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14 Taking Stock of Policy Networks: Do They Matter?

Jörg Raab and Patrick Kenis

INTRODUCTION

Almost two decades of research in public policy using the concept of policy network has resulted in considerable output.¹ A great number of articles on policy networks can be found in major journals in political science and public administration and even more chapters in edited volumes, special issues of journals (Marin and Mayntz 1991; König 1998) or more specialized policy journals. Therefore, the concept can be regarded as being one of the major analytical concepts in the field of public policy partly competing, partly complementing other major approaches like veto players/game theory (Tsebelis 1999), ideas (Weir 1992), or the advocacy coalition approach (Sabatier and Jenkins-Smith 1993). The concept has been used to analyze policy making and implementation at the local and regional (Melbek 1998; Schneider et al. 2003), the national (see, among others, Laumann and Knoke 1987; Rhodes 1991; Schneider and Werle 1991), the European (Bretherton and Sperling 1996; Héritier 1993; Nölke 2003), and the international level (Grundmann 1997; Reinicke 1998). Moreover, the concept has been applied in the analysis of policy making in many different industrial sectors such as nuclear energy (Zijlstra 1979), chemicals, and telecommunication (Schneider 1992), and policy fields such as environmental (Carpenter et al. 2003) or science policy (Grande and Peschke 1999).

If we look at the nationality of the authors, however, it seems that the concept has been used much more frequently by European than by North American, especially U.S., scholars. This can be largely attributed to different research traditions but also to different political cultures of European welfare states with coalition governments and a consensus oriented policy style which make the development of policy networks much more likely than in a political system that is characterized by majority voting rule, party competition, and a pluralistic interest intermediation system as in the United States (Peters 1998, 32). Moreover, as we will see below, the policy network concept followed and largely replaced the framework of corporatist interest intermediation (very popular in the 1970s and 1980s in Europe) as a more general analytical framework. The policy network concept has widely been used in the 1990s to analyze policy making within the European Union, which is now frequently characterized as a new system of governance based on negotiations between national governments, the European Commission, the European parliament, large companies and national or European associations (Börzel 1997).

Common to all studies in this area is a relational perspective, i.e., a focus on actors, their interests, and especially their relations as the key explanatory factors, whether they are conducted qualitatively or quantitatively, whether they use network as a mere metaphor or with a clear definition that is subsequently operationalized.

The role of networks in policy making became an important issue on the research agenda in the late 1980s. Policy researchers began to both theoretically and empirically focus on how networks

1. A search for the term "policy network(s)" on the ISI Web of Science covering ISI journal articles from 1988 to July 2006 resulted in 155 hits for titles only and 323 hits as a general topic.

between public, private and non-profit actors shape processes of policy making and governance. This increasing popularity can be attributed, first, to a transformation of political reality, second, to a subsequent transformation of the conceptual and theoretical framework in policy analysis, and, third, to the development of a methodological apparatus for structural analysis (Kenis and Schneider 1991, 33). As a consequence, scholars not only started to describe these more horizontal forms of governance that developed out of a changed distribution of power, but also tried to argue normatively why these forms of governance were the most effective and efficient for certain types of policy and organizational problems. The term “network” was claimed to becoming the new paradigm for the “architecture of complexity” (Simon quoted in Kenis and Schneider 1991, 26) or the major device to reintegrate differentiated systems of actors in modern societies (Mayntz 1993a). At the beginning of the 1990s, it was stated that policy network analysis was not just a “new fad,” but was employed “due to the growing insight that public policies emerged from the interaction of public and private actors” (Windhoff-Héritier 1993, 143). It was further seen as a “promising instrument of political research” because different theoretical approaches could be combined and because it offered the possibility to go beyond the mere description of formal institutional structures and to investigate which actors dominate the political decision-making process in different policy fields (Windhoff-Héritier 1993, 143).

These were high hopes, but to what extent were they fulfilled? Using a network perspective, policy researchers have been able to describe the various formal and informal structures of policy making in different policy fields. In some but still rather rare instances, quantitative network analysis was used in order to gain a more detailed description and analysis. Describing these policy-making structures is no little achievement, since the description of the nature of the beast is a fundamental step for any further inquiry. But how much progress was there beyond the mere description? Have more insights been gained into how certain structural configurations influence policy processes and outputs, i.e., did scholars manage to go beyond network as a metaphor or an analytical tool? In short, do policy networks matter?

In answering this question, we will look at where and how the concept originated. Then we will discuss what progress has been made toward a network theory of policy and what further steps could be taken in order to further advance such a theory.

WHERE DOES THE POLICY NETWORK CONCEPT COME FROM?

Looking at the literature the term *policy network* is used with different meanings and analytically with different purposes. One can identify at least three dimensions of the concept: (1) network as an analytical framework and as an empirical tool, (2) network as social structure, and (3) network as a form of governance. Network theory is often talked about as a fourth dimension. However, there is still a lot of uncertainty as to what exactly a network theory is. At times, network is the object of the study (dependent variable) in network theories (comparable with organizations in organization theories). At other times, one can also find network as the independent variable, and policy outcomes, organization behavior, etc. are explained by its characteristics (Kenis and Knoke 2002). In this second form, however, one should not talk about network theories but about a network theory of policy or a network theory of organizations.

NETWORK AS AN ANALYTICAL FRAMEWORK AND AS AN EMPIRICAL TOOL

The network concept is often used merely metaphorically in policy analysis. However, even in those instances, the researcher takes a particular perspective, namely focusing the analysis on the actors,

their interests but especially on the existing and non existing ties among each other. Therefore, the policy network approach takes a middle position between undersocialized approaches like rational choice or oversocialized approaches like Marxist approaches (Granovetter 1985).

Network analysis as an empirical tool has been one of the major innovations in the social sciences in the last 30 years and has recently been applied more and more in policy analysis. Three reasons have led to the success of network analysis as a paradigm and an empirical tool. First, concepts were based on relations rather than attributes. By concentrating their attention on the ties between social entities, rather than on the qualities possessed by them, it forces social scientists to think in terms of constraints and options that are inherent in the way social relations are organized (van Poucke 1979, 181). Network analysis is therefore based on an "anticategorical imperative, which rejects all attempts to explain human behavior or social processes solely in terms of categorical attributes of actors, whether individual or collective" (Emirbayer and Goodwin 1994, 1414). At the center of analysis are not attributes such as age, gender, social status, political affiliation, religious beliefs, ethnicity, or psychological predisposition, but the relations between social entities as a means of explaining why people behave the way they do and why certain outcomes come about (Emirbayer and Goodwin 1994, 1414). The two basic components of all network analyses are a set of objects (called nodes, positions, or actors) and a set of relations among these objects (called edges, ties, or links) (Knoke 1990). Network analysis is not a neutral statistical method, nor is it a theory. It is an empirical tool to describe social structure on the basis of relations between social entities (Kenis and Schneider 1991). It is nonetheless analytically formal in that it mandates systematic and replicable routines, requires strict coding rules and has an internal logic or algorithm that produces descriptive or inferential results (Griffin and van der Linden 1998). The strength of the methodology is based first on well-developed data collection procedures. Second, standard methods are available for analyzing and measuring the structural properties of whole systems (centralization, hierarchization, density, etc.) as well as of the social positions of the single social entities within these systems (centrality, clique membership, prestige, structural equivalence, etc.). Third, the statistical procedures to calculate these measures are implemented in standard calculation and visualization software. Based on this "toolbox," the principal achievement of network analysis "has been to transform a merely metaphorical understanding of the embeddedness of actors in networks of social relationships into a more precise and usable tool for social analysis" (Emirbayer and Goodwin 1994, 1446). It is now possible to operationalize and measure the relational properties of social and political systems and the encompassing units by collecting data on virtually any social relation between the units of interest to the researcher.

Besides the formalized quantitative approach, a second more qualitative direction evolved in political science arising from the discussion on interest intermediation and corporatism (Schmitter and Lehmbruch 1979; Börzel 1998), the coordination of industrial sectors (Hollingsworth et al. 1994), as well as the discussion on political planning and implementation (Scharpf 1993; Mayntz, 1996) all of which were later integrated in the general analytical approach of policy analysis. Here, "network" is applied as an analytical framework, which guides the empirical perceptions in research on policy making and directs the researchers' perception and attention towards the actors and their relations. Laumann and Knoke's study of the U.S. energy and health policy domains (1987) can serve as a classical example for the formalized approach on a large scale as well as Schneider and Werle's research in the German telecommunication domain (1991) on a smaller scale. In these studies, quantitative information is rigorously collected about the actors and their relations within a certain policy field. These data are then used to gain insight into the (power) structure of a policy field by using indices such as density, centrality or influence reputation or by analyzing the cliques (coalitions) that were formed in a policy process. The advances in computer hardware and software now make it possible to use quantitative data for elaborate visualizations of networks (Brandes et al. 1999). Examples for the qualitative branch of the policy network approach include case studies

such as Toke and Marsh's study on genetically modified food (2003) in which they describe the network structure and how it changed over time and use these insights to explain how network were mutually affected by each other in this case.

NETWORK AS SOCIAL STRUCTURE

One of the fundamental assumptions in network analysis is the belief that structures have a certain stability, which leads to its rather static character. When applying the "network" notion in the analysis of economic, political, and social processes and outcomes, it is assumed that after some time actors have built more or less stable exchange relations, which are not changed fundamentally by "superficial" every day events (Windhoff-Héritier 1993, 144). In most cases, the nodes within a policy network represent corporative or collective political or administrative actors like ministries, government agencies, or societal actors like associations, unions, or even private actors like companies which occupy specific positions or roles. "Network" in this respect, is seen as a social structure with very specific features. In policy making it is regarded as an arrangement characterized by a predominance of informal communicative relations, a horizontal as opposed to a hierarchical pattern of relations and a decentralized pattern of actors' positions (Kenis and Schneider 1991, 32). The difference between the first and the second understanding of network is that in the first it is possible to conceptualize any social structure (even pure hierarchies) as a network and apply the analytical toolbox of network analysis, but that the second dimension reveals specific structural features.

NETWORK AS A FORM OF GOVERNANCE

Starting with Williamson's *Markets and Hierarchies* in 1975, in which he elaborated Coase's basic ideas about the determinants for the organization of economic activities, a rich body of literature has developed on different forms of governance over the last two decades (Williamson 1975). For some time, transaction costs as the major factor to explain special forms of social organization was applied only in economics. It was only some years ago that the discussion in economics, organization theory, and political science converged in a common literature. Central to this discussion were the questions about the factors leading to hierarchical, network, or market arrangements and about the conditions under which the different forms have comparative advantages (Hollingsworth et al. 1994). An important point in this discussion was the question whether networks are simply a combination of elements of market and hierarchy—and could therefore be placed on a continuum somewhere between market and hierarchy—or whether they are better understood as unique forms of governance in their own right (Powell 1990).

Parallel to the Anglo-Saxon discussion in economics, an independent discussion about networks and other governance forms started in Germany in political and administrative science. Since the beginning of the 1970s, a debate about steering (*Steuerung*) had been developing. Originally, scholars were interested in understanding and improving policy planning and implementation processes through the state. But the high hopes were profoundly disappointed. The state as the central actor lost more and more of its strong and independent position and had to face the claims of the ever stronger societal actors, which made it impossible to hierarchically implement policy decisions especially in complex policy fields. As a consequence, scholars not only started to describe these more horizontal forms of governance, which developed out of a changed distribution of power, but also tried to explain normatively why these forms of governance were the most effective and efficient for certain types of policy problems. Central to this discussion is the understanding of network as an emergent organizational entity, i.e., as a new form of social organization. Although

network as a form of governance is characterized by a plurality of autonomous actors, as they are found within markets, and the capability to pursue collective goals through deliberately coordinated actions, which is one of the major elements of hierarchies (Mayntz 1993b), it is claimed that a new form of governance develops. This new form is more than the sum of the actors and their links and more than a combination of elements of hierarchy and markets (Mayntz 1993b). In this approach, "network" is conceived and interpreted as a discrete form of governance and together with market and hierarchy as an ideal type of coordination. The characteristics of this ideal type are not only seen in a specific structural feature of the system of production and exchange, but also for example in the mode of conflict resolution, the basis of legitimacy, the general (cognitive) orientation and incentives of the actors.

It is claimed by the proponents of this approach (Schneider and Kenis 1997) that it is not only possible to achieve more conceptual clarity but also to develop a refined analytical instrument with which actor coordination in concrete policy or economic systems can be modeled as a specific mixture of these ideal types (Schneider and Kenis 1997, 20).

The integration of the discussion in economics, organization theory, and political science has had two consequences. First, scholars now have a less normative and more flexible notion for the description of new arrangements in policy making. Second, the discussion on and comparison of markets, hierarchies, and networks, which was taken from economics, had a strong functionalist and economic touch (Perrow, 1981). A major concern was effectiveness and efficiency and the classical questions of political science were more and more superseded. In empirical policy network studies one rarely reads about power and influence, legitimacy, interests, democracy, etc. This was substantively different in the early network studies such as the community power studies (Laumann and Pappi 1973). They focused explicitly on the analysis of political structures, especially on power structures. Therefore, it is necessary to separate the discussion on network as a governance form, network as a specific social structure, and network as an analytical tool in order to address questions of power, influence, and responsibility more accurately. With network as an analytical tool, influence and power can be operationalized in terms of centrality or prestige of actors. On the other hand, thinking in terms of governance and not only in terms of social structure opens up yet another perspective. Systems of governance made up of different organizations, whether their features come close to a network or rather represent a mixed type, can be seen as an organization of "higher order" (Teubner 1996) or "emergent" (Scharpf 1993) form of organization, which produce outcomes that cannot be attributed to any single organization alone. Moreover, the process and therefore the outcome cannot be completely controlled by any individual organization. The different views on networks, therefore, have great implications not only for the analysis of the structure and the processes but also for the evaluation of the outcome.

TOWARD A NETWORK THEORY OF POLICY?

Despite the frequent talk in the literature about network theory, we claim that the utilization of such a theory regarding policy making is a long way off. Strictly speaking, we should be able to demonstrate that a difference in structural network characteristics, i.e., the presence and absence of ties, has a significant impact on the policy output. Only in this instance could something be explained other theories are not able to and only then could one seriously talk about a *network* theory of policy (see Salancik 1995) with regard to a network theory of organization). Network analysis might be used as a descriptive tool to collect data but that does not automatically lead to a network theory if the data is used to develop or test other theories.

In the literature on policy networks, ample attention has been given to the conditions for the development of policy making. Some of the case studies mentioned before tried to explain why a

specific policy network has developed. Others set out to explain why policy networks as a specific form of governance developed since the 1970s (e.g., Kenis and Schneider 1991; Mayntz 1993b). Here, policy network is seen as the dependent variable.

If we look at publications from the second half of the 1990s and in the last few years, we can observe that scholars try to bring together at least some of the different perspectives on governance (the German and American version), interorganizational networks, interest intermediation, and studies in political sociology sometimes using quantitative network analysis beginning with the community power studies in the 1970s (Dowding 1995; Klijn 1997; Raab 2002).

However, despite the achievements mentioned earlier, we feel that we are not really making enough progress in creating empirical generalizations especially when it comes to explaining policy outputs or outcomes with network characteristics. Using the framework of scientific inquiry proposed by Wallace (1969) as a heuristic tool it will therefore be evaluated what building blocks of a network theory of policy are already assembled and what is still missing. The model by Wallace distinguishes five components of scientific inquiry: theories, hypotheses, observations, empirical generalizations, and methods. The first four components form the major steps of the research cycle, while methods play a role in and connect all transitory steps between the components, from logical deduction through operationalization and measurement to logical induction. Scientific work is hereby conceptualized as a succession of manipulations of information each of which is controlled by a particular kind of method. Whereas methods are seen here as the principal controls over the way in which scientific inquiry is pursued, theories are the most important informational product of this pursuit. Wallace points out that individual observations contain only very small amounts of information about a given phenomena, and that empirical generalizations and hypotheses are limited to moderate amounts of information but that theories (insofar as each theory is synthesized from several different generalizations, and each empirical generalization is synthesized from several different observations) can contain the maximum amount of information (Wallace 1969, x).

In his perspective, theory is not just a storehouse of information, but theory itself actively performs two crucial roles in generating the information that is stored within it: first, it specifies the factors one should be able to measure before doing research, and, second, it serves as a common language into which the results may be translated for purposes of comparison and logical integration with results of other researchers after the research has been completed. In order to arrive at a network theory of policy making, a "theory storehouse" (Wallace) can therefore only be developed by recurrently going through the research cycle as described above.

Consequently, the policy network literature will in the following be assessed on the basis of what has already been assembled in each of the components "observation," "empirical generalizations," "theories," and "hypotheses." Before we can start however, we first have to identify that part of the policy network literature that falls within the definition of "network theory of policy making," since we are interested in the information in the literature on how and why networks influence the structure, process, and outcomes of policy making. Only the literature in which network is considered the *explanans* and policy is considered the *explanandum*, can logically contribute to the development of a network theory of policy making. As we will see, the so-called policy network literature is a miscellany of analytically quite different approaches. Consequently, the literature identified can, following the principal logic of the model presented, be assessed on how and whether information is produced which can be added to the "network theory of policy making"-storehouse. Such a contribution can be made, again according to the logic of the model, by any of the four "method"-steps presented: developing theory from empirical generalizations, developing empirical generalizations from observations, developing observations from hypotheses, or developing hypotheses from theory. If we look at the literature, the vast majority of contributions being published so far contain empirical observations. This is no surprise, because usually after a phenomenon is discovered the natural first step is to describe it as thoroughly as possible. We will therefore start with "observations."

MAIN OBSERVATIONS IN THE LITERATURE ON POLICY NETWORKS

Numerous quantitative and qualitative studies describing networks were published in the 1980s until the mid-1990s. Important publications in this regard were the *Organizational State* (1987) and subsequent work by Pappi, Knoke, and colleagues (Knoke et al. 1996) in which the importance of large formal organizations for policy making in modern industrialized countries was demonstrated and analyzed what kind of structures had developed in certain policy fields like energy, health, and labor.

Other empirical articles that were influenced by the “Organizational State” but came from a European tradition and were published in the edited volume *Policy Networks* by Marin and Mayntz (1991), i.e., Schneider and Werle (1991), Jansen (1991), and Kenis (1991). A somewhat different strand developed in the British context (Rhodes 1990; Rhodes and Marsh 1992).

Further empirical work was done among others by Bulkeley (2000) on the Australian climate change network, Daguette (2000) on child care policy in England and France, Daugbjerg (1998) on nitrate policy making in Denmark and Sweden, Forrest (2000) on drought policy in post-apartheid Namibia, Nunan (1999) on the implementation of European Union environmental policy in Britain, Schneider (1992) on the chemicals control and telecommunication policy in Germany, and Sciarini (1996) on the Swiss agricultural policy and the GATT negotiations.

Further and more recent work encompasses studies on policy networks by Greer (2002) as well as Toke and Marsh (2003) in the English, Montpetit (2002) and Carpenter et al. (2003) in the North American, and Raab (2002) in the German context.

Studies that combine a policy network and a rational choice/game theoretic approach, i.e., that attempt the integration or reconciliation of structure and agency related approaches encompass among others König and Bräuninger’s study on network formation in the German labor-policy domain (1998), Pappi and Henning’s study on the organization of influence on the EC’s common agricultural policy (1999), Stokman and Berveling’s study on decision outcomes and network dynamics in Amsterdam (1998), and van Assen et al.’s (2003) study on decision making in the EU regarding support for fishery infrastructure.

Although or because we, meanwhile, have a myriad of empirical studies using network as a concept to describe structures in policy making, it is very hard to come up with some robust and consistent findings (see below) that go beyond some superficial descriptions. However, some notable patterns emerge.

First, in the roughly first two decades of research and discussion on policy networks it was demonstrated that policy making structures indeed existed in which corporate actors negotiated solutions for certain policy fields. The strong involvement of private and societal actors led to a wider perspective from a state centered to a more encompassing perspective of public policy making.

Second, despite the very different usages of the concept “network,” almost all studies see organizations or parts of them as the main actors and conceptualize them as corporate actors and more technically as nodes in the network. Thus organizations are generally accepted as boundedly rational actors and are characterized by intentional actions that have a certain consistency and stability (Jansen 1997). They are seen as being able to control collectivized events (Coleman 1990) and to follow a long-term strategy (Jansen 1997).

Third, there are only few studies in which “network” is used as the independent variable, i.e., in which policy outputs or outcomes are explained with certain structural features of the policy making arrangement. Moreover, there are—in our view—hardly any studies in which the outputs or outcomes are evaluated in terms of effectiveness whatever the criteria might be. If we, therefore, have to answer the question “what do networks do?” we have to come to the conclusion that we know very little based on empirical research when it comes to their effectiveness. This might be due to the fact that one of the—sometimes implicit—assumptions by network scholars has been for a long time that policy networks produce better policies and are, consequently, a better form of policy making compared to more traditional forms. Accordingly, the quality of policy outputs or

outcomes and especially the democratic quality of policies made in and through policy networks has rarely been questioned (for some exceptions see Schneider 1999 and Guéhenno 1994).

Fourth, most of the studies have a static character, i.e., the policy networks are seen as stable and the structural characteristics are described for a certain period or in a snapshot mode for multiple periods or points in time. This involves a methodological and a theoretical problem. In network analysis, it is generally assumed that these structures, i.e., the actors and their relations, should have a certain stability. However, it is common knowledge that social structures, including policy networks, are nothing else than repetitive patterns of social interactions (Giddens 1979) that are slightly changed every time they are repeated.

Besides the methodologies difficulties, there is also a theoretical problem. Because agency, structure, process, and outputs are so closely linked in reality the question arises whether the sequence of structural configurations makes a difference for an ongoing policy making process and the subsequent output. For example, does it make a difference if a policy network first develops a high internal density and a high internal legitimacy and then maximizes external ties and external legitimacy as has been suggested by Human and Provan (2000) for interorganizational networks?

Furthermore, there are hardly any studies that try to track policy networks for a longer time either retrospectively or through repeated measurements. This is partly due to the fact that the approach is relatively young, but, also partly, because data requirements are considerable, retrospective data collection is problematic, and repeated collection of network data is risky and very expensive.

EMPIRICAL GENERALIZATIONS IN THE LITERATURE ON POLICY NETWORKS

According to the model by Wallace presented above, it is possible to arrive at a general theory through logical induction by first making empirical generalizations over a multitude of observations. Unfortunately, to our knowledge, no encompassing meta-analysis has yet been conducted, that tries to come up with more general and more abstract categories and indicators for the dependent as well as independent variables, count the observations and make statements about the effects (consequences, outputs, outcomes, results), for example, in terms of the number and types of actors, the types of relationships, clique structure, density, centralization, etc.

In general, we have not gone beyond some very preliminary attempts to summarize some results by constructing descriptive categories (see, for example, van Waarden 1992) that have resonated in the field only to a limited extent.

What we would need, on the one hand, are studies in which the questions should be addressed how networks influence outputs/outcomes (performance) and how particular aspects of networks matter (assuming that the basic question—do networks matter?—has already been answered affirmatively). On the other hand, as it was stated before, the number of studies reporting specific effects of policy networks is rather limited so far. Therefore, at this time it is doubtful whether a comprehensive meta-analysis with a limited number of cases will already lead to meaningful results.

THEORETICAL BUILDING BLOCKS IN POLICY NETWORK RESEARCH

In our view, which seems to be the general opinion in the field (among others König, 1998; Peters 1998, 26; Peterson 2003, 8), a consistent body of hypotheses does not exist that could be called a network theory. To be precise, since a theory is defined by its dependent variable it is likely, if there is progress in that direction at all, that different theories will be developed that might share some important traits but would be considerably different from each other. They could be called a network theory of policy, of effectiveness, of organizations, etc., depending upon what the main phenomenon-to-be-explained is.

The decisive question in this endeavor, however, is whether it is possible to come up with more general categories both for the dependent and independent variables compared to the ones constructed for the step “empirical generalizations.” The question to be asked at this point would be “of what factors are the structural features of a network a special case?” and “of what categories are the different policies a special case?” (see Wallace 1969, ix). The three categories usually used to categorize policies, i.e., distributive, redistributive, and regulative, might be a good starting point in this respect). This should then allow us to formulate causal relationships of a more general kind between structural features of the policy making arrangements and policy outputs/outcomes.

HYPOTHESES IN POLICY NETWORK RESEARCH

If we start with making empirical observations and through empirical generalizations manage to formulate a theory, the next step is to come up with hypotheses derived from the theory that can subsequently be tested by making empirical observations. Hypotheses in this respect are concise about what is expected to occur, not why it is expected to occur (Sutton and Staw 1995, 377).

Since there is no unified theoretical body, it is logical that we hardly find specific hypotheses making statements about what to expect in terms of policy outputs or outcomes given certain structural features of the network in the literature. There are, however, bits and pieces in the literature that formulate propositions based on a range of theories, using network as a dependent or an intervening variable.

A sober evaluation of the research and findings in terms of developing a network theory of policy so far reveals that the situation seems to be rather bleak. Despite the multitude of observations, we have not been able to really go beyond the merely metaphorical use of the network concept. From this perspective, the strategy to start at empirical observations and arrive at a theory through logical induction from empirical generalizations seems highly doubtful. Also, most of the studies reporting empirical observations do this without any hypothesis. Therefore, it is no surprise that the results seem to lack the necessary consistency in terms of time, institutional frame, number of actors, importance of the policy, and the like in order to come to empirical generalizations. Given the effort especially necessary in conducting comparative quantitative network studies, it does not seem very promising to engage in studies that simply add empirical observations without any hypotheses based on a network theory of policy. Therefore, we will evaluate in the next section, how such a theory could be developed as a starting point for further empirical research.

WHERE TO GO FROM HERE?

From the analysis above it can be concluded that the “network theory of policy-making” storehouse is rather empty. There seems to be hardly any knowledge on the effects of network attributes on the characteristics of policy making. In order to hold the claim that networks are relevant in policy making, one has to demonstrate that the presence and absence of relationships between actors in a policy-making setting makes a difference to the policy making (i.e., its structure, processes and outcomes). Only if we can demonstrate the types of effects of interactions or links between actors on policy making, can we create a genuine and exclusive basis for a network theoretical approach to policy making. Rather than claiming again and again that relations are important, one should arrive at theoretical propositions about whether interactions make a difference with respect to policy making, i.e., linking structural characteristics to outcomes. Studies in adjacent fields such as sociology, organization studies, or public management could hereby serve as guiding examples that look at the influence of network characteristics, for example, on innovation (Owen-Smith and Powell 2004) or on the quality of service delivery in health and human services (Provan and Milward 1995).

Instead of using the network terminology just as a tool, one should use it for understanding policy making per se. How do interactions support policy making? How does policy-making function in terms of interactions? How does adding or subtracting an interaction in a policy setting change the policy making? How should interactions be structured ideally to increase, for example, innovation in policy making. An information rich theoretical storehouse should be able to answer these types of questions.

But what happens in the absence of such a storehouse or better, how could the storehouse be filled? Here again, the classical model of Wallace might be useful. On the basis of this model, we can identify what has to be achieved in order to develop theory.

Since network theory building on policy making is in such a premature state, the most logical place to start at in the Wallace model is "observations." This might, at first glance, appear to contradict the earlier remark that claimed that we have an abundance of observations but a deficit of theories. The issue seems, however, that we need different types of observations. Since we are primarily interested in the effects of a specific independent variable (i.e., the absence and presence of relations) and not just in the dependent variable (i.e., traits of policy making), we cannot just start collecting information about policy-making cases, which vary on a specific trait. The reason being, that we are at this point not so much interested in explaining differences in certain traits of policy making (e.g., its degree of innovation) but are interested in the effect of a specific explanation (i.e., the absence and presence of relations).

Therefore, in order to develop a network theory of policy making we need to select observations in function of the operationalization of hypotheses. These hypotheses on their part should be logically deduced from some kind of theoretical statement, which proposes that the presence or absence of interactions between policy actors affect a specific characteristic of policy making. For example, a hypothesis could be: The higher the density within a policy field, the higher the chance that it produces an innovative outcome. This hypothesis does obviously not result from a strong or sophisticated network theory of policy making, but it is at least consistent with the general theoretical claim that networks play an important role in policy making. Moreover, such a hypothesis can be operationalized and thus guide our empirical observations.

On the basis of these observations, the hypothesis can be falsified or rejected and thus leads to an empirical generalization: policy fields with high density rates have higher innovation rates compared to policy fields with low density rates. In order to transform this type of information to the level of "theory," the "why" question must be answered. Why is it that the degree of density in a policy field increases its level of innovation? This question can be answered by first finding an answer to the question what other distinctive characteristics policy fields do have in common, because they either have a high or low level of density (which can explain differences in the level of innovation). Second, one needs to answer the question of what the degree of innovation is a special case of. In other words, in which way can the phenomenon-that-explains (i.e., the density of the policy field) and the phenomenon-to-be-explained (i.e., innovation in policy fields) be inductively generalized beyond its original formulation and thus increasing the scientific information.

CONCLUSION: ARE WE EXPECTING TOO MUCH?

The answer is yes and no. We are not expecting too much for at least two reasons. On the one hand, there is a constant and increasing stream of claims from the academic and practice literature that relations and networks are important in the functioning, process and outcome of policy making. As our review of the literature has demonstrated, however, the evidence for this claim is hardly present. On the other hand, network analysis has been providing more and more sophisticated and widely used methods for describing and analyzing relational structures (also in the field of policy making). But in order to be productive in understanding policy making, network analysts will also need to

become more theoretical about the study of policy making. As convincingly argued by Salancik (1995), network analysts tend to use other theories (such as resource dependency theory or diffusion theory) to explain phenomena but often do not ask how their perspective addresses a theoretical problem. In line with Salancik, it seems that we are not expecting too much that if network analysis is used, its theoretical advantages should go beyond other well-developed theories. Consequently, in case networks are considered important in policy making and network analysis wants to be productive in describing policy making arrangements and in explaining policy outputs or outcomes, we do expect two things: first, the formulation of propositions about how adding or subtracting a particular interaction in a policy network will change the policy coordination among the actors; and second, the formulation of propositions on how a network structure enables or disables the interactions between two parties in a policy setting (see e.g., Kenis and Knoke 2002).

But, at the same time, we could also say that, at least at this time, we are indeed expecting too much. The main reason being that developing a theory as a rich “information storehouse” in the sense of the Wallace model is an extremely complicated journey. It assumes that we study a substantive number of policy-making cases, agree on the most important independent variables, use comparable operationalizations and measurements, concentrate on comparable traits of policy making, develop causal reconstructions that will ultimately have to be based on a theory of action, etc.

We have to admit that this chapter has not contributed much to this journey, except, perhaps, by demonstrating how such a journey could look (and, as we all know, real journeys always look different than those in travel catalogs).

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