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Policy Networks: History

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Synonyms

Collective decision-making and social networks; Influence networks; Interest alignment; Policy networks; Power networks

Glossary

(Voting) Power	The ability of authorities to codetermine collective decisions based on institutionally determined voting weights and the voting rules
Collective decision	A binding ruling for the system
Enforcement process	Shifts of voting position under pressure from a more powerful actor or coalition
Hierarchical/ power networks	Networks based on institutionally determined rights
Influence	The ability of actors to have their interests reflected in collective decisions, strongly determined by direct or indirect *access* to authorities and by *resources* they can mobilize, resources to persuade authorities or to force them to take certain interests into account
Issue salience	How strongly the outcome on an issue affects important goals of an actor
Issue	A one-dimensional scale of possible outcomes on a controversial element in the collective decision
Logrolling process	Shifts of voting position on one issue in exchange for a favorable voting position shift of another actor on another issue, creating a win-win situation for both actors
Negotiated exchange networks	Networks of potential and realized exchanges of voting positions resulting in voting positions that deviate from policy positions
Persuasion process	Shifts of policy position and/or issue salience based on convincing arguments by other actors
Policy networks	Networks of influence relationships
Policy position	The preferred outcome of an actor on an issue

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Voting position	The outcome that an actor supports in decision making

Definition

Policy networks are influence networks in which actors compete to obtain binding rulings in a system close to their preferred outcomes.

Introduction

Policy networks are usually defined and analyzed in the context of collective decision making. In the long history of policy networks, the focus was first, however, on key positions in networks, assuming that such positions are powerful. Concepts like influence and power were not yet clearly distinguished, resulting in quite some misunderstanding and confusion, both in public debates and in scientific literature, even at present. What is required is an approach in which these different lines of research are integrated into one overarching theory of collective decision making. We aim to do this by distinguishing different types of networks, by connecting them to different fundamental processes of collective decision-making, and by specifying conditions under which each type of process is dominant. We will follow this line throughout the text, followed by examples in section "Key Applications."

Key Points

In *The SAGE Handbook of Social Network Analysis*, Knoke concludes his chapter on policy networks with the utopian desire for an intellectually matured political network research with a distinctive theoretical explanation able to account fully for the origins, evolution, and policy outcomes of policy domains at every level of analysis (Knoke 2011, 219). I will argue that a fundamental step in that direction requires definition of policy networks in terms of fundamental processes of interest alignment in joint production. In these contexts, related collective decision making is required for specification and implementation of what and how such products should be produced as well how profits and costs should be distributed.

Historical Background

The first policy network studies tried to trace influence relationships directly, and central positions in such networks were interpreted as power positions. Later influence studies included preferences or focused on exchange processes. Power positions were derived from opportunities to get better outcomes than others or larger control over events in which one is interested. Subsequently, we integrate these components in an integrated framework.

The present insights developed in five stages, each contributing an important new element in the fundamentals of policy networks.

The Five Stages Toward an Integrated Theory

Power and Influence Studies

When in the 1950s of the past century empirical studies on local power started, their main topic was the distribution of power in local societies. It gave rise to a huge debate about the concepts and measurement of power and influence. Ideological, theoretical, and measurement issues colored the empirical results and made them incomparable. The debate concentrated around two empirical local studies in that period, the study of Hunter in 1953 in Atlanta (Hunter 1953) and the New Haven study of Dahl (1961). Starting from opposite perspectives in the so-called elitist-pluralist debate, their definitions and measures of power could hardly do anything else than confirming their view of American politics. But the main benefit of the debate is that it revealed the necessity to reflect about different dimensions in the concepts of power and influence and how these dimensions have to be represented in measures.

The first important distinction concerns the question whether power and influence have to be

defined as capacities (Hunter c.s.) or as actual effectuation (Dahl c.s.). As effectuation of power and influence depends heavily on the amount of perceived interest of the stakeholder in the problem and the issues involved, it is important to differentiate between the two and to define and measure power and influence as capabilities. The perceived interest of an actor in the problem can then be characterized as the percentage or fraction of potential resources that a stakeholder will mobilize.

Second, are the concepts of power and influence interchangeable or do they refer to different phenomena? In more complex contexts, collective outcomes become binding through institutional arrangements. Such arrangements specify which actors are legally or otherwise formally charged with taking decisions and determine their voting weights and the voting rules. These two determine the *voting power* of actors. This is particularly obvious in political decision making. Such formal procedures often mean that stakeholders who have no formal right to codetermine the decision outcomes have very high stakes in those decisions. In Western democracies, final decision making is allocated to parliaments, composed of elected representatives who take the final decisions. Some political theories, like the one of Schumpeter (1943), identify democratic decision making with democratically taken decisions. Other theories stress that democratic procedures are only a necessary, but not a sufficient condition for democratic decision making (Bachrach and Baratz 1962). They stress that content and quality of decisions should be part of the evaluation of the democratic character of decisions. In their view, a decision should be based on a "balanced" weighing of different interests in a society. To arrive at such a balanced weighing, democracies recognize the right of assembly and free expression of opinion and often require certain consultations and hearings as part of the decision-making process. Particularly within this normative frame, we expect that authorities receive social approval when they weigh the intensity of interests and relative influence of different societal actors properly. Errors, particularly frequent errors, will result in serious social conflicts and poor implementation, which will reduce the likelihood of the authorities being reelected. The ability of actors in social systems to co-determine collective outcomes is consequently not based solely on their voting power in the final decision-making stage but also on actors' ability to have their interests reflected in final decisions. The latter we denote *influence* (Mokken and Stokman 1976).

Third, should influence be measured as a relational variable or as a characteristic of the stakeholder or as a combination of the two? Influence is strongly determined by direct or indirect *access* to authorities, those actors who are formally empowered to take decisions. On the other hand, influence also depends on *resources* of actors they can mobilize, resources to persuade authorities or to force them to take certain interests into account. One essential resource is information, particularly very specialized information. Numbers might also matter, like the number of people a stakeholder, such as a trade union, for example, can mobilize. The importance of different resources depends on the context in which the collective decision is taken. For example, a country's military resources are unlikely to be relevant when international banking regulations are being debated. The three essential elements of power and influence in collective decision making are, therefore, voting power in final decision making, timely access, and resources.

Access: Influence Network Studies

The increasing analytic possibilities of social network analysis gave rise to a large number of network studies to investigate power centers. Illustrative are the many studies on elite and intercorporate networks. Social network analysis of joint membership in clubs and organizations started to reveal the duality of meeting places of political and economic elites. On the one hand, similar educational and social background, joint membership in a large number of elite organizations, and leading positions in powerful organizations, like large corporations, reveal who belongs to the ruling elite (Domhoff 1967). On the other hand, social network analysis revealed the many links between seemingly independent

organizations, providing access and giving influence to each other. New network analytic methods uncovered so far hidden power centers. Fennema and Heemskerk (forthcoming) show that the field of corporate interlock research developed in the 1970s simultaneously and independently in the USA and the Netherlands, a nice example of "Mertonian" multiple discovery. Prominent examples are studies at the local level by Laumann and Pappi (1976) and at the national level by Mintz and Schwartz (1985). Later studies compared these American studies with similar studies in other countries (Stokman et al. 1985).

Knoke (1990) and Carroll and Sapinski (2011) give good overviews of this line of research. Within the context of policy networks, such an overview is beyond scope, particularly as such studies may well reveal hidden power centers but are unable to specify their effects on policies. This is due to the fact that interests are not specified but assumed. Whereas American scholars tended to interpret network power centers as homogeneous and interlocks as signs of shared interests, Marxist-oriented researchers, like Fennema (1982), qualified this interpretation and emphasized that shared board membership (e.g., of two bankers within one board) may well imply competition. Moreover, the abovementioned duality of interlocks as result of elite recruitment versus institutional link between corporations asked for longitudinal studies where stability of interlocks between corporations can be compared with career patterns of persons. Stokman et al. (1988) showed that both components are present and can be roughly specified by such a longitudinal study. How interests can change over time and have dramatic effects on these networks shows the rapid decline of the hidden national power centers after 1990. Globalization really broke through in the 1990s due to the fall of the Soviet system and the international market orientation of China. Global competition required international recruitment of corporate board members based on American salary and bonus level at the expense of national elite recruitment and resulting interlocks between national companies. David and Westerhuis (2014) combine the historical and international perspectives in a comparative study over the full twentieth century.

We therefore can conclude that we cannot limit policy networks to access studies but have to include interests explicitly in policy network studies.

Interests: Policy Positions and Salience in Policy Network Studies

Voting power, access, and resources determine the *potential power and influence* of actors. The actual mobilization of an actor's potential influence depends on three other elements. First of all, it depends on how strongly the decision affects important goals of an actor, the *issue salience* of the collective decision for the actor. The other two elements are (a) *the degree to which actors expect the outcome will deviate from their preferred outcome* and (b) *whether their participation is expected to have a positive effect* through the mobilization of their resources (Zelditch and Ford 1994). This implies that theories of collective decision making cannot be based solely on the three power elements of the actors but also have to take into account their issue salience and their preference regarding the outcome. Power becomes visible only if actors have diverging preferences regarding decisions of sufficiently high salience to them. Similarly, if the status quo reflects the interests of the powerful, they are likely to prevent decision making rather than exercise power and influence in the decision-making process. This phenomenon is called "nondecision making," now better known as "agenda setting" (Tsebelis 1994 and many others).

The so-called contagion models (Friedkin and Johnsen 1999; Leenders 2002) assume that actors' opinions and attitudes in a social system depend only partially on individual characteristics and that these opinions and attitudes are also shaped by social influence. Social influence is represented in the form of an influence network, reflecting the dyadic influence of actors on each other. Technically, spatial autocorrelation algorithms are used to capture such processes. In the social influence part of the model, a person's opinions or attitudes are modeled as the weighted mean of the opinions or attitudes of the people who have an influence

relationship with that person. In the literature, a large variety of weights have been proposed, as Leenders (2002) has shown. Dynamic network models combine influence and selection effects in networks and investigate the relative impacts of the two effects (Steglich et al. 2010). Stokman and Berveling (1998) connect these types of models with the fundamental step of aggregating the individual opinions to a collective outcome, a step the other models do not make.

The distinction between (voting) power and influence is strongly related to the common conception of collective decision making that it consists of an influence stage followed by a voting stage. Achen (2006, 86) notes that a broad range of studies has shared this general conception. Stokman and Van Den Bos (1992) formalized this conception in their two-stage model of policymaking. At the bargaining stage, actors attempt to win support for the decision outcomes they favor most (denoted their *policy positions*). During this *bargaining stage*, actors employ a range of strategies in pursuit of this goal. As a consequence of bargaining, actors may end up supporting policy positions other than those they originally took. We refer to these new positions as actors' *voting positions*. In the second stage, *the voting stage*, the process consists of the transformation of the voting positions into one outcome that is binding for all. This implies that the processes in the two stages are fundamentally different. In the bargaining stage, policy positions are transformed into voting positions; in the voting stage, voting positions are transformed into binding decisions. In complex systems, a final outcome may well be based on a repeated chain of these two stages, like a decision-making process at three levels in the government and in two chambers of parliament.

Policy Network Models Based on Exchange Processes

If we consider other approaches to social influence in the literature, we find two alternatives based on social exchange.

The first consists of extensions of Coleman's exchange model (1972) that incorporate networks. Coleman assumed that actors have an interest in some events and control over others. By exchanging control over events in which they are less interested for control over events in which they are more interested, mutually beneficial outcomes can be achieved. The main mechanism in this model is that of a market. The model can predict the division of control among the actors in equilibrium. Power (and value of the events) is derived from the model, rather than being introduced on an ad hoc basis. While the original Coleman model assumed that exchange possibilities are unrestricted, later models introduced the concept of unequal exchange opportunities by connecting Coleman's exchange model to networks (Laumann et al. 1987). In these models, structural constraints force actors to exchange with particular other actors. Moreover, the models were adapted to predict outcomes on issues on which there are only two policy alternatives (such as yes or no). Coleman's model thus became extended to outcomes of collective decision-making processes. Later models explicitly represented the two earlier mentioned decision-making stages by distinguishing agents like interest groups and agents like public authorities with voting rights (König 1993) and extended the models from dichotomous issues to one-dimensional issue dimensions (König and Proksch 2006). An excellent overview of this line of research in the European Union is given by Thurner (2017).

The second approach to exchange consists of network exchange models (e.g., Markovsky et al. 1988). Whereas Coleman's model is based on global equilibria, network exchange models focus on network effects on exchange rates between pairs of actors. Actors' power derives primarily from the possibilities they have to exclude others from exchange. This power is defined in terms of shifts of exchange rates to an actor's own advantage. Network exchange theory mainly deals with exchanges of private goods. Private goods are also the starting point for Coleman's models, and generalizations to public goods are not straightforward (Stokman and Van Oosten 1994). Exchanges of voting positions deal explicitly with public goods: changes in voting positions affect all stakeholders in collective

decision making and have externalities for other actors (Van Assen et al. 2003).

The Integrated Theory: Policy Networks Based on Fundamental Processes of Goal and Interest Alignment

Characteristic for earlier studies is that they study only one process and do not specify conditions under which that process is likely to dominate. What is needed is an approach that includes the main processes of interest alignment in collective decision making and specifies the conditions under which each process is likely to take place. Earlier studies assume also one given and static network, whereas relevant networks may vary over processes and network ties may depend on the distribution of positions and saliences of the stakeholders on the issues.

As the processes in bargaining stages (policy positions are transformed into voting positions) and voting stages (voting positions are transformed into binding decisions) are fundamentally different, *game-theoretical models* of the two stages are fundamentally different. I focus here on bargaining models, as models of the voting stage are not linked with policy networks but assume that outcomes are the result of the interplay between institutional arrangements and procedures on the one hand and preferences of actors with voting power on the other. Moreover, empirical studies have shown that this class of models is less able to predict outcomes well (Thomson et al. 2006; Thomson 2011).

Collective decision making is necessary in any situation where people wish to achieve things that can often only be achieved, or can be achieved more efficiently, with the contributions of others. This is referred to as *joint production* (Lindenberg and Foss 2011). Joint production requires collective decisions to be taken about what actions should be taken to realize shared interests: who should deliver which contributions and how should the added value of the joint production be divided. But collective decision making itself is also a special case of joint production, because individuals involved in such decisions are mutually dependent on each other in making the required decisions. The joint product in collective decision making is a collective decision that is binding for all actors in the social system.

Consider the wide range of situations in which people take collective decisions. Families take collective decisions about how to spend and save, about where to live, and about the distribution of household tasks. Management boards of businesses and nonprofit organizations take collective decisions about what strategies to implement. Public policies in democracies are collective decisions taken by groups of elected representatives, often after consultations with affected stakeholders. In all these contexts, collective decision making is the process in which stakeholders have to transform their different preferences into a single collective decision that is binding for all actors within the social system. In doing so, all actors try to influence the decision outcome, including efforts of some of them to prevent decision making for the preservation of the status quo. Seen from this perspective, not power or influence but *interest alignment* is the key to understanding collective decision making: how diverging preferences for collective outcomes nevertheless result in one collective outcome that is binding for all. Such an analysis requires a focus on and specification of fundamental processes by which interest alignment takes place, even when we realize that actors have different capabilities to do so and differ in their perceptions on how much of their interests are at stake.

Joint production inevitably involves both *shared* and *conflicting interests* in the perceptions of the stakeholders. Shared interests result from the perceived added value of the joint product; conflicting interests from the perceptions regarding the division of the added value and the division of the individual contributions to the joint production. Perceptions of the relative weight of shared and conflicting interests strongly affect the type of process expected to emerge in different collective decision-making settings. This perception also determines the intensity with which people try to influence the collective decision outcome in line with their own position versus their willingness to compromise in order to arrive at a broadly supported common position.

Fundamental processes **Persuasion**	*Dominant networks* **Information and trust networks**	*Present not-integrated Approaches* 1. Contagion models 2. Reciprocal exchange networks	*Integrated approach* Cooperative Nash Bargaining Solution for all relevant stakeholders	*Conditions for process to dominate* 1. Reversion point very unattractive 2. Overall coalition possible/ sub-coalitions difficult to form 3. Risk-averse stakeholders
Logrolling	Negotiated exchange networks	1. Coleman's exchange model 2. Network exchange theory	Voting Position exchange models (cooperative solutions for subsets of stakeholders with positive and/or negative externalities for others)	Opposite positions and complementary interests
Enforcement	Hierarchical/ power networks	1. Non-cooperative models	(Noncooperative) challenge model	Opposite positions and noncomplementary interests

Policy Networks: History, Fig. 1 Fundamental processes, dominant networks, approaches, and conditions for processes to dominate (Source: Stokman et al. (2013), p 164)

The dynamics in decision-making processes result from the fact that each of the stakeholders attempts to realize the policy position it favors as the outcome. The complexity of such processes derives from the fact that stakeholders often take quite different positions, have different levels of potential to influence the decision outcome, and differ from one another with respect to the intensity of their preferences. Stakeholders may attempt to build a coalition as large as possible in support of the policy positions they favor. By building such coalitions, stakeholders hope to affect the positions of the final decision makers, the authorities, which will in turn lead to a collective outcome that reflects their interests as much as possible. Consequently, the dynamics of decision-making processes are primarily based on processes through which other stakeholders are willing or forced to change their positions. Three fundamental processes can result in such shifts in positions: *persuasion, logrolling*, and *enforcement*. Udehn (1996) derives these three fundamental processes from the literature in his sociological critique of economic models of politics. Each of these has its own specific interdependencies. Stokman et al. (2013) argue that in any decision-making context *all three processes and associated networks take place simultaneously* but that *only one of them is dominant*. They specify the *conditions* under which each is likely to be dominant and under which conditions the logrolling and enforcement processes are likely to support or undermine the persuasion process.

Figure 1 gives an overview of these three processes, the types of networks associated with these processes, which approaches in the literature are associated with which process, and the conditions under which each of the processes is expected to dominate collective decision making.

Through *persuasion*, stakeholders aim to change other stakeholders' initial positions, or preferences, and the levels of salience they attach to the issues that must be decided on (Stokman et al. 2000). When a stakeholder changes its position, or alters the level of salience it attaches to an issue as a result of persuasion, this change constitutes a fundamental internal switch on the part of

the stakeholder. Persuasion is achieved through the provision of convincing information. Persuasion strategies are particularly likely to dominate when collective decision making based on unanimity is a strong formal or informal norm (i.e., if the group consensus salience is high and includes all stakeholders).

The Nash Bargaining Solution provides an approach with which to model persuasion as a dominant mode of interaction. One of the central conditions that are conducive to persuasion is that stakeholders perceive shared interests to greatly outweigh their individual interests. When stakeholders have a strong shared interest in reaching a collective decision, failure to do so is highly undesirable and far less desirable than any of the decision outcomes advocated by any of the stakeholders involved. This facilitates the feasibility of grand coalitions of all stakeholders, particularly when smaller coalitions are difficult to form. Under these conditions and assuming quadratic loss functions on the issue continua (implying risk-averse stakeholders), Achen (2006) shows that the average of the stakeholders' initial policy positions, weighted by the product of each stakeholder's influence and salience, becomes a first-order approximation of the Nash Bargaining Solution. This weighted average was earlier introduced under the name compromise model as an ad hoc measure for an overall comprise (Stokman and Van Den Bos 1992).

Conditions that are conducive to persuasion can only exist when stakeholders are embedded in *dense trust networks or are severely punished when they deviate from shared interests*. Stakeholders need to be confident that the information they receive is sincere and not strategically manipulated. Pursuing one's own personal gains is permitted as long as this does not inflict harm on others and as long as personal gains are compatible with shared interests. Within this context, stakeholders can be confident that the concessions they make to stakeholders who have strong interests in present issues will be compensated in future situations when their own interests are stronger. Reciprocal and generalized exchanges (Molm 1997) are therefore an integral part of decision making by persuasion and not of decision making by logrolling as the name might suggest.

Stakeholders who provide information will be trusted if they have proven to be reliable in the past and if they would experience future negative consequences from providing distorted or incomplete information. This "shadow of the future" is more effective if providers of distorted information lose reputation, not only with respect to the recipient stakeholder but also with respect to others (Raub and Weesie 1990). Trust will also be greater if the information is less related to the provider's central interests. These conditions for trust emerge more readily among like-minded stakeholders and among stakeholders who also meet each other in other contexts than among stakeholders with conflicting interests. Stakeholders also tend to assign more weight to the opinion of powerful stakeholders, whereas powerful stakeholders tend to listen more to one another than to less powerful ones (Molm 1997). Large power differences, however, make it less likely that persuasion strategies will be successful. The same holds for highly polarized issues.

In contrast to persuasion, logrolling and enforcement processes typically do not affect stakeholders' initial positions or the levels of salience they attach to issues. Logrolling is a process of negotiated exchanges. The result is that stakeholders are willing to support another position on an issue that is of relatively less importance to them in exchange for support of another stakeholder on an issue that is relatively more important to them. Similarly, when enforcement is the dominant mode of interaction, stakeholders can feel forced to support another position under pressure from more powerful stakeholders or coalitions. Logrolling and enforcement are most likely if stakeholders' initial positions fundamentally differ due to the different weights they attach to different higher-ordered goals. In such situations, arguments do not help to bring initial positions closer to one another. Therefore, coalitions can be built only through processes that affect the final or voting positions of stakeholders.

Whereas information and trust networks define persuasion, *negotiated exchange networks* define stakeholders' exchange possibilities under

logrolling. When stakeholders shift their policy positions due to logrolling, these shifts lead to changes in the expected outcomes on the issues involved in the exchange. Consequently, stakeholders experience gains and losses when the expected outcomes on issues move closer to or further from their initial positions. Stakeholders from two groups with opposing positions can profit from position exchange if the relative salience of the two issues for each of them is different (see Fig. 1; Stokman and Van Oosten 1994; Stokman et al. 2013). A position exchange is then profitable for both stakeholders.

Bilateral exchanges also have important side effects or externalities with respect to other stakeholders' utility due to the resulting shifts of expected outcomes. These externalities for other stakeholders, not involved in the exchange, are either positive or negative depending of the directions of the outcome changes and the resulting utility changes for them (Van Assen et al. 2003). Logrolling therefore generates not only *networks of potential and realized exchanges* but also *externality networks* for all stakeholders. In certain contexts, stakeholders may want to avoid negative externalities for certain other stakeholders with whom they are allied in one or another way. In that case, logrolling is linked with a *network of allies*. Certain institutional conditions may discourage stakeholders to realize exchanges with negative externalities at all and encourage them to realize exchanges with positive externalities. Some decision-making rules stipulate that outcomes must be supported unanimously. In other contexts, informal norms stipulate that unanimous support should be sought, although outcomes could formally be taken by majority voting. In both these contexts, we expect stakeholders to avoid voting position exchanges with negative externalities and to realize only exchanges with positive externalities. Exchanges with positive externalities facilitate overall consensus, as the interests of the exchanging parties are in harmony with those of the others.

When collective decision making is driven by power processes, *enforcement*, not persuasion, is the dominant mode of interaction among the stakeholders (see Fig. 1). Stakeholders try to build as large a coalition as possible behind their own policy position by showing that they have sufficient power to enforce a decision and/or to block other alternatives. Solutions to substantive problems are not sought by arguments but by showing that there is sufficient support to enforce the decision on the basis of the formal procedures and/or informal power arguments. When enforcement is the dominant mode of interaction, stakeholders may shift their positions because they feel compelled to do so, not because they are convinced to do so. To the extent that a stakeholder's issue salience is lower than that of stakeholders who support another position, and the power of those other stakeholders is greater, that stakeholder may be inclined to give up its initial position. Stakeholders may avoid costs by conceding on an issue that is only marginally related to their own interests. When enforcement occurs, decision outcomes can be seen as the result of a noncooperative game in which no binding agreements are made (Bueno de Mesquita et al. 1985; Bueno de Mesquita 1994). Bueno de Mesquita (2010) introduced a completely new noncooperative game model, based on Perfect Bayesian Equilibria.

If enforcement dominates decision making about organizational policies, hierarchy dominates over arguments also in the preparatory stage of decision making. In such a situation, the goals of the organization are likely not primarily seen as shared goals but as the goals of and set by the top of the organization. Such a setting leads to a cognitive interdependence model in which personal relationships are primarily seen in the light of their hierarchical place and ordering. In other words, *power networks* dominate the outcomes of collective decision-making processes.

Again, as bilateral negotiated exchanges may well be compatible with consensus or even enhance consensus building (in the presence of large positive and the absence of negative externalities), it is unlikely that persuasion on the basis of high shared interests will long survive without clear institutional rules and clear responsibilities that are derived from them (Rockenbach and Milinski 2006). They connect joint production with external sanction (legal) systems to enforce

cooperation, resulting in sufficient trust that non-cooperative individuals can effectively be sanctioned or even fired. Enforcement of cooperation is also important for the timely and correct implementation of collective decision making. Recent EU studies investigated whether larger distances between decision outcomes and policy positions of member states and European Commission resulted in later and less correct implementation of the taken decisions (see among others Falkner et al. 2005). For an overview of implementation issues, see O'Toole (2000).

If cognitive interdependencies are linked to norms that decisions should be based on consensus, institutional rules work like legal contracts. They provide safeguards to stakeholders in case fundamental problems arise or other stakeholders misbehave. However, the more often you have to fall back on them, the more the norm of consensus building will be under pressure.

Building sufficient support for a specific outcome may lead to a preferable outcome, but it may also lead to disturbed relations. Some stakeholders may not be interested in a specific outcome, but in any outcome as long as it is supported by all stakeholders. Other stakeholders may solely be interested in an outcome close to their policy position, even when it implies a lot of opposition and turmoil. From this perspective, each stakeholder can be perceived to have at least two objectives while intervening in decision making. The first objective is to minimize the distance between the outcome and the policy position of the stakeholder on the issue. The second objective is to minimize the variance of the positions of all stakeholders or the subgroup of stakeholders with whom the stakeholder is associated. Stokman et al. (2013) denote the first "issue salience" and the second "group consensus salience." The two objectives can be modeled by using an aggregate utility function in which both objectives are combined. This can be realized by applying the Cobb-Douglas function with two weights, one being the issue salience and the second the group consensus salience.

Key Applications

The dominance of the three types of networks (persuasion, logrolling, enforcement) in the context of the European Union was evaluated on the basis of the accuracy of the three corresponding models. The distance between the model-predicted outcomes and the actual outcomes on the issue scales determines the accuracy of each model. Models based on cooperative solutions that include the positions of all EU decision makers give the best predictions (Thomson et al. 2006). Till the financial crisis, *unanimity, wherever possible*, was a very strong norm in the EU, even when decision outcomes supported by only a qualified majority of actors are possible (see also Mattila and Lane 2001). Decision outcomes in the EU tended to take into account actors' essential interests, wherever possible, and actors avoided harming the essential interests of others (Schneider et al. 2010). This implies that persuasion networks dominated in the European context. Negotiated exchange networks do not often support consensus building in the European Union because of the high negative externalities involved. Given the dominant norm of consensus building, this type of network was not dominant in the European context, as shown by its worse predictions than the persuasion model. Power networks did not dominate European Union decision making either: noncooperative procedural and bargaining models did even worse. The conclusion that also in the European context procedures do not determine behavior, but set the boundaries within which action takes place, was right till the financial crisis but has to be reinvestigated for the period after it.

The reader should be aware that the inferences about the European Union decision making can only be made by a comparative analysis of the three processes and corresponding networks.

It is interesting to study and model transitions from one dominant process of decision making to another. Transitions from persuasion to enforcement strategies were very clear in the context of

the climate negotiations, where enforcement strategies dominated at COP 15 (2009) in Copenhagen and resulted in its failure to reach agreement versus the success of COP 21 (2015) in Paris (Sprinz et al. 2016).

Future Directions

I hope I have shown that policy networks play a very important role in two different ways. First of all, policy networks give insights in recruitment processes of actors in elite positions and may reveal hidden power centers in society. In that case, policy networks have been and have to be connected to recruitment theories. Nominations in leading positions may well be based on personal qualifications as well as on institutional links for control and information or combinations of both. If our aim is to connect policy networks to collective outcomes, however, we have to derive policy networks from and link to fundamental processes of interest alignment. Interest alignment is primarily linked with the bargaining stage where policy positions are adapted on the basis of convincing information or new voting positions taken on the basis of logrolling or enforcement processes. They are the basis for the transformation of preferences into binding outcomes in the voting stage. Whereas first studies were based on exchange processes, later studies specified persuasion, logrolling, and enforcement as the three fundamental processes of interest alignment. The relevant policy networks were derived from these three processes. Moreover, some conditions could be derived for which of the three processes is likely dominant and whether the other two are likely to strengthen or undermine the dominant process.

Several steps still have to be taken. First, the link between bargaining processes and procedural rules in the voting stage is not yet well elaborated. What happens when the bargaining stage does not lead to (sufficient) interest alignment? Can institutional rules survive when interests are not aligned over a long period, such as presently seems to be the case in the European Union? What are the effects on implementation and acceptance of the outcomes? Collective outcomes are not solely determined on the basis of collective decisions. They have to be implemented as well. The abovementioned extensions of the networks and models to implementation are very important, therefore. They require new types of data as well, like process produced data by administrations and social media, as advocated by Thurner (2017).

Cross-References

- ▶ Exchange Networks
- ▶ Game Theory and Social Networks
- ▶ Interlocking Directorate Networks
- ▶ Political Networks
- ▶ Social Networks and Politics
- ▶ Trust in Social Networks

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