

European Union transgovernmental networks: The emergence of a new political space beyond the nation-state?

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Abstract. Does the European Union (EU) represent a new political order replacing the old nation-states? The assessment of the real character of political orders requires the identification of political key actors and of the specific structure of their interactions. Transgovernmental networks have been considered to be one of the most important features of EU integration. Unfortunately, the network structures, processes and the impact of these informal horizontal inter-organisational relations between nation-states are mostly unknown. The main objective of this article is to measure and explain the selective pattern of informal bilateral relations of high officials of the EU Member States' ministerial bureaucracies on the occasion of an EU Intergovernmental Conference. The quantitative data used rely on standardised interviews with 140 top-level bureaucrats. The statistical estimation of network choices is based on recent developments of exponential random graph models.

Emerging new political spaces: The fusion of European administrations

Does the European Union (EU) represent a new political order replacing the old nation-states? The suggestions of the grand theories of EU integration are well known: for the liberal intergovernmentalist approach of Moravcsik (1998), national governments are and continue to be the 'masters of the treaty'. Therefore, the author focuses on the making of constitutional rules as representing the most fundamental rules of this intergovernmental regime. He understands the dynamics of integration to be driven mainly by the economic interests of states with defined territories and boundaries. To the contrary, neofunctionalism accentuates the role of civil society, reorienting its demands and support to supranational actors who are supposed to be better able to manage social change (Haas 1961). In this view, functional needs drive the integration process and shape its form. Cross-sectional spillovers expand the political competencies of supranational actors and, eventually, replace the authority of the nation-state.

Are these grand theories incommensurable? The assessment of the real character of a political order requires the identification of key political actors

and the specific structure of their interactions. In their volume *The Institutionalization of Europe*, Stone Sweet, Sandholtz and Fligstein (2001) offer a perspective that has the potential to overcome the clash in EU grand theorising. They define 'political spaces' as 'social spaces wherein actors meet to make, apply, interpret and enforce rules; they are thus sites of collective governance' (Stone Sweet et al. 2001: 13). So-called 'skilled actors' within the existing political boundaries of governance develop new forms of governance. This perspective is open for any type of actor in the making and the application of any type of rules of a political order. Accordingly, we suggest neglecting (for the moment) competing claims with regard to the preponderance of different actors (national governments versus actors below or above the governmental executive). Rather, applied research should specify the respective action arena (constitutional treaty-making versus legislative policy making and/or implementation in different policy areas) and focus on the 'skilled actors' involved in order to identify the specific structure of their interactions.

For the following analysis we have chosen a constitutional conference as our research case.¹ However, contrary to Moravscik (1998), we will not focus on formal interstate bargaining, but on the underlying, embedding informal transgovernmental interactions of the national ministerial bureaucracies. According to several theorists of EU integration, government officials are the most important national 'skilled actors' for the preparation of EU intergovernmental conferences (Hayes-Renshaw & Wallace 1997). Following Slaughter (2004) and Wessels (1997), transgovernmental relations constitute the most important process of integration. Regular formal meetings of governments and administrations at the EU level institutionalise manifold forms of mutual participation and facilitate a common perception of problems. Wessels (1997) diagnoses a complex fusion of national governmental administrations with supranational bureaucracies. He argues that the ongoing transborder bureaucratisation has already produced a special type of a mixed multilevel administration. Focusing on the intergovernmental policy-making styles of state officials,² we will provide a completely new perspective on the political order of the EU-15. Making transparent the informal communication networks of EU-15 government officials on the occasion of an intergovernmental conference, we want to delineate inter-organisational relations – that is, activities at the boundaries of semi-open political systems.

In the next section, we will outline the approach of transgovernmental networks and provide definitions. Next, we introduce the case: the EU Intergovernmental Conference 1996. Then we will derive hypotheses with regard to the micro-incentives to form transgovernmental networks. A descriptive overview of the different ministerial networks is followed by a statistical explanation of the individual network choices. Knowing the micro-incentives to form

such networks contributes to our understanding of the emergence of new political spaces and new authority structures (Stone Sweet et al. 2001; Grande & Pauly 2005). More specifically, we investigate whether informal bureaucratic networks have been a challenge to the national governments: Have incentives for ‘bypassing’ their own government been effective? Our data are based on standardised interviews with 140 top-level bureaucrats in the governments of the EU-15 who were involved in the preparation of the negotiations preceding the Amsterdam Treaty. For the statistical estimation we apply recently developed exponential random graph models based on Markov Chain Monte Carlo maximum likelihood estimation (Snijders et al. 2005; Robins et al. 2006).

Transgovernmental networks

According to Slaughter (2004), transgovernmental networks are the most important feature of the new world order. They replace the state, formerly conceived as a hierarchical unitary actor. In her view, government officials form horizontal networks in order to prepare and enforce global policies informally. Central governmental authorities may completely lose their function in favour of issue-specific border-crossing networks; or, the state may evolve into a strategic manager of a ‘networked polity’ (Ansell 2000). The discussion of transgovernmental relations was mainly initiated by the important contribution of Keohane and Nye (1974), where they provided what has become a classic definition:

We define transgovernmental relations as sets of direct interactions among sub-units of different governments that are not controlled or closely guided by the policies of the cabinets or chief executives of those governments. Thus we take the policies of top leaders as our benchmarks of official government policy. (Keohane & Nye 1974: 43)

The authors take the interests of the top leaders as a reference point representing the highest governmental authority. They distinguish two types of transgovernmental relations. As long as transgovernmental relations of governmental officials are fully consistent with the targets and intentions of top leaders, these relations are called ‘transgovernmental coordination’. To the contrary, where the central executive is weak and the officials ‘perceive a greater common interest with another government, or sub-units of another government’, the resulting relations are called ‘transgovernmental coalitions’ (Keohane & Nye 1974: 48).³ It may seem surprising that the authors contrast transgovernmental coalitions with transgovernmental relations, because the

latter are already characterised as ‘not controlled or closely guided’. However, this simply mirrors the modern conception of bureaucracies, and of delegation in general (Hammond & Knott 1996; Lupia 2003). By definition, every agency relation is characterised by an asymmetry of the distribution of information and the risk of moral hazard – otherwise, delegation, specialisation and self-organisation would be useless. A transgovernmental coalition *à la* Keohane & Nye distinguishes itself by the fact that the bureaucratic agent actually works against its own principal. Note that in their comparative analysis of top officials in Western European states, Page and Wright (1999) come to the conclusion that the question of political control of the bureaucracies has become the most crucial one.

The formal structure of governmental organisations lays down the chain of delegation and the hierarchy of positions. Competencies of decision making and of control are formally assigned and allocated to positions. However, every organisation is also built on informal structures of administrative self-organisation (Breton 1998: 187). Whereas the existence of informal trans-governmental bureaucratic networks is not new, their extent and the issue areas covered have reached completely new dimensions in the international sphere. Despite her rather optimistic expectations with regard to the diverse functions and effectiveness of such networks, Slaughter acknowledges their potential problems: their lack of accountability due to their informality, the risk of uncontrolled technocracy and the consequences of depoliticisation. Her suggestion for countering these risks is to secure transparency – that is, to make the networks visible (Slaughter 2004: 235). Unfortunately, quantitative empirical evidence with regard to the structure, processes and impact of horizontal inter-organisational networks between nation-states’ bureaucracies does not exist.⁴ As a consequence, questions concerning how these networks come into being, how they are structured and how they further develop remain open.

The case: The EU Intergovernmental Conference 1996

The Intergovernmental Conference (IGC) 1996 and the resulting Amsterdam Treaty constituted a step – like Maastricht, Nice or Lisbon – in an ongoing reform process that contributed to the formal and explicit constitutionalisation of the EU. The IGC 1996 took place from April 1996 to June 1997. It had the purpose of completing Political Union, of (re-)balancing the division of power and especially of preparing the institutional setting for an EU enlargement. So far, EU constitution-building has happened incrementally, with Member States consenting gradually to voluntarily incomplete contracts. Like national constitutions, intergovernmental treaties contain global goals as well as provisions

for institutional arrangements. However, the public impression of one-shot intergovernmental conference negotiations during summits of heads of states is invalid. Negotiations span months of formal meetings and informal discussion between Member States. Therefore, an appreciation of negotiation outcomes has to take into account the specific form of the underlying processes. More specifically, we argue that the specific, selective pattern of transgovernmental networks of the responsible top officials are an indicator of already existing enhanced informal cooperation – among at least some of the national ministerial bureaucracies. The existence of subsets of Member States already exhibiting a deeper degree of an administrative integration is expected to constitute a valid measure of the implicit integration of the EU-15 at that time.

Actually, the possibility of allowing subsets of Member States to form sub-union(s) on the basis of concrete policies ('Europe à la Carte') or on the basis of more general criteria ('Core Europe', 'Europe of Concentric Circles') was one of the most discussed issues in the negotiations leading to the Amsterdam as well as the Nice treaties, and it continues to determine the public and scientific debate. Finally, the Amsterdam Treaty inserted the opportunity for majorities to engage in a closer cooperation of subgroups with the possibility of using the existing institutions and procedures of the EU.⁵

Hitherto, our knowledge about the embeddedness of EU intergovernmental negotiations in informal transgovernmental networks of officials in the relevant ministries has been at best incomplete. In order to identify and characterise the informal bureaucratic interactions, we follow graph-theoretical approaches defining 'networks' simply as relations between nodes. Nodes in our case are top officials of the ministerial bureaucracies. They indicate their communication partners in equivalent departments of the other Member States. These relational data allow us to reconstruct the emerging networks from local bilateral transgovernmental communication channels of the ministries involved and the respective responsible officials during the IGC 1996. In the next section we discuss the micro-incentives to initiate and maintain such informal transgovernmental networks in order to formulate testable hypotheses.

Hypotheses on the network formation of the ministerial bureaucracy

Why should agents of the ministerial bureaucracies initiate and/or maintain transgovernmental relations before and during ongoing international negotiations? Slaughter (2004: 208) argues that transgovernmental networks encourage 'multilateral discussion prior to all decisions' and are therefore 'likely to produce more creative, more reasoned, and more legitimate solutions to many

of the problems that members face'. Fearon (1998) enumerates several reasons to discuss issues before making a collective decision: revealing private information, information aggregation, justification of demands, promoting a consensus and so on. However, these advantages of debate and preplay communication are not unconditional (Austen-Smith 1990a, 1990b). For example, the attraction of revealing private information depends on a perception of common, or at least non-opposite, interests. Hence, for theoretical reasons it is necessary to identify preconditions for different incentives of informal trans-governmental preplay communication in varying contexts.

In the following we leave it open whether transgovernmental communications efforts are intended to influence the addressees and whether resources like support are offered or demanded. In principle, in every relation there is a flow of information that can be of considerable value. At the same time, initiating and maintaining relations entails opportunity costs: the time budget of politicians and top officials is extremely constrained. Therefore, we assume that informal bilateral transgovernmental networks are formed on the basis of a cost-benefit analysis: connections are valuable, but their initiation as well as their continuation requires the allocation of resources (e.g., attention) that may be more useful for other tasks or relations (Bueno de Mesquita 2003: 85). As a consequence, actors limit their network efforts and we expect selective and directed networks. 'Selective' means that not every bureaucratic agent takes every possible opportunity to entertain relations due to opportunity cost considerations. 'Directed' means that network efforts originate from one agent and are addressed to another agent in an equivalent ministerial jurisdiction. The revealed selectivity and directedness of network choices can be interpreted as an indicator of the relative valuation of a link at a certain point in time. As a result, the pattern of the networks mirrors a 'spatial cost topology' (Jackson & Wolinsky 1996) – that is, the respective spatial distribution of costs and benefits. 'Spatial' differences are not necessarily of a geographic nature – they may represent any social similarity or conflict. The assumption of a spatial cost topology supposes that the resulting similarity structure indicates the more or less constant attributes of the nodes/actors leading to intensified interactions. Starting from this general opportunity cost perspective, we now have to derive concrete micro-incentives for officials to bear the cost of informal communicative efforts – additional to the already formalised regular meetings in the sectoral Councils.

Applying the delegation perspective of bureaucracies (Bendor et al. 2001) to the Keohane/Nye conjecture on the incentives for building transgovernmental coalitions to 'bypass' their own government, we distinguish between the principals (premiers, ministers) and the respective bureaucratic agents (responsible ministerial officials). We propose to separate four situations

Table 1. Formal authority and transgovernmental networking

	Agent is in line	Agent is not in line
Principal is against informal network formation	No networking	Networking (hidden action, transgovernmental coalitions = bypassing)
Principal is in favour of informal network formation	Networking (transgovernmental coordination, screening and signaling efforts)	No networking (shirking)

resulting from the combination of the following two dimensions: the principal is in favour of or against the creation of informal networks of self-organisation; the agent self-organises transgovernmentally in line with or against the explicit or implicit goals of the principal. Table 1 summarises this combination.

The table nicely illustrates that it is not straightforward to derive the underlying incentives for network formation from simple observation of informal communication. The absence of informal networking may be in harmony with the principal's explicit and implicit command or it may be simply due to a shirking bureaucracy. Analogously, the principal may be in favour of decentralised informal networking – for example, in order to screen another governments' bureaucracy, to signal negotiation positions, to signal domestic resolve or to prearrange coalitions. Or the agent may actually hide his or her networking efforts – for example, in order to bypass the principal. It should be noted, however, that the bypassing conditions as formulated by Keohane and Nye are sufficient and necessary separating conditions for detecting moral hazard! Formulating their definition of 'transgovernmental coalition' as a hypothesis, we expect officials to bypass their principals under the following conditions. Hypothesis 1a formulates the spatial distance component of the Keohane/Nye bypassing conjecture:

H1a: Bypassing Incentive – Issue Distances

The more often a bureaucratic agent perceives a larger distance to the negotiation position of his or her government as compared to the distance to the position of a bureaucratic agent of an equivalent ministry of another Member State, the higher the probability of forming a transgovernmental coalition with this agent.

With regard to EU summits of the heads of governments, such incentives have been highlighted by Hayes-Renshaw and Wallace (1997), who argue that many ministers as well as officials have a rather ambivalent relation toward these

summits. They fear that their jurisdictional interests are put aside in these highly political meetings. Assuming that the issues on the table can be measured on a quantitative scale, it is possible to compare the issue distances between the bureaucratic agent and the official bargaining position of the executive and the one between the bureaucratic agent and his or her colleague in an equivalent ministry in another Member State.⁶

According to Keohane and Nye (1974: 48), transgovernmental coalitions are expected to be more frequent in governments with a low degree of hierarchy or, conversely, with a high degree of ministerial discretion or autonomy.⁷ Hypothesis 1b formulates this part of the conjecture as follows:

H1b: Bypassing Incentive – Low Hierarchy

Ministries in governments that are characterised by a low degree of hierarchy in their organisation⁸ are expected to exhibit a higher propensity to engage in transgovernmental networks.

Bypassing may be especially strong in such an environment, or even exist only there (Keohane & Nye 1974: 48, see Note 3 below):

*H1c: Bypassing Incentive and Low Hierarchy*⁹

The incentive for bypassing their own government should be effective more frequently or exclusively in low-hierarchy environments.

Our bypassing hypothesis relies on one of several distinct processes of network formation as identified by the network literature – that is, on social selection due to attribute similarity or so-called ‘homophily’. The probabilities of selective network choices often depend on ‘types’ (i.e., on the attributes of actors). This process is called ‘assortative mixing’ (Newman 2003: 191). It reflects the tendency ‘to associate preferentially with people who are similar to ourselves in some way’ (Newman 2003: 191). In the following we propose additional hypotheses based on ‘assortative mixing’, with regard to the effect of (dis)similarities of policy preferences, of being a founding member and of bilateral economic interdependencies.

It is often argued that forming transgovernmental networks with equivalent ministerial jurisdictions in other states is caused or facilitated by similar policy interests. Conceiving policy decision making as being located in a measurable political space (Enelow & Hinich 1984), we argue that similar locations of the state officials with regard to the negotiation issues of the conference should induce transgovernmental interactions. For example, Grofman (1982) accentuates the process of proto-coalition building of actors with similar interests. Scharpf (1997) argued that in the process of ‘negative coordination’, small

subsets of actors bilaterally engage in avoiding negative externalities. Based on these arguments and on theoretical results of signalling theory (Austen-Smith 1990a, 1990b), we expect state officials with similar policy preferences to form transgovernmental links. On the other hand, if we assume complete information on political positions and high opportunity costs, we would not expect rational actors to bear the cost of additional communicative efforts directed to officials with similar or even identical preferences. If it is rather the second incentive that is effective in transgovernmental network formation, agents should invest more in networks with distant agents – for example, to screen or influence other officials:

*H2: Political Distance*¹⁰

The larger the issue distances between the bureaucratic agents of different Member States, the lower/higher the propensity of officials to entertain informal transgovernmental networks.

According to concepts of a ‘Core Europe’ or a ‘Europe of Concentring Circles’ – that is, according to the idea that only a subset of Member States should deepen their political integration (Stubb 2002) – one should expect that especially the ministerial bureaucracies of the founding members (Germany-France-BeNeLux-Italy) would be engaged in a relatively closer network as compared to agents of late entry states. For the officials of these Member States, established long-term relations may imply lower transactions costs of transgovernmental coordination. Contrary to this hypothesis, and along the arguments of adherents of the thesis that ‘deepening is not in contrast with widening the EU’, we should expect that transgovernmental network formation would spread evenly across all Member States:

H3: Informal ‘Core Europe’

The ministerial bureaucracies of the founding Member States exhibit a higher degree of informal transgovernmental interactions.

The central goal of EU integration as addressed in the guidelines of the European Community (Article 2 of the founding treaty) is economic cooperation and a free trade area. According to geopolitical approaches, international economic cooperation follows security concerns and already existing alliances.¹¹ Neofunctionalism and liberalism in international relations assume the causal impact to be reverse: regional integration is driven by economic demands. More recent approaches propose a more complex causal logic of regional integration. For Mattli (1999: 190ff), the initial demand for regional integration comes from market actors. However, the political supply side has

to show a ‘willingness . . . to accommodate demands for functional integration’. Fligstein and co-authors (Fligstein & Mara-Drita 1996; Fligstein & Stone Sweet 2002) put forward the view that the dynamics of political and economic integration mutually interact. More importantly, markets and political governance systems are socially embedded and constructed from networks. Regardless of the postulated direction or process of causality, these perspectives lead us to expect those states with higher bilateral economic interdependence or connectedness to have closer underlying transgovernmental relations. Furthermore, strong economic interdependence requires a politico-administrative embedding, regardless of which ministerial jurisdictions are considered. If, to the contrary, transgovernmental relations reflect special jurisdiction-specific interdependencies, we would not expect a generalised relation between transgovernmental networks and economic flows across ministerial jurisdictions:

H4: Bilateral Economic Interdependencies

The higher the bilateral economic interdependence between two Member States, the higher, *ceteris paribus*, the propensity to form transgovernmental ties.

If Fligstein’s idea of the social embedding of markets and politics is valid, we should also observe typical patterns of social interaction. The literature on social networks has long experience with micro-incentives of network formation. First, social processes give rise to structural reciprocity and transitivity. The investigation of preferences for reciprocated relations in an observed network implies the question: ‘How strong is the tendency for one actor to “choose” another, if the second actor chooses the first?’ (Wasserman & Faust 1994: 507). Referring to our example, if the bureaucratic agent A has been trying to achieve a pre-arrangement with an equivalent ministry B in another country, then how likely is it that the bureaucrat B has been trying to do the same? Another prominent preference of actors in social relations is to be party to closed and therefore trustful relations. This incentive of social network formation is represented, for example, by transitivity structures. In many social networks we observe that if A is connected to B, and B to C, then there is an increased probability that A will also be connected to C. Transitivity is a formalisation of the proposition that ‘the friend of my friend is my friend’. The existence of such configurations would be an indicator for informal self-organising teams and even clique-like structures – below highly formalised conferences. Measuring transitivity, therefore, allows us to assess the stability and the degree of the institutionalisation¹² of transgovernmental relations.

Alternative social processes of network formation are the asymmetric attraction of ties (popularity) as well as asymmetric efforts to initiate links

(expansiveness). Both types lead to core-periphery network structures and indicate the emergence of informal transgovernmental hierarchies. Non-hierarchical structures are reflected by so-called ‘cycling structures’ – that is, we observe a tie from A to B, from B to C, and from C to A. Communication flows moving in a circle indicate decentralised deliberation. To the contrary, acyclic configurations are interpreted as indicators of hierarchical networks (De Nooy et al. 2005: 213 ff).

Last but not least, there is a market for political brokers of information. These actors invest in bridging ‘structural holes’ (Burt 1992) and serve as mediators. There are two possible consequences: either these bridges institutionalise as social positions without leading to more direct interactions, or the probability of a direct connection between two officials increases if there is at least one indirect relation between them. Whether these local processes of reciprocity, transitivity, asymmetric popularity and expansiveness, deliberation and indirect relations are present in transgovernmental networks has never been assessed empirically. In the next section we provide formal definitions and assumptions in order to make intersubjectively transparent the operational prescriptions for the set up of the empirical model.

Definitions and assumptions

We consider the set N consisting of the 15 EU national ‘governments’ ($i = 1, \dots, 15$). Each government is regarded as a system with specific chains of delegations (Strøm et al. 2003) and a policy-specific assignment of competencies to partial ministerial jurisdictions. The government can therefore be disaggregated into a team with varying numbers of actors ($j = 1, \dots, 9$). We call them for brevity ‘premiers’ and ‘ministers’. Denote a_{ij} as a bureaucratic agent in the premier’s office or in jurisdiction j of Member State i . Each of the agents involved is endowed with varying formal policy-specific decision-making competencies. However, this simplified formal structure may be embedded in informal, potentially deviating, authority systems due to or based on informal interaction patterns. Let Φ be the set of jurisdiction-specific transgovernmental networks with $\Phi = \{PO, MFA, MI, MJ, MF, MEco, MLab, MSoc, MEnv\}$.¹³ Thus, we conceive transgovernmental networks as consisting of multiple function-specific relations between different equivalent actors in each government of the Member States.

The assumption of directed relations requires a differentiation between relations of agent A to agent B and agent B to agent A. For a relation of agent A to agent B, we consider agent A as the initiator of a communication/coordination effort whereas agent B is considered as the addressee. Therefore,

every network consists of a set of ordered pairs indicating whether the agents have relations one to another. Each of the jurisdiction-specific networks can be represented by $g \times g$ sociomatrices $X_{PO}, X_{MFA}, \dots X_{MENV}$, where g is the number of actors involved in that network. In case of the occurrence of a directed relation between agent A and agent B, the cell entry $x_{a,b}$ takes a value of 1, and takes the value of 0 otherwise.

Each bureaucratic agent a_{ij} has a location z_{ij} in the multidimensional political space Z with dimensions supposed to be separable. A subspace of this overall political space consists of the set M of negotiation issues ($m = 1, \dots, 46$), over which the governments tried to reach an agreement in the inter-governmental conference. Each negotiation issue can be mapped onto the unit interval. The official bargaining position of a government on an issue is called its national bargaining position (NBP). Bureaucratic agents are assumed to optimise an objective function (Snijders et al. 2005: 38) with respect to a local network configuration when forming transgovernmental ties. Analogously to random utility models where non-deterministic discrete choices are assumed due to uncertainty, random graph models may capture the agents' uncertainty when choosing network partners: uncertainty about the attributes of the alteri and their organisational environment, about the quality of a bilateral relation, and about the structure of the overall network. Alternatively, random graph models may reflect a lack of information on the part of the observing scientist – that is, they include measurement error (McFadden 1974; Manski 1977). Let us therefore assume that bureaucratic agents are not completely certain about the exact location of the alteri in the political space. However, each official is supposed to have the same subjective expectations. In the following it will be argued that these expectations are represented by probabilistic choice functions.

Exponential random graph models: A new method for the explanation of network choices

The main objective of this study is a statistical analysis of each of the different transgovernmental networks of the bureaucratic agents of the premiers' offices and of the ministerial jurisdictions. However, in addition to a quantitative description of aggregate network patterns we want to test whether the observed network choices are purely random or whether their selectivity exhibits regularities that reflect the hypothesised incentives and processes. As is well known from the extensive literature on social networks, real-world networks are far from being completely random. There are interdependencies

due to reciprocal attraction, transitive closures and so on. These complex patterns of interdependencies between the units of observation make statistical estimation a nontrivial task.

Random graph models try to capture these interdependencies by constructing so-called ‘dependence graphs’ where the presence and relevance of specific local configurations are hypothesised.¹⁴ According to the Hammersley-Clifford theorem (Besag 1974), each hypothesis on the presence of specific dependencies in an observed network requires a particular specification of ‘sufficient statistics’. The most simple, but also completely unrealistic, model is the assumption of the independence of all ties (Bernoulli Graph). This implies uniform probabilities for all edges of a given network. A more complex model assumes dyadic independent tie formation. In this so-called ‘p1 model’, the sufficient structural parameters control for the number of ties and the number of mutual ties. Newer approaches, the so-called ‘Markov random graphs’ or ‘p* models’, construct even more complex dependence graphs. p* models assume that network ties are conditionally dependent as soon as common actors are shared – thereby taking into account triadic and even higher order configurations.

The functional form of these models is as follows. Suppose our $g \times g$ sociomatrixes X_{PO} , X_{MFA} , ... X_{MENV} to be random matrices with diagonal elements of 0. $x_{a,b}$ indicates whether there is a tie from a to b. Assuming a type 1 extreme value distribution for the stochastic component and a given vector of sufficient statistics $y(x)$ of a behavioural model, the following exponential probability function results (Wasserman & Robins 2005: 152–153):

$$\Pr(X = x) = \frac{\exp\{\theta'y(x)\}}{\kappa(\theta)},$$

where θ represents a vector of model parameters, and $\kappa(\theta)$ is a normalising constant guaranteeing that estimated probabilities sum to 1. The estimated coefficients can be interpreted as in conditional logit regression models – that is, the change in a network statistic, in a actor or in a dyadic covariate, refers to the change of the log odds of observing a tie or not. The estimated parameters reflect the relative values of the incentives incorporated in our hypotheses on (dis-)similarities of the actors, on the quality of their relations (dyadic covariates), as well as on the discussed network processes of reciprocity, transitivity, attractions and so on. Applying standard maximum likelihood techniques is now considered inappropriate for statistical testing. Therefore we rely on a new estimation technique as implemented by Snijders in the StOCNET module SIENA. Snijders uses a Monte Carlo Markov Chain maximum likelihood estimation technique based on Metropolis-Hastings Sampling (Snijders et al. 2005).

Data and descriptive results

In the standardised interviews with 140 bureaucratic agents involved¹⁵ in the preparation of the IGC 1996 the following question was asked:

Sometimes, it proves to be useful for a ministry – before taking the final national official position – to come to an agreement with an equivalent ministry of another Member State. (Interviewer: Please show list F¹⁶). Could you indicate the Member States where you have practiced such an agreement building?

This network generator is neutral with regard to the analytical distinction between transgovernmental coordination and transgovernmental coalition-building as put forward by Keohane and Nye (1974). It does not carry meanings such as ‘influencing others’ or ‘demanding information’. We only investigated a communicative effort for ‘distilling and disseminating credible information’ (Slaughter 2004: 178).

For illustrative reasons, we present the emerging transgovernmental network of the officials of the ministries of environment in Figure 1. The visualisation is based on the concept of PageRank (Brin & Page 1998).¹⁷ PageRank-centrality operationalises a concept of centrality that is constructed not only by simply counting the number of received choices (in degrees) of an actor, but also by taking into account the number of sent and received choices of the respective initiator. Therefore, this measure also accounts for indirect ties, and the importance of the initiator.

The most central bureaucratic agents, the officials of Germany and Sweden, are located in the middle of the circle. All other actors are depicted on concentric circles around the centre according to their decreasing centrality values. Actors beyond the outer dashed circle have a value of zero. They have not been involved in the domestic process. The directedness of choices is represented by arrows. A unilateral offering of or demand for a relation is represented by a single arrow. Non-directed edges indicate symmetrical transgovernmental relations. Circles representing the respective Member State are used as long as the number of indegrees and targeted agents (outdegrees) are identical. Ellipses indicate the asymmetry between indegrees and outdegrees. The more indegrees as compared to outdegrees, the flatter the ellipse of an actor in the vertical direction (e.g., Denmark, DK) and the more outdegrees as compared to indegrees, the flatter the ellipse of an actor in the horizontal direction (e.g., Austria, AUT). The size of the ellipse/circle grows with the overall number of relations.

Figure 1 shows that only the officials of the ministries of the environment of the Scandinavian countries, Austria, the Netherlands, Germany and Great

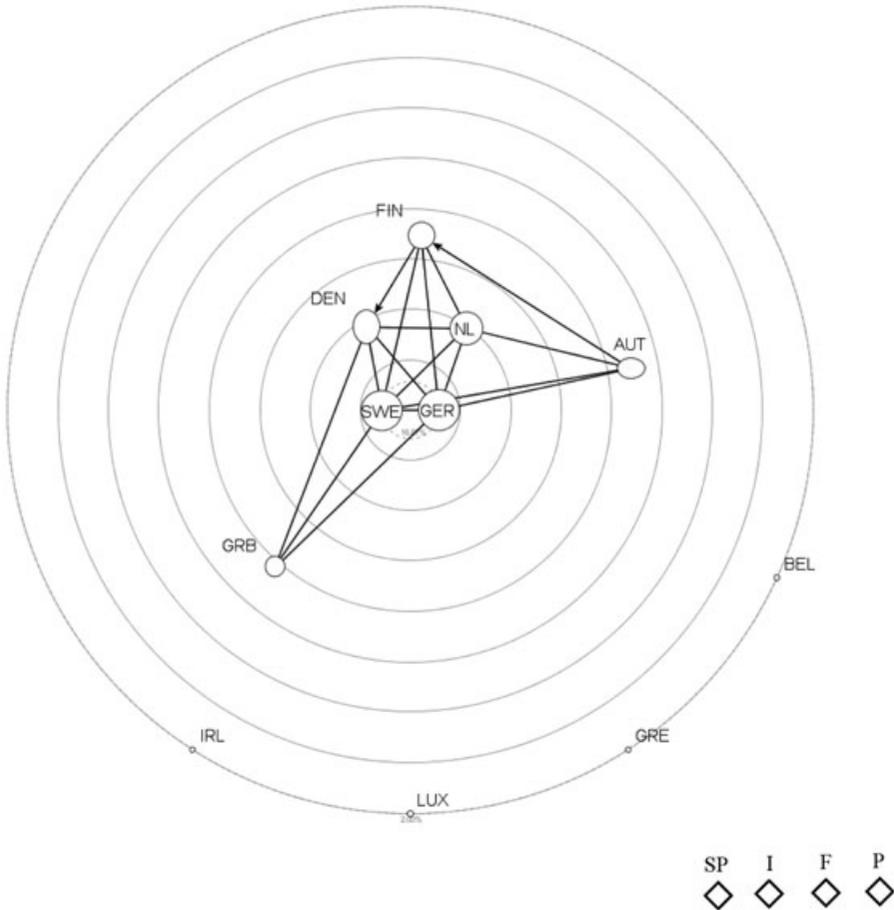


Figure 1. Informal transgovernmental communication channels: Environmental ministries (EU-15) (PageRank).

Britain were engaged in transgovernmental networking. Most of these are well known as ‘green countries’. This transgovernmental network seems to include proactive policy pioneers rather than coalitions of negative coordination. As we can see in Table 1, this network is especially peculiar due to its extremely high degree of reciprocatedness. Visual inspection already makes clear the nearly complete cliqueness of this network.¹⁸

In Table 2 we present several network descriptive measures for those networks large enough to be treated statistically. Other ministries, like the ministries of defence or agriculture, have not been, or have only sporadically been, involved in the preparation of the intergovernmental conference. For a

Table 2. Synopsis of relevant network descriptives (calculated with StOCNET; Boer et al. 2006, Snijders et al. 2005)

	PO	MFA	MI	MJ	MF	MEco	MLab	MSoc	MEnv
N of involved actors	13	15	11	14	14	13	12	11	11
Maximum N of directed ties	156	210	110	182	182	156	132	110	110
N of observed ties	29	55	29	44	35	31	31	24	32
Density	0.186	0.262	0.188	0.224	0.179	0.170	0.185	0.156	0.208
N of possible dyads	78	105	55	91	91	78	66	55	55
Mutual (M)	8	8	7	6	11	7	8	5	15
Asymmetric (A)	10	39	10	30	11	15	11	11	2
Null (N)	60	58	38	55	69	56	47	39	38
Index of reciprocity	0.615	0.291	0.583	0.286	0.667	0.483	0.593	0.476	0.938
Maximum N of triads	286	455	165	364	364	286	220	165	165
N of observed triads	81	181	76	107	123	93	90	64	154
N of transitive triads	36	84	23	54	40	33	36	21	96
Index of transitivity	0.444	0.464	0.303	0.505	0.325	0.355	0.400	0.328	0.623

complete network with bureaucratic agents from all 15 Member States there are

$$\binom{N}{2} = (N^2 - N)/2 = (15^2 - 15)/2 = 105$$

possible unordered pairs and 210 ordered pairs. Comparing the densities, corrected for missing nodes, we get an impression of the relative network activity of the officials of ministries. As expected, the highest degree of communication activities is reported by the officials of the ministries of foreign affairs. Traditionally, they have a formal monopoly over the external representation of the nation-state. As a rule, they managed the coordination units responsible for preparing the negotiation positions. Note also the relatively high network activity of the officials of the ministries of justice, and the ministries of the environment showing by far the highest degrees of network activity. The expertise on European Law of the officials of the ministries of justice is highly appreciated during such conferences. They have to assess the compatibility of negotiation positions with existing European and national laws and are therefore expected to communicate with the legal experts of other Member States. The officials of the ministries of the environment not only stand out as especially communicative, but the configuration of this transgovernmental network is, as already shown in Figure 1, extremely reciprocal. Obviously, these officials had a preference for reciprocating relations. On the other hand, the network of the officials of the ministries of foreign affairs is highly asymmetric. This indicates the existence of informal authorities or at least dependencies. The relatively low density of the network of the officials of the premiers' offices reflects the usually applied ex-post control, leaving transgovernmental precoordination efforts to the officials of the partial jurisdictions.

According to the network densities, all networks under investigation have been highly selective, and therefore we conclude already at this stage that the officials followed a cost-benefit analysis when establishing and maintaining informal relations with equivalent ministries in other EU Member States. We point again to the asymmetric nature of the dyads – that is, we distinguish between addressing and being addressed. Asymmetric dyads are often conceived of as 'intermediate states of relationships that are striving for a more stable equilibrium of reciprocity, or complete nullity (devoid of either arc)' (Wasserman & Faust 1994: 510–511). Further interpretations argue that asymmetric dyads reveal an unequal distribution of resources. Another important attribute of (sub-)graphs is the degree of transitivity given the distribution of triads and triplets. Triads consist of relations connecting triplets (three actors)

and are therefore structurally embedding dyads. Transitive relations constitute a social equilibrium state allowing for reciprocal exchange and its control. They secure the control of compliance and policy implementation. Again, the network of the officials of the ministries of environment stands out as especially transitive. Do these descriptive measures indicate a significant deviation from pure randomness given the overall network configuration? And is the selectivity of these network choices driven by the hypothesised incentives? This will be tested with the following statistical analysis.

Test of hypotheses

Table 3 shows the estimated parameters for each of the effects discussed. We begin the discussion with the block of structural parameters. Most of the jurisdictional networks are characterised by non-random reciprocity and transitivity effects. This indicates that reciprocated ties and network closure have been valued positively. Officials have been more inclined to communicate transgovernmentally with other officials if such relations were reciprocated and if there were also indirect ties connecting them. Both results corroborate the thesis of an institutionalisation of transborder interactions among national bureaucracies. Remember, however, that this process of institutionalisation is obviously very selective. Both non-random reciprocal and transitivity effects are absent in the transgovernmental network of the officials of the ministries of economics. The networks of the officials of the ministries of labour and the ministries of the environment exhibit no additional preference for transitive closure, whereas the network of the officials of the ministries of foreign affairs network is characterised by a lack of reciprocated relations. However, this network is characterised by a tendency towards transitive structures. We interpret this as an indicator that foreign offices pay attention to communication efficiency and non-redundancy.

The network of the ministries of the environment is remarkable insofar as the highly reciprocal nature of the relations absorbs all other effects. Additionally including our hypothesised micro-incentives based on actor attributes or on dyadic attributes does not improve the models in a way that is required statistically (Snijders et al. 2005: 24). Therefore we present only the reduced form model. Interestingly, the negative effects of ‘three-cycles’ in the networks of the premiers offices, the ministries of the interior, the ministries of finance and the ministries of social affairs point to a statistically significant low occurrence of this configuration. We conclude, therefore, that in four out of nine transgovernmental networks, we observe tendencies towards informal hierarchies whereas ‘deliberative’ tendencies have been completely absent.

Table 3. ERGM: Sufficient statistics and dyadic covariates

	PO	MFA	MI	MJ	MF	Meco	MLab	Msoc	Menv
Reciprocity	4.209* (1.303)	0.098 (0.707)	3.495* (1.168)	1.123 (0.815)	4.044 (0.946)	1.477 (0.857)	1.815* (0.901)	2.748* (1.210)	6.322* (2.185)
Expansiveness (out-2-stars)	0.569* (0.160)	-0.051 (0.140)	0.251 (0.308)	0.114 (0.115)	0.099 (0.219)	0.350* (0.161)	0.124 (0.293)	0.030 (0.251)	-2.174 (1.617)
Popularity (in-2-stars)	0.070 (0.348)	-0.116 (0.143)	0.187 (0.261)	-0.205 (0.190)	-0.224 (0.309)	0.122 (0.255)	-0.229 (0.367)	-0.830 (0.542)	-1.973 (1.441)
Indirect Relations (2-paths)	-0.074 (0.251)	-0.147 (0.136)	-0.003 (0.250)	-0.319* (0.147)	0.189 (0.240)	0.017 (0.172)	0.042 (0.295)	0.588 (0.340)	2.486 (1.566)
Transitivity	0.616* (0.201)	0.533* (0.149)	0.616* (0.259)	0.645* (0.181)	0.753* (0.187)	0.256 (0.246)	0.417 (0.324)	0.944* (0.312)	0.924 (0.855)
Deliberation (3-cycles)	-1.533* (0.682)	-0.527 (0.418)	-2.098* (0.888)	-0.493 (0.534)	-1.988* (0.667)	-0.143 (0.687)	0.066 (0.909)	-2.796* (1.133)	-2.223 (2.587)
Bypassing Incentive	0.001 (0.042)	-0.028 (0.017)	-0.004 (0.016)	0.002 (0.013)	-0.008 (0.017)	-0.018 (0.026)	-0.001 (0.026)	-0.116 (0.133)	
Low Hierarchy	-1.432* (0.700)	-0.056 (0.372)	0.938 (0.513)	0.431 (0.383)	0.205 (0.410)	-0.054 (0.431)	0.473 (0.420)	0.354 (0.719)	
Bypassing Incentive x Low Hierarchy	-0.034 (0.031)	-0.010 (0.011)	0.009 (0.017)	-0.005 (0.011)	0.011 (0.017)	0.021 (0.027)	-0.006 (0.024)	0.102 (0.132)	
Issue Distance	-0.030 (0.033)	-0.078* (0.026)	0.002 (0.021)	-0.016 (0.012)	0.003 (0.014)	-0.021 (0.014)	-0.032* (0.014)	-0.028 (0.016)	
Informal 'Core Europe'	1.124 (0.691)	0.274 (0.367)	-0.079 (0.520)	-0.222 (0.409)	0.334 (0.356)	0.243 (0.433)	0.893* (0.437)	0.425 (0.531)	
Bilateral Economic Interdependencies	0.117* (0.038)	0.066* (0.024)	0.089* (0.040)	0.089* (0.030)	0.060* (0.026)	0.055* (0.026)	0.134* (0.041)	0.121* (0.047)	

Notes: * $p < 0.05$. Standard errors are in parentheses. Premiers Offices = PO; Ministries of Foreign Affairs = MFA; Ministries of the Interior = MI; Ministries of Justice = MJ; Ministries of Finance = MF; Ministries of Economy = MEco; Ministries of Labour = MLab; Ministries of Social Affairs = MSoc; Ministries of the Environment = MEnv.

The second block of estimation results pertains to our hypotheses on micro-incentives, which relate to actor attributes or dyadic attributes. The hypothesis that issue proximity (i.e., the similarity of policy preferences) induces informal transgovernmental relations is partly corroborated. In the case of the networks of the officials of the ministries of foreign affairs and the ministries of labour affairs, the functional relationship between policy distance and network choice is negative: the larger the policy distances between the respective ministries, the smaller the chance that they entertain relations. We interpret this as corroboration of the expectation that transgovernmental efforts have been made to build or rely on coalitions with like-minded state officials. One of the most astonishing results can be seen in the coefficients on bilateral trade interdependencies. For the first time, results from a complex relational analysis show that informal transgovernmental interactions have an economic background: the higher the relative export shares from Member State A to Member State B, the higher the probability of a transgovernmental relation, regardless which jurisdictional network is considered.

Finally, Keohane and Nye's bypassing conjecture is refuted for all the networks. Neither the main effects of the existence of the simple bypassing incentive and strong ministerial autonomy, nor their interaction effect are statistically significant. Governments characterised by a low-hierarchy do not induce more transgovernmental relations, nor do they increase the impact of the bypassing incentive. There is one exception: officials of the premiers' offices have a significantly reduced tendency to form transgovernmental network in governments where the ministries have high autonomy. This is plausible insofar as we expect that transgovernmental self-organisation in such contexts is exclusively carried out by specialised ministries endowed with high discretionary decision-making competencies.

What could be the reason for this quasi non-existence of moral hazard in EU transgovernmental networks? Do we observe political control over the national bureaucracies (Page & Wright 1999)? At first glance, it seems that the national governmental executives effectively exercised command and control, that they even mastered the political control of transgovernmental messages. Probing deeper into necessary conditions (Braumoeller & Goertz 2003) of the Keohane/Nye conjecture, we formulated two further hypotheses: in order to be effective the bypassing incentive (a) must be simultaneously present for both agents ('mutual bypassing incentive'), and (b) occur only in trustful bilateral situations. The latter condition has been operationalised as an interaction effect of the bypassing incentive and the situation of a reciprocated relation. Testing these additional hypotheses we get the result that a 'mutual bypassing incentive' does not contribute to the explanation of the occurrence

of transgovernmental relations. Bypassing in our transgovernmental networks is only effective conditional on the existence of a reciprocal communication situation – namely in the case of the networks of the ministries of the interior, ministries of finance, ministries of economy and ministries of social affairs. Here the interaction effect of bypassing and reciprocity proves to be statistically significant.¹⁹ We interpret this as an indication that the risk of bypassing is taken only in mutually trustful relations.

Conclusion

For the first time we have reconstructed the informal transgovernmental organisation of an important EU intergovernmental conference. We would like to emphasise that it is already difficult to trace out such behaviour in private organisations and at lower levels of public and private organisations. Naturally, the existence of transgovernmental relations has been acknowledged in the scientific literature for decades. The pattern of the emerging overall structure – often beyond individual and bilateral will and perception – and its selectivity were so far unknown. Our objective in this article was explanatory: we wanted to contribute to the question of ‘why’ informal transgovernmental communities are formed.

The main results of our statistical analyses are: bureaucratic agents carry out a cost-benefit analysis when entertaining transgovernmental networks; these networks are highly selective and they exhibit low densities. Given the statistically significant effects of reciprocity, transitivity and acyclical relations, there are strong indications of a high degree of institutionalisation of these interactions and of the existence of mutual trust. Third, the existence of acyclical relations corroborates the expectation of the emergence of informal administrative hierarchies. Structures of informal deliberation are absent. The existence of these structural effects confirms the hypothesis that politics and markets are socially constructed and embedded (Fligstein & Stone Sweet 2002). Fourth, the often repeated conjecture that preferential similarity induces and facilitates transgovernmental coordination is at least partly corroborated by our data; affinities with regard to political issues facilitate communication between the officials of different states. Fifth, bilateral economic interdependencies are related to the formation of transgovernmental relations, regardless of the type of ministry considered – that is, regional political integration and economic exchange patterns mutually interact. Our research design and our results are in line with a research agenda suggested recently by Fligstein (2005: 195): ‘The expectation is that one will observe global governance where markets exist and a push for new governance, where markets

openings have occurred.' This hypothesis has never been investigated in the way that we have proposed it in this article.

Last but not least, we put forward a measure for the effectiveness of state boundaries amid processes of regional integration. The proposed bypassing incentive seems to have been at work – but only in several actor networks (networks of the ministries of the interior, ministries of finance, ministries of economy and ministries of social affairs) and conditional only on mutually confirmed relations. In order to bear the risk of bypassing, agents had to consider the relationship as stable and trustworthy. We emphasise that we not only put forward an operational hypothesis of the Keohane/Nye conjecture, but we also offered a theoretical extension insofar as we proposed and corroborated an alternative necessary condition for the effectiveness of this behavioural mechanism. We conclude that moral hazard is existent and exploited in transgovernmental relations, but the breakup of nations by transgovernmental relations is far from being complete.

Despite acknowledging the transient character of the observed transgovernmental structure of European regional integration, we claim that we have been able to derive insights of a wider spatial-temporal process of the development of European integration. As a rule, those high officials having been or being in charge of the preparation of negotiation issues have been and continue to be those who are responsible and competent in the every-day policy making. State officials are not nominated completely anew, nor are responsible teams composed from scratch to prepare an Intergovernmental Conference. These state officials are experts and have experience with Brussels' comitology – and they rely on their established networks. Naturally, we do not argue that the observed network structure is time-independent. Especially, EU enlargement should have changed the overall structure. Nevertheless, due to the human tendency to build stable coalitions, the network links between the 'old members' are expected to have strong inertia and are path-structuring. As classical studies of the dynamics of bureaucracy (Blau 1955) have shown, successful and legitimate forms of informal administrative self-organisation potentially institutionalise to new forms of accepted governance. The institutionalisation of informal hierarchies potentially leads to new taken-for-granted forms of political governance. Our analyses of informal inter-organisational relations clearly indicate the emergence of informal transgovernmental hierarchies of informal administrative leaders and followers.

What are then the broader theoretical implications of this study? First, the development of European integration is driven mainly by the Member States – just as liberal intergovernmentalism claimed. However, states and governments are, and have always been, 'legal fictions'. Consequently, we disaggregated the state into those parts mostly responsible for policy making in

parliamentary systems: the ministries. State officials of the ministries prepare the sectoral councils of ministries, they control the comitology and they prepare Intergovernmental Conferences. The transgovernmental cooperation of administrations is a strategic process – including coalition-building and strategic communication. There is no smooth global functional administrative ‘fusion’, but rather a competitive process of politicians and bureaucrats with vested career concerns. A by-product is the emergence of informal authority structures. Focusing on the transgovernmental nerves of governance it is possible to identify specific patterns of community formation below the processes of formal intergovernmental conferences. The understanding of the inter-organisational networks of these state officials is a prerequisite for the understanding of the process of EU governance – and its management.

Appendix. Operationalisation of hypotheses

Bypassing

$$\text{Bypassing}_{a,b} = \frac{\sum_{iid=1}^{46} \text{BY}_{a,b}}{\sum_{iid=1}^{46} \text{VT}}$$

$$\text{where } \text{BY}_{a,b} = \begin{cases} 1 & \text{if } \|\text{Position}_a - \text{Position}_b\| < \|\text{Position}_a - \text{NBP}_A\| \\ 0 & \text{otherwise} \end{cases}$$

NBP_A is the publicly declared bargaining position of Member State A

$$\text{VT} = \begin{cases} 1 & \text{if } \text{Position}_a, \text{Position}_b \text{ and } \text{NBP}_A \text{ are not missing} \\ 0 & \text{otherwise} \end{cases}$$

*Low Hierarchy*²⁰

$$\text{Low Hierarchy}_A = \begin{cases} 1 & \text{if Member State A has a high degree} \\ & \text{of ministerial autonomy} \\ 0 & \text{if Member State A has a low degree} \\ & \text{of ministerial autonomy} \end{cases}$$

Issue Distance

$$\text{Distance}_{a,b} = \frac{\sum_{iid=1}^{46} \|\text{Position}_a - \text{Position}_b\|}{\sum_{iid=1}^{46} \text{VD}}$$

where $\text{VD} = \begin{cases} 1 & \text{if Position}_a \text{ and Position}_b \text{ are not missing} \\ 0 & \text{otherwise} \end{cases}$

Informal Core Europe

$$\text{Informal Core Europe}_A = \begin{cases} 1 & \text{if Member State A is a founding member of} \\ & \text{the EU} \\ 0 & \text{otherwise} \end{cases}$$

Export²¹

$$\text{Export}_{A,B} = \frac{\text{Export from Member State A to B}}{\sum \text{all Exports of A}}$$

Notes

1. For empirical studies on legislative decision making in the EU, see Bueno de Mesquita and Stokman (1994); Thomson et al. (2006).
2. 'State officials develop policy-making styles . . . that are provoked by, and are used to respond to, perceived dysfunctionalities' (Fligstein & Stone Sweet 2002: 477).
3. 'For a transgovernmental coalition to take place, a sub-unit of one government must perceive a greater common interest with another government, or sub-units of another government, than with at least one pertinent agency in its own country; and central executive control must be loose enough to permit this perception to be translated into direct contacts with the foreign governments or agencies in question' (Keohane & Nye 1974: 48).
4. For recent case studies, see Newman (2008); Eberlein and Newman (2008).
5. For more details on these flexibility provisions, see Title VII of the Treaty of the EU. An overview of the debate is provided in Stubb (2002).
6. We calculate the proportion of issues where an agent has a larger distance with regard to the official national position than to the position of the agent in the other Member State. We provide formal operational definitions for all hypotheses in the Appendix to this article.

7. For an operationalisation of ministerial autonomy, see Laver and Hunt (1992: 125).
8. More concretely, low governmental hierarchy can be thought of as a high degree of ministerial autonomy (see Laver & Hunt 1992: 125).
9. This effect should become visible by specifying an interaction effect of both variables.
10. Operationally, we add up the issue distances between two agents over 46 issues. For reasons of inter-individual comparability, we normalise with regard to the number of positions taken simultaneously by both agents.
11. For the context of the EU, see Moravcsik (1998: 27–35, 476–478).
12. Note that we suggest here a network-oriented micro-foundation of institutionalisation processes. ‘Institutionalisation’ has recently been defined as the ‘self-enforcing feedback dynamics of heightened legitimacy and enhanced-taken-for-grantedness’ (Colyvas & Powell 2006: 306).
13. Premiers Offices = PO; Ministries of Foreign Affairs = MFA; Ministries of the Interior = MI; Ministries of Justice = MJ; Ministries of Finance = MF; Ministries of Economy = MEco; Ministries of Labour = MLab; Ministries of Social Affairs = MSoc; Ministries of the Environment = MEnv.
14. For recent overviews on random graph models, see Robins et al. (2006); Wasserman and Robins (2005); Snijders (2002); Snijders et al. (2005).
15. ‘Involved’ means that bureaucratic agents have written proposals for the national coordination unit. These persons were indicated by the delegation leaders in a first wave of data collection. This form of snowball sampling implies that all relevant actors were surveyed.
16. List F showed the EU-15 Member States in an alphabetical order.
17. Figure 1 was produced with the software package visone.
18. Cliques are characterised by maximal connected subgraphs (i.e., all member of clique are directly connected) (Wasserman & Faust 1994: 254). These are the cliques: AUT-GER-NL-SWE; FIN-GER-NL-SWE; DEN-GER-NL-SWE; DEN-GER-GB-SWE.
19. Estimation of these additional models are available from the authors on request.
20. Laver and Hunt (1992: 125): ‘High autonomy’ is assumed to take values of 1–5 of their index.
21. Data are available online at: <http://comtrade.un.org/db/>

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