollution in the first place. This is part of the reason why the wastewater treatment grants provided to local governments in the 1970s were accompanied by regulatory requirements. Similar dangers are evident for non-point source water pollution problems, which may also be addressed through allocations of funds to support non-point source water pollution remediation projects. In this case, however, funding may be more instrumental in addressing the problem because the large number of non-point sources makes regulatory interventions more difficult and because expenses associated with non-point source projects are generally lower than for construction of new wastewater treatment processes for point sources. For these reasons, Table 2 estimates the relevance of ‘monetarization’ for point source water pollution as ‘medium’ and the relevance of this attribute for non-point sources as ‘high-medium’.

2While we have rated this policy problem (fragmentation and duplication of public health services) “high” with respect to problems of divisibility because divisible benefits are not likely to be common or clearly apparent to outside observers, some might argue that a “high-medium” rating is appropriate – as there could potentially be divisible benefits associated with policy solutions such as sharing services and/or LHD consolidation in some cases.
By contrast, health care access is a highly ‘monetized’ problem because it is largely a function of disparities in wealth. For this reason, Table 2 rates the health care access problem ‘high’ for the ‘monetarization’ attribute. Through substantial transfers of funds facilitated by governments, health care access can be extended to those without the resources to purchase health insurance. While there is some long-term danger associated with work disincentives for both recipients of health care access benefits and taxpayers who support those benefits, these incentives may be counterbalanced for recipients by incentives associated with other human wants and needs – fungible income, food, housing, etc.

Of the policy problems investigated here, ‘monetarization’ is probably least applicable to problems of fragmentation and duplication of local public health services. This is because a central concern associated with this problem is that the funds allocated are utilized effectively – either because they are squandered on duplicative services or because their utility is reduced by a lack of coordination among the institutions that are designated to spend them. While funding to address this problem may help finance processes to consolidate organizations or facilitate coordination among them, this type of monetary support may be viewed as ‘grease’ for an appropriate policy design rather than central to that design. For this reason, Table 2 estimates the influence of ‘monetarization’ to be ‘low-medium’.

5.6. Scope of activity

The scope of activities giving rise to a problem affects the means used to address it. Where many individuals and organizations are involved in the problem, solving the problem becomes a more complex endeavour that may need to be addressed by a wide range of policy designs and instruments. Conversely, where the scope of activity is narrow, focused regulatory policy instruments may be reasonably employed to address the problem.

For water pollution, this attribute has potential effects on the selection of policy instruments. Point sources of water pollution, while numbering in the tens of thousands across the US, are certainly less numerous than the sources for non-point source water pollution – which, at the extreme, may be as numerous as parcels of land where rain may fall! Perhaps in part because of this difference, American policy-makers have established regulatory solutions which apply to point sources across the US, while they have been more reluctant to impose regulatory controls on non-point sources. Regulating non-point sources would tax the capacities of the public sector, and may not even be effective in addressing a wide range of underlying problems. For these reasons, Table 2 estimates the relevance of this scope of activity attribute to be ‘medium’ for point sources and ‘high’ for non-point sources.

The scope of activity giving rise to problems of health care access is broad. Individuals without adequate health care access are scattered across the entire nation, with numerous causes for their inability to fund health care. The underlying causes of the distributions of wealth in the US that lead to health care access problems are thus wide-ranging and difficult to address. For this reason, Table 2 rates this attribute, the scope of activity (yielding the problem), as ‘high’ in terms of its influence on the problem of health care access.

The problem of fragmentation and duplication of local public health services, by contrast, is rated ‘low’ on ‘scope of activity’. This is because there are relatively few actors involved in creating the problem, and the problem results from antiquated state legal structures that give rise to more LHDs than are needed. For this reason, these problems can often be addressed by legal or contractual changes that effectively integrate incentives, practices or
organizations across jurisdictional boundaries. While this is not always easy to do politically, the difficulties here relate more to the ‘zero sum’ issues relating to winners and losers than they do to a multiplicity of underlying activities giving rise to the problem.

5.7. Interdependence

Interdependence relates to the extent to which policy problems lie within the jurisdiction of single ministries, agencies or organizations. Interdependent problems engage multiple organizations, and this increases the complexity of achieving resolutions to the problem. By contrast, problems that are not interdependent in this manner may be more easily addressed.

For water pollution, regulatory controls on point source discharges typically lie within the jurisdictions of federal and/or state environmental agencies. By contrast, addressing non-point source water pollution problems may require engagement by a wide range of agencies and organizations, beyond federal and state environmental agencies (agriculture departments, government land management agencies, coastal commissions, etc.). They may also require extensive interactions across levels of government because land management responsibilities typically lie at local and state levels, while accountabilities for water pollution control tend to exist at higher (state and federal) levels of government. For these reasons, Table 2 rates point source water pollution control as ‘low’ in interdependency, while non-point source water pollution rates ‘high’ on this same attribute.

Health care access has some interdependence, particularly across levels of government, as both federal and state agencies in the US have some jurisdiction over the problem. There is also horizontal interdependence at all levels of government, as agencies such as the Veterans Administration and the Department of Defense at the federal level, for example, have significant health care programmes. At the state level, there is additional horizontal interdependence, including that relating to the operation of mental health systems and state and local correctional systems. While these interdependences may not be quite as far reaching as those in place for non-point source water pollution control, they are nevertheless substantial. For this reason, Table 2 rates the health care access problem in the US in the ‘high-medium’ range for this particular attribute.

By contrast, the problem of fragmentation and duplication of local public health services appears to be characterized by less interdependency than both the health care access problem and the non-point source water pollution control problem. This is because most of the issues involved in addressing this problem lie under the broad purview of state health departments. However, this is not always the case because there are inevitably at least two, and possibly more, LHDs that must work to resolve this kind of problem at the local levels of government. While this process, when it occurs, can certainly yield troublesome interdependence, it can be counterbalanced by external pressures at the state level of government. For these reasons, Table 2 rates this problem ‘medium’ for this particular attribute.

6. Discussion: findings from the analysis and issues for further investigation

Applying the Peters (2005) framework to several US policy problems has yielded insights that are potentially valuable for policy design and policy instrument selection. For example, the analysis suggests that ‘monetized’ solutions are probably more important for expanding health care access than they are for addressing duplication and fragmentation in local
public health services delivery. It also suggests that incremental steps towards resolution of all three policy problems appear feasible, in spite of potential assertions to the contrary. These are just two examples of the kinds of insights that can flow from the use of this kind of framework. More examples could be provided, and this attests to the potential of this kind of analytical effort over time (Peters, 2005, p. 367; Peters & Hoornbeek, 2005, p. 105).

However, we also encountered challenges in applying the framework across a range of illustrative problems. We discuss these challenges below in order to provide insights which may help yield enhancements to the framework over time. The objective here is to identify the challenges and offer some preliminary ideas on how they might be addressed.

A. There is a need to improve our ability to assess and measure problem attributes consistently and/or objectively.

While problem characteristics for several policy problems in the US are assessed above, the multi-element ordinal scale we use is probably not optimal. First, we have measured and coded each application of an attribute on a five-point ordinal scale. The definitions of each point on the scale include at least two elements: (1) the clarity of the attribute’s presence in relationship to the problem, and; (2) its pervasiveness across space and time. Where this assessment approach yields ambiguous results for either of these two dimensions, coding becomes potentially problematic. Second, there is presently no clear way to quantify this coding consistently across policy problems, so different coders could potentially produce different values for each attribute problem application. For these reasons, there would be value in seeking out more consistent and/or objective methods for measuring policy problem attributes.

B. The existence of multiple sub-attributes within a single attribute makes it difficult to apply the framework to problems in an unequivocal manner. As a result, there may be value in assessing each sub-attribute independently as one applies the framework to specific policy problems.

This challenge was most evident with the ‘complexity’ attribute, which – in the current framework – includes both ‘political’ and ‘programmatic’ elements. As we applied these two sub-attributes to policy problems, it became apparent that they could yield different assessments of complexity. One sees differing assessments of complexity in the political and programmatic dimensions of the concept in Table 2 for non-point source water pollution, health care access, and the fragmentation and duplication of public health interventions. This means that when we assess the overall complexity of a policy problem, the relevant sources of that complexity may vary. In the larger context, this may mean that the sub-attributes hold greater potential analytical value than the larger attributes to which they contribute.

One rather obvious way to address this challenge would be to subdivide the complexity attribute into two or more attributes, so the attributes assessed can be applied consistently across problems and over time and space. This might result in separate attributes for political and programmatic complexity, and – potentially – even subdivisions of programmatic complexity based on technical content and assessments of causality. While this would clarify application of the attributes, it would also increase the number of attributes to be assessed and potentially reduce the overall parsimony of the framework.
C. **There is a need to achieve appropriate balance between the comprehensiveness of policy problem assessment and parsimony in the number and nature of the attributes included in the framework.**

In any analytical framework, it is necessary to balance thoroughness with parsimony, and assessing policy problems does not appear to be an exception to this general rule. The findings in Table 2 suggest that the addition of some attributes to the framework may be worth considering. First, as is suggested above, breaking down the complexity attribute into multiple component attributes could clarify its application(s). However, it would also yield additional attributes and thus reduce the parsimony of the framework.

Based on the assessments presented in Table 2, we might also consider adding an attribute or variable relating to the salience of the issue on the policy agenda. This variable was highlighted by Gormley (1986) in his analysis of regulatory issue networks, and it may be worth considering for an expanded version of this framework. When one looks at the local public health delivery problem and the water pollution problem(s) in Table 2, for example, one finds that they are ranked higher in solubility than the health care access problem. This suggests that these two problems (water pollution and LHD service delivery) may be easier to address than the health care access problem. However, one could hypothesize that the difference in the relative ease of addressing these problems may be traceable to the relative lack of salience of water pollution and LHD service delivery in comparison to the health care access. To the extent that these differences are attributable to an underlying difference in salience, it could reflect an underlying conditional relationship between salience and other attributes in the framework. For example, low salience may enhance solubility by streamlining the politics associated with finding a solution.

On the other side of the comprehensiveness-parsimony ledger, our analyses suggest ways in which we might eliminate or combine other attributes in the current framework. For example, the interplay between solubility and interdependence provides one opportunity for parsimony. The analyses above suggest that similar patterns of actual assessment of problem conditions may occur when applying these two attributes to policy problems. Interdependence refers to the extent to which the problem can be addressed in a single agency or ministry, affecting the difficulty of solving the problem. Thus, it should not be surprising that our application of these two attributes reveals that assessments of interdependence appear to be inversely related to assessments of solubility in two of the four cases in Table 2. For point source water pollution, interdependence is rated low and solubility is rated high. In both of these cases, it appears that the extent to which issues are settled within a particular organizational jurisdiction may play a significant role in determining solubility. To some degree, therefore, we may be assessing some of the same underlying problem characteristics in these two attributes, and this suggests that we might productively consider combining these attributes a revised version of the framework.3

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3However, one problem area where we do not see this kind of relationship between interdependence and solubility is non-point source water pollution. Here, interdependence is rated high, while solubility is rated high-medium. There are many organizations with potential jurisdictions over non-point source water pollution problems, accounting for the high rating on interdependence. However, perhaps due to respect for property rights, there are not strong efforts to assert jurisdiction over non-point source water pollution problems in most American states. Thus, where multiple jurisdictions exist but are not actively asserted by the agencies involved, high levels of interdependence may not lead to low levels of solubility, even though this may be true consistently in other cases.
Another potential opportunity for greater parsimony might be to combine scope of activity leading to the problem and political complexity. In Table 2, the assessments of political complexity and scope of activity are identical for both aspects of the water pollution problem (point and non-point) and health care access. This appears to occur because of similar definitions of elements of political complexity and problem scope. Scope of the problem addresses ‘the numbers of people, activities, or organizations involved with a problem’ and political complexity ‘refers to the number of political interests and activities involved in the problem and hence to the degree of difficulty in negotiating agreements among the parties involved’ (Peters & Hoornbeek, 2005, pp. 97 and 90). This conceptual similarity results in identical ratings for three of the four policy problem situations recorded in Table 2 above.4

One other potential opportunity to enhance the parsimony of the framework may lie in considering whether and how to retain scale. A review of the results in Table 2 suggests that scale did not vary among the problems investigated. No problem was at such a large scale that it was not subject to ‘disaggregation’ in some manner (Peters & Hoornbeek, 2005, p. 93). While previous work (Ibid., 93) offers several potential examples of large-scale problems (originally advanced by Schulman, 1980), it may be that this kind of problem is relatively rare and largely confined to capital intensive projects. As a result, it might be eliminated from consideration, except for large capital intensive projects. Or, conversely, the framework itself may be confined to problems that are not capital intensive.5 Either of these changes could have advantages in terms of parsimony, but might carry potential costs for the overall comprehensiveness of the framework.

D. There is a need to clarify further the ties between policy problems, the social construction of those problems, and their combined implications for policy design and instrument selection.

Throughout this analysis, it has once again become clear that the assessment of problems is tied to the ways in which political processes yield definitions of policy problems. Indeed, the very definition of a problem as a disconnection between existing conditions and desired states of affairs means that some persons(s) or group(s) must agree on desired states of affairs (Hoppe, 2010). This process of determining how policy-makers will define what is desirable is inherently political and it means that recommendations for policy design and policy instrumentation will be tied to the underlying politics associated with the problem’s definition to at least some degree. Over time, we need to recognize this reality and consider ways to build it more explicitly into the framework if we are to guide policy design and instrument selection. The literature on social construction of

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4There is one example above where scope of activity leading to the problem and political complexity are not well aligned – the problem of fragmentation and duplication of local public health service delivery. Here, the scope of activity leading to the problem is low because these problems are largely determined by local political arrangements and lie almost wholly within the public health policy sector. However, political complexity is rated high-medium nonetheless. This latter rating occurs not because of a multiplicity of actors but rather because intense interests of a limited number of parties (two individual LHD directors, for example) may make reaching agreements difficult. This suggests the potential bifurcation of problems characterizing political complexity so they account for issues arising because of strongly held viewpoints or interests, as well as multiplicity of actors – another potential expansion of the attributes in the framework.

5Global warming, which was cited by Peters and Hoornbeek (2005) cited some years ago, is problematic. However, in that piece it was recognized that the problem itself might be disaggregated so it could take place in incrementally, but that full resolution of the problem would require commitment to a major intervention.
policy problems can help us understand this process. Still, in spite of productive work in this broad area (Bacchi, 2009; Hoppe, 2010, for example), continued work to find ways to enable policy problem assessment frameworks – like the one investigated here – to come to terms with differing framings of policy problems would seem to be appropriate.

7. Conclusion

The analysis above expands the range of illustrative problems to which Peters (2005) framework for analyzing policy problems has been applied. Because the analysis appears to produce at least some potentially useful insights about several policy problems in the US, it lends further credence to the idea that efforts to understand policy problems and tie them systematically to policy design and policy instrument selection alternatives holds potential for expanding both our knowledge base and our ability to develop effective designs for solving policy problems.

At the same time, however, the systematic application of the assessment framework in this article makes it clear that we still have some distance to go before we can effectively link our assessments of problems in detailed fashion to preferred or recommended policy solutions. At a minimum, we face challenges in measuring the attributes included in the framework, identifying and applying appropriate attributes (and sub-attributes?) to specific policy problems, balancing comprehensiveness with parsimony within the framework, and tying the analytical framework to the realities associated with the social construction of policy problems. In spite of these substantial challenges, however, there is reason to believe that – with continued focus and some critical analysis – efforts in this area are likely to be rewarded over time.

Disclosure statement

No potential conflict of interest was reported by the authors.

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