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Thirty years of instrument research: What have we learned and where are we going?

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Thirty Years of Instrument Research:
What Have We Learned and Where Are We Going

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Abstract

Anyone interested in policy studies, policy analysis, policy evaluation and policy management should be aware of, and knowledgeable about, the origins, nature and capabilities of different policy tools. They are a critical part of policy-making, providing the 'means' by which to achieve policy 'ends' but also often becoming ends-in-themselves. Policy instruments are and have been the subject of inquiry in many policy-related fields, including public administration and 'governance' studies, but also various broader disciplines such as political science and economics. Additionally, they have been a research topic in various policy-specific areas of study such as policy analysis and policy studies, as well as in sector-specific areas of study such as health studies, labour studies, social policy studies, women's studies, international studies and others. This chapter examines, reviews and assesses this literature and derives lessons from it concerning where the study of policy tools has been and where it is going.

1. Introduction: Policy Instruments and Public Policy-Making

Policy instruments are techniques of governance that, in one way or another, involve the utilization of state resources in order to both help define and achieve government goals. Other terms have been developed in the field of policy studies to describe the same phenomena, such as "governing instruments", "policy tools", and the "tools of government", and while these sometimes are used to refer to the different mechanisms and calibrations of policy means, they are more often used synonymously.

Policy instruments are and have been the subject of inquiry in many policy-related fields, including public administration and 'governance' studies, but also various broader disciplines such as political science and economics (Dahl and Lindblom 1953, Hood 2007). In his path-breaking early works on public policy-making Harold Lasswell noted the significance of policy tools to policy-making, defining public policies as government decisions composed of two interrelated elements: policy goals and policy means (Lasswell 1958. See also Lasswell, 1954, 1971). Policy goals being the basic aims and expectations governments have in deciding to pursue (or not) some course of action,

while policy means or instruments are the techniques they use to attain those goals (Walsh 1994).

This instrument orientation was retained by many early students of policy-making who tended to have a very flexible notion of the multiple means by which governments could affect, or give effect to, policy. In these early works, "policy instruments" were defined broadly so as to include a wide range of tools or techniques of governance including both general implementation preferences and policy mechanisms, as well as their calibrations (Dahl and Lindblom 1953; Kirschen et al. 1964;   Edelman 1964 and Lowi 1966).

The policy sciences have thus always been interested in policy tools but their study and analysis has often been subordinated to studies of policy processes and the manner in which governments organize and manipulate these processes in order to achieve their ends.

This can be seen, for example, in the concise definition of public policy set out by Thomas Dye, who defined policy simply as "what government chooses to do or not to do" (Dye 1972). This is a useful definition because it underscores the notions that policies are conscious choices and not accidents; that they result from government decisions and not those of other actors in society such as private companies or other non-governmental organizations; and that so-called "negative decisions" - that is, decisions to consciously avoid changing the status quo - are just as much public policies as more commonly thought of "positive decisions" - which do in fact alter some aspect of current circumstances. This definition, however, is not all that helpful from an analytical

perspective because it does not tell us anything about the *content* of government

decisions; about what it is that governments are choosing to do, or why.

By the early 1980s, under the urgings of the U.S. student of non-profit

organizations, Lester Salamon, and others, attention began to be focused on more

precisely categorizing policy instruments and better analyzing the reasons for their use

(Salamon 1981). Careful examination of instruments and instrument choices, it was

argued, would not only lead to considerable insight into the factors driving the policy

process and the characterization of long-term patterns of public policy-making, but would

also allow practitioners to more readily draw lessons from the experiences of others with

the use of particular techniques in specific circumstances (Woodside 1986).

Salamon argued the 'tools approach' was a major approach to policy studies in its

own right, bringing a unique perspective to the policy sciences with its focus on policy

outputs. Salamon argued that this perspective had revealed that not only did, as

traditional policy studies had maintained, politics determine policy, but also the reverse

(Landry, Varone and Goggin, 1998).

That is, via the feedback mechanism in the policy cycle and the establishment of a

kind of political economy of a policy regime, a tool choice such as, for example, a

decision to use tax incentives to accomplish some end, creates a constituency for

continuation of that incentive (and sometimes one opposed to it), affecting future policy

deliberations and decisions. (Bobrow and Dryzek 1987; Dryzek and Ripley 1988; Linder

and Peters 1984). Hence, instrument choice should be seen as not simply technical, but

political, especially when the selection of a particular policy instrument results in the

entrenchment of institutional resources and procedures that become difficult to reconfigure (Peters 2002).

This approach suggested that public policy analysis should shift from the almost exclusive study of policy inputs to the study of policy implements and techniques. This challenge was taken up by the policy design literature and endorsed by Bardach (1980) and Salamon (1981) in the early 1980's, both of whom argued that policy studies had "gone wrong" right at the start by defining policy in terms of "areas" or "fields" rather than in terms of instruments. As Salamon (1981) argued:

> The major shortcoming of current implementation research is that it focuses on the wrong unit of analysis, and the most important theoretical breakthrough would be to identify a more fruitful unit on which to focus analysis and research. In particular, rather than focusing on individual programs, as is now done, or even collections of programs grouped according to major "purpose," as is frequently proposed, the suggestion here is that we should concentrate instead on the generic tools of government action, on the "techniques" of social intervention. (p. 256)

Salamon in particular framed two important research questions which subsequent scholarship has addressed in the analysis of tools of government action: "What consequences does the choice of tool of government action have for the effectiveness and operation of a government program?" and "What factors influence the choice of program tools? (p. 265)

The key information instrument studies needed in order to answer these questions related to:

1. What tools does a government have?

2. How can these be classified?

3. How have these been chosen in the past?

4. Is there a pattern for this use?

5. How can we explain these patterns?

6. And how can we improve on past patterns of use? (Salamon 1981; Timmermans et al 1998; Hood 2007)

The results of efforts over the past 30-40 years to gather this information and answer these questions are set out below.

2. What is a Policy Instrument?

At their most basic level, policy instruments or tools fall into two types depending on their general goal orientation. One type proposes to alter the actual *substance* of the kinds of day-to-day activities carried out by citizens going about their productive tasks, and the other focuses more upon altering political or policy behaviour in the *process* of the articulation of policy goals and means. '*Procedural*' policies accomplish the latter purposes, while '*substantive*' policies are those used to more directly affect the production, distribution and consumption of goods and services in society (Howlett 2000). Hence Evert Vedung, for example, defined policy instruments as "the set of techniques by which governmental authorities wield their power in attempting to ensure support and effect social change" (Vedung 1997). This definition can be seen to include both "substantive" tools, those Hood (1986) defined as attempting to "effect or detect" change in the socio-economic system, as well as those "procedural" instruments

identified by Kickert and his Dutch colleagues (1997); those designed to 'ensure support' for government actions in their various efforts at 'network management'. This distinction is apparent in common definitions of governing instruments although its significance has sometimes been overlooked.

Substantive Policy Instruments:

Substantive instruments are those expected to alter some aspects of the production, distribution and delivery of goods and services in society. These goods and services range from mundane goods and services like school lunches to crude vices such as gambling or illicit drug use; individual virtues such as charitable giving or volunteer work with the physically challenged; and the attainment of collective goals like peace and security, sustainabilty and well-being. *We can thus define substantive policy instruments as those policy techniques or mechanisms designed to directly or indirectly affect the production, consumption and distribution of different kinds of goods and services in society.* This is a larger field of action than that typically studied in economics, for example, although quite similar in many respects since it extends to many goods and services provided or affected by markets, but also well-beyond the use of that particular tool or mechanism, to state or public provision and regulation of goods and service, as well as to the control and regulation of goods and services typically provided by the family, community, non-profit and voluntary means often with neither a firm market nor state-basis.

Substantive policy instruments can affect many aspects of production, distribution and consumption of goods and services regardless of their institutional basis. Production

effects, for example, include determining or influencing the types of activities set out in Figure 1.

Figure 1: Production Effects of the use of Substantive Tools

1. Who produces (e,g. via licencing, via bureaucracy/procurement, via subsidies for new start-ups).

2. The types of goods and services produced (e.g. via bans or limits or encouragement)

3. The quantity of goods or services provided (e.g. via subsidies or quotas)

4. The quality of goods or services produced (e.g. via product standards, warranties)

5. Methods of Production (e.g. via environmental standards or subsidies for modernization etc).

6. Conditions of Production (e.g. via health and safety standards, employment standards acts, minimum wage laws, inspections, etc)

7. The organization of Production (e.g. via unionization rules, anti-trust or anti-combines legislation, securities legislation, tax laws etc.)

Consumption and distribution effects are also manifold. Some examples of these are set out in Figure 2.

Figure 2: Consumption and distribution effects of the use of Substantive Tools

1. Prices of goods and services (e.g. regulated taxi fares, WWII rationing)

2. Actual distribution of produced goods and services (e.g. location and types of schools or hospitals, forest tenures or leases)

3. Level of Consumer Demand for specific goods (via information release, nutritional and dangerous good labeling (cigarettes), export and import taxes and bans etc).

4. Level of consumer demand in general (e.g. via interest rate policy)

Examples of substantive tools used to affect these aspects of social and individual behaviour include tools such as 'regulation' whereby governments establish agencies and empower them to monitor and control social and economic behaviour using mechanisms such as information collection and penalties, and 'subsidies', whereby governments provide various kinds of financial incentives to encourage social actors to behave in certain ways. But they also extend to more esoteric instruments such as 'transferable quotas' used to limit and control everything from fish harvests to CO2 emissions, and 'government advertising' used to inform and promote individuals and companies and other actors to, for example, stop smoking or lose weight, or in the case of companies to support their employees healthy life choices. Many permutations and combinations of such tools exist, such as when a government agency runs a stop smoking campaign while at the same time banning smoking in bars and other locations and heavily taxes cigarette consumption.

Procedural Policy Instruments

Procedural policy tools, on the other hand, affect production, consumption and distribution processes only indirectly, if at all, and instead are concerned with altering aspects of a governments own workings. Policy actors are arrayed in various kinds of policy networks, for example, and just as they can manipulate the actions of citizens in the productive realm, so governments can also manipulate aspects of their political or policy-making behaviour. These behavioural modifications can affect the articulation of policy goals and means in many not always easily predictable or controllable ways. Procedural tools are an important part of network management activities "aimed at

improving game (policy) interaction and results" but, as Klijn, Koppenjan and Termeer (1995) also note: "the network structures the game without determining its outcome" (p. 441). Figure 3 lists many of the kinds of policy-related activities that can be affected by the use of procedural organizational tools (Goldsmith and Eggers 2004; Klijn and Koppenjan (2006 and 1995).

Figure 3: Effects of the Use of Procedural Tools

1. Change actor positions
2. Set down actor positions
3. Add actors
4. Change access rules for actors
5. Influence network formation
6. Promote self-regulation
7. Modify system e.g. level of market reliance
8. Change evaluative criteria
9. Influence pay-off structure for actors
10. Influence professional and other codes of conduct and behaviour
11. Regulate conflict
12. Change interaction procedures
13. Certify certain types of behaviour
14. Change supervisory relations between actors

Examples of policy tools with this procedural orientation include a government creating an advisory committee of select citizens or experts to aid it in its policy deliberations in contentious issue areas such as local housing development or chemical regulation, or its creation of a freedom-of-information or access-to-information legislation making it easier for citizens to gain access to governments records, information and documents. Re-organizing their own internal structure can have an effect on policy processes, for example, as occurs when natural resource ministries are combined with environmental ones, forcing the two to adopt some form of new operating arrangements.
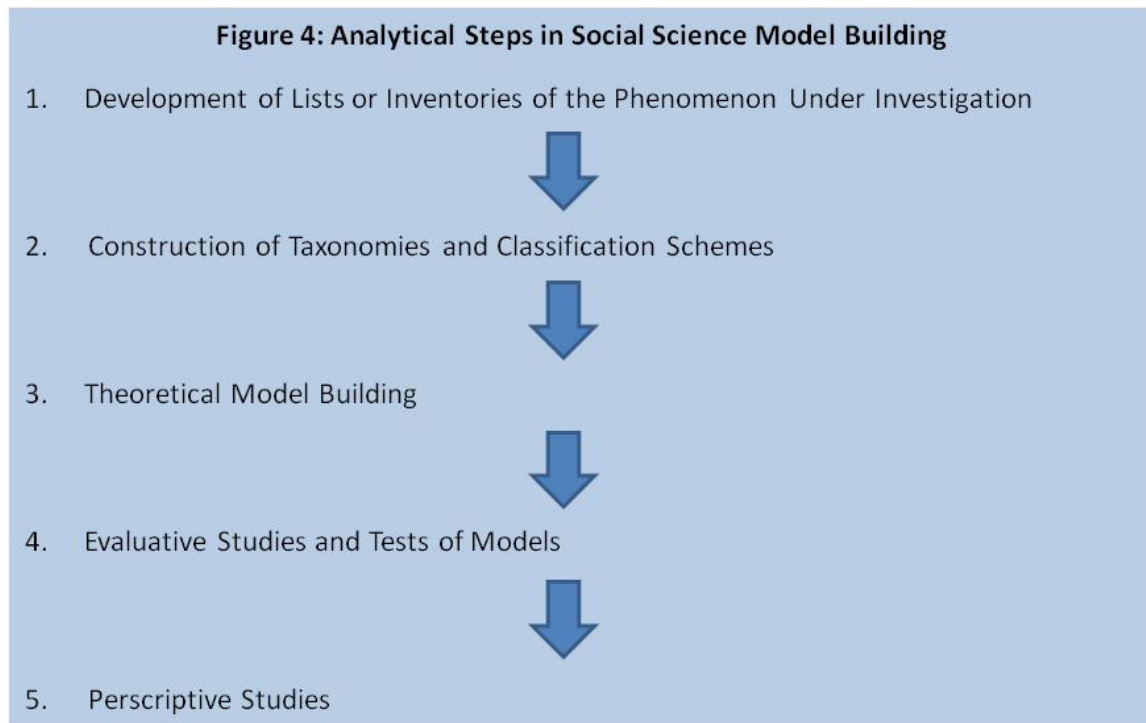
In general, procedural tools are not as well studied as are substantive instruments, and are less well known in their impact and effects, although several techniques such as the use of public participation and administrative re-organizations are quite old and well-used and form the basis of study in fields such as public administration and organizational behaviour (Woolley, 2008)

2. Where Have we Been? From Policy Implementation to Policy Design Studies

Analyses of specific policy instruments proliferated during the 1970s and early 1980s in domain- and/or sector-specific analyses in areas of study such as health studies, labour studies, social policy studies, women's studies, international studies and others where new techniques – such as enhanced use of market tools emerged or where efforts were made to alter or improve existing ones through the use of procedural tools such as advisory commissions (Varone 2000 and 2001, Hood 2007). At about the same time, attempts to better understand policy instrument functions across sectors generated a series of studies which proposed and propagated different instrument in order to "produce

parsimonious and comprehensive or generic classifications that allowed comparisons across time, area, and policy domain" (Hood 2007, 129).

Offering a retrospective on over two decades of policy instrument studies in 2007, Christopher Hood (2007) identified several broad streams of policy tool research that had defined the area since the mid 1970s. These included many efforts to better categorize and 'genericize' policy tools, efforts to evaluate their impact and affect on policy outcomes and efforts to develop models of tool use and explain patterns found in their use. Although not always a clearly conscious of their activities than might be wished, what these many scholars and studies amounted to was a fairly standard effort to build a model of policy instrument use which fit the cannons and methods of standard social science enquiry (see Figure 4 below) (McKelvey 1982 and 1978; Stevens 1994).

Figure 4: Analytical Steps in Social Science Model Building

1. Development of Lists or Inventories of the Phenomenon Under Investigation

2. Construction of Taxonomies and Classification Schemes

3. Theoretical Model Building

4. Evaluative Studies and Tests of Models
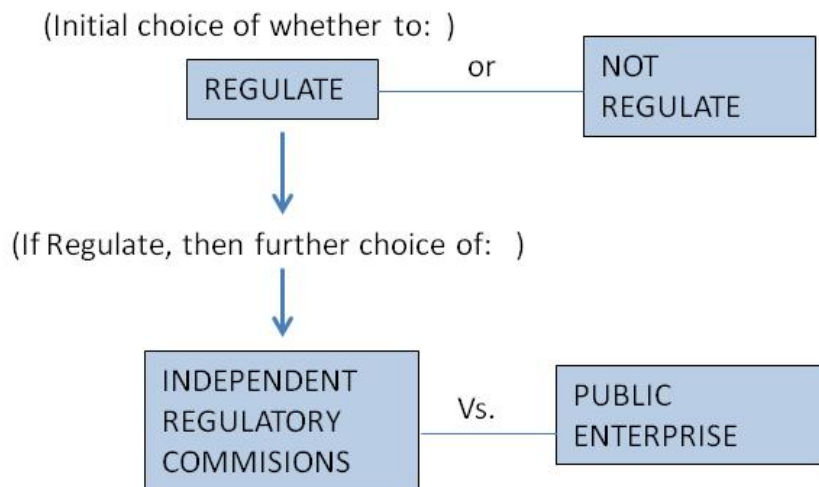
5. Perscriptive Studies

First, following the lead of process studies in the policy sciences (Howlett and Ramesh, 2009; Lyden et al 1968), instrument scholars disaggregated the policy process into a series of stages and identified instrument choice with the stages of policy formulation and/or policy implementation, befitting the procedural and substantive dimensions of tools use highlighted above. The instruments used at these stages of the policy process were then identified, listed or inventoried (Blankart 1985; Mitnick 1980; Posner 1974).

Second, an effort was made to classify these lists into a series of manageable groups or categories. A major component of the existing policy instruments literature has to do with the many various attempts at creating generic classifications and taxonomies of instruments in order to allow for greater analytical tractability across policy areas.

One of the first inventories of instruments was Kirschen et al's identification in 1964 of well over 40 different types of instruments then prevalent in economic policy-making. Such studies were followed by many others examining the instruments prevalent in other areas, such and banking and foreign policy (Hermann 1982). These were pathbreaking studies which, although they did not make any distinctions between general implementation preferences, policy mechanisms or calibrations, laid the groundwork for such future refinements by providing the raw data required for later classification efforts. Kirschen and his fellow authors utilized a resource-based taxonomy of governing instruments to group instruments into five general "families" according to the resource used. These were: public finance, money and credit, exchange-rates, direct control, and changes in the institutional framework (pp. 16-17).

However this scheme was very sectorally specific and more attention was paid to more generic schemes such as Theodore Lowi's early efforts to categorize the types of policies which governments could enact according to two dimensions of the criterion of coerciveness. (Lowi 1966; Lowi 1972). In his work, Lowi had developed the insight first put forward by students of public administration in the U.S. - like Robert Cushman who wrote on the origins of regulatory commissions in that country in the late 1940s - that governments had a number of alternative choices they could make in a given regulatory situation, depending on the amount of coercion they wished to employ in that situation. Lowi himself had acknowledged his debt to Cushman (1941) and to Cushman's initial realization that government could either regulate or choose not to regulate societal activities, and that if they chose the former they could regulate either in a coercive or non-coercive manner (see Figure 5).

Figure 5: Cushman's Three Types of Policy Tools

(Initial choice of whether to:)

REGULATE —or— NOT REGULATE

(If Regulate, then further choice of:)

INDEPENDENT REGULATORY COMMISIONS —Vs.— PUBLIC ENTERPRISE

This analysis, among other things, introduced the idea that instrument choices were multi-level and nested, an insight which would be further developed in the years to come. The original three policy types developed by Lowi included the weakly sanctioned and individually targeted "distributive" policies; the individually targeted and strongly sanctioned "regulatory" policy; and the strongly sanctioned and generally targeted "re-distributive" policy. To these three Lowi later added the weakly sanctioned and generally targeted category of "constituent" policy.

Lowi's categories - distribution, re-distribution, constituent and regulatory - were difficult to operationalize (Roberts and Dean 1994), however, and many other classification schemes emerged in the literature in the 1980s. Elmore (1987), for example, identified four major classes of instruments: mandates, inducements, capacity-building, and system-changing while Balch and others talked about "carrots and sticks" and other strategies (Balch 1980).

Most of these, however, followed Lowi and Cushman's lead in focusing on some aspect of coercion as the key element differentiating policy instruments types. Scholars like Bruce Doern, Richard Phidd, Seymour Wilson and others[1] published a series of articles and monographs in the late 1970's and early 1980's, that turned Lowi's matrix of policy choices into a continuum of policy instruments. They first placed only self-regulation, exhortation, subsidies, and regulation on a scale according to the extent of government coercion required for their implementation; (Doern 1981), later adding in categories for "taxation" and public enterprise (Tupper and Doern 1981) and finally, adding an entire series of finer "gradiations" within each general category (Phidd and Doern 1983) (See Figure 6 below).

Figure 6: The Doern Continuum

Exhortation ------- Financial -------- Regulation -------- Public Enterprise

Minimum   Maximum

Extent of government coercion
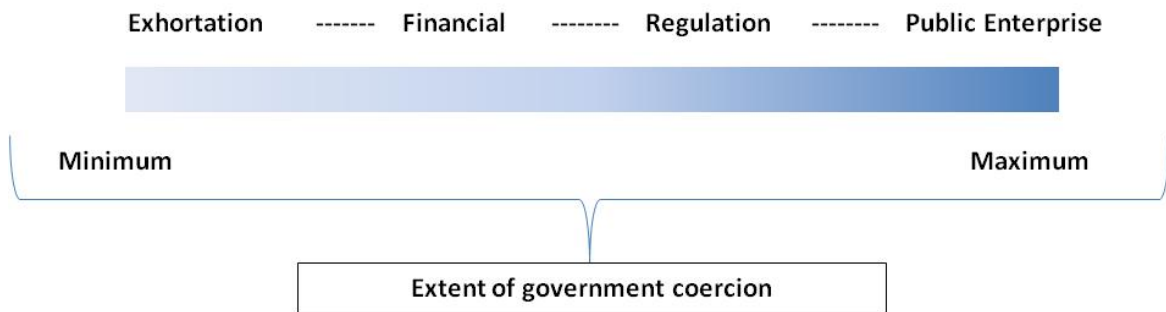
This model was lauded for its simplicity and elegance but as their critics pointed out, their formulation was problematical since "coercion" appears to be indivisible, or at best, very difficult to operationalize (Trebilcock et al. 1982 pp. 22-23). What Doern actually identified through their coercion formulation was the willingness of governments to use their authority, financial, informational and organizational resources against specific target groups (Baxter-Moore 1987; Woodside 1986).

Further studies tried to expand on the idea of a limited number of 'governing resources' lying behind each tool. Bardach (1980), for instance, argued that government had three "technologies" which they could utilize in any given choice situation: enforcement, inducement, and benefaction; and that these strategies required different combinations of four critical governmental resources: money, political support, administrative competency, and creative leadership. Many other similar schemes were developed at this time. All these schemes were somewhat idiosyncratic, but all hinted at the presence of at least four different general categories of instruments - often referred to

as 'carrots' and 'sticks', as well as 'sermons' and 'organization' (Balch 1980; Vedung 1997).

Based on this insight, Hood generated a major work on the subject (Hood 1983; Hood 1986) which received much international attention; including in North America. Hood's discussion was directly influenced by detailed studies of the British and German policy implementation processes undertaken by Dunsire (1977) and Mayntz (1975) and involved a resource-based categorization scheme for policy instruments which was straightforward and served as an admirable synthesis of the other, earlier, resource-based models of policy instruments.

Hood argued that governments have essentially four resources at their disposal - nodality (meaning the resource that existed simply by nature of the fact that government's existed at the 'centre' of social and political networks but which can be thought of as 'information' or 'knowledge'), authority, treasure, and organizational (or 'NATO')- and can utilize those resources for either of two purposes - to monitor society or to alter its behaviour. In Hood's scheme, instruments are grouped together according to (1) which of the NATO resources they rely upon for their effectiveness and (2) whether the instrument is designed to effect a change in a policy environment or to detect changes in it (Hood 1986; Anderson 1975).

This formulation proved useful in providing eight clearly differentiated categories of substantive instruments (see Figure 7).

Figure 7: Hood's Taxonomy of Substantive Policy Instruments

Governing Resource				
Principle Use:	**Nodality**	**Authority**	**Treasure**	**Organization**
Effectors	Advice Training	Licences User charges Regulation Certification	Grants Loans Taxes Expenditures	Bureaucratic Administration Public Enterprise
Detectors	Reporting Registration	Census Taking Consultants	Polling Policing	Record keeping Surveys

Source: Adapted from Christopher Hood, *The Tools of Government*. Chatham: Chatham House Publishers, 1986

Other works by Bressers and Klok, Schneider and Ingram, and others, identified a large number of possible categories for classifying typical procedural policy instruments (Weiss and Tschirhart 1994; Chapman 1973).

These authors identified a large number of such instruments - including education, training, institution creation, the selective provision of information, formal evaluations, hearings, and institutional reform - but existed outside the mainstream in this field of study (Weiss and Tschirhart 1994; Belehumeur 1997; Chapman 1973; Wraith and Lamb 1971; Peters 1992; Kernaghan 1985). Research into the tools and mechanisms used in intergovernmental regulatory design also identified several other such instruments, including "treaties" and a variety of "political agreements" that can affect target-group recognition of government intentions and vice versa (Bulmer 1993; Harrison 1999; Doern and Wilks 1998). Other research into interest-group behaviour and activities highlighted the existence of tools related to group creation and manipulation, including the role

played by private or public sector patrons in aiding the formation and activities of such groups (Pal 1993; Burt 1990; Finkle et al 1994; Phillips 1991; Nownes and Neeley 1996, Lowry, 1999). Still other specialized research into aspects of contemporary policy making highlighted the use of procedural techniques such as the provision of research funding for, and access to, investigative hearings and tribunals (Gormley 1989; Jenson 1994; Cairns 1990; Salter and Slaco 1981).

While this taxonomical investigation continued, on the basis of investigations into actual instances of instrument use these and other scholars also sought to provide explanations or rationales for why governments would choose one kind of instrument over another (Doern and Wilson 1974; Hood 1984).

'Second' and later 'third' generation instrument theorists, for example, determined to understand the processes of procedural instrument choice selection (Howlett 2000; Bressers and O'Toole 1998; De Bruijn and ten Heuvelhof 1991; Milward et al 1993). Hence in their 1988 work Bressers and Klok noted the ways in which "subjective rational actors" can be influenced by manipulation of the alternatives placed before them (Bressers and Klok 1988). They observed that different instruments can affect the number of policy options developed in the policy process, or the calculations of costs and benefits of alternative courses of action made by policy actors. While some of the instruments they examined were "substantive" (for example, the use of licences to affect the cost of certain activities), most of the instruments captured by their scheme were procedural; especially those dealing with the selective creation, provision and diffusion of information to policy actors. Similarly, in their 1990 study, Schneider and Ingram also focused on government's ability to alter the underlying behaviour of policy

actors. In proposing their own scheme for categorizing policy instruments they argued
that policy-making "almost always attempts to get people to do things that they might not
otherwise do". They noted that:

> If people are not taking actions needed to ameliorate social, economic or political
> problems, there are five reasons that can be addressed by policy: they may believe
> that law does not direct them or authorize them to take action; they may lack
> incentives or capacity to take the actions needed; they may disagree with the
> values implicit in the means or ends; or the situation may involve such high levels
> of uncertainty that the nature of the problem is not known, and it is unclear what
> people should do or how they might be motivated. (Schneider and Ingram 1990 at
> 513-514. See also 1990).

On the basis of this analysis Schneider and Ingram identified five general types of
instruments corresponding to these "behavioural assumptions". These they called
"authority", "incentives", "capacity-building", "symbolic and hortatory" and "learning"
instruments. As was the case with Bressers and Klok, this scheme included both
"procedural" and "substantive" tools. While the discussion virtually ignores pure public
provision of goods and services by government agencies and corporations, the "authority"
and "incentive" examples cited are typical substantive instruments involving mixed
provision of goods and services by a combination of private and public actors.
"Capacity", "symbolic" and "learning" tools, however, are much more procedurally-
oriented, affecting the policy institutions and processes within which policy decisions are
taken.

Probably the best synthetic summary of these multi-dimensional rationales was made by Linder and Peters (1989). The two authors argued that instruments vary according to eight criteria, all ranging from low to high in a series of conjoint continua. These dimensions are:

1. Complexity of Operation

2. Level of Public Visibility

3. Adaptability Across Users

4. Level of Intrusiveness

5. Relative Costliness

6. Reliance on Market

7. Chances of Failure

8. Precision of Targeting (p. 56)

More recently, Henstra (2015)has sought to combine Hood's typology with the evaluative instruments typology advanced by Laundry and Varone (2005) by assessing instruments within each category (nodality, authority, treasure, organization) according to four fundamental attributes: (1) resource intensiveness; (2) targeting; (3) political risk; (4) constraints on state intervention.

Then, in the fourth phase, these generalizations about instrument use were tested against evidence from case studies in many different locales and sectors (Peters and Van Nispen, 1998; Bemelmans-Viden et al 1998). Studies in Europe and North America shed a great deal of light on the construction and establishment of regulatory and other

political and administrative agencies and enterprises; traditional financial inducements, and the "command-and-control" measures adopted by administrative agencies, however (Landry, Varone and Goggin 1998). Studies in many countries of areas such as economic policy or industrial policy generated several useful taxonomies (Tupper and Doern 1981; Hood, 1986; Vedung 1997; Howlett 1991) and shed light on significant subjects such as the reasons behind shifts in patterns of instrument choices associated with the waves of privatization and deregulation which characterized the period (Howlett and Ramesh 1993).

Finally in the fifth stage, the merits and demerits of specific instruments in meeting or achieving specific expectations were discussed as an aid to future government deliberations (Howard 1995; Gunningham et al 1998, Salamon 2001). As the field of enquiry expanded, together with a focus on the implementation process, the study of policy instruments was seen as a theoretical and scientific endeavor that could provide useful insights on practical policy issues (Bressers and Klok 1988). This new emphasis upon the systematic study of policy instruments quickly generated a sizable academic literature and resulted in immediate application in the design of many new policy initiatives in emerging areas such as pollution prevention and professional regulation (Hippes 1988; Trebilcock, 1983).

3. **Where Are we Going? Mixes, Styles and the Increasing Sophistication of Policy Instrument Theory**

Hence, over the course of the past 50 years, policy instrument theory has advanced through the various stages described in Figure 5. Work has been done on instrument

inventories and classification schemes, while empirical historical studies have generated

the basis for different theories and models of instrument choice. Further work has

progressed on evaluating these theories, leading to the development of the current

predictive models of instrument choice behaviour and use (Hood; 2007; Lascoumes and

LE Gales, 2007).

By his own admission, Hood (2007) in his narrative of the earlier two decades of

policy instrument studies, indicated that his original resource based taxonomy

"deliberately analyzed government instruments in an institution-free and technology-free

way" and treated governments as a single policy actor (137). More recent work has

attempted to examine these questions and others, examining how policy tools are often

mixed together and analyzing the multi-level nature of instrument choices this involves

(Kooiman 1993; Peters and Pierre 1998; Klijn and Koppenjan 2000; Walters et al 2000).

Understanding Multiple Tool Mixes

Understanding the use of "bundles," or "portfolios," of instruments rather than of

single tools, is a focus of much current work attempting to move instrument studies

forward and elucidating and designing effective governance strategies (Doremus 2003;

Sterner 2002).

The study of multiple-instrument policy formulation helps to analyse the contents

of the toolbox from which governments must choose in creating public policies

Instrument choice, from this perspective, in a sense, *is* public policy making, and the role

of a textbook in policy design is one of assisting "in constructing an inventory of

potential public capabilities and resources that might be pertinent in any problem-solving situation" (Anderson, p. 122).

While instrument choice is clearly not a simple technical exercise and must take into account aspects of the social, political, and economic contexts of instrument selection, it is also the case that the internal configuration of instrument mixes alters the calculus of instrument choice in significant ways. Instrument, or policy, mixes are complementary combinations of policy instruments that are designed to achieve particular policy objectives and which are generally seen as more efficient and effective than single instrument policies (Gunningham, Grabosky and Sinclair 1998). Some instruments may work well with others -- as is the case with "self-regulation" set within a regulatory compliance framework (Gibson 1999; Grabosky 1995; Trebilcock et al 1979; Tuohy and Wolfson 1978) -- while other combinations may not, such as, notably, independently developed subsidies and regulation (de Moor 1997; Myers and Kent 2001).

Over the last decade or so, policy design scholars have become increasingly interested in guidelines for the formulation of more sophisticated policy designs in which complementarities are maximized and conflicts avoided (Buckman and Diesendorf 2010; Roch, Pitts and Navarro 2010; Barnett and Shore 2009; Blonz, Vajjhala and Safirova 2008; del Rio et al 2010). While this work has continued, concerns regarding how to make the most of policy synergies while curtailing contradictions in the formulation of new policy packages has become a major topic of investigation within the new design orientation (Hou and Brewer 2010; Kiss et al. 2012; Lecuyer and Quirion 2013). Evidence from the world over concerning renewable energy and energy efficiency policy,

due to climate change mitigation and energy security concerns, has revealed, for example that policy packages combining voluntary compliance with command-and-control regulation can inherently inconsistent, bringing out contradictory responses from targets of these policy combinations (Del Rio, Silvosa and Gomez 2011, Boonekamp 2006).

Contempory research also asks questions regarding how some policy mixes may comprise of redundant, duplicate elements while others, despite containing repetitive elements, may in fact promote resiliency and adaptiveness (Braathen and Croci 2005; Braathen 2007; Swanson et al 2010; Walker et al 2010).   In their discussion of policy element duplication, Hou and Brewer (2010) have noted that the real issue is not to simply eliminate all duplication on a priori grounds but rather to design policy toolkits containing tools that work together or complement each other while being effective given stated goals and policy contexts.

Optimizing the choice of instruments in such mixes requires an additional level of knowledge of instrument-goal interactions and considerations of both long and short-term processes of policy change. Scholars in the new design orientation, for example, are concerned with how 'unintended' policy mixes, created and limited by historical legacies, can be hampered due to internal inconsistencies, whereas other policy instrument groupings can be more successful in creating an internally supportive combination (Howlett and Rayner 2007, Grabosky 1994, Gunningham, Grabosky and Sinclair 1998, del Rio 2010).

Understanding Patterns of Instrument Choices

While the generic taxonomies of policy tools have greatly defined the research agenda of policy instrument studies, as propounded by Hood (2007) in his retrospective

of instrument studies, a greater emphasis on the process of instrument formulation, than implementation and the creation of complex policy tool mixes has come to light over the last decade. The overarching, unidimensional state versus market governance focus that occupied policy instrument considerations through the 1990s and early 2000s, lead to various poor instrument formulation choices that did not take into account the various complexities of policy goals and contexts. Experiences from these have since increased the awareness of the many dilemmas that can appear in the path of sound policy tool design,

With a renewed analytical focus on studying policymaking as a knowledge-informed, problem-solving endeavor of matching suitable means to complex policy aims, the new policy tool design orientation since the last decade or so, has reinstated the focus on tool formulation in policy instrument design studies. . This policy design orientation maintains a systematic, means-ends understanding of policy formulation as it also points out the difference between the purposive activity of evidence based policymaking versus the less technical and more overtly political varieties of policymaking which lead to the creation of long-term patterns in instrument choices (Howlett et al 2015). This renewed design orientation includes a consideration of the the limitations put on policy design due to temporality and the long-term patterns of policymaking that can affect the creation of policy instruments

Where earlier views on policy instrument design often assumed a constrained yet blank slate available to policy designers, the new generation fo design thinking is informed more by empirical experience that has generally indicated that policy designers work in spaces with policy mix formulation patterns that are already entrenched due to

policy legacies. Scholars working within this new design orientation have drawn significantly from the work of historical and sociological neo-institutionalists such as Kathleen Thelen (Thelen 2003; 2004) and others (Beland (2007), Thelen (2004), Hacker (2004); Beland and Hacker (2004); and Stead and Meijers (2004)) who have commented on how macro-institutional compositions have generally resulted more from the accrual of incremental modifications or reformulations through processes such such as 'layering' or 'drift" and less from calculated planning.[2]

New policy design scholars, similar to their neo-institutionalist colleagues, have argued that policy mixes are often the result of similar transformation pathways - such as layering - that can easily lead to internal contradictions between tools and goals within policy mixes (Hacker 2005). Mixes may emerge over long stretches of time as a result of earlier policy decisions (Howlett et al. 2015). As a result, even when the initial logic of these decisions matching policy tool and target may have been clear, through multiple layering processes they can gradually transform into degenerated mixes over time (van der Heijden 2011, Bode 2006; Howlett and Rayner 1995, Orren and Skowronek 1998, Rayner et al. 2001, Torenvlied and Akkerman 2004, Hacker 2005). A similar concern for scholars in the new design orientation, is how 'unintended' policy mixes, created and limited by historical legacies, can be hampered due to internal inconsistencies, whereas other policy instrument groupings can be more successful in creating an internally supportive combination (Howlett and Rayner 2007, Grabosky 1994, Gunningham, Grabosky and Sinclair 1998, del Rio 2010).

The need to deal with Non-implementation Tools

It is important to repeat, however, that policy instruments exist at *all* stages of the policy process - with specific tools such as stakeholder consultations and government reviews intricately linked to agenda-setting activities, ones like legislative rules and norms linked to decision-making behaviour and outcomes, and others linked to policy evaluation, such as the use of ex-post, or after-the-fact, cost benefit analyses (see Figure 5).

Although policy instruments appear in all stages of the policy process, those affecting the agenda-setting, decision-making and evaluation stages of the policy process, while very significant and important in public management (Wu et al 2010) have traditionally not been considered in policy design research which is centered the formulation of tools and their mixes.

While the studies of policy tools from the 1980s and early 1990s focused on policy implementation, instrument classification and choices and paid much less attention to other stages of policy processes and how policy-making over time tended to 'layer' and 'lock-in' choices. While earlier policy instrument design thinking tended to suggest that design could only occur in spaces where policy packages could be designed 'en bloc' and anew, the new orientation recognizes that most design circumstances involve building on the foundations created in another era and working with sub-optimal design spaces (Howlett et al. 2015). In such situations, policy designers are faced with the added issue of redesigning existing regime elements but in the context of a design space which has been altered by remnants of earlier policy efforts. This context 'lock in' can have an effect on the formulation process as well as subsequent evaluation efforts by restricting a

government's ability to evaluate alternatives and plan, design and if need be , redesign, in an effective manner (Howlett 2009; Oliphant and Howlett 2010; Williams 2012).

In such situations, by being informed by the evaluation of policy packages, "designers can often attempt to patch or restructure existing policy elements rather than propose alternatives de novo although the situation may require the latter for the sake of coherence and consistency in the reformed policy mix" (Howlett 2013. See also Gunningham and Sinclair 1999; Thelen 2003; 2004; Eliadis et al. 2005). New policy design scholars are thus very interested in processes such as how policy formulators, like software designers, can issue such 'patches' to correct flaws in existing mixes or allow them to adapt to changing circumstances (Rayner 2013; Howlett 2013, Howlett and Rayner 2014). And they are also interested in related subjects such as how policy experiments can help reveal the possibilities of re-design (Hoffman 2011) or how building temporal properties into tool mixes – "adaptive policy-making" (Swanson et al 2010) - can make designs more flexible or resistant to shifting conditions (Walker et al. 2010, Haasnoot et al. 2013).

4. Conclusion

The study of policy instruments over the past 20 years has generated many insights into instrument use; insights which have helped academics to better understand policy processes and have helped practitioners design better policies (Gibson 1999). However, in the process of developing the taxonomies and models of substantive instrument choice, many investigators have focused almost exclusively upon the specific set of instruments which governments use to alter the distribution of goods and services

in society. While the previous several decades of instrument scholars such as Hood, Doern, Cushman, Lowi and Kirschen and their colleagues focused almost exclusively on substantive instruments, many of which are involved in economic and industrial policy formulation and implementation, much less attention was paid to the systematic analysis of their procedural counterparts. In focusing so intently on these substantive policy instruments, sight has been lost of the need, identified by early students of public policy, to take both the substance and process of policy-making into account when conducting instrument analyses.

Thus, the real challenge for a new generation of instrument studies is to develop not only the conceptual clarity and the methodological sophistication needed to identify changes in policy settings, but also the techniques for understanding the influences of diffusion on other elements of policy and, more importantly, on the diagnosis of the origins and ills of existing policy mixes and the design and development of new ones and of governance strategies in general (Eliadis, Hill, Howlett 2004).

As mentioned in the beginning of this chapter, the next generation of policy instrument studies must move to understand not just what governments choose to do or not do, but also the reasons behind these choices. This exercise entails a necessary consideration of the profound complexity that is inherent in the contexts within which policy instruments are utilized. This means espousing not just a close understanding of substantive and procedural instruments themselves, as was the aim of dominant focus on typologies and generic classification in earlier policy instrument studies, but also an examination of how these instruments work together in tandem in complex policy mixes, meant to address complex policy problems. With this analytical aim, the research agenda

of contemporary policy instrument design studies has re-centered on a more detailed

exploration of the actual formulation processes that result in choices surrounding policy

tools and policy tool mixes as they evolve over time (Linder and Peters 1990; Schneider

and Ingram 1997; Considine 2012). Similarly for policy designers, rather than being

limited within the technical and capacity restrictions of their policy design space, for

example, it is imperative for them to "be familiar not only with the technical aspects of

the menu of instruments before them, but also with the nature of the governance and

policy contexts in which they are working" (Howlett 2013).

The future research agenda or those interested in policy instrument analysis thus includes

many related subjects. As set out in this chapter, some of the subjects of much current

interest include outlining principles of design quality in complex multi-tiered mixes, an

understanding of the various temporal and political factors affecting patterns of

instrument choice and their evolution, and the need to look beyond implementation to the

multiple factors that can constrain the systematic formulation, design and redesign of tool

mixes.

Recent other forays into forwarding instruments research include a discussion of

policy design quality, an area that is are especially promising for both scholars and policy

practitioners. These include the detailing of several 'first principles' for policy mix or

'toolkit' design that ponder the characteristics of evaluative criteria to discern whether

design is being done well or poorly; such as notions of ''maximizing complementarity"

and "goodness of fit" with existing governance arrangements with which contemporary

design theory is grappling (Howlett and Rayner 2013). These and other subjects

highlighting an increasing acknowledgement of the complexity of policy instrument

interactions and their formulation are certain to continue to emerge in the near future.

Endnotes

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[1] Their work on instrument choice influenced others working on the subject at the University of Toronto, such as Michael Trebilcock, Donald Dewees, Robert Pritchard and others, who took part in a detailed discussion of instrument choice issues commissioned as part of a government 'regulation reference' in the late 1970s (Trebilcock et al 1992a and 1992b).

[2] New institutionalists attribute these processes to the evolution of institutions which, they argue, are manifested into policy (Kay 2007, van der Heijden 2011). In the new design orientation, these processes are seen as also applying to the formation of bundles of policies.

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