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The Selection of Policy Instruments: a Network-based Perspective*

HANS TH. A. BRESSERS *Centre for Clean Technology and Environmental Policy, University of Twente*
LAURENCE J. O'TOOLE, JR *Department of Political Science, The University of Georgia*

ABSTRACT

The concepts of policy instruments and policy networks have played important roles in recent theoretical development on public policy, as research in several nations attests. These notions, however, have largely been considered in isolation from each other. Here a simple typology of policy networks is used to help explain the selection of different kinds of instruments by governments. Several instrument characteristics are considered for the expected impact of network features on instrument selection, and a set of propositions is developed that matches degrees of network interconnectedness and cohesion with the choice of different kinds of instruments – such as regulations, subsidies, and covenants. Examples from different national and policy-sectoral contexts are used to indicate the plausibility of the argument. The article suggests that considering network attributes can be useful in understanding governments' choice of instruments and can strengthen extant discussions largely focused on such variables as learning and policy style.

The two subjects of this article, policy networks and the choice of government instruments to be used to achieve policy objectives, have each received extensive attention by scholars. Nonetheless, the core ideas developed in each stream of research have been largely ignored in the other.[1] The purpose of the current article is to link these concepts as

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the core of a theory of policy instrument choice and to suggest the theory's plausibility.

Much research into the application of policy instruments and their impact on the target actors of public policy, or 'target group' for convenience, is aimed at providing information which can help the government in its efforts to ameliorate social problems. Unfortunately, however, policy instruments are rarely selected on the basis of their implementability and effectiveness. Different policy fields tend to show preferences for their own 'favourite' types of policy instruments and use these repeatedly regardless of their actual contribution to problem solving. These tendencies limit governmental learning capacity, particularly when major new challenges present themselves – problems that cannot be solved by minor policy adjustments.

Several aspects of a social setting can influence the choice of instruments in the process of policy formation. This article aims to establish how the choice of policy instruments is influenced by the characteristics of the network of actors involved in considering a policy problem. This objective imposes restrictions on the explanatory factors to be discussed. It is assumed, however, that the influence of network characteristics is sufficiently great to explain an empirically significant portion of the instruments selected. *The central problem addressed in this article is: in what way do characteristics of policy networks influence the probability that various types of instruments will be selected during the policy formation process?* The answer to this question is sought by means of a theoretical exploration based on deduction from a central proposition grounded in social and policy theory. The findings are then illustrated, though not rigorously tested, with examples from policy practice primarily in two national contexts.

The article begins with abbreviated reviews of research on networks and instruments, and then offers a rationale for connecting the themes theoretically. The two following sections present characteristics of networks and instruments, respectively. The two conceptual patterns are then linked theoretically through the introduction of a core proposition that, we argue, explains a significant part of what drives the choice of government instruments. The theory is elaborated into some basic expectations, and selected empirical evidence is introduced to illustrate the theory.

The Burgeoning Interest in Policy Networks

The concept of policy network has received considerable attention in recent years. Researchers based in the United Kingdom, the United States, Germany, the Netherlands, and elsewhere have begun to use

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network notions to help describe and explain parts of policy action (a sampling includes Bogason and Toonen 1998; Bressers, O'Toole and Richardson 1994a; Haas 1992; Heclo 1978; Hufen and Ringeling 1990a; Jordan and Schubert 1992; Kickert et al. 1997; Klijn 1996; Marin and Mayntz 1991; Marsh and Rhodes 1992; O'Toole 1997a and 1997b; Provan and Milward 1995; and Scharpf 1993). The surge of interest has been fuelled in part by recognition of the complex array of actors involved in policy choices as well as the inability of contemporary government to move unilaterally without incorporating the constraints, preferences, and resources of other social actors. As such, the trend is a sign of renewed interest in developing robust theories of policy processes. (Several recent and promising efforts to provide better theoretical explanations for policy formation and change include, in particular, Sabatier and Jenkins-Smith 1993, 1996. See Schlager and Blomquist 1996 for a comparative analysis of this and other significant approaches.)

Some research has been limited to characterizing the networks involved in policy processes – primarily for policy formation but also for implementation. Depicting policy networks, however, or simply showing that they can be typical settings for policy choices, hardly takes one very far. Indeed, if research were to stop at the simple (and implicitly universal) observation that networks are part of the context for policy design and action, nothing very significant would have been said (see Bressers and O'Toole 1994). What are needed are theoretical advances that use the network notion to explain some part of the variance in policy processes, outputs, or outcomes (Bressers, O'Toole and Richardson 1994a).

While complex typologies have advantages, and while it is clear that many empirical instances of policy networks contain a multitude of actors linked in complicated ways, we simplify greatly in the exposition that follows. We do so in the interest of initiating the development of explicit and deductive theory that can be used as a starting point for refinement and testing. Specifically, we simplify in at least three ways.

First, we use the notion of network in an intentionally narrow sense: to denote the pattern of relationship between a governmental authority (like an agency or ministry), on the one hand, and the set of actors – the 'target group' – toward which the governmental authority's policy efforts are directed, on the other. The very word 'authority' is used with caution here. The emphasis on networks in policy research derives from the fundamental point that governmental actors are not simply and unilaterally authoritative; they depend on the actions and often the acquiescence or support of others whom they do not directly control.

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Furthermore, the reference to 'government' or a 'government authority' applies relatively easily in Parliamentary systems, less well in separation-of-power regimes, where the 'government' is often divided and internally competitive. We ignore these distinctions here to avoid rendering the analysis overly complex.

This full aggregation, including both government and sectoral target groups rather than merely one or the other, is what is referenced here by the term network. In short, we ignore the details of the networked interdependence across target groups and concentrate instead on the pattern of relationship within a relatively definable cluster of targets (like an industrial sector) and between government and target. (Note that networks are defined here in terms of the system of actors that interact on a certain topic, rather than via a particular level of intensity in that interaction. Although many actors may be involved, we assume that the bulk of these often cluster into two sides, or coalitions (cf. Sabatier and Jenkins-Smith 1993), in which both the responsible authority and the actors specifically targeted by policy proposals have their allies – probably each larger array encompassing portions of both sides of the public-private distinction.) This limitation necessarily means ignoring some important differences across cases but is a helpfully simplifying first step for theory building.

Second, we concentrate on networks for policy formation. Policy networks operate around both formation and implementation. But even for the same policy initiative, these networks may be different. To limit scope and increase precision, this article focuses on how policy networks function around the process of policy formation only – more precisely, that portion of policy formation dealing with the selection of policy instruments.

Third, we ignore many dimensions of the networked relationship between government and target group. Despite the many ways that networks have been typed and characterized, the most well-known and frequently cited network distinction has been that highlighting the difference between issue networks, as conceptualized by Heclo (1978), and policy communities (for instance Richardson and Jordan 1979). While this distinction can obscure a great deal, employing it to make sense of differences across national settings in policy action has been shown to be productive (Bressers and O'Toole 1994). We develop a relatively simple characterization of policy networks that builds upon but formalizes some of the notions undergirding the issue networks-policy communities distinction and then use the results, by offering a sketch of how network characteristics can help to explain features of policy instruments.

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Policy Instruments in Theories of Policy

The notion of policy instrument has also enjoyed growing prominence in recent years. Behind the term is a core idea: the type of mechanism used in a policy matters – for how and whether the policy is executed, how a proposed initiative is greeted during policy formation, and how likely the effort is to achieve the intentions of policy makers.

The type of policy involved during formation has been treated seriously by scholars of public policy at least since the explicit formulation by Lowi (1964). Unfortunately, theoretical advance has been limited by a number of factors: proliferation of overlapping and somewhat incompatible instrument typologies, differing theoretical purposes and research questions pursued by different researchers, and a relative lack of attention to careful empirical testing.

On the issue of typologies, as pointed out most prominently by Howlett (for instance 1991), the ideas of scholars like Salamon (1981), Hood (1986), Doern and colleagues (Doern and Wilson 1974; Tupper and Doern 1981), and Linder and Peters (1989) each offer intriguing insights but also omit key elements possibly necessary for productive theory building. As of yet, these thought-provoking ideas have not been fully melded into a coherent and accepted approach. Howlett and Ramesh (1995) try to rectify this limitation by offering a more comprehensive picture (pp. 162–63). On this issue, as for the concept of policy networks, we opt for parsimony while also working deductively to strengthen the reach of the perspective.

Second, the research questions posed by investigators have employed the notion of policy instrument in different ways and toward different ends (Howlett and Ramesh 1995: 158). Clearly, for instance, attention by economists to instruments has been focused on the issue of optimizing the match between instruments and policy problems. The current article, on the other hand, largely ignores this question and asks one closer to a political science or policy science perspective: what explains the choices by governments regarding instruments – whether effective or ineffective, promising or not? But unlike the perspectives on the choice of government instruments developed thus far, which have tended to emphasize unique case history and circumstances, our theoretical approach is based on a set of hypothesized matches between types of policy instruments and general characteristics of the networks comprised of government and target groups.

Other, mostly recently, efforts to explain instrument choice offer hints but also expose gaps. Some researchers imply that instrument choice can be influenced by the social construction of target groups by policy makers, without really exploring the pattern of actual inter-

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dependence between the two (Ingram and Schneider 1991; Schneider and Ingram 1990, 1993). Others focus on emulation, or policy learning, as a direct driving factor (Rose 1993; Smith and Glick 1995). Additional researchers emphasize the importance of learning but also note the complexity and differing depths of cognitive changes that can accompany learning in often loosely-coupled advocacy coalitions (Sabatier and Jenkins-Smith 1993, 1996). Certainly, policy learning can drive instrument selection under some circumstances, but it is equally clear that learning processes cannot account for significant portions of policy change and instrument choice (for example, Majone 1991), let alone for the observation that stability in types of instruments chosen is more typical for almost any given sector than is change. Plausible explanations for instrument choice have been formulated around the notion of national styles. At the same time, evidence suggests large variation in style across sectors within a given nation (for instance, Howlett 1991; see also Howlett and Ramesh 1993). Furthermore, shifts in instruments over time sometimes occur over relatively brief periods, and these occur without any evidence of policy makers' attending to choices in other countries. Learning and national style fail to account for a substantial amount of the choice of government instruments.

A Typology of Policy Networks

Following Hufen and Ringeling (1990b: 6), we define a policy network as a social system in which actors develop comparatively durable patterns of interaction and communication aimed at policy problems or policy programs. The focus here in particular is on the patterns observable between the 'steering' coalition – normally a government agency with allies within and without the public sector – and the 'targeted' constellation – typically comprised of strong individual organisations and/or representative organisations along with their allies, which may include some additional governmental agencies. We refer to these two parts of the network as 'government' and 'target group', respectively; but the referents are the two more carefully defined coalitions just described.

Policy networks can be typified in many different ways (Bressers, O'Toole and Richardson 1994a). Network characterizations including the familiar policy community-issue network distinction, have been developed in a number of fashions; but nearly all rely on distinctions along the dimension of integration versus fragmentation. By considering this general continuum as encompassing both structural and cognitive-affective characteristics, one can capture two distinct aspects

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of the overall integration-fragmentation dimension, while also avoiding the tendency among network theorists to focus on properties of network members rather than on network relations themselves as independent variables (Dowding 1995). The intensity of actors' interactions and the way in which objectives are distributed among the actors are the basic characteristics of network relations. These can be referred to as *interconnectedness* and *cohesion*, respectively (Bressers, Huitema and Kuks 1994). (Additional features of networks are the distribution of information and of power. We ignore these dimensions in the present exposition for the sake of parsimony.)

Interconnectedness refers both to the contacts in the relevant policy formation process (and the habits that have developed in this connection over time) and also the relationships between these actors outside the actual policy process at any particular time (cf. Zijlstra, 1982: 83–95). Apart from the possibility that these same actors also encounter each other in other processes, the origination of these relationships may also depend on the presence of intermediary groups or organizations designed to improve contacts within the network and possibly encourage sharing of staff or staff transfers (cf. DiMaggio and Powell 1983: 148).

In neocorporatist nations, one indicator of the degree of interconnectedness would be the degree to which '(semi-)private organisations take part in policy formation by means of formal consultative structures or by being members of committees or advisory bodies' (Koppenjan, Ringeling, and Te Velde 1987: 245–50). More pluralistic systems typically lack extensive formal mechanisms of connectedness, yet these may exhibit less full-fledged but nonetheless regular links, including heavily-used advisory processes. Some scholars assume that the presence of features like these will result in less imposition of policy choices by central actors on other interested parties and a consultative, rather than authoritative, policy style (Koppenjan, Ringeling, and Te Velde 1987). A related implication, we suggest, may be that this dimension can influence similarly the policy instruments likely to be chosen.

The second central characteristic of a policy network concerns the distribution of objectives among the actors in the network. Objectives can range from conflicting through compatible to mutually reinforcing. Since within every network various actors can have both supportive and conflicting objectives, a more general variable is needed: 'cohesion', that is, the extent to which individuals, groups, and organizations empathize with each other's objectives insofar as these are relevant to the policy field. This empathy generally stems from shared values and a shared worldview (cf. the cognitive patterns shared by members of advocacy coalitions, as depicted by Sabatier and Jenkins-Smith 1993).

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There may be differences in perspective and also values on a range of less important matters, for instance, while the networked actors share tightly consistent values and worldview at more basic levels. In a cohesive network, the consensus is not specific and narrow but rather pertains to deeper issues. If there is an extremely high degree of cohesion, the actors are inclined to self-identify as a cluster: to place the boundary line between 'us' and 'them' on the periphery rather than in the middle of the network.

Up to a certain point, interconnectedness can be seen as a 'structural' characteristic and cohesion as its 'cultural' counterpart (cf. Ostrom 1991 on 'institutional' and 'normative' perspectives). While interconnectedness and cohesion may thus vary together and be mutually supportive, there is no reason to assume that they necessarily covary. More or less stable forms exhibiting high values on one characteristic and low values on the other are both theoretically conceivable and empirically demonstrable. So there is no reason to define these situations *a priori* as nonexistent.

Why expect that these network characteristics can influence the selection of policy instrument types? The theoretical foundation for such an argument can be elicited from the work of analysts like Luhmann (1984), who asserts the importance of "self-reproduction" or autopoieisis as an important characteristic of social systems; and policy scholars like Majone (1976), who offers a connection between the distribution of power among social actors and the selection of policy instruments. Such theoretical bases suggest a tendency that types of public policy instruments are likely to be selected in such a fashion as to be congruent with existing social features.

Accordingly, the central proposition of this article is that *in general, the more an instrument's characteristics help to maintain the existing features of the network, the more likely it is to be selected during the policy formation process*.

This does not mean, of course, that policy instruments can*not* be chosen to subvert or change an existing network. Indeed, we assume that often specific actors, including government actors, prefer and perhaps intend major changes of this sort. But as analysts of multiactor policy processes often remind, policy action is frequently quite different from what any particular actor intends. Our argument, in fact, is that there is a *process* that results in instrument determination, rather than a particular *actor* who 'chooses'. Nor does it mean that the causal arrow cannot work in the other direction: instruments shaping networks rather than networks constraining mechanisms. Indeed, the former follows the more standard logic, with governments sometimes explicitly seeking network modification. Sometimes, furthermore, the network-instrument relationship is clearly bidirectional.[2] But the theoretical

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argument on which we build treats seriously the notion that extant network features are a potent determinant of instrument type, and not always or even usually the reverse.

So the basic proposition we offer deserves some further justification. As indicated above, a grounding lies in perspectives like those of Luhmann, who makes a persuasive case for tendencies toward the continual reproduction of social-systemic characteristics over time. Yet the formulation in which this argument is typically put explains both too little and too much. As regards the former, the perspective's emphasis on cognitions and communication as dominating explanatory factors omits other potential explanations for system, or network, reproduction (see Sabatier and Jenkins-Smith 1993 for a framework of policy change based in part on cognitive dynamics that also considers other causal factors). A more specific policy-grounded basis for the core proposition we offer can be seen in the work of Majone (1976), who asserts that the selection of different policy instruments has little impact on a policy's success, since instruments can only be used during the implementation process insofar as the balance of power allows it, and that instruments which could change this balance would have considerable difficulty getting selected in the first place. He argues that even if it were possible to develop instruments which could be implemented in spite of powerful opposition, the opponents would prevent the selection of them during the policy formation process. As a result, the selected instruments would never pose a serious threat to the existing balance of power.

This reasoning, of course, is not always fully applicable. And that is the reason why the autopoieisis approach (as well as Majone's basic formulation) explains too much. After all, the balance of power in a network is not static, and it is precisely the tactical manipulation of differences in power with different policy processes or at different times that can eventually lead to a shift in the balance. This point, however, is no reason to reject Majone's assumption altogether, and the same can be said for our basic premise. The development and results of a policy process can ultimately change the circumstances in which that policy process operates some years later. But the fact remains that it is first and foremost the current circumstances which determine the outcome of a process. It is, for instance, perfectly plausible that the greater the government's power in the policy network, the more capable and interested it will be in selecting instruments which give it (or its allies) the power required to implement the policy.

For the reasons sketched above, emphasis is placed here on exploring the relationship between the two network characteristics introduced above *other than* the one considered exclusively by Majone – that is,

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TABLE 1 *Four Types of Policy Networks, with Examples*

	Strong interconnectedness	Weak interconnectedness
Strong cohesion	U.S. agriculture	Dutch economic affairs
Weak cohesion	Dutch environmental management	U.S. environmental protection

our focus is on interconnectedness and cohesion – and the choice of instruments. For purposes of simplicity, we draw dichotomous distinctions regarding both the degree of interconnectedness and the degree of cohesion. The result is a typology comprising four types of networks. This treatment ignores the many intermediate situations likely to occur in practice.

By way of clarification, Table 1 displays examples for each type of policy network from two national contexts. In this formulation, as in the rest of this article, emphasis is placed on the interconnectedness and cohesion between actors on the governmental side, on the one hand, and actors with the 'target group' and its representatives, on the other. This portrayal is by no means meant to imply that these two groups are necessarily or even probably homogeneous and coherent.

We consider first the cases depicted as illustrating strong cohesion, and then those suggesting weak network cohesion. The American agricultural sector has long been known for its close relationships between the target groups (small farmers and agribusiness), the Department of Agriculture and its associated bureaus, and in fact various other organizations – including land-grant universities. Despite recent reductions in agricultural subsidies, the policy network continues to seem largely characterized as depicted in the Table. The case described is that of American agriculture, but the characterization seems likely to apply to agricultural policy networks in other countries as well. In the U.S. case, the interconnectedness is sufficiently strong that the sector is sometimes depicted by analysts as the one field in which U.S. policy making approximates a corporatist pattern. Compared with this instance, the relationship between the Ministry of Economic Affairs in the Netherlands and Dutch industry is characterized by a weaker degree of interconnectedness (cf. Hufen, 1990). In both cases, however, there is a strong degree of cohesion. Both ministries are inclined to stand up for their 'own' target groups, or 'clients', to promote what is perceived to be the long-term interests of the group as a whole.

As regards U.S. environmental policy, the situation can be typified as a combination of relatively weak interconnectedness and weak cohesion between policy makers and target groups (that is, the various categories

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of polluters). Despite efforts by some in recent years to develop more consensual approaches to industrial sectors, many national environmental bureaucrats see these as their 'natural enemy'. This point is a good link to the fourth cell of the matrix. In the same policy field in the Netherlands, a similar characterization could have been made in the 1970s. During the succeeding decade, however, the distance between policy makers and target groups narrowed. This shift can be attributed to the fact that the then-Environmental Minister and his successors encouraged an approach based on cooperation with target groups. The main result was a strong acceleration in the number of mutual contacts. The Ministry has now even appointed special target-group managers to maintain these connections, and target group consultation is currently a prominent item on the environmental policy agenda. Of course, a highly cohesive sector is next to impossible; Dutch environmental policy is unlikely to approximate the American agricultural 'iron triangle', because of the nature of the policy problem – which itself inevitably entails significant conflict between the parties' interests.

Characteristics of Policy Instruments

In this section we sketch a set of characteristics of policy instruments that can be used in the theoretical exposition to follow. These attributes, like the network dimensions offered in the preceding section, can be considered institutional features, interpreted as sets of rules specifying relations in a social setting. We treat policy instruments as the results of choices made for influencing the behaviour, and sometimes the institutional arrangements, of policy targets into the future. In this sense, instrument selection is a form of institutional design. Lest we be accused of thus using tautologially institutional arrangement as both the dependent and independent variables in our analysis, we should note that our argument is basically that policy instrument selection to influence behaviour at time is heavily influenced by networked institutional arrangements at $time_2$: this is the core of the self-reproduction thesis, and it is neither trivial nor tautological. Furthermore, to avoid the potential for tautology, we have deliberately sought to avoid incorporating the same characteristics in both the network and the instrument variables. The two clusters are distinct.

Policy instruments have been classified in a variety of fashions (Howlett and Ramesh, 1995). To relate the probability of the selection of different instruments to characteristics of policy networks, it is necessary to identify instrument features that can be logically related to the distinctive characteristics of different kinds of networks. This

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section seeks to trace the relevant instrument characteristics. In this regard, shaping network composition itself as a policy instrument is omitted from consideration; this exclusion is indeed necessary to avoid framing network features as independent and dependent variables simultaneously (Bressers and Honigh 1986). A number of aspects of instruments can be discussed, and appropriately relevant characteristics can be derived.

Our set of instrument characteristics starts by emphasizing the limitative or expansive characteristics of influence efforts, including policies. 'Expansion' is used here to denote circumstances in which the instrument makes the totality of behavioural alternatives for the target actors more feasible or attractive; 'limitation' refers to situations in which the reverse is the case (Bressers and Klok 1988). If we consider features of policy instruments that limit or expand the range of permissible options for policy targets, several would seem to be important. The first and more direct one is whether a policy instrument involves the *provision or withdrawal of resources* to target groups.

Expansion or limitation can also be shaped by adjusting additional features of policy. One is the presence or absence of a formal *freedom of choice to apply* the instrument for the members of the target group. Some instruments, like certain forms of information and subsidies available on request, leave choices about action in the hands of the target actors – they are free to choose whether or not the instrument is applied to them.

Furthermore, some instruments are framed so that government unilaterally acts on target groups, while others build a *bilateral or multilateral* feature directly into the mechanism. Certain instruments available to policy makers, like covenants in the Netherlands or negotiated rule making in the United States (both on issues of environmental policy) are centred on the notion of 'horizontal' mutual adjustment rather than 'vertical' rule setting or order giving.

Another distinction among types of policy instruments, that between economic and judicial or regulatory mechanisms, often gives rise to a misimpression. Legal instruments are often accompanied by financial sanctions, while economic instruments are anchored in legal regulations. So rather than making a strict distinction, it is more realistic to refer to a continuum in which a wide range of concrete instruments occupy intermediate positions (cf. Bressers 1983; Bressers and Klok 1988). The distinction between 'economic' instruments (incentives) and 'legal' instruments (directives) is often based on the question as to what extent a *normative appeal* is made to the law-abidingness of the target group ('thou shalt' or 'thou shalt not' regulations make such an appeal, financial incentives do not). In addition, many characteristics

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attributed to incentives or directives rest on the degree to which the size or intensity of a certain target group behaviour is *in proportion to* the size or intensity of the government reaction to that behaviour. In general, incentives are more proportional to behaviour than regulations, particularly since the latter often draw only a single normative borderline.

Apart from the selection of policy instruments, the process of policy formation also usually involves the selection of the implementing organization(s). In this connection, the *role of the policy makers in the implementation process* is important. Does the government also assign itself (via affiliated organizations, like line agencies or ministries) an important task in the implementation process? Or are policy makers happy to leave the challenge of execution to more remote organizations, for instance relatively independent bodies like government corporations or lower levels of government? Strictly speaking, these considerations do not involve a specific instrument characteristic. But the choice can be an important factor in determining whether and how the instruments work in practice.

The italicized instrument characteristics concern the degree to which the instrument involves the provision/withdrawal of resources, the freedom to opt for/against application, bi/multilaterality, normative appeal, proportionality, and the role of government in policy implementation. These characteristics (with the possible exception of normative appeal) can be considered institutional rules intended for application in subsequent processes.

Relationships between Network and Instrument Characteristics

This section explores the relationships between the characteristics of policy instruments and the two network features, cohesion and interconnectedness. The basic principle remains the central proposition that the more an instrument's characteristics help to maintain the existing characteristics of the network, the more likely it is to be selected during the process of policy formation. Other explanatory factors are deliberately excluded from the analysis.

The two network characteristics, interconnectedness and cohesion, are interrelated; the influence of one may depend partly on the other. In certain cases, therefore, it is not possible to make a straightforward link between each of the characteristics independently and the distinctive instrument features. Accordingly, the analysis in this section is organized around the dependent variables – the instrument characteristics (we reorder them for ease of exposition). The expectations formulated are then later summarized by type of policy network.

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Normative Appeal

With some instruments, like regulations and persuasive public information, the government makes a normative appeal to encourage the targets to choose or reject a certain type of behaviour. The legitimacy of the government is thus employed to seek to control behaviour (Bressers and Klok 1988). Such is not the case with other instruments.

If there is strong cohesion between government and targets, the main concern of the authorities is to support the target group in its own efforts to achieve its own aims. The selection of instruments that make a normative appeal to the target group is then rendered less necessary: there is no need to draw on government's legitimacy if the parties already share a basic normative stance, which is the case for cohesive networks. Where minor policy adjustments are involved, the authorities generally aim at detailed aspects of behaviour rather than at the pattern as a whole. Even when the government acts against the target's group immediate preferences, high cohesion can be expected to limit the deployment of normative instruments. After all, the use of mandatory regulations would soon undermine the cohesion.

One exception, however, concerns behaviour that is detrimental to the interests of the entire group. In a situation characterized by strong cohesion, the government actors and target group actors feel part of the same collectivity. If individual behaviour threatens to harm the general interest, the deployment of normative instruments can help to keep the network intact, thereby confirming the group values and reinforcing the legitimacy of choosing mandatory regulations (dos and don'ts). One example is the behaviour of companies which secure competitive advantages by unfair means.

Proportionality

The demands that must be met to achieve proportionality between targets' behaviour and government reaction during policy formation and implementation differ markedly, depending on whether instruments of general or individual application are considered. General instruments, like price subsidies and excise duties, require little specific knowledge of or contact between representatives of government and target groups. Individualized instruments are a different matter. To design and implement these, it is necessary to collect detailed information on the target group's situation. If the degree of interconnectedness is strong, there are more opportunities for government bodies to learn about variations in the target group's behaviour.

On the other hand, though strong interconnectedness enables the

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selection of better-proportioned individualized instruments, it does not necessarily provide the motive for doing so. The best way of maintaining strong cohesion is to take account of target group members' circumstances. Individually applied instruments which are designed to be in proportion with the target group's behaviour are ideal for this purpose. This type of instrument is therefore most frequently used in situations where strong interconnectedness and strong cohesion are combined.

With the more general type of proportionate instruments, these considerations do not apply. Such incentives are not aimed at the behaviour of individual members of the target group. In fact, with general measures, the individual members may not even be aware of the existence of the policy incentive (for instance, a price measure). Where cohesion is weak, however, the government may be inclined to opt for more normatively-based measures. In this case, 'invisible' control by means of general incentives would be a less obvious choice.

Providing or Withdrawing Resources to/from the Target Group

The application of some policy instruments requires that the target group receive funds, powers, rights, know-how or other resources in exchange for complying with a certain desired behaviour. Alternatively, resources may be withdrawn from the target group to counter undesired behaviour. If cohesion is strong, the authorities by definition are expected to be positively inclined toward the target group's main aims. In such situations, and to preserve cohesion, the government is likely to seek to influence behaviour by rewarding rather than penalizing.

Strong interconnectedness modifies this relationship somewhat. If the policy includes frequent communication, politicians and officials in administrative units often have considerable reason to try to direct resources to target groups – including program clients. Therefore, particularly in the case of strong interconnectedness, government organizations are likely to be guided primarily by the consideration that good relations with the target group are extremely beneficial to the government itself – not least to make life easier for the officials involved. Consequently, the frequent contacts involved in situations of strong interconnectedness reinforce the tendency to reward the target group.

Target Group's Freedom to Opt for or against Application

The freedom of target group members to opt for or against the application of certain policy instruments is another indicator of the expansive

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character of such instruments. This characteristic differs from the preceding one (providing/withdrawing resources), although there is probably some association between the two.

Typically, the target group is free to opt for or against application in situations in which the government's objectives are broadly similar to those of the target group – that is, if there is a high degree of network cohesion. Where the aim is to stimulate targets to undertake actions that they themselves perceive as significant (for instance, with technological innovations in industry), the parties involved in policy formation can be expected to regard mandatory enforcement as unnecessarily heavy-handed and potentially threatening to cohesion. And vice versa: if the target group is free to opt for or against application, one can expect – almost by definition – no conflicting objectives between government and target group. The danger to cohesion is small, since each member of the target group can simply ignore the policy whenever that suits the individual's circumstances. Freedom to opt for or against application can therefore be seen as a 'safety valve' which protects general consensus in the network.

Instruments involving freedom of choice also obviate the need to monitor target groups closely. It was noted earlier that strong interconnectedness makes it easier for policy makers to collect target group information. Offering the group substantial freedom of choice can be seen, therefore, as a way of dealing with a low degree of interconnectedness. In this case, therefore, the effect on instrument choice of *strong* cohesion is reinforced by *weak* interconnectedness.

Bilaterality or Multilaterality

Covenants are explicitly negotiated, formal understandings between government and some target entity, like an industrial sector. The notion behind covenants is that such agreements, when successfully conducted and when incorporating some responsibility for policy-relevant goal attainment on the part of the target group itself, can adapt governmental intentions to the needs, interests, and particular concerns of a target population and thus achieve policy goals more effectively and efficiently than authoritative, one-sided governmental decisions. Agreements like covenants thus involve intensive negotiations not only during implementation but also at the formation stage (Klok 1989). Such agreements have become increasingly used in relatively corporatist national settings for issues like environmental policy.

Note that covenants show that 'bilaterality or multilaterality' is not the same thing as 'freedom to opt for or against application'.

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Those attentive to the notion of formal cooptation can see clearly that covenants, like regulations, are aimed at limiting the target group's freedom of choice during implementation. For this reason, these instruments are suitable for situations involving weak cohesion. When networks are strongly cohesive, on the other hand, intensive negotiations can be avoided if policy makers opt for instruments providing additional resources and the freedom to choose for or against application.

A high degree of interconnectedness provides a 'natural' context for bilateral instruments requiring many contacts between the government's policy makers and (representatives of) the target group. The converse can also be expected: the use of such instruments encourages the continuation of intensive interaction.

Role of Policy Makers in Implementation

Given the central proposition that network characteristics tend to reproduce themselves in a given setting, one could expect that strong interconnectedness would promote the implementation of policies by organizations that also participate in policy formation – thus preserving the pattern of continuous mutual involvement. Continuing involvement during implementation would help to maintain strong interconnectedness, while the availability of these contacts encourages the involvement of the network's parties in implementation.

Even for cases exhibiting strong cohesion, policy makers are likely to be reluctant to entrust the full responsibility for implementation to lower authorities or other institutions outside the network, particularly if these others harbor unknown or less supportive attitudes. If the target group is opposed to the policy, policy makers would want to keep implementation in their own hands. In the more likely case that the instrument consists of the provision of additional resources, application by a unit within the network helps to reinforce cohesion. In both cases, this pattern provides reasons to entrust implementation to organizations from within the network that have also participated in policy formation.

These two influences have a mutually reinforcing effect. Under strong interconnectedness and strong cohesion, policies are implemented almost exclusively by organizations from within the network. As noted above, where strong cohesion is combined with weak interconnectedness, it is sometimes necessary to set up intermediary structures to facilitate implementation. Only with both weak cohesion and weak interconnectedness is implementation likely to take place, without

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pressure from outside the network, in a decentralized fashion and with little direct supervision from central policy makers.

Four Network Types and the Choice of Policy Instruments

In the preceding section, policy instrument characteristics were used to explore some accompanying links with features of policy networks. In this section, the procedure is reversed: the findings are used to craft a short inventory of the kinds of instruments likely to be adopted in different types of policy networks. We emphasize again that our aim is not to determine which policy instruments are the 'best' in various situations. It is also important to bear in mind that this array offers only a partial analysis: it assumes a severe restriction on the explanatory factors and derives expectations from one central proposition. Including other assumptions or variables would certainly lead to more detailed conclusions than those set out below. The examples introduced earlier are used below to illustrate the relationships. Their mention constitutes a brief check on the reasonableness of the expectations but does not amount to a test of the hypotheses.

To present the full set of relationships, we draw explicitly from the logic of the preceding section. Four sets of broad hypotheses can be sketched and then discussed briefly. Each is connected to one of the four types of policy networks. For each network type, we hypothesize likely characteristics of policy instruments.

Networks with Strong Cohesion and Strong Interconnectedness

The basic hypothesis here is: *The more a policy network is characterized by strong cohesion and strong interconnectedness, the more the instruments selected are likely to be characterized by: the absence of a normative appeal to the targets, except for behaviour damaging to the target group as a whole; proportionality; a net provision of additional resources to the target group; freedom for target groups to opt for or against application of the instrument; bilateral or multilateral arrangements; and implementation by policy makers or organizations closely affiliated with them.*

How does this hypothesis translate into the more usual language to characterize policy instruments? A simple summary is that in such networks, we can expect a rather pragmatic and straightforward choice of instruments. The emphasis here can be expected to be on subsidies and personal information (education and advice), but there is also room for whatever other types of instruments may be necessary to keep the network intact and cohesive.

This general point can be expanded with some specifics. When the

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overall group interest is involved, direct regulation can be expected. There is also a clear tendency, however, to provide the target group with additional resources. The emphasis is on supportive instruments, like research, information, and subsidies. (Incidentally, the net addition of resources may consist, on the one hand, of resources being withdrawn – for instance, by imposing fees – and, on the other, of these same fees or other larger flows of resources being pumped back into the target group for alternative purposes.) Implementation is entrusted as little as possible to proxies (Kettl 1987), institutions at a distance. 'More complex' instruments requiring an extensive exchange of information between government and individual members of the target group need not necessarily be avoided. The participants' strong sense of belonging to a group makes it possible – to a much greater extent than with the other three types of network – to consider the selection of instruments as a 'technicality' which can be approached pragmatically.

As an example of such a network, the U.S. agriculture sector can be considered. It is well known that a wide range of instruments have been used in this field, with emphases on research; subsidies and price supports; and huge efforts at information provision, targeted advice, education, and technical assistance. Nonetheless, other kinds of instruments like regulations and some fees have also been used where the interests of the group as a whole have been at stake. Note, however, the striking absence of regulations aimed at restricting freedom of action on issues that do not involve network survival. In addition, information is often provided through direct contact – that is, not merely in written documentation and mass-media communications, but mainly in the form of targeted advice and education. And implementers are almost solely located within the sector and include national and state agricultural agencies as well as farmers' organizations themselves.

Networks with Strong Cohesion and Weak Interconnectedness

Here the core hypothesis is as follows: *The more a policy network is characterized by strong cohesion and weak interconnectedness, the more the instruments chosen are likely to be characterized by the absence of a normative appeal, except in the case of behaviour damaging to the target group as a whole; proportionality (though weaker than for the networks strong on both dimensions, since the use of individually-applied instruments often requires intermediaries); provision of additional resources to the target group; considerable freedom for target groups to opt for or against application; an absence of bilateral arrangements; and implementation by policy makers or intermediary organizations.*

The general tendency of instrument selection in such networks can be sketched simply: with strong cohesion but weak interconnectedness,

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an emphasis on investment and research subsidies as well as written information can be expected. In settings of this type, mechanisms like investment subsidies, research subsidies, and written and mass-media information can be anticipated – often with the involvement of intermediary organizations. Price measures can also be useful, provided that these are seen as positive incentives.

In the earlier discussion of network types, the relationship between the Dutch Ministry of Economic Affairs and Dutch industry was given as an example of a pattern with strong cohesion and weak interconnectedness. Technology instruments continue to be used in this sector, as do positive price incentives. One example of the latter has been the successful attempt to keep electricity prices low for large-scale users in the Netherlands, even though this success for economic policy has had negative consequences for policy efforts on energy conservation.

Networks with Weak Cohesion and Weak Interconnectedness

The more a policy network is characterized by weak cohesion and weak interconnectedness, the more the instruments selected are likely to be characterized by a normative appeal, an absence of proportionality, withdrawal of resources from the target group, only limited ability on the part of the target group to opt for or against application, an absence of bilateral arrangements, and implementation characterized by involvement of parties other than policy makers and organizations closely tied to them.

What does this set of characteristics mean in concrete terms? The emphasis is clearly expected to be on regulations. In policy formation, no real attempt is made to achieve proportionality between behaviour and governmental reaction. Since the responsibility for implementing the policy is often passed on to other authorities, it is possible to opt for licensing systems which do necessitate individualized implementation (that is, by others).

This description corresponds fairly well with the environmental policy that took shape in the U.S. from the 1970s down to the present. This is so despite some initiatives aimed at the use of economic instruments and others intended to emphasize more bi- or multilateral arrangements. Indeed, in the near term at least, the networks-based explanation helps to render understandable the persistent difficulties American policy analysts have had in getting adoption of some of the economic and consensual instruments that have been recommended so frequently.

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Networks with Weak Cohesion and Strong Interconnectedness

The more a policy network is characterized by weak cohesion and strong interconnectedness, the more the selected instruments are likely to be characterized by a normative appeal; proportionality, provided instruments are individually applied; limited withdrawal of resources; an absence of freedom for the target group; many bi- or multilateral arrangements; and implementation by policy makers themselves or by affiliated organizations.

The hypothesis asserts that in these policy networks, one should be able to find instruments which are based on bi- or multilateral arrangements and also make a normative appeal. The joint impact is an emphasis on the target group's own responsibility during consultative meetings. In appealing to this personal sense of responsibility, policy makers can try to secure the commitment of the target group. This commitment can then be officially laid down in agreements (like covenants in neocorporatist settings). The ministry or agency supervises compliance and thus continues to play an active role. The target group's own sense of responsibility can also be reinforced by imposing certain obligations, such as liability insurance or research, reporting, and information requirements.

This package of policy instruments is quite close to what has emerged in the Netherlands regarding 'new' instruments for environmental policy during the past several years. The intentional intensification of contacts between the Dutch Environmental Ministry and its target group during the 1980s and since (pressed by three successive environmental ministers) has altered the network structure from its character during the 1970s, when the sector looked much like that in the U.S. The shift in network structure, according to our hypotheses, can help to account for a consequent shift in instruments during the same period. This example suggests, in turn, that a more efficacious approach to improving the likelihood of government's adopting the technically 'optimal' policy instruments may be by attempting to craft network characteristics themselves – establishing intermediary organizations, intensifying contacts, creating a government with a high likelihood of a cohesive relationship with target groups – rather than simply taking policy makers to task for having chosen 'wrong'. Often, nonetheless, the character of the network will change without any intentional program of network alteration.

A Comparative Illustration

The theoretical sketch just offered outlines a set of testable propositions. An additional opportunity to indicate the potential of such an

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approach is provided by a recently-concluded four-nation comparative study of water policy networks in Germany, Britain, the Netherlands, and the United States (Bressers, O'Toole and Richardson 1994b).[3] This study is useful to consider in this regard since it was crafted as a single comparative inquiry, with relevant data but absent the idea of testing these hypotheses. The purpose was otherwise, thus no deliberate selection bias is entailed. The investigation, based on detailed interviews among policy actors in each country as well as analysis of relevant documents and literature, produced portraits of each country's water policy networks not only currently but also stretching back for a couple of decades. In each case, there have been shifts in network characteristics – from networks relatively high in both interrelatedness and cohesion toward more diverse, less tightly interconnected, and less cohesive arrays. In each case, changes in policy instruments can also be observed, in particular shifts from heavy subsidies and informational support toward more regulatory approaches. This pattern obtains despite large differences in political systems and moderate differences in problem severity.

More specifically, the particulars of the changes in national instruments have differed across the countries during the last 20 years, with the kinds of shifts largely correlated – even at the subsectoral level – with the dynamics of network shifts over time. In particular, in the U.S., which exhibited less consensual and interconnected networks than in the other countries studied, a comparatively more regulatory apparatus was already apparent during the 1970s. And although additional regulatory forms have appeared in the United States, especially regarding water-supply issues in the arid West, the degree of instrument change seems less than in Britain or in a portion of the water sector in the Netherlands. Britain has moved to a less integrated (in fact an explicitly privatized) network, and more direct regulatory instruments have indeed developed and replaced earlier instruments. Note that this is not simply the trivial point that once government privatizes, it needs to exert some regulatory control. Rather, prior to privatization, the instruments used for British drinking water in particular were highly consensual and the network much more community-like. The move toward a more antagonistically regulatory approach has come to some degree to the surprise of certain water experts in the UK.

The Dutch case is slightly more complicated but also supportive of the theory. Here the water sector needs to be considered in terms of two different network patterns. The water supply side changed during this period to a looser and less consensual array, and the Ministry of Economic Affairs has responded with more involvement in price setting – including increased criticism of private tariff-setting and more

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regulatory pressure for efficiency. For surface water quality, on the other hand, the relatively tight and consensual network of water authorities and industrial actors from earlier days remains largely intact. In this latter sub-case, the observed instrument pattern that evolved during the seventies and eighties – that is, negotiated agreements in a permanent committee with representatives of industry on standard setting as a basis for permit-giving – continues. Finally, the German case (leaving aside issues raised by unification) is somewhat difficult to characterize from the data available. The primary reason is that the distance between water suppliers and authorities is quite large (or, interconnectedness is almost absent), and it is also difficult to identify any clearly central policy on such issues. ('Policies', such as they are, are more or less 'in house' within companies.) The German case is not so much a refutation of one of the theoretical propositions as it is a complicated empirical case. And indeed, it suggests a refinement: where networks as we define them are virtually absent, so too may be policy and policy instruments. In the other four instances (two national cases and two Dutch sub-cases), the shifts in instruments have been generally consistent with the dynamics of network shifts over time. And the Dutch evidence supports indirectly something like the hypothesized link rather than, for instance, an explanation rooted in the notion of national, or even sectoral, policy style.

It is hazardous to draw firm conclusions regarding networks as causal forces in observed changes such as these (Bressers and O'Toole 1994). Correlations, even when correctly observed and appropriately documented, may well be spurious. But it is worth noting that the network and instrument changes in these cases, while broadly consistent with each other and with the theory's expectations, have occurred with little evidence of lesson drawing or policy learning across national boundaries (Bressers, O'Toole and Richardson 1994b). (Some learning may be evidenced on the subject of challenges to public financing that emerged in similar fashions in the countries analysed.) This point does not demonstrate conclusively that indirect forms of learning do not account for a portion of the shifts – particularly for the European cases, since the development of a European-level water policy discussion recently provides many opportunities for diffusion of information. Indeed, theoretical and empirical claims of institutional isomorphism, as developed in the research literature on organizations, suggest that learning and cross-sectional diffusion can well extend beyond policies to structural features. But the evidence does indicate the plausibility of the link emphasized in the present article.

And any hypothesis based on European-level learning on the part of policy actors across countries would need to be compared in its explan-

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atory potential with an approach such as the one outlined here. In particular, emerging European-level water policy networks may exhibit structural attributes that help to drive some of the developments in the selection of EU water policy instruments, which in turn can be background or contextual conditions influencing national-level choices. This possibility would then generally be a European version of a kind of two-level policy game to be expected as well in other multilayered political systems (see note 2 above).

Conclusion

This article has aimed to connect two different but potentially related streams of policy research: one focusing on policy networks and another analysing policy instruments. We argue that the two can and should be linked, and that certain gaps in existing policy research – regarding the use of the policy networks notion as an independent variable in explaining policy-relevant phenomena, as well as on explanations for observable patterns of governmental adoption of policy instruments – can be partially filled by making this connection in a theoretically meaningful way. Developing this link in theoretical form has been the purpose of this article.

This idea has led us to offer some straightforward and testable expectations for when and where we are likely to find such different instruments as subsidies, regulations, and information adopted. Note that the explanation explicitly avoids focusing on either an economic logic (matching instruments to policy problem characteristics) or any other 'problem'-based theoretical reasoning. In a world where governments could be in more-or-less unilateral control, they might have the luxury of crafting policy instruments through such a technocratic matching process. In today's real world, in which democratic aspirations heavily permeate policy formation and where power is dispersed rather than congealed in ministries or other centres of decision, the network of relations in a policy sphere is likely to frame the selection of rules for shaping future policy-oriented action. That, at least, is the argument we have been sketching.

To make such an argument is by no means to demonstrate its accuracy. Indeed, for all the theorizing about policy instrument selection to date, there have been no systematic empirical tests thus far. This gap is not fully addressed directly in the present article, although we have intended to show the reasonableness of the theory offered in the preceding pages.

The networked context of policy formation deserves attention as a partial shaper of public policy. The best way of optimizing policies may

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be to look beyond the instruments themselves and into the social setting in which they – or agreements about them – are actually shaped.

NOTES

1. Dutch research on networks and also on instruments is an exception. Work on these topics in the Netherlands has been extensive, but thus far relatively little of this material is available to broader audiences. Research is also currently underway in the Netherlands to develop, refine, and test policy theory incorporating both network and instrument characteristics as variables. This article broadens the important Dutch line of inquiry and links it more fully to the international research literature.
2. Interestingly, empirical evidence can be sketched to indicate that policy and policy instrument choice at one level can influence network characteristics at another level, with these network features in turn shaping instrument selection at the second level. This characterization fits the U.S. subnational choice of instruments by the New York City Water Board to deal with an important target group in the agriculture sector (a Watershed Agricultural Council) – within the City's watershed: individual assistance to improve nonpoint source protection by helping farmers to design and execute detailed "farm plans" with heavy and proportional government subsidies. Certain network features (high cohesion and interconnectedness) were encouraged in this region by the requirements of national regulatory policy; and these network features, once established, appear to have shaped the New York-level policy instrument. See O'Toole 1998.
3. Actually, two additional cases are included in the full study: Hungary and the European Union. These are omitted from discussion here, since their unique features – regime transition and relative newness, respectively – needlessly complicate the analysis for present purposes.

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HANS TH.A. BRESSERS
Centre for Clean Technology and Environmental Policy
University of Twente, Box 217 7500AE Enschede, The Netherlands
J.T.A.Bressers@cstm.utwente.nl

and

LAURENCE J. O'TOOLE, JR.
Department of Political Science
Baldwin Hall, University of Georgia, Athens, GA 30602 USA
cmsotool@arches.uga.edu

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