The Criteria for Effective Policy Design: Character and Context in Policy Instrument Choices

Michael Howlett
Lee Kuan Yew School of Public Policy
National University of Singapore
and
Department of Political Science
Simon Fraser University
Burnaby, BC Canada
Howlett@sfu.ca

Presented to ICPP III
June 28-30
LKY School of Public Policy
National University of Singapore

Draft 2 – May 25, 2017

Abstract
Recent studies of policy design have grappled with such issues as policy tool use, overcoming historical policy legacies, the nature of policy mixes and issues around policy formulation and the nature of 'design' and 'designing' in policy-making. These studies have begun to establish insights into what makes a policy design 'effective' or likely to succeed in being adopted or implemented or both. This paper draws lessons from both the 'old' and the 'new' design work to establish several basic criteria for effective design and designing. As the review of the literature shows, the kinds of lessons that can be drawn from these studies fall into two categories: those dealing with matching design activity to the context of policy-making and those which focus on the character of the tools deployed in a design. The paper sets out both these elements and shows how they can be combined to generate lessons, insights and practices for both policy scholars and practitioners alike.

Introduction: Policy Design and Policy-Making

Policies come in complex packages and understanding the nature of the design criteria for creating effective portfolios is an important aspect of policy formulation and implementation. Recent studies of policy design have grappled with such issues as policy tool use, overcoming historical legacies, the nature of policy mixes and issues around policy formulation and the nature of 'design' and 'designing' in policy-making and have begun to establish insights into the question of what makes a policy design 'effective' or more likely to succeed (Bobrow 2006; Howlett 2011; Flanagan et al 2011).

That is, policies involve more or less complex sets of goals and the means to achieve them – existing as what Milkman (2012) calls 'policy bundles', Chapman (2003) and Hennicke (2004) 'policy mixes' and Givoni et al (2012) 'policy packages'. These are all are examples of complex portfolios of tools expected to address some part of a set of policy goals. These mixes typically involve much more than functional logics linking tools to a goal but also deal with ideological or even "aesthetic" preferences in tool choices and goal articulation which involve trade-offs and bargaining between actors in choosing one set of tools, goals and policies over another (Beland 2007; Williams and Balaz 1999). This makes their formulation or design especially problematic

(Peters 2005; Givoni 2013; Givoni et al 2012) and is more difficult to do when instruments belong to different territorial/administrative levels.

The kinds of lessons that can be drawn for effective policy design from studies of policy experiences and efforts with mixes and tools of different kind fall into two categories: those dealing with matching design activity to the context of policy-making and those which focus on the character of the tools deployed in a design.

Given their nature, policy tools or instruments, or techniques used by government in order to implement policy goals (Howlett 2005), have a special place in considerations and studies of policy design. Each tool has its own particular '*character*' and understanding this character is an important aspect of designing programmes and packages likely to attain government goals. But choosing policy tools and designing policy portfolios becomes more complex when, as is very common in many policy-making situations, multiple goals and multiple sectors are involved in a programme (Doremus 2003; Jordan et al 2012; Howlett et al 2009). In such circumstances, balancing the character of different types of tools is a challenge and how to achieve 'complementarity' and possibly useful 'redundancy' while avoiding excessive duplication and counter-productive mixes (Grabosky 1995; Hou and Brewer 2010; Justen et al 2013a) is a key question affecting programme design as is the question of how best to sequence or phase in instruments over time (Taeihagh et al 2013).

However, this activity of policy design or formulation is not just a matter of the character of individual tools and mixes, but also of *context*. That is, design questions with which contemporary scholars and practitioners grapple include issues such as avoiding both 'over' and 'under' design, or balancing 'effort' with the severity of a problem (Haynes and Li 1993; Maor 2012); how to enhance or alter mixes over time so that they are able to continue to meet old goals

and take on new ones (van der Heijden 2011; Kay 2007); and how to assess the political feasibility of policy alternatives as well as their technical merits (May 2005; Gilabert and Lawford-Smith 2011; Majone 1975).

If policy design theory is to improve and better inform policy practice, then it requires better understanding of both these dimensions of designs and designing, including both detailed knowledge of tool requirements and effects, and also of the kinds of formulation processes and contexts in which design takes place and instruments operate (Howlett 2011). This paper draws lessons from both the 'old' and the 'new' design work to establish several basic criteria for effective design and designing. It sets out both elements and shows how they can be combined to generate lessons and insights for better design among both scholars and practitioners alike.

Understanding the Character of Individual Policy Tools

Most older literature on policy tools focused on single instrument choices and fairly simple designs (Tupper and Doern 1981, Salamon 1989, Trebilcock and Prichard 1983). Early students of policy-making like Dahl and Lindblom, Edelman, Lowi and others, for example, had very flexible notions of the multiple means by which governments can give effect to policy and of the reasons why different kinds of tools were effective (Dahl and Lindblom 1953; Kirschen et al 1964; Edelman 1964; Lowi 1966).

While these studies provided only limited insights into the complex arrangements of multiple policy instruments which are commonly found in all policy fields (Jordan et al 2011 and 2012; Givoni 2013), they did provide detailed considerations on the strengths and weaknesses, and prerequisites, of many tools.

In an inventory of policy instruments undertaken in the early 1960s, Kirschen et al (1964) identified dozens of instruments utilized by western governments in the area of economic

development in post-war Europe. They grouped these into five general "families" according to the resource used to effect change. These were: public finance, money and credit, exchange-rates, direct control, and changes in the institutional framework (pp. 16-17).

Around the same time other authors like Dahl and Lindblom, for example, did not try to develop an exhaustive list or categorization scheme for existing techniques of governance but instead argued that the number of possible alternative instruments is virtually infinite. In order to understand their variation, they argued they could usefully be ranged over five long continua with various techniques lying between the poles of each continuum. The first continuum ranged instruments according to whether they involved public or private enterprises or agencies; the second according to whether they were persuasive or compulsory; the third according to whether they involved direct or indirect controls over expenditures; the fourth according to whether they involved organizations with voluntary or compulsory membership; the fifth according to whether government agencies were autonomous or directly responsible to legislators or executive members (pp. 9-16).

Both these kinds of lists were relatively arbitrary but all addressed a key issue in programme design: attempting to distinguish between different tools based on their inherent characteristics and impacts. This discussion dealt with an ongoing issue at the time in the field, that of level of 'substitutability' of different tools (Howlett 1991). That is, whether different instruments can perform similar tasks and are hence to some degree substitutable with eachother or whether different instruments perform distinctly different tasks and thus are more unique. Inventories and taxonomies which focused on the different resources used by different tools and their different configuration and impact lead to the conclusion that instruments are not entirely

substitutable. That is, instruments have particular capabilities and particular requisites and must be carefully matched to the job they are expected to perform.

This lack of substitutability is the fundamental basis for policy design work. That is, if any tool can perform any job then policy design is less problematic for a government than having the administrative expertise required to ensure adequate staff and reporting arrangements are in place to ensure an instrument is deployed properly and adjusted as necessary to attain its objective(s). If each instrument is capable of addressing only particular kinds or aspects of problems, however, then a large part of the task before governments and policy analysts is to establish the technical specifications of each instrument in order to see which instruments are even theoretically capable of addressing a given problem. Policy design is then about understanding the nature of the problem faced by governments, the supply of governing resources available to deal with it and the capabilities and requisites, or "character" of different instruments which can be deployed to affect it. Understanding their unique characteristics thus serves to restrict the number of feasible and available instruments and to greatly narrow the range of choice available to governments in any given situation (Gilabert and Lawford-Smith 2012). Explaining an effective instrument choice, in this second conception, is then a matter of determining the parameters of a given policy situation and of matching the needs for action and with the supply tools available, tasks which can be done well ("good" design) or poorly ("poor" design).

Thus in 1989, for example, Linder and Peters attempted to summarize the findings of this literature and in so doing described eight "attributes of instruments" which they felt affected specific tool choices. These were: *complexity of operation, level of public visibility, adaptability across uses, level of intrusiveness, relative costliness, reliance on markets, chances of failure, and precision of targeting* (p. 56). In his later work, Peters (2000) reduced this number to seven and

altered their content so that they became: directness, visibility, capital/labour intensity, automaticity or level of administration required, level of universality, reliance on persuasion vs enforcement, and their 'forcing vs enabling' nature (p. 39). This was no doubt due to the conclusion from further study that drawing a sharp distinction between 'market-based' and 'state-based' tools is less useful than thinking about these as 'modes of governance; while 'chances of failure' is also a highly contextual item which does not 'adhere' to an instrument as a fundamental characteristic. The other difference between the two lists is the addition of several sub-elements to "level of intrusiveness" which, if removed, leaves five main instrument characteristics or appraisal criteria: *automaticity, visibility, intrusiveness, cost and precision of targeting.*

Targeting, visibility and intrusiveness, for example, are key criteria which must be balanced against the more administrative preference for 'automaticity' or cost efficient ("low maintenance") implementation.

Principles of Policy Design Based on Character of Tools

The discussion above highlights the role played in policy design by the characteristics of individual policy tools. The literature on the subject has highlighted several key principles, which can inform policy design considerations in this area. Three of these are listed below: parsimonious tool use; moving up the scale of coercion in sequential instrument choices; and matching tools with targets.

Parsimonious Tool Use

The older literature on policy design suggested several maxims or heuristics which can be used to head off common errors in policy-making. The first and oldest of these is to observe parsimony in tool selection. An oft-cited rule in this area, for example, is that the optimal ratio of the number of tools to targets is 1:1 (Knudson 2009) an axiom first put forward by Tinbergen (1952) who argued

that the number of policy tools in any mix should roughly match the number of goals or objectives set for the policy. This is a reasonable rule-of-thumb, for which Tinbergen provides some logical justification in his discussion of information and administrative costs associated with redundant tools in the area of economic policy.

Assuming that utilizing more instruments costs less than fewer, this maxim translates easily enough into a basic efficiency calculus for the attainment of policy ends and in his work Tinbergen analyzed what he termed the 'normal' case in which it was possible to match one goal with one target so that one instrument could fully address its task and accomplish the goal set out for it. Most observers, however, including Tinbergen, were and are well aware that combinations of tools are typically used to address a policy goal, not a single instrument. As Tinbergen (1952 p. 37) himself argued "A priori there is no guarantee that the number of targets always equals the number of instruments" and (p. 71) "it goes without saying that complicated systems of economic policy (for example) will almost invariably be a mixture of instruments". This aspect of policy design is discussed in more detail in the following section.

Moving Up the Scale of Coercion in Sequential Instrument Choices

A second principle of policy design found in the older literature on the subject was not only to be parsimonious in the number of instruments chosen at a specific point in time to attain a goal, but also dynamically or sequentially. In the mid-1970s and early 1980s, for example, Bruce Doern, Richard Phidd, Seymour Wilson argued that different policy instruments varied primarily in terms of the 'degree of government coercion' each instrument choice entailed (Doern 1981; Doern and Phidd 1983; Doern and Wilson 1974; Tupper and Doern 1981). They argued that tool choices should only 'move up the spectrum' as needed from minimum towards maximum.[1]

This rationale is based on a cost-effort calculation linked to an appreciation of the ideological preferences of liberal-democratic governments for limited state activity and on the difficulties posed the exercise of state power by the relative political "strength" of the societal actors able to resist government efforts to shape their behaviour. Assuming that all instruments were more or less technically "substitutable" or could perform any task - although not necessarily as easily or at the same cost - they argued that in a liberal democratic society, governments, for both cost and ideological reasons, would prefer to use the least coercive instruments available and would only "move up the scale" of coercion as far as was necessary in order to overcome societal resistance to attaining their goal (Howlett 1991). Preferring "self-regulation" as a basic default, for example, governments would first attempt to influence overall target group performance through exhortation and then add instruments only as required in order to compel recalcitrant societal actors to abide by their wishes, eventually culminating, if necessary, in the public provision of goods and services.

This is not an unreasonable conclusion, based as it is on extensive observation of the actual design practices followed by many governments. However, as Woodside (1986) argued:

> Experience suggest that governments do not always seek to avoid coercive solutions, but indeed, may at times seem to revel in taking a hard line from the start. While there are undoubtedly many reasons for these heavy-handed responses, surely some of the most important ones include the constituency or group at which the policy is aimed, the circumstances in which the problem has appeared, and the nature of the problem involved (p. 786).

Matching Tools and Targets

There is a significant behavioural component to policy design, tool use and choice which is critical to policy success and failure (Weaver 2009b; Lynn 1986; Schneider and Ingram 1990; Shafir 2013) and correctly anticipating this is a key component of effective policy design. That is, it is critically important for policy-making that the behaviour resulting from policy activity and the expenditure of governing resources matches that anticipated prior to deployment (May 2004; Kaine et al 2010; Duesberg et al 2014).

Policy tool use and behavioural expectations are linked in the sense that the use of policy tools involves implicit or explicit assumptions and expectations about the effect tool deployment will have upon those impacted by it. In most cases, with the exception of those symbolic instances where 'over-design' is welcomed, such as in areas such as national security or crime prevention (Maor 2013; 2014; 2016), efficient policy designs are those that affect only those targets whose behaviour it is necessary to change and with only the minimum necessary levels of coercion and display.

Studies of policy designing, and many designs themselves, have often been developed with only the most rudimentary and cursory knowledge of how those expected to be affected by and instrument are in fact likely to react to it (Lewis 2007; Corner and Randall 2011; Taylor et al 2013; Duesberg et al 2014).[2] However, regardless of whether those targets are purely social constructions with few empirical referents (Schneider and Ingram 1993 and 2005) or if they reflect more objective assessment of the actual behaviour of relevant groups of policy actors, it is critical for effective policy-making that actual target behaviour matches expectations and this is thus a key aspect of effective policy design (Grabosky 1995; Weaver 2009a, 2009b, 2013, 2015; Winter and May 2001; Neilson and Parker 2012).

Hence much work in this area is often focused around the idea of 'getting incentives right' or calibrating incentives and disincentives, within financial tools in order to achieve expected levels of compliance and outcomes rather than upon examining other, more normative or culturally-determined aspects of target reactions. Policy designs in areas such as environmental policy-making developed in the 1980s reflected this economistic orientation with policy initiatives in areas such as pollution prevention and professional regulation assuming a distinctly utilitarian bent in so doing (Hippes 1988; Trebilcock 1983; González-Eguino 2011). This tendency has changed somewhat in recent years, however, as scholars and practitioners alike, many under the influence of behavioural economics, have come to appreciate that members of the public and other policy actors often predictably behave in less than perfectly rational ways (Ariely 2010; Thaler et al 2010; Thaler and Sunstein 2009, Mulgan 2008, Bason 2014).

Assessing behaviour and choosing tools accordingly is not a trivial issue in policy theory and practice. Is it the best way to encourage and increase in birthrates, for example, to provide subsides which might tip the balance of a woman's or family's calculations of affordability of children? Or is it more effective to promote family-centred events and activities in public service announcements and movie and television and other entertainment placements which promote the notion of home life and the pleasures of children and family (Lichtenstein and Slovic 2008)? Or both?

Policy tool considerations built around the first orientation can involve debates and discussions around particular kinds of financial tools such as providing more widely distributed and available subsidized daycare and better local schools rather than around how much of a direct subsidy to a parent through the use of tax incentives or cash grants will promote higher levels of childbirth and larger families (Woodside 1979). The second may involve activities such as movie

theatre and TV public service advertisements and educational programmes in schools and elsewhere rather than the actual provision of new services or subsidies. And whether both work in conjunction with each other or at cross purposes is unknown.

Weaver (2009b p. 5), for example, has enumerated some of the various 'compliance problems' or 'barriers' to compliance which governments face when putting their policies into practice. These indeed include incentive and sanction problems where positive and or negative incentives are insufficient to ensure compliance, but also monitoring problems where target compliance may be difficult or costly to monitor; resource problems where targets lack the resources to comply even if they want to; autonomy problems where targets do not have the power to make decisions that comply with policy even if they want to; information problems where targets lack information that would make compliance more likely, and attitude and objectives problems where targets are hostile /mistrustful towards providers or programs. Addressing such considerations requires more than one tool and how these tools interact in a 'compliance regime' is an important but understudied aspect of policy designs.

Many significant issues related to the manner in which tool choices in bundles are made and how tool bundles evolve over time affect the propensity for designs to avoid the twin shoals of over and under-reacting to problems (Maor 2012; Howlett and Rayner 2007) while incorporating better knowledge of both synergistic and counter-productive tool relationships and interactions (Del Rio 2010; LePlay and Thoyer 2011; Grabosky 1995; Justen et al 2013b).

Extending the Analysis to the Character of Policy Mixes

The character of individual tools then, both in terms of the modalities of their employment and behaviours they invoke, are a key aspect of policy designs. However, as mentioned above, it is not

just the character of individual tools, but of policy mixes which must be taken into account in the creation and execution of effective designs.

Bundling or mixing policy tools together in complex arrangements raises many difficult questions for students and practitioners when there are significant interactive effects among policy tools some of which may be very difficult to anticipate or quantify using standard analytical tools (Justen et al 2013a and 2013b; Boonekamp 2006; Yi and Feiock 2012). That is, in such mixes the instruments are not isolated from each other and tools in such mixes interact leading to the potential for negative conflicts ("one plus one is less than two") and synergies ("one plus one is more than two") (Lecuyer and Bibas 2011; Philibert 2011). In such cases, different design principles are required to help inform portfolio structure.

There are also a series of questions about how exactly tools fit together, or should fit together, for example, in a mix. Another set of design issues involves determining how many tools are required for the efficient attainment of a goal or goals. The issue of potentially under or over-designing a mix arises in many circumstances and is made more complex because in some instances, for example, arrangements may be unnecessarily duplicative while in others some redundancy may be advantageous in ensuring that goals will be met (Braathen and Croci 2005; Braathen 2007).

This concern has animated policy design studies from their outset. Here the question of tool complementarity looms large. As Tinbergen (1952) noted, additional tools – "supplementary" or 'complementary" ones – are often required to control side-effects or otherwise bolster the use of a 'primary' tool. However, there are information and administrative costs associated with the use of redundant tools which also have to be taken into account (Knudson 2009).

It is also a situation which has a temporal as well as a spatial dimension. That is, across time periods new instruments appear and old ones evolve or are eliminated. That is, design analyses must extend beyond questions of tool synergies and optimal design to consideration of how and why mixes change over time and how the processes of policy formulation followed in adopting such complex designs take place (Larsen et al 2006; Kay 2007; Feindt and Flynn 2009). The existing evidence shows that suboptimal situations are very common in many existing mixes which have developed haphazardly through processes of policy layering (Thelen 2004; van der Heijden 2011). This is a process in which new tools and objectives have been piled on top of older ones, creating a palimpsest-like mixture of quite possibly inconsistent and somewhat incoherent policy elements (Howlett and Rayner 2007; Carter 2012; OECD 1996). These kinds of 'unintentional' mixes can be contrasted with 'smarter' designs which involve creating new sets of tools specifically intended to overcome or avoid the problems associated with layering but which may be harder to put into practice (Gunningham et al 1998; Kiss et al 2012).

These processes and change dynamics again focus attention on the *sequencing* of instrument choices within mixes (Taeihagh et al 2009 and 2013b) and especially upon the fact that many existing mixes have developed without any sense of an overall conscious design (Daugbjerg 2009).

Principles of Policy Design Based on Character of Tools in Mixes

The impact of these kinds of studies is clear in the kinds of admonitions made to policy designers and the effort to articulate clear principles of policy formulation and design linked to the characteristics of policy portfolios.

Aiming for Coherence, Consistency and Congruence as Measures of Design Integrity and Superiority

Much work on policy design and policy mixes has focused on the need for the various parts of a mix or portfolio to be *integrated* for maximum effectiveness (Briassoulis 2005a and 2005b). Policies are composed of several elements and some correspondence across these elements is required if policy goals are to be integrated successfully with policy means (Cashore and Howlett 2007).

These include criteria such as "*consistency*" (the ability of multiple policy tools to reinforce rather than undermine each other in the pursuit of policy goals), "*coherence*" (or the ability of multiple policy goals to co-exist with each other and with instrument norms in a logical fashion, the relationships within the shaded area in figure), and '*congruence*" (or the ability of goals and instruments to work together in a uni-directional or mutually supportive fashion) as important measures of optimality in policy mixes following this integrative logic (Lanzalaco 2011; Howlett and Rayner 2007; Kern and Howlett 2009).

However, while clear enough in theory, empirical work on the evolution of policy mixes has highlighted how these three criteria are often weakly represented in existing mixes, especially those which have evolved over a long period of time (Howlett and Rayner 2006; Rayner and Howlett 2009). That is, discussions of policy designs do not take place in an historical vacuum and an issue which is especially vexing for design studies is the extent of the constraints imposed on design by the *temporal* evolution of tool portfolios (Miller and Winterberger 1990).

Many existing studies assume, whether explicitly to implicitly, that *any* combination of tools is possible in any circumstance. That is, that decision-makers have unlimited degrees of freedom in their design choices. Empirical studies, however, have noted this kind of freedom in

combining design elements is only to be found in very specific circumstances – what Thelen (2003) terms 'replacement' or 'exhaustion' – when older tool elements have been swept aside or abandoned and a new mix can be designed or adopted *de novo*. These circumstances are quite rare and most existing mixes or portfolios have been found to have emerged from a gradual historical process in which a policy mix has slowly built up over time through processes of incremental change or successive reformulation – processes that historical institutionalists, such as Thelen (2003), Hacker (2004 and 2005) and others, term "layering", "drift", or "conversion" (Bode 2006). This aspect of designing and design work is discussed further in the next section of the paper.

Maximizing Complementary Effects & Minimizing Counter-Productive Ones

Recent design thinking and work on "smart regulation" has underlined the importance of considering the full range of policy instruments when designing a mix rather than assuming that a choice must be made between only a few alternatives such as regulation versus market tools (Gunningham et al 1998).

However, a major issue for such studies is the fact that not all of the tools involved and invoked in a mix are inherently complementary (Tinbergen 1952; Grabosky 1995; Gunningham et al 1998; Gunningham and Sinclair 1999; del Rio et al 2011; Boonekamp 2006) in the sense that they evoke contradictory responses from policy targets (Schneider and Ingram 1990a, 1990b; 1993; 1994; 1997; 2005). Some combinations, of course, may be more virtuous in providing a reinforcing or supplementing arrangement (Hou and Brewer 2010). And some other arrangements may also be unnecessarily duplicative while in others some redundancy may be advantageous (Braathen and Croci 2005; Braathen 2007).

That is, as Grabosky (1995) and others suggested, some tools counteract each other – for

example, using command and control regulation while also attempting voluntary compliance – while, as Hou and Brewer (2010) argued, other tools complement or supplement each other – for example, using command and control regulation to prevent certain behaviour deemed undesirable and financial incentives to promote more desired activities.

A key principle of current policy design thinking, therefore, is to try to maximize supplementary effects while minimizing counterproductive ones. "Smart' design implies creating packages which take these precepts into account in their formulation or packaging (Gunningham, Grabosky and Sinclair 1998; Gunningham and Sinclair 1999; Eliadis et al 2005).

Understanding and Incorporating the Context of Policy Designs into Designing

While the character of individual tools and mixes is important, so is context (deLeon 1988). Kirschen et al, for example, noted very early on that the key determinants of policy choice are the economic objective pursued and the structural and conjunctural context of the choice. While the choice of a specific instrument could be made on essentially technical grounds, according to criteria such as efficiency, cost or effectiveness; it would also be affected by the political preferences of interest groups and governments, and a variety of sociological and ideological constraints which would also inform tool choices and preferences (pp. 238-244).The economic objectives of the governments they examined in post-war Europe, they argued, were determined by the interaction of political parties and their representatives in government, administrators, and interest groups. (pp. 224-236). The structural and conjunctural contexts created by the influence of long-term economic processes and structures, and current economic conditions affected political institutions and actors and through them, instrument choices (pp. 236-238).

Similarly, in his pathbreaking early works on public policy-making, for example, Harold Lasswell (1954), a political psychologist by training, conceived of the main instruments of politics

as involving, among other things, the manipulation of symbols, signs and icons which rely on individual's affections and loyalties to particular ideas and actors in addition to financial and other kinds of incentives and disincentives subject to more utilitarian calculations. Lasswell noted the extent to which governments could affect every aspect of policy-making through such manipulations varied depending upon the circumstances and actors involved in any given context and argued that a principal task of the policy sciences must be to understand the nuances of these situations and calibrate their actions and their effects accordingly (Lasswell 1954 and 1971; Doern and Phidd 1988; Doern and Wilson 1974).

This makes the question of instrument choice and design more difficult since, if political choices predominate over effectiveness ones, then theoretically at least any instrument could be utilized in any given situation regardless of the actual results of this deployment in terms of correcting or ameliorating a problem. Given this political-driven substitutability, why one instrument is chosen over another cannot be explained or conceived of as a technical matter. Rather a host of other factors must come into play and different governments will choose different instruments given their particular mix of partisan, electoral, legislative and other preferences including their habits and historical *modus operandi*. The latter subject saw some earlier treatment in studies on 'policy styles' which identified common patterns and motifs in the construction of typical policy designs in different jurisdictions reflecting these concerns (Richardson et al 1982; Howlett 2004). Contemporary studies have taken this work to heart in locating design decisions within governance arrangements and existing policy regime preferences do much the same thing (Howlett 2009).

Such decisions, however, even if politically driven are not random and context, like character, can be systematically modelled and analyzed in its effects on the process of policy

designing. In other words, the design of policy mixes can encompass the need to ensure a good fit not only between packages of tools and government goals but also their institutional and behavioural contexts at specific moments in time (Considine 2012; Lejano and Shankar 2013).

Existing work on the subject of policy portfolio design helps to address this issue by differentiating between design spaces which are simple and more complex (Howlett 2004; Howlett et al 2006; (Howlett 2011). Thus, for example it is possible to categorize policy mixes in terms of whether they are single 'level' mixes and those with a more complex structure. That is, in addition to the 'horizontal' issue addressed by many students of the subject – pertaining to the kind of relationships existing between tools, goals and policies within a single level of government and sector of policy-making – a second, 'vertical' dimension is often present. This vertical dimension involves not just the number of instruments, goals and policies found in a mix, but also the number of policy sectors they involve and the number of governments active in policy formulation in this area (del Rio 2009; Howlett and del Rio 2015). Such a framework allows room for many more complex interactions between bundle elements than typically envisioned or analyzed in existing studies. That is, conflicts and synergies between tools, goals and policies can be identified both at the horizontal level, for example between different types of instruments and goals within each level of analysis, and/or at the vertical, that is, across and between different policy sectors and/or administrative levels.

These variations have significant implications for both the number and type of actors involved in policy design and the processes through which formulation unfolds, as well as for the complexity of design itself. While some aspects of horizontal interactions can be addressed in largely technical ways – so that, for example, some conflicts can be mitigated just by selecting certain instruments over others – in more complex cases such analyses must be supplemented by

other political, administrative and organizational logics and policy formulation processes become more difficult.

Vertical design contexts cutting across sectors and governments require greater efforts aimed at achieving administrative coordination and policy integration suitable to the complexity of context which horizontal mixes generally do not. In the former situation relevant coordination, for example, needs to be in place between different administrative levels and across policy subsystems which do are not needed in simpler horizontal contexts. The configuration of elements in a vertical mix must relate to preferences for different instruments favored in multiple sectors and governments rather than just among a single set of actors (Freeman 1985; Howlett 2009). And shifts in these preferences over time also require special handling and analysis (Briassoulis 2005a and 2005b).

Other work has examined a second aspect of 'context', that is, the question of the ability and intent of governments to undertake this kind of design activity. In this work, design "spaces" are defined somewhat differently. Many commentators, pundits and jaded or more cynical members of the public, for example, assume that all policy-making, as the output of a political system and decision-making process, is inherently interest-driven, ideological and hence "irrational" in a design sense. Policy design studies, of course, acknowledge that not all policy work is rational in an instrumental sense: that is, not all policy-making is logic or knowledge driven and it is debatable how closely policy-makers approximate the instrumental logic and reasoning which is generally thought to characterize this field (Howlett et al., 2009; Howlett and Mukherjee 2014).

In some policy decisions and formulation processes "design" considerations may be more or less absent and the quality of the logical or empirical relations between policy components as

solutions to problems may be incorrect or ignored (Cohen, March, & Olsen, 1979; Dryzek, 1983; Eijlander, 2005; Franchino & Hoyland, 2009; Kingdon, 1984; Sager & Rielle, 2013). This includes a variety of contexts in which formulators or decision-makers, for example, may engage in interest-driven trade-offs or log-rolling between different values or resource uses or, more extremely, might engage in venal or corrupt behaviour in which personal gain from a decision may trump other evaluative criteria.

In general, this work has suggested that a spectrum of design and non-design formulation processes exists between policy processes informed by instrumental motivations and ones driven by other logics. While the distinction between policy-driven and politically-driven processes is clear, however, it is necessary to examine in more detail why one process emerges rather than the other and, secondly, the conditions under which either can successfully achieve its goals.

Figure 1 presents a schematic illustrating how two different contextual aspects of policy-making – having a design intention and the capacity to carry it out or not - create different policy formulation spaces which enable very different policy design processes and outcomes to emerge. This sets out a set of formulation processes lying between the intention and ability to undertake purposive, instrumental policy design and the intention to meet more political goals coupled with the presence of significant policy resource constraints or tool lock-in affects.

Figure 1. Types of policy formulation spaces: Situating design and non-design processes and outcomes

		Level of Government Knowledge and Other Constraints	
		High	**Low**
Government Formulation Intention	**More Instrumental**	***Capable Policy Design Space*** *Relatively unconstrained formulation via design is possible*	***Poor Policy Design Space*** *Only partially informed or restricted design is possible*
	Less Instrumental	***Capable Political Non-Design Space*** *Relatively unconstrained non-design processes are possible*	***Poor Political Non-Design Space*** *Only poorly informed non-design is possible*

As Figure 1 suggests, the nature of the constraints on government intentions can negatively affect both design and non-design processes and result in poor outcomes in specific sectors. While in either the case of a design or a non-design situation high government capacity is a significant pre-requisite for success, the same is true of a lack of capacity. For those favouring more rational design process the worst situation is a politicized, religious or ideologically-driven policy process with few governing resources. However even when these values dominate, capacity remains a critical pre-requisite for successful formulation and implementation.

Having the necessary skills or *competences* to make policy are crucial to policy and governance success. However, they also rely on their availability and the availability of adequate resources to allow them to be mobilized. These resources or *capabilities* must exist at the individual, organizational and system-levels in order to allow individual policy workers and managers to participate in and contribute to designing, deploying, and evaluating policies. It includes not only their ability to analyse but also to learn and adapt to changes as necessary (Wu et al 2015).

Analytical competences allow policy alternatives to be effectively generated and investigated; managerial capacities allow state resources to be effectively brought to bear on policy issues; and political capacities allow policy-makers and managers the support required to develop and implement their ideas, programs and plans. The skills and competences of key policy professionals, such as policy-makers, public managers, and policy analysts, play a key role in determining how well various tasks and functions in policy process but require various kinds of resources if they are to be exercized fully or to the extent they are needed. But resources must also

be available at the level of the organization if their members' ability to perform policy functions as needed is to exist.

System level capabilities include the level of support and trust a public agency enjoys from its political masters and from the society at large as well as the nature of the economic and security systems within which policy-makers operate. Such factors are critical determinant of organizational capabilities and thus of public managers' and analysts capability to perform their policy work. Political support for both from both above and below is also vital because agencies and managers must be considered legitimate in order to access resources from their authorizing institutions and constituencies on a continuing basis, and such resources must also be available for award in the first place (Woo et al 2015).

Principles of Policy Design Based on the Design Context

Just as was the case with single instrument and mix characteristics, it is possible to highlight several design principles which flow from the analysis of design context above. These include the question of goodness of fit of proposed designs with pre-existing governance preferences, and the need for an accurate analysis of the degrees of freedom designers have to innovate.

Goodness of Fit: The Need for Designs to Match Governance Mode and Policy Regime Capacities

Contemporary design theory highlights the need for designs to respond to particular, context-dependent features of the policy sector involved. In this sense, "goodness of fit" between tool and context is a key concern in contemporary policy design considerations and can be seen to occur at several different levels (Brandl 1988).

That is, design choices emerge from and must generally be congruent with the governance modes or styles practiced in particular jurisdictions and sectors (Howlett 2009). That is, different orientations towards state activity require different capabilities on the part of state and societal actors and since different governance modes or styles rely on these to greater or lesser degrees, policy designs must take into account both the desired governance context and the actual resources available to a governmental or non-governmental actor in carrying out its appointed role.

Thus, for example, planning and 'steering' involve direct co-ordination of key actors by governments, requiring a high level of government policy capacity to identify and utilize a wide range of policy tools in a successful policy 'mix' or 'arrangement' (Arts, Leroy and van Tatenhove, 2006; Arts and van Tatenhove, 2000). Again, work on 'policy styles' and administrative traditions (Kagan 2001, Richardson et al 1982, Freeman 1985; Knill 1998) have identified common patterns and motifs in the construction of typical policy designs in different jurisdictions reflecting such concerns (Kiss et al 2012; Howlett 2011 and 2009) and leading to preferences for particular kinds of tools which make their design and adoption simpler than non-traditional ones.

Degrees of Freedom in Policy Designs: Matching Policy Designing and Policy Designs Over Time

Second, as noted above, empirical studies in many policy areas have shown that many existing policy mixes were not 'designed' in the classical sense of conscious, intentional and deliberate planning according to well established or oft-used governance principles but rather evolved through processes of layering and others. As Christensen, et al. (2002) have argued, the issue here is the leeway or degrees of freedom policy designers have in developing new designs given existing historical arrangements of policy elements not, as above, tine the context of governance preferences and policy styles but in that of path dependencies, policy legacies and lock-in effects.

That is, in addition to the requirements of "goodness of fit" with prevailing governance modes with respect to policy design (noun), there are also constraints imposed on design (verb) activities by existing trajectories of policy development. As Christensen et al. note, 'these factors place constraints on and create opportunities for purposeful choice, deliberate instrumental actions and intentional efforts taken by political and administrative leaders to launch administrative reforms through administrative design' (2002: 158).

How much room to manouevre or degrees of freedom designers have to be creative (Considine 2012) or, to put it another way, to what degree they are 'context bound" in time and space (Howlett 2011) is a key one for contemporary design studies.

Conclusion: The Multi-Level and Nested Nature of Policy Designs

As this discussion has shown, over the course of the past 30 years, the study of policy implementation instruments has advanced through the various stages of social scientific theory construction and now contributes a great deal of knowledge to policy formulation and policy designs (Hood; 2007; Lascomes and Le Gales, 2007).

Instrument selection and activation is a key component of policy design. And policy studies is replete with many taxonomies and typologies describing policy instrument varieties and grappling with the issue of the "rationale for tool choice', that is the theoretical, and practical, reasons policy-makers - formulators, decision-makers and implementers - prefer or select specific kinds of tools. These insights have not been well integrated with policy design studies, however, despite the latter's emphasis on policy tools as the substance of design work.

This paper addressed this important aspect of policy design work and policy studies by distinguishing between the *context* of policy designing and the *character* of the tools deployed in

a design. Many recent design studies have focused on issues related to policy-maker behaviour, such as ideological predispositions or the lock-in effects of bureaucratic tools, but less upon the characteristics of the tools, themselves, something earlier work on policy tools that authors such as Salamon, Linder and Peters and others emphasized. Harkening back to this earlier work this paper suggests that some aspects of the tool itself, notably its ability to be focused generally or more precisely, is a significant determinant of choice. Some tools are more capable than others in this area and these capabilities and limitations, it is argued, are essential considerations in designing and implementing public policies.

Understanding both character and context and combining them, it is argued here, provides a formula for effective design, matching what could be done in theory with what can be done in practice. This suggests that design element appraisals vary directly with the fluidity of the decision context. When governance modes are changing, appraisals and design criteria will include assessments of political risks and constraints that are not required if a mode is stable. If both governance mode and policy regime are stable then decisions may be taken essentially on grounds of micro-level factors such as visibility, automaticity, intrusiveness, cost, and especially in terms of instrument 'settings', precision of targeting.

Defining and thinking about designing polices and policy-making in this way is very useful for policy design because it highlights how instrument choices are all about constrained efforts to match goals and expectations both within and across categories of policy levels and elements (Keohane 1998). As Renate Mayntz (1983) argued, "to approach the problems of effective programme design", it is "necessary first to identify the relevant programme elements and characteristics which are the object of decision in a process of programme design" (p. 126). Understanding the character of the basic types of instruments available to policy-makers and

establishing the criteria for assessing the advantages and disadvantages of their use in specific contexts s essential knowledge allowing for the creation of new policy designs as well as the assessment and improvement of existing ones (Gibson 1999).

Endnotes

[1] They first placed only self-regulation, exhortation, subsidies, and regulation on this scale (Doern 1981) but later added in categories for "taxation" and public enterprise (Tupper and Doern 1981) and finally, an entire series of finer "gradations" within each general category (Phidd and Doern 1983).

[2] It is often simply assumed, for example, that policy 'targets' are rational self-maximizers, calculating their best interests hedonically in deciding whether or not to comply with the demands of government instruments and mechanisms such as regulation, laws and subsidies (Stover and Brown 1975; Gevrek and Uyduranoglu 2015; Weaver 2014; Jones et al 2014; Duesberg et al 2014; Araral 2014; Maskin 2008). Many studies of policy instruments, heavily influenced by economists, for example, assumed both decision-makers and policy targets were motivated exclusively by relatively narrow utilitarian self-interest maximization (Stokey and Zeckhauser 1978; Trebilcock and Hartle 1982; Dewees 1983). Other studies often reflected this view in part because they followed the lead of economists in focussing on the use of economic tools such as regulation, public enterprises, or subsidies which more or less directly affected the type, quantity, price or other characteristic of goods and services being produced in industrial and environmental policy spheres, which could in fact be analyzed in largely economistic terms (Salamon 1989; Bemelmans-Videc 1998; Peters and van Nispen 1998).

References

Araral, Eduardo. "Policy and Regulatory Design for Developing Countries: A Mechanism Design and Transaction Cost Approach." *Policy Sciences*, 2014, 1–15. doi:10.1007/s11077-013-9192-z.

Ariely, Dan. *Predictably Irrational, Revised and Expanded Edition: The Hidden Forces That Shape Our Decisions*. 1 Exp Rev edition. New York: Harper Perennial, 2010.

Arts, B., P. Leroy, and J. van Tatenhove. "Political Modernisation and Policy Arrangements: A Framework for Understanding Environmental Policy Change." *Public Organization Review* 6 (2006): 93–106.

Bason, Christian. *Design for Policy*. Farnham, Surrey; Burlington, VT: Gower Pub Co, 2014.

Beland, Daniel. "Ideas and Institutional Change in Social Security: Conversion, Layering and Policy Drift." *Social Science Quarterly* 88, no. 1 (2007): 20–38.

Bemelmans-Videc, M. L., R. C. Rist, and E. Vedung, eds. *Carrots, Sticks and Sermons: Policy Instruments and Their Evaluation*. New Brunswick: Transaction Publishers, 1998.

Bobrow, Davis. “Policy Design: Ubiquitous, Necessary and Difficult.” In *Handbook of Public Policy*, edited by B. Guy Peters and Jon Pierre, 75–96. SAGE, 2006.

Bode, I. “Disorganized Welfare Mixes: Voluntary Agencies and New Governance Regimes in Western Europe.” *Journal of European Social Policy* 16, no. 4 (2006): 346–359.

Boonekamp, Piet G.M. “Actual Interaction Effects Between Policy Measures for Energy efficiency--A Qualitative Matrix Method and Quantitative Simulation Results for Households.” *Energy* 31, no. 14 (November 2006): 2848–2873. doi:10.1016/j.energy.2006.01.004.

Braathen, N. A., and E. Croci. “Environmental Agreements Used in Combination with Other Policy Instruments.” In *The Handbook of Environmental Voluntary Agreements Vol 43*, 335–364. Dodrecht: Springer, 2005.

Braathen, Nils Axel. “Instrument Mixes for Environmental Policy: How Many Stones Should Be Used to Kill a Bird?” *International Review of Environmental and Resource Economics* 1, no. 2 (May 16, 2007): 185–235. doi:10.1561/101.00000005.

Brandl, J. “On Politics and Policy Analysis as the Design and Assessment of Institutions.” *Journal of Policy Analysis and Management* 7, no. 3 (1988): 419–424.

Briassoulis, H. “Analysis of Policy Integration: Conceptual and Methodological Considerations.” In *Policy Integration for Complex Environmental Problems: The Example of Mediterranean Desertification*. Aldershot: Ashgate, 2005a.

Briassoulis, H., ed. *Policy Integration for Complex Environmental Problems: The Example of Mediterranean Desertification*. Aldershot: Ashgate, 2005b.

Carter, Pam. “Policy as Palimpsest.” *Policy & Politics* 40, no. 3 (2012): 423–443. doi:10.1332/030557312X626613.

Cashore, Benjamin, and Michael Howlett. “Punctuating Which Equilibrium? Understanding Thermostatic Policy Dynamics in Pacific Northwest Forestry.” *American Journal of Political Science* 51, no. 3 (2007): 532–551.

Chapman, R. “A Policy Mix for Environmentally Sustainable Development - Learning from the Dutch Experience.” *New Zealand Journal of Environmental Law* 7, no. 1 (2003): 29–51.

Christensen, T., P. Laegreid, and L. R. Wise. “Transforming Administrative Policy.” *Public Administration* 80, no. 1 (2002): 153–179.

Cohen, M., J. March, and J. Olsen. “A Garbage Can Model of Organizational Choice.” *Administrative Science Quarterly* 17, no. 1 (1972): 1–25.

Considine, Mark. *Enterprising States: The Public Management of Welfare-to-Work*. Cambridge: Cambridge University Press, 2001.

Considine, Mark. “Thinking Outside the Box? Applying Design Theory to Public Policy.” *Politics & Policy* 40, no. 4 (2012): 704–724. doi:10.1111/j.1747-1346.2012.00372.x.

Corner, Adam, and Alex Randall. “Selling Climate Change? The Limitations of Social Marketing as a Strategy for Climate Change Public Engagement.” *Global Environmental Change* 21, no. 3 (August 2011): 1005–14. doi:16/j.gloenvcha.2011.05.002.

Dahl, R. A., and C. E. Lindblom. *Politics, Economics and Welfare: Planning and Politico-Economic Systems Resolved into Basic Social Processes*. New York: Harper and Row, 1953.

Daugbjerg, Carsten. “Sequencing in Public Policy: The Evolution of the CAP over a Decade.” *Journal of European Public Policy* 16, no. 2 (2009): 395–411.

deLeon, Peter. “The Contextual Burdens of Policy Design.” *Policy Studies Journal* 17, no. 2 (1988): 297–309. doi:10.1111/j.1541-0072.1988.tb00583.x.

Del Río, Pablo, Anxo Calvo Silvosa, and Guillermo Iglesias Gómez. "Policies and Design Elements for the Repowering of Wind Farms: A Qualitative Analysis of Different Options." *Energy Policy* 39, no. 4 (April 2011): 1897–1908. doi:10.1016/j.enpol.2010.12.035.

Del Río, Pablo. "Analysing the Interactions Between Renewable Energy Promotion and Energy Efficiency Support Schemes: The Impact of Different Instruments and Design Elements." *Energy Policy* 38, no. 9 (September 2010): 4978–4989. doi:10.1016/j.enpol.2010.04.003.

Del Rio, Pablo, "Interactions between Climate and Energy Policies: The Case of Spain." *Climate Policy* 9, no. 2 (2009): 119–38. doi:10.3763/cpol.2007.0424

Dewees, D. N. "Instrument Choice in Environmental Policy." *Econ.Inq.* 31 (1983): 53–71.

Doern, G. B. *The Nature of Scientific and Technological Controversy in Federal Policy Formation*. Ottawa: Science Council of Canada, 1981.

Doern, G. B., and R. W. Phidd. *Canadian Public Policy: Ideas, Structure, Process*. Toronto: Methuen*, 1983.

Doern, G. B., and V. S. Wilson. "Conclusions and Observations." In *Issues in Canadian Public Policy*, 337–345. Toronto: Macmillan, 1974.

Doremus, H. "A Policy Portfolio Approach to Biodiversity Protection on Private Lands." *Environmental Science & Policy* 6 (2003): 217–232.

Dryzek, John. "Don't Toss Coins in Garbage Cans: A Prologue to Policy Design." *Journal of Public Policy* 3, no. 4 (1983): 345–367.

Dryzek, J. S., and B. Ripley. "The Ambitions of Policy Design." *Policy Studies Review* 7, no. 4 (1988): 705–719.

Dryzek John S., and B. Ripley. "The Ambitions of Policy Design." *Policy Studies Review* 7, no. 4 (1988): 705–719.

Duesberg, Stefanie, Áine Ní Dhubháin, and Deirdre O'Connor. "Assessing Policy Tools for Encouraging Farm Afforestation in Ireland." *Land Use Policy* 38 (May 2014): 194–203. doi:10.1016/j.landusepol.2013.11.001.

Edelman, M. *The Symbolic Uses of Politics*. Chicago: University of Illinois Press, 1964.

Eijlander, P. "Possibilities and Constraints in the Use of Self-regulation and Co-Regulation in Legislative Policy: Experiences in the Netherlands - Lessons to Be Learned for the EU." *Electronic Journal of Comparative Law* 9, no. 1 (2005): 1–8.

Eliadis, P., M. Hill, and M. Howlett, eds. *Designing Government: From Instruments to Governance*. Montreal: McGill-Queen's University Press, 2005.

Feindt, Peter H, and Andrew Flynn. "Policy Stretching and Institutional Layering: British Food Policy Between Security, Safety, Quality, Health and Climate Change." *British Politics* 4, no. 3 (September 2009): 386–414. doi:10.1057/bp.2009.13.

Flanagan, Kieron, Elvira Uyarra, and Manuel Laranja. "Reconceptualising the 'Policy Mix' for Innovation." *Research Policy* 40, no. 5 (June 2011): 702–713. doi:10.1016/j.respol.2011.02.005.

Franchino, Fabio, and Bjorn Hoyland. "Legislative Involvement in Parliamentary Systems: Opportunities, Conflict and Institutional Constraints." *American Political Science Review* 103, no. 4 (2009): 607–621.

Freeman, G. P. "National Styles and Policy Sectors: Explaining Structured Variation." *Journal of Public Policy* 5, no. 4 (1985): 467–496.

Gevrek, Z. Eylem, and Ayse Uyduranoglu. "Public Preferences for Carbon Tax Attributes." *Ecological Economics* 118 (October 2015): 186–97. doi:10.1016/j.ecolecon.2015.07.020.

Gibson, R. B. *Voluntary Initiatives: The New Politics of Corporate Greening*. Peterborough: Broadview Press 1999.

Gilabert, Pablo, and Holly Lawford-Smith. "Political Feasibility: A Conceptual Exploration." *Political Studies* (2012). doi:10.1111/j.1467-9248.2011.00936.x.

Givoni, Moshe, James Macmillen, David Banister, and Eran Feitelson. "From Policy Measures to Policy Packages." *Transport Reviews* (n.d.): 1–20. Accessed December 11, 2012. doi:10.1080/01441647.2012.744779.

Givoni, Moshe. "Addressing Transport Policy Challenges through Policy-Packaging." *Transportation Research Part A: Policy and Practice*, 2013. doi:10.1016/j.tra.2013.10.012.

González-Eguino, Mikel. "The Importance of the Design of Market-based Instruments for CO2 Mitigation: An AGE Analysis for Spain." *Ecological Economics* 70, no. 12 (October 2011): 2292–2302.

Grabosky, P. "Counterproductive Regulation." *International Journal of the Sociology of Law* 23 (1995): 347–369.

Gunningham, N., P. Grabosky, and D. Sinclair. *Smart Regulation: Designing Environmental Policy*. Oxford: Clarendon Press, 1998.

Gunningham, N., and D. Sinclair. "Regulatory Pluralism: Designing Policy Mixes for Environmental Protection." *Law and Policy* 21, no. 1 (1999): 49–76.

Hacker, J. S., M. A. Levin, and M. Shapiro. "Reform Without Change, Change Without Reform: The Politics of US Health Policy Reform in Comparative Perspective." In *Transatlantic Policymaking in an Age of Austerity: Diversity and Drift*, 13–63. Washington D.C.: Georgetown University Press, 2004.

Hacker, J. S. "Policy Drift: The Hidden Politics of US Welfare State Retrenchment." In *Beyond Continuity: Institutional Change in Advanced Political Economies*, edited by W. Streek and K. Thelen, 40–82. Oxford: Oxford University Press, 2005.

Haynes, Kingsley E., and Qiangsheng Li. "Policy Analysis and Uncertainty: Lessons from the IVHS Transportation Development Process." *Computers, Environment and Urban Systems* 17, no. 1 (January 1993): 1–14. doi:10.1016/0198-9715(93)90002-M.

Hennicke, P. "Scenarios for a Robust Policy Mix: The Final Report of the German Study Commission on Sustainable Energy Supply." *Energy Policy* 32, no. 15 (October 2004): 1673–78. doi:10.1016/S0301-4215(03)00163-0.

Hippes, G. "New Instruments for Environmental Policy: A Perspective." *International Journal of Social Economics* 15, no. 3/4 (1988): 42–51.

Hood, Christopher. "Intellectual Obsolescence and Intellectual Makeovers: Reflections on the Tools of Government After Two Decades." *Governance* 20, no. 1 (2007): 127–44.

Hou, Yilin, and Gene Brewer. "Substitution and Supplementation Between Co- Functional Policy Instruments: Evidence from State Budget Stabilization Practices." *Public Administration Review* 70, no. 6 (2010): 914–924.

Howlett, M. "Policy Instruments, Policy Styles, and Policy Implementation: National Approaches to Theories of Instrument Choice." *Policy Studies Journal* 19, no. 2 (1991): 1–21.

Howlett, M. "The Lessons of Failure: Learning and Blame Avoidance in Public Policy-making." *International Political Science Review* 33, no. 5 (October 24, 2012): 539–555.

Howlett, Michael, M. Ramesh, and Anthony Perl. *Studying Public Policy: Policy Cycles & Policy Subsystems*. Oxford University Press, 2009.

Howlett, M. “What Is a Policy Instrument? Policy Tools, Policy Mixes and Policy Implementation Styles.” In *Designing Government: From Instruments to Governance*, edited by P. Eliadis, M. Hill, and Howlett, M, 31–50. Montreal: McGill-Queen’s University Press, 2005.

Howlett, Michael, and Jeremy Rayner. “Convergence and Divergence in ‘New Governance’ Arrangements: Evidence from European Integrated Natural Resource Strategies.” *Journal of Public Policy* 26, no. 2 (2006): 167–189.

Howlett, Michael, and Jeremy Rayner. “Design Principles for Policy Mixes: Cohesion and Coherence in ‘New Governance Arrangements’.” *Policy and Society* 26, no. 4 (2007): 1–18.

Howlett, Michael, and Raul Lejano. “Tales from the Crypt: The Rise and Fall (and Re-Birth?) of Policy Design Studies.” *Administration & Society* Forthcoming (2012).

Howlett, Michael. *Designing Public Policies: Principles and Instruments*. New York: Routledge, 2011.

Howlett, Michael, and Pablo del Rio. “The Parameters of Policy Portfolios: Verticality and Horizontality in Design Spaces and Their Consequences for Policy Mix Formulation.” *Environment and Planning C* 33, no. 5 (2015): 1233–45.

Howlett, Michael. “Governance Modes, Policy Regimes and Operational Plans: A Multi-Level Nested Model of Policy Instrument Choice and Policy Design.” *Policy Sciences* 42, no. 1 (2009): 73–89.

Jones, Rhys, Jessica Pykett, and Mark Whitehead. *Changing Behaviours: On the Rise of the Psychological State*. Edward Elgar Pub, 2014.

Jordan, A., D. Benson, A. Zito, and Wurzel R. “Environmental Policy: Governing by Multiple Policy Instruments?” In *Constructing a Policy State? Policy Dynamics in the EU*, edited by JJ Richardson, 104–24. Oxford: Oxford University Press, 2012.

Jordan, Andrew, David Benson, Rudiger Wurzel, and Anthony Zito. “Policy Instruments in Practice.” In *Oxford Handbook of Climate Change and Society*, edited by J.S. Dryzek, R.B. Norgaard, and D. Schlosberg, 536–49. Oxford: Oxford University Press, 2011.

Justen, Andreas, Nils Fearnley, Moshe Givoni, and James Macmillen. “A Process for Designing Policy Packaging: Ideals and Realities.” *Transportation Research Part A: Policy and Practice*, 2013. doi:10.1016/j.tra.2013.10.016.

Justen, Andreas, Jens Schippl, Barbara Lenz, and Torsten Fleischer. “Assessment of Policies and Detection of Unintended Effects: Guiding Principles for the Consideration of Methods and Tools in Policy-Packaging.” *Transportation Research Part A: Policy and Practice*, 2013. doi:10.1016/j.tra.2013.10.015.

Kaine, Geoff, Helen Murdoch, Ruth Lourey, and Denise Bewsell. “A Framework for Understanding Individual Response to Regulation.” *Food Policy* 35, no. 6 (December 2010): 531–37. doi:10.1016/j.foodpol.2010.06.002.

Kagan, Robert A. *Adversarial Legalism: The American Way of Law*. Cambridge: Harvard University Press, 2001.

Kay, Adrian. “Tense Layering and Synthetic Policy Paradigms: The Politics of Health Insurance in Australia.” *Australian Journal of Political Science* 42, no. 4 (2007): 579–591.

Keohane, Nathaniel O., Richard L. Revesz, and Robert N. Stavins. “The Choice of Regulatory Instruments in Environmental Policy.” *The Harvard Environmental Law Review* 22 (1998): 313–67.

Kern, Florian, and Michael Howlett. “Implementing Transition Management as Policy Reforms: A Case Study of the Dutch Energy Sector.” *Policy Sciences* 42, no. 4 (November 1, 2009): 391–408. doi:10.1007/s11077-009-9099-x.

Kingdon, J. W. *Agendas, Alternatives, and Public Policies*. Boston: Little Brown and Company, 1984.

Kirschen, E. S., J. Benard, H. Besters, F. Blackaby, O. Eckstein, J. Faaland, F. Hartog, L. Morissens, and E. Tosco. *Economic Policy in Our Time*. Chicago: Rand McNally, 1964.

Kiss, Bernadett, Clara González Manchón, and Lena Neij. "The Role of Policy Instruments in Supporting the Development of Mineral Wool Insulation in Germany, Sweden and the United Kingdom." *Journal of Cleaner Production* no. 0. Accessed December 29, 2012. doi:10.1016/j.jclepro.2012.12.016.

Knill, C. "European Policies: The Impact of National Administrative Traditions." *Journal of Public Policy* 18, no. 1 (1998): 1–28.

Knudson, William A. "The Environment, Energy, and the Tinbergen Rule." *Bulletin of Science, Technology & Society* 29, no. 4 (August 1, 2009): 308–312.

Lanzalaco, Luca. "Bringing the Olympic Rationality Back In? Coherence, Integration and Effectiveness of Public Policies." *World Political Science Review* 7, no. 1 (May 25, 2011): 1098.

Larsen, T. P., P. Taylor-Gooby, and J. Kananen. "New Labour's Policy Style: A Mix of Policy Approaches." *International Social Policy* 35, no. 4 (2006): 629–49.

Lascomes, Pierre, and Patrick Le Gales. "Introduction: Understanding Public Policy through Its Instruments - From the Nature of Instruments to the Sociology of Public Policy Instrumentation." *Governance* 20, no. 1 (2007): 1–21.

Lecuyer, Oskar, and Ruben Bibas. "Combining Climate and Energy Policies: Synergies or Antagonism? Modeling Interactions with Energy Efficiency Instruments." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, January 26, 2012. http://papers.ssrn.com/abstract=1992324.

Lejano, Raul P., and Savita Shankar. "The Contextualist Turn and Schematics of Institutional Fit: Theory and a Case Study from Southern India." *Policy Sciences* 46, no. 1 (March 1, 2013): 83–102. doi:10.1007/s11077-012-9163-9.

Leplay, Solenn, and Sophie Thoyer. "Synergy Effects of International Policy Instruments to Reduce Deforestation: A Cross-Country Panel Data Analysis." Working Paper. LAMETA, University of Montpellier, 2011. http://ideas.repec.org/p/lam/wpaper/11-01.html.

Lewis, Miranda. *States of Reason: Freedom, Responsibility and the Governing of Behaviour Change*. London: Institute for Public Policy Research, 2007.

Lichtenstein, Sarah, and Paul Slovic. *The Construction of Preference*. Cambridge; New York: Cambridge University Press, 2006.

Linder, S. H., and B. G. Peters. "Policy Formulation and the Challenge of Conscious Design." *Eval.Program Plann.* 13 (1990): 303–311.

Linder, S., and B. G. Peters. "The Design of Instruments for Public Policy." In *Policy Theory and Policy Evaluation: Concepts, Knowledge, Causes, and Norms*, edited by S. S. Nagel, 103–119. New York: Greenwood Press, 1990.

Lowi, T. J. "Distribution, Regulation, Redistribution: The Functions of Government." In *Public Policies and Their Politics: Techniques of Government Control*, edited by R. B. Ripley, 27–40. New York: W.W. Norton, 1966.

Lynn, Laurence E. "The Behavioral Foundations of Public Policy-Making." *The Journal of Business* 59, no. 4 (1986): S379–84.

Maor, Moshe. "Emotion-Driven Negative Policy Bubbles." *Policy Sciences* 49, no. 2 (September 1, 2015): 191–210. doi:10.1007/s11077-015-9228-7.

Maor, Moshe. “Policy Bubbles: Policy Overreaction and Positive Feedback.” *Governance*, 2013, n/a–n/a. doi:10.1111/gove.12048.

Maor, Moshe. “Policy Overreaction.” *Journal of Public Policy* 32, no. 3 (2012): 231–59. doi:10.1017/S0143814X1200013X.

Maor, Moshe. “The Implications of the Emerging Disproportionate Policy Perspective for the New Policy Design Studies.” *Policy Sciences*, July 19, 2016, 1–16. doi:10.1007/s11077-016-9259-8.

Majone, G. “On the Notion of Political Feasibility.” *European Journal of Political Research* 3, no. 2 (1975): 259–274.

Maskin, Eric S. “Mechanism Design: How to Implement Social Goals.” *The American Economic Review* 98, no. 3 (June 1, 2008): 567–76. doi:10.2307/29730086.

May, P. J., J. Saptichne, and S. Workman. “Policy Coherence and Policy Design.” In *Annual Research Meeting of the Association for Public Analysis and Management*. Vol. Washington DC, 2005.

May, P. J. “Reconsidering Policy Design: Policies and Publics.” *Journal of Public Policy* 11, no. 2 (1991): 187–206.

May, P. J. “Policy Maps and Political Feasibility.” In *Thinking Like a Policy Analyst: Policy Analysis as a Clinical Profession*, 127–151. edited by I. Geva-May. London: Palgrave Macmillan, 2005.

May, P., B. D. Jones, B. E. Beem, E. A. Neff-Sharum, and M. K. Poague. “Policy Coherence and Component-Driven Policymaking: Arctic Policy in Canada and the United States.” *Policy Studies Journal* 33, no. 1 (2005): 37–63.

May, Peter J. “Policy Design and Implementation.” In *Handbook of Public Administration*, edited by Peters, B. Guy and Jon Pierre, 223–233. Beverly Hills: Sage, 2003.

Mayntz, Renate. “The Conditions of Effective Public Policy: A New Challenge for Policy Analysis.” *Policy & Politics* 11 (April 1983): 123–43. doi:10.1332/030557383782718779.

Meijers, E., and D. Stead. “Policy Integration: What Does It Mean and How Can It Be Achieved? A Multi-Disciplinary Review.” In *2004 Berlin Conference on the Human Dimensions of Global Environmental Change: Greening of Policies - Interlinkages and Policy Integration*, Berlin:1–15, 2004.

Meijers, E., D. Stead, and H. Geerlings. “Policy Integration: A Literature Review.” In *Policy Integration in Practice: The Integration of Land Use Planning, Transport and Environmental Policy-Making in Denmark, England and Germany*, 9–24. Delft: Delft university Press, 2004.

Milkman, Katherine L., Mary Carol Mazza, Lisa L. Shu, Chia-Jung Tsay, and Max H. Bazerman. “Policy Bundling to Overcome Loss Aversion: A Method for Improving Legislative Outcomes.” *Organizational Behavior and Human Decision Processes* in Press, Corrected Proof. Accessed August 1, 2011. doi:16/j.obhdp.2011.07.001.

Miller, S. M., A. Evers, and H. Winterberger. “The Evolving Welfare State Mixes.” In *Shifts in the Welfare Mix: Their Impact on Work, Social Services and Welfare Policies*, 371–388. Frankfurt: Campus Verlag, 1990.

Mulgan, Geoff. *The Art of Public Strategy: Mobilizing Power and Knowledge for the Common Good*. Oxford; New York: OUP Oxford, 2008.

Nielsen, Vibeke Lehmann, and Christine Parker. “Mixed Motives: Economic, Social, and Normative Motivations in Business Compliance.” *Law & Policy* 34, no. 4 (2012): 428–462. doi:10.1111/j.1467-9930.2012.00369.x.

Oecd. *Building Policy Coherence: Tools and Tensions*. Paris: Public Management Occasional Papers no. 12, 1996.

Peters, B. G. "Conclusion: The Future of Instruments Research." In *Designing Government: From Instruments to Governance*, edited by P. Eliadis, M. Hill, and M. Howlett, 353–63. Montreal: McGill-Queen's University Press, 2005.

Peters, B. G., and F. K. M. Van Nispen. *Public Policy Instruments: Evaluating the Tools of Public Administration*. New York: Edward Elgar, 1998.

Peters, B. Guy. "Policy Instruments and Public Management: Bridging the Gaps." *Journal of Public Administration Research and Theory: J-PART* 10, no. 1 (January 2000): 35–47.

Philibert, Cédric. "Interactions of Policies for Renewable Energy and Climate." IEA Energy Paper. OECD Publishing, March 2011. http://econpapers.repec.org/paper/oecieaaaa/2011_2f6-en.htm.

Rayner, Jeremy, and Michael Howlett. "Conclusion: Governance Arrangements and Policy Capacity for Policy Integration." *Policy and Society* 28, no. 2 (July 2009): 165–172. doi:10.1016/j.polsoc.2009.05.005.

Richardson, J., G. Gustafsson, and G. Jordan. "The Concept of Policy Style." In *Policy Styles in Western Europe*, edited by J. J. Richardson, 1–16. London: George Allen and Unwin, 1982.

Sager, Fritz, and Yvan Rielle. "Sorting through the Garbage Can: Under What Conditions Do Governments Adopt Policy Programs?" *Policy Sciences* 46, no. 1 (March 1, 2013): 1–21. doi:10.1007/s11077-012-9165-7.

Salamon, L. M. "Rethinking Public Management: Third-Party Government and the Changing Forms of Government Action." *Public Policy* 29, no. 3 (1981): 255–275.

Salamon, L. M. *Beyond Privatization: The Tools of Government Action*. Washington D.C: Urban Institute, 1989.

Schneider, A., and H. Ingram. "Systematically Pinching Ideas: A Comparative Approach to Policy Design." *Journal of Public Policy* 8, no. 1 (1988): 61–80.

Schneider, A. L., and H. Ingram. "Behavioural Assumptions of Policy Tools." *Journal of Politics* 52, no. 2 (1990): 511–529.

Schneider, A., and H. Ingram *Deserving and Entitled: Social Constructions and Public Policy*. SUNY Series in Public Policy. Albany: State University of New York, 2005

Schneider, A., and H. Ingram *Policy Design for Democracy*. Lawrence: University Press of Kansas, 1997.

Schneider, A., and H. Ingram. "Policy Design: Elements, Premises and Strategies." In *Policy Theory and Policy Evaluation: Concepts, Knowledge, Causes and Norms*, edited by S. S. Nagel, 77–102. New York: Greenwood, 1990b.

Schneider, A., and H. Ingram. "Social Construction of Target Populations: Implications for Politics and Policy." *American Political Science Review* 87, no. 2 (1993): 334–347.

Schön, Donald A. "Designing: Rules, Types and Words." *Design Studies* 9, no. 3 (July 1988): 181–190. doi:10.1016/0142-694X(88)90047-6.

Schön, D.A. "Designing as Reflective Conversation with the Materials of a Design Situation." *Knowledge-Based Systems* 5, no. 1 (March 1992): 3–14. doi:10.1016/0950-7051(92)90020-G.

Shafir, Eldar, ed. *The Behavioral Foundations of Public Policy*. Princeton University Press, 2013.

Stead, D., and E. Meijers. "Policy Integration in Practice: Some Experiences of Integrating Transport, Land-Use Planning and Environmental Politics in Local Government." In *2004 Berlin Conference on the Human Dimensions of Global Environmental Change: Greening of Policies - Interlinkages and Policy Integration*, Berlin:1–13, 2004.

Stead, D., H. Geerlings, and E. Meijers. *Policy Integration in Practice: The Integration of Land Use Planning, Transport and Environmental Policy-Making in Denmark, England and Germany*. Delft: Delft university Press, 2004

Stokey, E., and R. Zeckhauser. *A Primer for Policy Analysis*. New York: W.W. Norton, 1978.

Taeihagh, Araz, René Bañares-Alcántara, and Zun Wang. "A Novel Approach to Policy Design Using Process Design Principles." In *Computer Aided Chemical Engineering*, edited by Claudio Augusto Oller do Nascimento and Evaristo Chalbaud Biscaia Rita Maria de Brito Alves, Volume 27:2049–54. London: Elsevier, 2009. http://www.sciencedirect.com/science/article/pii/S1570794609707321.

Taeihagh, Araz, Moshe Givoni, and René Bañares-Alcántara. "Which Policy First? A Network-Centric Approach for the Analysis and Ranking of Policy Measures." *Environment and Planning B: Planning and Design* 40, no. 4 (2013): 595 – 616. doi:10.1068/b38058.

Taylor, Christopher, Simon Pollard, Sophie Rocks, and Andy Angus. "Selecting Policy Instruments for Better Environmental Regulation: A Critique and Future Research Agenda." *Environmental Policy and Governance* (May 8, 2012). doi:10.1002/eet.1584.

Thaler, Richard H., and Cass R. Sunstein. *Nudge: Improving Decisions About Health, Wealth, and Happiness*. Revised & Expanded edition. New York: Penguin Books, 2009.

Thaler, Richard H., Cass R. Sunstein, and John P. Balz. "Choice Architecture." SSRN Scholarly Paper. Rochester, NY: Social Science Research Network, April 2, 2010. http://papers.ssrn.com/abstract=1583509.

Thelen, K. "How Institutions Evolve: Insights from Comparative Historical Analysis." In *Comparative Historical Analysis in the Social Sciences*, edited by J. Mahoney and D. Rueschemeyer, 208–240. Cambridge: Cambridge University Press, 2003.

Thelen, Kathleen. *How Institutions Evolve: The Political Economy of Skills in Germany, Britain, the United States and Japan*. Cambridge: Cambridge University Press, 2004.

Tinbergen, Jan. *On the Theory of Economic Policy*. Dordrecht: North-Holland Pub. Co., 1952.

Tinbergen, Jan. *The Design of Development*. The Johns Hopkins University Press, 1958.

Tinbergen, J. *Economic Policy: Principles and Design*. Chicago: Rand McNally, 1967.

Trebilcock, M., and D. G. Hartle. "The Choice of Governing Instrument." *International Review of Law and Economics* 2 (1982): 29–46.

Trebilcock, M. J., and et al. *The Choice of Governing Instrument*. Ottawa, 1982.

Trebilcock, M. J., and J. R. S. Prichard. "Crown Corporations: The Calculus of Instrument Choice." In *Crown Corporations in Canada: The Calculus of Instrument Choice*, edited by J. R. S. Prichard, 1–50. Toronto: Butterworths, 1983.

Tupper, A., and G. B. Doern. "Public Corporations and Public Policy in Canada." In *Public Corporations and Public Policy in Canada*, 1–50. Montreal: Institute for Research on Public Policy, 1981.

Van der Heijden, Jeroen. "Institutional Layering: A Review of the Use of the Concept." *Politics* 31, no. 1 (January 10, 2011): 9–18. doi:10.1111/j.1467-9256.2010.01397.x.

Weaver, Kent. "If You Build It, Will They Come? Overcoming Unforeseen Obstacles to Program Effectiveness." The Tansley Lecture - University of Saskatchewan, 2009.

Weaver, Kent. "Target Compliance: The Final Frontier of Policy Implementation." Washington DC: Brookings Institution, 2009. http://www.brookings.edu/research/papers/2009/09/30-compliance-weaver.

Weaver, R. Kent. "Compliance Regimes and Barriers to Behavioral Change." *Governance*, 2013, n/a–n/a. doi:10.1111/gove.12032.

Weaver, Kent. “Getting People to Behave: Research Lessons for Policy Makers.” *Public Administration Review*, July 1, 2015, n/a-n/a. doi:10.1111/puar.12412.

Winter, Søren C., and Peter J. May. “Motivation for Compliance with Environmental Regulations.” *Journal of Policy Analysis and Management* 20, no. 4 (2001): 675–698. doi:10.1002/pam.1023.

Woo, J. J., M. Ramesh, and M. Howlett. “Legitimation Capacity: System-Level Resources and Political Skills in Public Policy.” *Policy and Society*, 2015. doi:10.1016/j.polsoc.2015.09.008.

Woodside, K. “Policy Instruments and the Study of Public Policy.” *Canadian Journal of Political Science* 19, no. 4 (1986): 775–793.

Wu, Xun, M. Ramesh, and M. Howlett. “Policy Capacity: Conceptual Framework and Measures.” *Policy & Society*, no. Fall (2015).

Yi, Hongtao, and Richard C Feiock. “Policy Tool Interactions and the Adoption of State Renewable Portfolio Standards.” *Review of Policy Research* 29, no. 2 (March 1, 2012): 193–206. doi:10.1111/j.1541-1338.2012.00548.x.