Networks and Social Influence in European Legislative Politics

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Abstract

The Treaty of Lisbon strengthened the role of national parliaments in the European Union. It introduced an "early warning system", granting parliamentary chambers the right to reject legislative proposals by the European Commission. Previous studies assumed independence between the decisions of parliaments to reject a legislative proposal. We apply recent advances in inferential network analysis and argue that parliamentary vetoes are better explained by conceptualizing parliaments' veto actions as a temporal network. Network effects can be observed along the dimension of party families. Based on a new permutation approach, we find that parliaments with similar party majorities influence each other over the course of the decision period ("social influence"), rather than basing their decisions independently on joint prior partisanship ("selection").

1 Introduction

In 2009, the Treaty of Lisbon established a stronger inclusion of national parliaments in European politics through the instrument of the *early warning system* (EWS). Since this institutional change became effective in 2010, the European Commission has been instructed to forward every proposed piece of legislation to the chambers of all national parliaments. The chambers can scrutinize the proposals and formally state their concerns if they conclude that the new law will violate the principle of subsidiarity (henceforth, such a statement is called an individual "veto" action). If the national chambers reach a certain quorum of reasoned opinions that state a subsidiarity concern, the Commission is forced to review the proposal again.

This is a new quality of legislative power, where national legislators have a say in supranational European politics, as they can effectively act as a collective veto player in an international organization—if a sufficient number of parliaments agrees to veto a proposal. Our paper provides the first systematic analysis of the determinants of interdependent veto behavior of national parliaments in this system. More specifically, we explain the sequence of individual parliamentary vetoes and, thereby, the occurrence of veto success in the scrutiny process.

Existing research on the EWS tries to explain veto participation mainly by focusing on the attributes of the national parliaments (e. g., Gattermann and Hefftler 2015; Williams 2015). These attributes are, for example, EU dispersion in government, left-right dispersion, general EU attitudes, the capacity of the chamber, and duration of EU membership. Such a perspective rests on the assumption that veto actions are independent of each other and that they are conditional only on the properties of the parliaments (and possibly the legislative proposals). That is, national parliamentary chambers ignore the preferences of other chambers when they decide whether to reject a legislative proposal by the Commission or not.

In contrast, we argue that a temporal network perspective is crucial for analyzing their interdependent behavior. The threshold character of the EWS creates a collective action problem for national parliaments, where coordination becomes necessary for joint veto success. Therefore the factor of primary interest to us relates to the dependencies between chambers through the network, while we also control for characteristics of chambers and of proposals under scrutiny. We conceptualize individual veto actions as a two-mode network of chambers (vertex mode 1), proposals (vertex mode 2) and vetoes of the chambers on these proposals (the edges in the two-mode network). This allows us to analyze the complex dependencies among national parliaments and identify how network patterns shape individual vetoes and the joint veto success following these activities. As the timing of the vetoes is known, we employ a recent innovation in inferential network analysis that permits us to incorporate the timing of vetoes into the analysis: we employ a two-mode relational event model (REM), a combination of inferential network analysis and survival analysis (Butts 2008; Lerner et al. 2013).

We argue that partisan ideology plays a key role in this network process. Political parties act as organizational and ideological bridges between different institutions at the national level (e. g., the administration, the parliament, and the constitutional court) as well as within other European institutions (e. g., party factions in the European Parliament or partisan leaning of decision makers in the Council). We argue that party families exert a similar bridge function between national parliamentary chambers in the EWS. Parliamentary chambers influence each other through their joint party families and thereby try to overcome the collective action situation posed to them by the threshold character of the EWS. We deliver quantitative evidence on the influence of party politics at the EU level. So far, such evidence exists only for the European Council and the European Parliament.

However, even if parliamentary chambers reject the same legislative proposals due to shared partisan leaning ("homophily"), the causal mechanism underlying this homophily pattern is yet unclear. Do parliaments with the same majority party family influence each other over the course of a decision-making period ("social influence"), or do parliaments reject the same proposals because of their shared prior partisan preferences ("social selection")? The timing of individual vetoes crucially matters for determining whether parliaments influence each other along partisan lines or merely engage independently in the same veto actions because their shared underlying party majority breeds similar substantive policy interests. We exploit the timing, or order, of veto actions to disentangle the former and the latter. If we find a random temporal order of vetoes per decision-making process, this is an indicator of mere social selection. If, however, parliaments with the same partisan leaning reject the same proposals in close temporal order, this is an indicator of social influence. We propose a new method that permits us to distinguish between competing causal mechanisms related to network patterns: are parliaments really mutually relevant over the course of a legislative process, or is joint action merely due to prior similarities? More broadly, studying the temporal dynamics of the chamber–veto network is important for understanding the role of homophily in political networks (Gerber, Henry and Lubell 2013).

2 Parliamentary vetoes and network effects

2.1 The early warning system

The European Union is the first supranational organization that established institutional rules for the inclusion of national parliaments in the supranational decision-making process (Raunio 2009; Auel and Christiansen 2015).

The most recent upgrade of national parliaments is the introduction of a subsidiarity control, commonly referred to as the "early warning system" (EWS), in the Treaty of Lisbon in 2009. For every legislative proposal by the Commission, Article 6 of Protocol 2 ("Principles of Subsidiarity") grants national parliaments the right to issue a *"reasoned opinion stating why it considers that the draft in question does not comply with the principle of subsidiarity"* within eight weeks from the date of transmission of a draft legislative act (European Union

2007: 150). Parliamentary chambers are supposed to veto a proposal if they come to the conclusion that the content of the proposed legislation is better regulated at the national than at the European level and therefore violates the Union's principle of subsidiarity.[1] The normative function of the EWS is to increase the legitimacy of European governance. According to Rittberger (2005), it was widely accepted that national parliaments suffered most from the transfer of sovereignty to the European level. Therefore, the EWS is a means to limit the policy-making competencies of the Commission under specific circumstances: if the principle of subsidiarity is affected. The democratic aspect of the EWS is hence *not* linked to classic democratic functions of parliaments like increasing governments' accountability or linking the citizens to the political system of the EU (de Wilde and Raunio 2015). Rather, the EWS introduces a device for exercising new network and gatekeeping functions of national parliaments (Sprungk 2013).

2.2 Parliamentary coordination and collective action

The innovative part of the EWS is the threshold character required to enforce an official reaction by the Commission. Each national parliamentary chamber has one vote, in a unicameral system two votes, resulting in 56 votes in total. If a draft legislation is interpreted as a violation of the subsidiarity principle, as argued in reasoned opinions by at least one third of the votes of all chambers (19 votes), the European Commission has to review the draft, can, however, maintain the original version after review. Beside this so-called yellow card, there is an orange card, which requires reasoned opinions by one half of the votes. In this case, the Commission can maintain, amend, or withdraw the proposed bill, but it must give a reasoned opinion in case of maintaining it. All reasoned opinions are submitted thereafter to the Council of the European Union and the European Parliament as co-legislators, which can overrule the Commission (by 55 percent in the Council and simple majority in the Eu-

[1] A note on terminology: such a subsidiarity concern only becomes an effective collective veto when a certain quorum is reached. In this article, we consistently call an individually stated reasoned opinion by a national parliament a veto, whether or not the statement is ex-post turned into an effective collective veto.

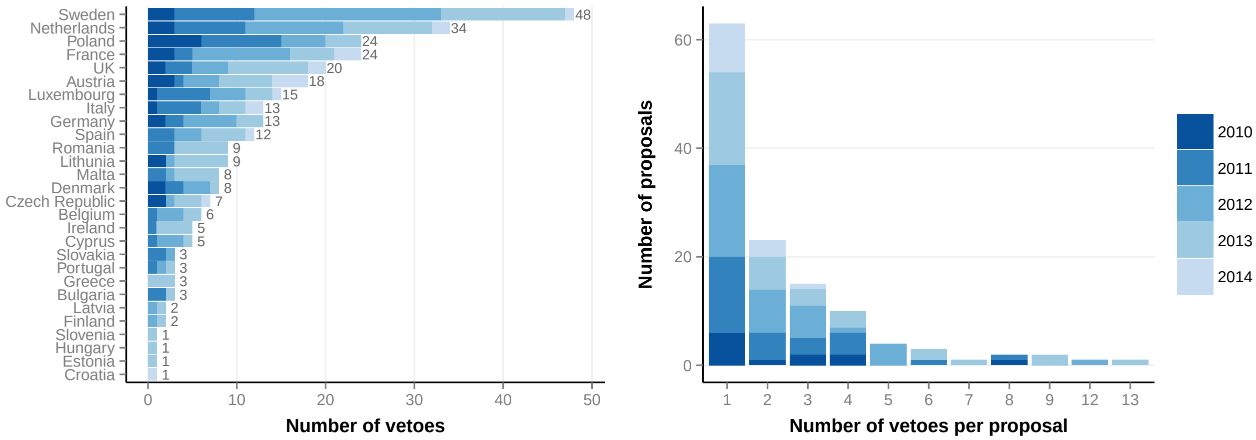


Figure 1: Parliamentary activity (left) and legislative proposal popularity per year (right)

ropean Parliament). So far, this institutional change has led to two yellow cards. However, most of the time the quorum is not reached. Figure 1 on the right shows that out of all 121 vetoed proposals, more than half are vetoed only by a single chamber, with a steep decrease in the likelihood for every additional veto. Overall, national chambers vetoed 298 times in the years 2010–2014, with the Swedish Riksdagen being most active as compared to several chambers from the newer member states who were almost absent in the EWS (see left part of Figure 1).

Analytically, the EWS has prompted a new conceptualization of national parliaments as "virtual third chambers" (Cooper 2012) or a "multilevel parliamentary field" (Crum and Fossum 2009). The changes introduced by the EWS call for an adjustment of the traditional reading, which emphasizes solely the passive watchdog-like control function of national parliaments in foreign affairs (Cooper 2006). With the introduction of the EWS, the institutional role of national parliaments has to be reinterpreted as follows.

First, in the sense of Tsebelis (2002), national parliaments become a de facto veto player without agenda-setting power.[2] However, the object of a veto has changed from the national to the European executive, resulting in an asymmetric vetoing relation. Additionally, while

[2]They are not a de jure veto player because the Commission can potentially overrule the veto. However, de facto the Commission so far agreed with the yellow cards and interrupted the legislative process after the veto.

the statement of a veto is made by a single chamber, a successful veto requires a form of collective action to reach the quorum. Hence, we consider national parliaments as collective veto players in an asymmetric veto relationship.

The interpretation of the veto process as a form of collective action involves autonomous national parliaments that incur costs like time and resources to process information on EU policies to the national benefit (de Ruiter 2013).[3] Every parliament incurs these transaction costs to formulate a reasoned opinion. One rationale for coordination is to minimize them (Wonka and Rittberger 2014). Since a veto only becomes binding if a certain threshold of chambers is reached, dedicated chambers have to communicate and monitor the policy problems and search for a mutually beneficial solution.

Furthermore, since not all chambers have to issue a veto, but a successful veto has repercussions on all EU countries, there exists a free-rider problem in the institutional veto structure, such that parliamentary action is generally sparse. Therefore parliaments must actively seek allies for a veto by influencing the cost/benefit calculation of other parliaments. This is possible because some parliaments have less vested interests in specific legislative proposals than others, which creates incentives for wide-spread coordination activities among parliaments. As Cooper (2015) showed in a case study for the first yellow card, parliaments mutually influence their decisions to (co-)veto specific proposals through coordination, and proposals may tend to be opposed by the same groups of parliaments. In a comparative case study, Pintz (2014) emphasizes the importance of active leadership in the veto process. In the analysis below, we put the influence hypothesis to a quantitative test by considering all cases available since the introduction of the EWS.

Second, the role of information has changed through the EWS. Whereas the strengthened oversight functions in the 2000s were still based on asymmetric information distribution from the Commission to the national parliaments, a horizontal and symmetric component

[3] We generally assume that the primary goal of parliaments is the circumvention of an undesired policy. A different interpretation could emphasize the individual signaling of aversion against a policy to the constituency, as studies on Council voting assume (Bailer, Mattila and Schneider 2015). However, since the veto activity is not a the center of public or interest group awareness, we ignore this possibility here.

has entered through the EWS practice. Because the rejection of a legislative proposal demands at least the legal participation of some other national chambers, parliaments have started to generate information about the violation of the subsidiarity principle on their own (Karlas 2012). Additionally, they have regular meetings and a platform where they share this information with all other parliaments. This network character of information exchange marks a general change from a hierarchical to a horizontal mode of governance. Beside the European Parliament and the respective national government, the third information source for national parliaments is now their national peer chambers in other Member States.

Network interdependence can be crucial for resolving collective action problems (Feiock and Scholz 2010). Besides the links between parliaments through information exchange and participation in common meetings, parliaments are linked through specific actions: their individual vetoes of legislative proposals. A chamber can perceive which other chambers are connected to the same legislative proposals through vetoes and what characteristics these other chambers have. If this local topology of the network matters for the decision of an individual chamber to veto a proposal (at a specific point in time), then this is what we call a network effect. We therefore look for the different factors through which network effects among parliaments could take place, like joint ideology, shared institutional properties, or preexisting relations like trade flows, and analyze if they can predict that two given chambers veto the same proposal.

In the field of EU studies, the network concept has been used by scholars who consider the EU as a case of multilevel governance (Hooghe and Marks 2001; Thurner and Binder 2009). However, researchers who focus specifically on parliaments raise concerns about the applicability of the network metaphor to parliamentary action. Crum and Fossum (2009), for example, miss the particular dimensions along which parliaments operate in EU decision making. Cooper (2012) favors systemic properties and an integrated structure over the looser concept of a network. We employ the network concept in a more analytical sense. We model parliamentary chambers and legislative proposals as nodes in a two-mode network. Reasoned opinions are the edges, or ties, that connect nodes across these two modes. The topology of these reasoned opinions is the explanandum in our study.

2.3 Selection and social influence as competing mechanisms

In the study of networks, *homophily* is the principle that a contact between similar actors occurs at a higher rate than among dissimilar actors (McPherson, Smith-Lovin and Cook 2001). By conceptualizing the EWS as a network, we argue that homophily can be observed between parliamentary chambers in the sense that two chambers co-veto a given legislative proposal if they share an attribute, such as partisan ideology. However, a general finding in the literature on homophily in networks is that causality can run into both directions—from joint attributes to tie formation ("selection") or from the existence of network ties to the emergence of joint attributes ("social influence")—and that both alternative causal pathways cannot be easily disentangled in observational data (Shalizi and Thomas 2011; Lyons 2011).

In our study of the EWS, we argue that *social influence* is at work because parliaments influence each other in their veto actions. In other words, actor i vetoes proposal j because i observes the veto actions of other actors k and discovers similarities with k. This leads to imitation of k by i because i faces uncertainty over its optimal veto choices and learns from k's choices because actors k and i are similar.[4] Most importantly, parliamentary chambers receive the signals from chambers with the same party family majority and follow their example.

In contrast, *social selection* may be an alternative explanation of partisan homophily in the EWS network because two parliamentary chambers may veto the same legislative proposals just because they have similar interests and institutions, irrespective of actual coordination between them. That is, i and k both connect to proposal j, but one action is not the result of the other action. For example, if two parliaments have the same majority

[4] As a consequence, if i is rational, this can lead to deliberate attempts of k to influence i's choices because k can anticipate and exploit i's uncertainty. Such level-k reasoning (Crawford and Iriberri 2007) should be explored in future research. In this contribution, we focus on unilateral social influence of i by k through imitation.

party family, they may develop the same policy preferences and eventually veto the same proposals, even though there is no signaling or awareness between them.

However, it is possible to discriminate between the two causal mechanisms by taking into account the timing of individual veto actions. If selection is at work, time should not play a role in the veto event sequence; vetoes take place at random time points between proposal date and deadline (potentially conditional on individual-level factors like work capacity); vetoes occur in no particular order because parliaments do not learn from previous actions of others—they act as if all veto decisions were made simultaneously. In contrast, if social influence and thus coordination is at work, time should play a role in the sense that parliamentary chambers learn from recent, previous actions of peers. One should be able to observe temporal clustering of vetoes according to homophily patterns like joint party family because vetoes trigger peer vetoes.

In the literature on the EWS, the distinction between the two mechanisms is only implicitly present: In his case study about the first successful yellow card, Cooper (2015) emphasizes the role of the first vetoing chamber as the initiator. The first veto can serve as a signal to other chambers with the same attribute to concentrate veto activities on the same proposal (social influence). According to Saam and Sumpter (2009), attribute similarity can also lead to ex-ante peer orientation: For example, chambers with the same ruling party choose each other as cooperation partners and try to find a common solution, either horizontally or vertically with the European party group (social influence). In contrast, a *selection* effect can occur if some issues appear salient to multiple countries and therefore they are willing to take the costs of vetoing. In this case, these countries' probabilities of vetoing the proposal are high, but they are independent of each other conditional on the chambers' preference or interest distribution that is formed by antecedent variables like location or GDP per capita (Gattermann and Hefftler 2015). Joint vetoes of quotas in fishing policies by member states with a large fishing industry are a prime example (Leuffen, Malang and Wörle 2014).

2.4 Partisan ideology and network homophily

Our main theoretical argument is that the EWS is characterized by social-influence-type network effects among parliaments along partisan lines. This entails i) that network homophily is at work in the EWS, ii) that partisan ideology is an important factor in shaping this homophily, and iii) that social influence is the guiding mechanism through which partisan ideology determines the occurrence of vetoes in the EWS.

These network effects between parliaments work best if they are politically and ideologically compatible. Political parties as ideological and organizational structure offer the basis for political compatibility. If a party in country 1 has developed political preferences and a good argument on why a certain proposal violates the subsidiarity principle, it is likely that a party from the same party family in country 2 subsequently adopts this position (e. g., diffusion may take place between the Labor Party in Britain and the Social-Democrats in Germany because they belong to the same party family). Studies on voting in the Council of the EU find these partisan patterns for national governments. Hagemann (2007), Hagemann and Høyland (2008) and Mattila (2009) identify a left-right cleavage as a conflict dimension in the Council.

Similarly, we assume that parliamentary chambers perceive activities of peer chambers on the basis of their party family affiliation. In some cases, chambers are pushed by an initiator from the same party family to adopt the behavior of an early adopter (Cooper 2015; Pintz 2014). In other cases, imitation may take place without actual communication, but through increased awareness of other chambers' recent actions when their majorities parties belong to the same party family. Whether i learns from k merely by observing k's veto actions or by receiving further information from k after k's veto does not matter for the argument presented here. Future research may disentangle the precise channels through which social influence operates. In either case, social influence leads to sequences of vetoes by chambers with similar political majorities over time, rather than a temporally random allocation of vetoes (given the cross-sectional network homophily patterns), because parliaments directly respond to their peers by means of imitation. The implication is that temporally local interactions can be identified between partisan peers:

Hypothesis 1a (Partisan influence) *A chamber is more likely to veto a specific legislative proposal the more other chambers ruled by a party from the same party family as the focal chamber vetoed the same proposal recently.*

As an alternative hypothesis centering around the idea of selection, we test for a temporally random partisan homophily effect. It may be the case that partisan ideology is at work through shared prior information sets rather than coordination strategies in order to reduce transaction costs and overcome obstacles related to collective action. In other words, it may be possible that two national parliaments have the same party family and therefore independently make similar decisions on what legislative proposals to veto.

Although there are different tools that should enable parliaments and parties to coordinate, like the COSAC meetings and the IPEX internet platform for information exchange (Knutelská 2013), some authors suggest interpreting joint vetoing as a coincidental sum of otherwise unrelated events rather than as a coordinated, goal-oriented action sequence (Kiiver 2006). According to this proposition, chambers choose on their own which proposals to veto, but due to shared attributes that cause the veto decision, a similar veto pattern occurs. Several liberal majority parties, for example, may independently reject a proposed regulation of job security and therefore veto specific proposals—in contrast to Christian-Democratic parties and Social-Democrats. Similarly, Social-Democratic parties may favor more multiculturalism whereas conservative parties veto such policy proposals (Bakker et al. 2015).

This ultimately leads to a static homophily network pattern, where temporal clustering of homophilous events cannot be detected in the sequence of individual veto actions:

Hypothesis 1b (Partisan selection) *A chamber is more likely to veto a specific legislative proposal the more other chambers ruled by the same party family also veto the proposal, regardless of when the other vetoes take place.*

2.5 Other dimensions of homophily

There are several other plausible dimensions along which network homophily may occur, especially EU accession round and physical proximity. These alternative dimensions are inspired by the literature on conflictual voting in the Council of Ministers. Member States are directly represented in the Council by their governments. Most legislative proposals are decided under qualified majority. Scholars normally assume a "culture of consensus" in the Council and try to explain individual negative votes by member states. We draw on this literature to identify two alternative dimensions that could explain homophilic veto behavior of parliaments: accession cohort and geographical location. We test if these alternative factors play a role at all and, if so, whether social influence or selection is at work.

First, the literature on the formation of coalitions of national governments in Council negotiations suggests one common result: there is a clustering of countries from the same EU enlargement rounds that structures voting patterns (Hayes-Renshaw, Van Aken and Wallace 2006). The reason for this finding is still open to interpretation. Some argue for a redistributive cleavage (Zimmer, Schneider and Dobbins 2005), others maintain the free-market versus regulated capitalism divide (Thomson, Boerefijn and Stokman 2004), while a third group proposes shared political culture or similar preferences on the future of integration (Mattila 2009) because the Eastern enlargement finally brought about a cleavage line between old and new members on the dimension of financial subsidies (Thomson 2009). All of these explanations empirically boil down to the temporal dimension "duration of EU membership" (Hosli, Mattila and Uriot 2011). Countries from the same enlargement round share more similarities than across enlargement rounds. We test whether a chamber vetoes a proposal with a higher probability if chambers from the same enlargement round have vetoed the given proposal recently (social influence, Hypothesis 2a) and whether chambers from Members States that joined the EU in the same enlargement round cluster around the same proposals, irrespective of timing (selection, Hypothesis 2b).

Second, we also expect geographic proximity to increase the benefits and reduce the costs of joint vetoing. Geography can be viewed as an alternative explanation to the enlargement round phenomenon. Whereas Bailer, Mattila and Schneider (2015) emphasize that geographical pattern of coalition building cannot offer a convincing causal mechanism for member states voting profile, several studies find a significant spatial pattern. Kaeding and Selck (2005) and Mattila (2009) uncover a north-south division in the Council voting patterns, as do Naurin and Lindahl (2008) in Brussels-based diplomatic communication and Veen (2011) in exchange on policy platforms. We assume, more specifically, that countries that are located physically close to one another often share geographic features that impose common preferences for policies. For example, a shared sea border influences the preferences for regulation on migration. This can play out as a social influence effect (Hypothesis 3a) or as a selection effect where geographic proximity leads to similar problems and preferences without any influencing taking place (Hypothesis 3b).

2.6 Control variables

We control for three alternative homophily patterns. First, we expect variables related to the political system to shape the preferences of a parliament towards EU policy. Political institutions matter because similar institutions presumably lead to similar policy preferences and similar kinds of transaction costs (Bennett 1991). In parliamentary systems, the majority party and the government party are usually identical, but this congruence is not necessarily given in presidential systems. We expect chambers in presidential systems to enjoy a greater degree of freedom and to place a greater emphasis on scrutinizing the government. Therefore, chambers from the same type of political system should act in similar ways (selection), and there may even be coordination or imitation among presidential systems or among parliamentary systems at a higher rate than across these two types (social influence).

Second, Bailer, Mattila and Schneider (2015) argue that economic factors determine deviant voting behavior in the Council. Especially rich and competitive member states are more likely to oppose legislation. These member states use voting against a legislative proposal only to signal their discontent to their domestic stakeholders. We assume that on the parliamentary level richer member states are more likely to veto the same legislative proposals (selection) and coordinate their veto behavior (social influence) to circumvent specific proposals.

Third, we use the size of a country as a measure for their political influence and hypothesize that more influential member states are more likely to veto a given proposal together.

In addition to homophily, main effects can be at work at two levels: covariates that increase or decrease the general propensity of parliamentary chambers to issue vetoes, and covariates that increase or decrease the popularity of specific legislative proposals as targets of vetoes.

There are five variables at the chamber level that were used in previous studies (Gattermann and Hefftler 2015; Auel, Rozenberg and Tacea 2015). First, Neuhold and Strelkow (2012) show that second chambers act more frequently than first chambers. Second, chambers with more capacity should lead to a higher veto activity. Third, the strength of institutional control rights per chamber influences its overall veto activity. Fourth, parliaments in countries with more Eurosceptic publics are hypothesized to be more active in vetoing EU legislation. Fifth, as a standard control on the national level, we add four variables related to the population and wealth distribution in the EU member states (Bailer, Mattila and Schneider 2015).

At the proposal level, we introduce two additional controls into the model: first, it is important to control for the clustering of multiple legislative proposals around the same chambers based on joint proposal characteristics. We capture this kind of *issue specificity* by controlling for clustering between bills proposed by the same Directorate General (DG) of the European Commission around the same chamber. Second, we control directly for the *salience* of an issue by introducing a dummy variable for whether the current legislative proposal is related to agriculture, which is traditionally the most redistributive issue in European politics (Kleine 2013; Leuffen, Malang and Wörle 2014).

3 Data and method

3.1 The dependent variable

The dependent variable consists of chamber–proposal veto events. These events are stored in a time-stamped edge list where one row represents one edge in the two-mode network of chambers (network mode 1) and legislative proposals (mode 2). Each tie in the network edge list is associated with a specific date on which the action was carried out. Parliaments only have a short time span of eight weeks for their formulation of a veto. There are two distinct dates in the vetoing process: the political decision to adopt a reasoned opinion and its formal adoption, i. e., its transmission to the European Commission. We use the transmission date for two reasons. First, the transmission date reflects the direct communication of the political decision via the IPEX website to all other chambers. Therefore the transmission should be regarded as the signal to the other chambers. If a chamber is keen on communicating their own veto, we assume that they will transmit the political decision as soon as possible. Second, the transmission date has the advantage over the decision date that it is more consistently reported. Cooper (2015: 10) shows that the political decision and formal adoption date can vary between chambers, but his data also shows that the sequence of political decision and formal adoption are congruent in almost all cases.[5] For the empirical analysis presented here, the exact date does not matter as long as the order of events is accurate.

The transmission date was obtained by a complete coding of parliamentary action on the IPEX homepage.[6] IPEX, the European InterParliamentary EXchange, is a platform for the mutual exchange of information between national parliaments about EU affairs. After

[5]Only two out of 12 chambers (French Senate and UK House of Commons) take a different position in the decision sequence compared to the adoption sequence.

[6]http://www.ipex.eu/IPEXL-WEB/home/home.do (last access: November 26, 2015).

the Commission sends the draft legislative act to all chambers and uploads them on IPEX, national parliaments can individually upload information on each proposal, state subsidiarity concerns, or, as a final step, veto the proposal.

We coded all vetoes for the years 2010–2014. The Treaty of Lisbon was signed at the end of 2009, so the start date 2010 is naturally given. Our coding efforts resulted in 121 proposals with 298 reasoned opinions by 39 chambers. The Supplementary Information online contains summary statistics.

3.2 Relational event model for two-mode networks

In order to take into account both the timing of vetoes and dependencies between actors, we estimate a relational event model (REM) (Butts 2008; Lerner et al. 2013). Our model is essentially a Cox regression model with user-defined covariates that capture network dependencies. On the one hand, adding such dependency terms to the survival model is necessary because the model would otherwise violate the i.i.d. assumption. On the other hand, we need these dependency terms to operationalize our network theory. Estimating a survival model is necessary because our theory not just conceptualizes cross-sectional dependencies but also crucially differentiates between two fine-grained temporal network mechanisms. The choice of a Cox proportional hazards model is due to the fact that we need an event-history model that incorporates exogenous covariates, but a priori the functional form of the survival curve is unknown. Even though we have exact time stamps for each event, the sequence is best modeled with a discrete-time model instead of a continuous-time model. In the continuous-time model, the number of days between two events would be calculated and used as a measure for event duration. However, the dates of the parliamentary meetings are partly determined exogenously, therefore the actual durations between events cannot be interpreted in a meaningful way, and we need to rely on a model for ordinal time. The dependent variable in the REM is therefore not the time to the next event, but rather the exact sequence of events, forming a dummy variable of event occurrence conditional on the event not having occurred in the past. This event occurrence can be estimated using a discrete-time conditional logit or Cox model (Allison 1982; Box-Steffensmeier and Jones 2004).

Time is counted since publication of the respective legislative proposal in order to standardize waiting times across proposals. For each individual veto action, additional non-events for previous dates in the event sequence (coded 0 in the dummy variable of event occurrence) are created and grouped into the same so-called risk set. The additional non-events start with the first event after the publishing date of the respective legislative proposal. Conditional on the composition of these risk sets, the probability that an event occurs at the next time step—i. e., a chamber vetoes a proposal—can be conveniently estimated using a conditional logit model (Gail, Lubin and Rubinstein 1980), a popular estimation technique for Cox models.

Factors that affect the probability of event occurrence can be tested by introducing exogenous covariates and covariates that capture endogenous processes. Given the flexible nature of the data, the covariates may be time-varying. Formulating temporal network statistics across the network of past events as sufficient statistics was proposed by Butts (2008) and has been expanded ever since (Hunter et al. 2011; Lerner et al. 2013; Quintane et al. 2014; Vu, Pattison and Robins 2015). In our exposition of the model, we follow Lerner et al. (2013). The network of past events is given as

$$G_t = G_t(E) = (U, V, w_t). \tag{1}$$

G_t consists of all events (or individual vetoes) E that have occurred before time t. These events consist of parliamentary chambers $u \in U$, legislative proposals $v \in V$ and a temporal weight function w_t that is applied to each of the past events. The reason we need temporal weighting is that more recent veto events presumably matter more for current veto activity. The weight function counts the number of past events between a chamber and a proposal and weights them according to how long ago they happened (Lerner et al. 2013):

$$w_t(i,j) = \sum_{e:u_e=i,v_e=j} |w_e| \cdot e^{-(t-t_e)\cdot \frac{ln(2)}{T_{1/2}}} \cdot \frac{ln(2)}{T_{1/2}}, \tag{2}$$

where w_e is the event weight (usually a constant set to 1 for each event), t is the current event time, t_e is the past event time, and $T_{1/2}$ is a halflife parameter. As the time span between the focal event and the past event increases, the weight w_e decreases exponentially, depending on the halflife parameter. We set halflife to be 10 because it slightly outperforms other parameter values, as measured by a decreasing Bayesian Information Criterion (BIC) of our final model.[7] The results are quite resilient to different halflife specifications. Every endogenous network term used in the REM is calculated with the help of this weight function, as detailed in the next section.

Estimation of the two-mode REM is carried out using the `rem` package (Brandenberger 2016), which is part of the `xergm` suite of packages (Leifeld, Cranmer and Desmarais 2016), in conjunction with the `survival` package (Therneau 2015) in `R`.

3.3 Construction of model terms: the independent variables

We construct endogenous statistics that operationalize hypotheses 1 to 3 and the relational controls. For Hypothesis 1, we use the classification of "party families" of the majority party as coded by the Manifesto Project (Volkens et al. 2013) for every chamber. In countries where the majority party changed over time, the party family value was adjusted to fit the respective date in the event sequence (in the form of an exogenous time-varying variable). To capture majority party homophily among chambers through their vetoes of the same legislative proposals, we construct an endogenous model term that we call a *sender node-*

[7] A halflife parameter of 10 indicates that an event that occurred 10 events in the past is weighted half as important. A halflife parameter of 10 results on average in a time difference of about 50 days (mean = 49.7 days and standard deviation = 40.9 days).

match on attribute x,

$$h^t_{\text{snm}}(i,j) = \sum_{e \in E^t} w_t(i_e, j_e)[j_e = j][i_e \neq i][x_{i_e} = x_i] \tag{3}$$

where i is the current chamber, j is the current proposal, e is an edge from the set of edges E^t in the network of past veto events up to the present time point t (as contained in G_t), i_e and j_e are the chamber and proposal contained in edge e, x_i denotes the attribute value of chamber i (in this case the name of the majority party family), and square brackets denote indicator functions that yield 1 if the expression within the brackets is true and 0 otherwise.

As each chamber can only veto a specific proposal once, the statistic counts the number of other chambers with the same majority party family as i that have already vetoed the same proposal, weighted by how long ago the respective veto occurred, with smaller weights for vetoes that occurred long ago. The weights are determined according to the exponential decay function described by Equation 2. The statistic therefore captures whether the sequence of events supports our ideological homophily hypothesis, that is, whether chambers indeed take into account the previous actions of other chambers with the same party family majority. As explained in the next section, we use a permutation approach on the event sequence to distinguish between Hypotheses 1a and 1b.

Hypothesis 2 is tested with the same statistic, but this time x represents the enlargement round in which the respective Member State joined the EU (based on a total of eight rounds).

For Hypothesis 3, we employ a similar model term that we call a *sender–sender covariate*:

$$h^t_{\text{ssc}}(i,j) = \sum_{e \in E^t} w_t(i_e, j_e)[j_e = j][i_e \neq i]X_{ii_e} \tag{4}$$

Here, X is a square $|U| \times |U|$ matrix with a relational covariate. In this case, X contains values of 1 where the row and column chamber are located in neighboring countries and 0 in all other cells. This model term tests whether chambers look at recent actions of chambers in adjacent countries when they consider vetoing a proposal.

Finally, we add several control variables. First, we test *political system homophily* using a node-match term (Equation 3) based on the "political system" variable from Armingeon's Comparative Political Data Set III (Armingeon et al. 2010). The SI online contains more detailed information on how the exogenous data in x and X were collected or created. *GDP* and *Logged population* come from the World bank database and are introduced as sender–sender covariates (Equation 4), using absolute differences in the respective variable, as well as main effects. *Second chamber* controls whether second chambers or upper houses differ from first chambers or lower houses in their veto activity. *Capacity* controls for the size of a chamber as measured by its number of seats. *Control* is taken from Winzen (2012) and captures the actual level of control rights of a chamber, which may be an institutional source of variance in vetoing activity. *EU opposition* controls for anti-EU attitudes of a ruling party by their mentioning of EU resentments in party manifestos as recorded by the Manifesto Project (Volkens et al. 2013). *Mean import from indirect ties* is a sender–sender covariate (Equation 4) that controls for trade flows between the countries in which co-vetoing chambers are located in order to account for veto behavior due to trade dependence on other countries. This variable is based on the UN Comtrade database as other frequently used trade datasets in international relations do not include recent years. *Chamber activity* is a main effect for chambers that sums up the weights of all the past vetoes that the focal chamber was involved in. Main effects enter the model weighted by time (see Equation 2). This model term tests whether the probability of vetoing a proposal increases if the chamber has vetoed other proposals in the recent past and therefore controls for differential chamber activity. *Issue specificity* is a node-match term similar to Equation 3, but with the attribute match occurring at the level of proposals, i. e., i and j are reversed (see SI online for more information). This term captures the tendency of actors to engage repeatedly in the same issues by vetoing proposals. We cross-checked every proposal with the EU's EUR-Lex database to get information about the Directorate General (DG) in charge of the proposal. This serves as a measure of the respective policy domain of a proposal (attribute value x).

Additionally, *salience* checks whether a law was proposed by the Directorate General (DG) for Agriculture. For *Party family*, *Entry round*, and *Political system*, main effects are introduced for the different levels in order to account for such things as nationalist sentiments and core EU members. Further details on the construction of the model terms, summary statistics, and correlations between variables can be found in the SI online.

3.4 Distinguishing social influence from selection

We exploit the temporal order of individual veto events to discriminate between social selection and social influence. The selection mechanism posits that joint properties like shared ideology independently lead to similar behavior. An implication is that veto events of chambers with the same attribute should be distributed approximately equally in a random way along the time axis for each legislative proposal. In contrast, if peer effects are at work, we should expect to see a temporal order of events where vetoes by chambers with the same attribute are temporally proximate because one event triggers another event.

A REM alone can test whether homophilic patterns occur in the event network. It cannot, however, discriminate between selection or influence because even a prior occurrence of a peer veto in a temporally *random* order of events might increase the coefficient of a homophily term and potentially lead to a significant homophily effect. This is the case because the weights in Equation 2 take into account all events up to the current time point. The problem is that the REM statistics confound network effects and temporal effects to a certain extent: they are increased when a prior event was both recent *and* matched with regard to homophily, but the statistics are still somewhat increased if an event was less recent but still matches the network pattern of interest. With enough data points, this might lead to a significant result even if selection is at work.

For comparison, a purely cross-sectional network model like the exponential random graph model (ERGM) (Cranmer and Desmarais 2011) cannot discriminate between the two effects either because it merely tests for the association between a veto event and a homophily pattern, but it equally takes into account all events along the temporal sequence, whether recent or not, and whether they occur before or after the focal event. The SI online reports the results of an ERGM as a robustness check; the results are in line with the findings reported here.

However, we do have leverage over the data-generating process if and only if i) such a cross-sectional model indicates a significant homophily effect (because then we know that the network effect is at work), and ii) the REM does not yield a significant result for the same association because the temporal pattern is not compatible. In precisely this situation, we can conclude that selection is at work rather than social influence.

We exploit this finding in a simulation where we randomly permute the temporal sequence of events and re-estimate the REM. More precisely, we assign a random date to each veto within the allotted time span.[8] Permuting the temporal sequence in this way and re-running the REM is repeated 5,000 times in order to yield a distribution of REM coefficients for each homophily model term given a random order of events. Then we test if the original REM coefficients significantly deviate from the means of their respective random coefficient distributions in order to imitate a comparison between a REM and a cross-sectional model. This counterfactual experiment is similar to the quadratic assignment procedure that is well-known in the literature on inferential network analysis (Dekker, Krackhardt and Snijders 2007). This identification strategy rectifies an important problem in inferential network analysis: the distinction between selection and influence, which are "generically confounded with each other" in observational studies (Shalizi and Thomas 2011: 213).

We report the permutation test as a separate column in the regression table (Table 1). Values smaller than 0.05 indicate that imitation or coordination rather than selection is at work. The table reports two separate permutation tests: one for a random temporal alignment of individual vetoes after a respective law has been proposed by the Commission

[8] In nine cases, the veto was issued several days after the deadline. On average, those vetoes were 5.4 days (sd = 6.4 days) late. In these nine cases, the deliberation period from which a random date was sampled was extended to include the overdue date.

and one that preserves the temporal distribution of veto actions in the aggregated dataset. Testing against a uniform temporal distribution may be inaccurate because empirically the bulk of vetoes takes place towards the end of the respective time window of eight weeks as parliaments need some time to evaluate the respective proposal (see the temporal distribution of vetoes in Figure 2), potentially leading to a type I error. Therefore we run a second permutation test where the probability that a veto takes place on a certain day is proportional to the relative frequency of that date in the whole dataset. This is a much stricter test that avoids these type I errors. However, at the same time, this test is too conservative and potentially introduces type II errors because, in principle, chambers would have had the freedom to make a veto earlier than the artificial constraint we impose on them in this second test. As such, we should take into consideration that the first permutation test may be too lax and the second one too strict, and the true p value is likely located between the two values that are reported. Yet, the joint interpretation of the three values should enable us to get a good sense of whether selection, influence, or none of them is at work: none of them if the first p value of the REM does not indicate significance, selection if only the REM p value but not the two permuted p values indicate significance, and influence if the REM p value and the first permutation p value indicate significance and the second permutation p value is relatively small, but not necessarily below 0.05.

4 Interpretation of results

The results are presented in Table 1. Figure 3 displays the permutation results for the three hypotheses graphically.

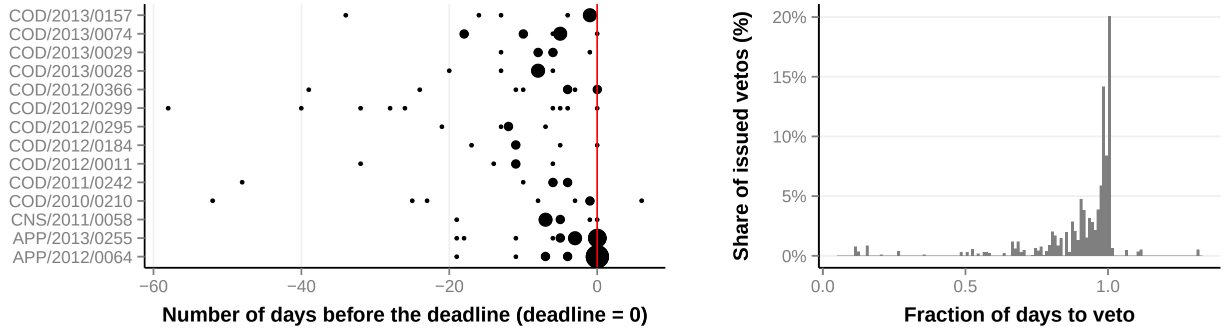
The model supports Hypothesis 1. As indicated by the original p value and the positive coefficient, ideological homophily is at work. Chambers veto legislative proposals at much higher rates if other chambers with a majority party from the same party family have recently vetoed the same proposal. Permutation 1 indicates that this is a temporal network pattern,

	Relational event model			Perm. 1	Perm. 2
	coef[a]	SE	p value	p value[b]	p value[b]
Primary hypothesis					
Ideological homophily	11.173	3.044	0.0002	0.0000	0.1342
Secondary hypotheses					
EU accession homophily	5.035	3.660	0.1689	0.1718	0.4519
EU location homophily	5.101	4.113	0.2148	0.1644	0.3671
Control variables					
Institutional homophily	8.363	2.011	0.0000	0.0012	0.6365
Abs. diff. in GDP	0.880	0.179	0.0000	0.0000	0.0036
Abs. diff. in logged population	1.923	2.232	0.3890	0.1720	0.7600
Second chamber	0.777	0.230	0.0007		
Capacity	−1.302	0.554	0.0187		
Control	0.678	0.371	0.0678		
EU opposition	−0.120	0.147	0.4151		
Constant GDP per capita	0.026	0.020	0.2000		
Population (log)	0.054	0.144	0.7079		
Mean import from indirect ties	0.000	0.000	0.0913	0.0732	0.6963
Chamber activity	−0.643	1.141	0.5732	0.6645	0.7518
Issue specificity	9.395	2.779	0.0007	0.0134	0.5053
Salience: DG Agriculture	−0.350	0.345	0.3105		
Party family baseline: Social-Democratic					
Socialist	−1.297	0.951	0.1726		
Liberal	−0.519	0.323	0.1084		
Christian-Democratic	−0.283	0.429	0.5094		
Conservative	0.007	0.274	0.9789		
Nationalist	2.115	0.734	0.0040		
Ethnic and regional	−0.536	0.818	0.5124		
Entry round baseline: 1957					
1973	−0.490	0.343	0.1527		
1981	2.292	1.125	0.0417		
1986	1.113	0.738	0.1312		
1995	−0.111	0.344	0.7460		
2004	0.259	0.766	0.7355		
2007 and 2013	0.021	0.869	0.9806		
Political system baseline: Parliamentary					
Presidential	−0.169	0.479	0.7244		
Semi-presidential	0.011	0.335	0.9728		

[a] Coefficients can be interpreted as log odds.

[b] Permuted p values are only reported where the permutation changes the event sequence.

Table 1: Results of the conditional logit regression on issued vetoes



(a) Dots indicate how many days before the deadline chambers issued a veto. Dot size is proportional to the number of events occurring on the same day. Only proposals with at least four reasoned opinions are shown ($N = 108$).

(b) Histogram showing when chambers are most likely to issue a veto. Distribution of time between the adoption date ($= 0$) and the veto ($= 1$) is shown ($N = 298$).

Figure 2: Timing of the vetoes

not just a cross-sectional one. Permutation 2 applies an even more conservative test, which is likely too strict because it constrains chambers to become active only at predefined time points. Yet, even here, the model produces an almost significant p value of 0.13, which is a strong indicator that social influence rather than selection is at work. Chambers solve the collective action problem of vetoing by turning to their peer chambers with majorities from the same party family, such that temporally clustered sequences of vetoes by chambers with the same party family emerge. It is not just the case that chambers with the same party family majority show the same veto behavior, as in the social selection effect posited by Hypothesis 1b; it is rather coordination between chambers that explains individual veto actions, as stated by Hypothesis 1a. Therefore partisan homophily plays a central role in governing the scrutiny processes and, on top, we find that the mechanism by which homophily works is social influence. Chambers that co-veto bills do not just exhibit the same underlying ideology; joint ideology causes them to move in a close temporal sequence, which is a strong indicator that they mutually influence each other. In other words, as far as partisan ideology is concerned, parliaments act in interdependent ways rather than independently.

This is notable because our results support our view of the EWS as a collective action problem and add a political party dimension to the literature on parliamentary action. So

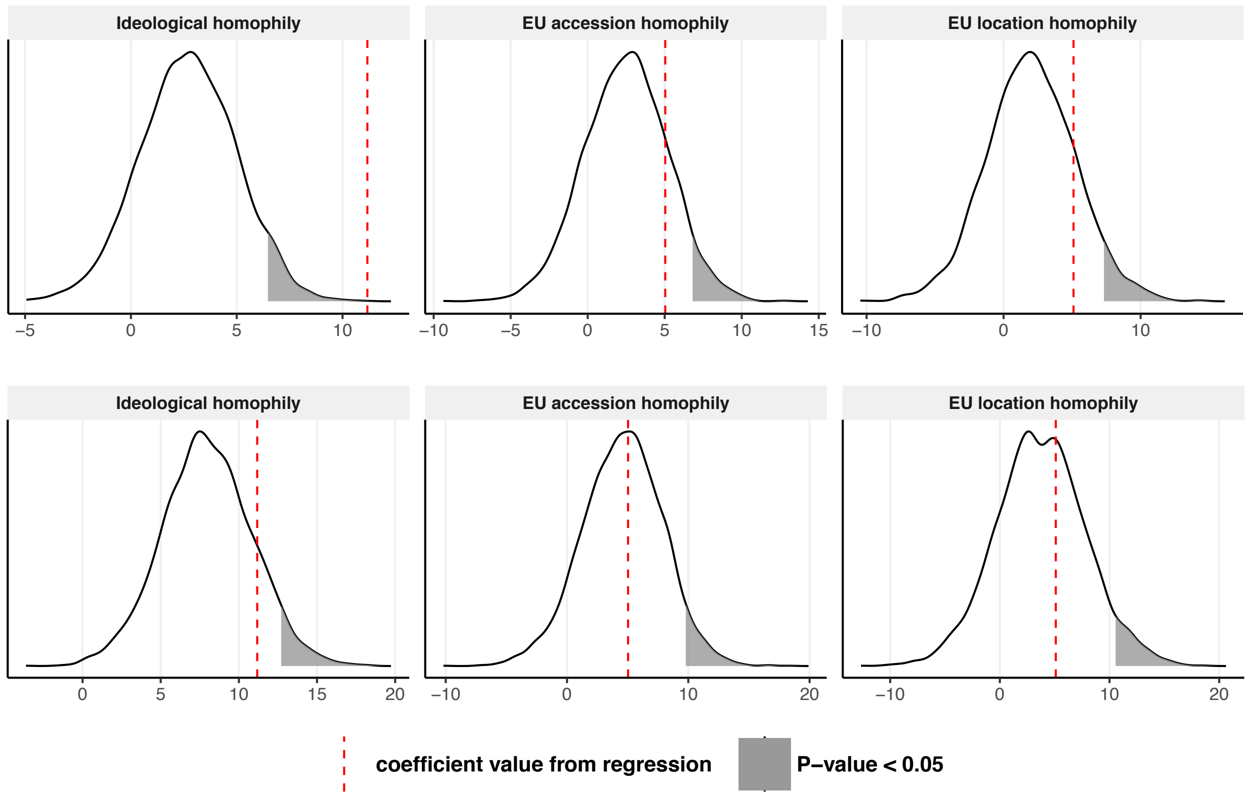


Figure 3: Permutation results for primary and secondary hypotheses: Distribution of coefficients across 5,000 permutations. Upper row: Dates of reasoned opinions are randomly assigned within the allotted period of deliberation. Lower row: Date assignment probability is weighted according to the time-to-event distribution found in the aggregated data (see Figure 2). The size of the unpermuted coefficient is represented by dashed vertical lines.

far, party positions were a rather weak and inconsistent predictor at the European level. This led researchers to diagnose a democratic deficit because of the missing party cleavage line at the European level. Our results suggest that at least cooperation between national legislatures is heavily dependent on the party dimension. We find compelling empirical evidence that party ideology matters in this new governance instrument established by the Treaty of Lisbon.

We hypothesized additionally that the similarity of chambers will lead to joint vetoes for two alternative chamber characteristics: enlargement cohort and spatial location. The results indicate that there are no homophily effects in terms of the time any two countries joined the EU and their location.

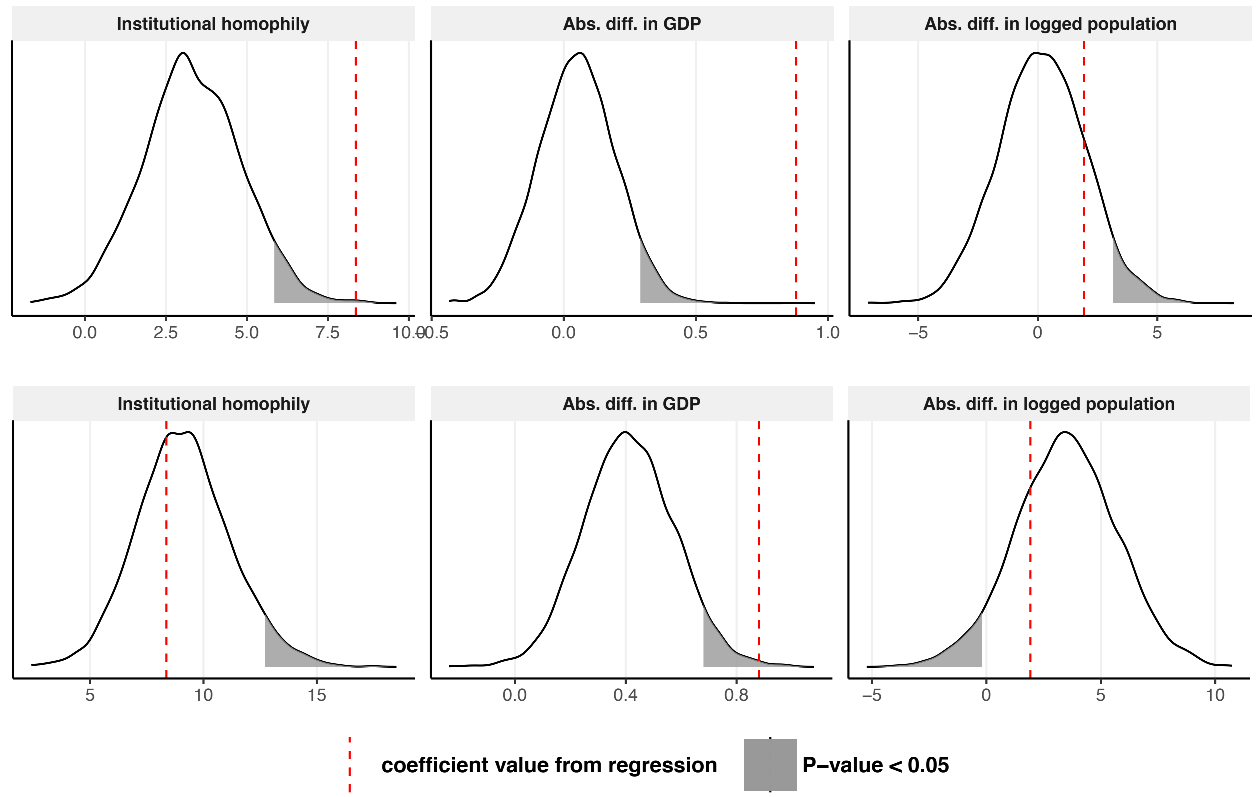


Figure 4: Permutation results for three selected controls: Distribution of coefficients across 5,000 permutations. Upper row: Dates of reasoned opinions are randomly assigned within the allotted period of deliberation. Lower row: Date assignment probability is weighted according to the time-to-event distribution found in the aggregated data (see Figure 2). The size of the unpermuted coefficient is represented by dashed vertical lines.

With regard to the control variables, however, we see that chambers that play according to the same institutional rules in their respective political system seem to cluster together around specific proposals (as indicated by the original p value for *Institutional homophily*). There is no clear result on whether this is due to social influence or shared underlying traits and interests because the first permutation indicates a significant difference of the homophily pattern from a random temporal sequence while the second permutation indicates no difference between the original coefficient and a model with permuted sequences of events given the global distribution of vetoes across time points (see Figure 4). If one is willing to make the assumption that parliaments need a great deal of preparation time and can only veto relatively close to the deadline, the second permutation is a hint that social selection, rather than social influence, is the triggering mechanism.

Veto diffusion also takes place among countries with different wealth levels. The larger the difference in GDP between a potential vetoing chamber and a chamber that already issued a veto, the more likely it is that the potential chamber issues a veto as well. The effect is strong and withstands even the second permutation (although here, too, the p-value is smaller compared to the first permutation). In comparison with the non-significant result of GDP per capita as a main effect, we get a nuanced understanding of the collective veto action. First, richer countries do not veto with a higher likelihood than poorer member states (a finding that is contrary to the voting pattern in the Council where Bailer, Mattila and Schneider 2015 find that richer member states oppose legislation more often). However, if a parliament from a richer member state initiates a veto, chambers from poorer countries will join with a higher likelihood afterwards. We interpret this result as evidence that vetoing in general is costly. If a rich member state initiates a veto, it has a bigger chance to overcome the collective action problem, either through direct persuasion of chambers from poorer member states or as the "shining" initiator whose vetoes promise a higher success rate and therefore is followed by other chambers with a higher likelihood.

No homophily effect is found for differences in (logged) population between vetoing states. Furthermore, some chamber characteristics like lack of capacity (in contrast to findings presented by Gattermann and Hefftler 2015), extensive control rights, cameralism (Neuhold and Strelkow 2012), and nationalist party family majorities cause chambers to veto more proposals than other chambers. Veto diffusion also takes place among trade partners and among countries with different wealth levels. Issue specificity can explain additional variation, which means that chambers tend to veto similar proposals, also in a temporally clustered way. Overall, such main effects seem to play a minor role compared to the homophily effects. To rule out the possibility that the ideological homophily effect could be driven by a single party family, we introduce dummy variables for all party families as a control (along with similar controls for the other hypotheses). Nationalist parties are skeptical about European integration, which causes parliaments led by nationalist parties to veto more proposals by the Commission.

5 Conclusion

Overall, our results demonstrate the impact of the institutional changes brought about by the Treaty of Lisbon. For the first time, this study has delivered empirical support for the influence of party politics at the supranational level and outside of the European Parliament and the Council. Partisan influence shapes the decisions of national parliaments to co-veto legislative proposals by the European Commission. Chambers do not just act individually; their actions diffuse from parliament to parliament along partisan lines and, likely, along institutional and economic lines.

How do these effects shape collective action? Once a parliament has started vetoing a proposal, our results indicate that peer chambers tend to follow in a close temporal order. This may lead to interesting and complex veto sequences with substantial heterogeneity as multiple parallel or sequential chains of homophilous vetoes may be initiated on different chamber attributes. For example, veto sequences may emerge around trade cliques and conservative cliques. These network mechanisms mitigate collective action problems parliaments would face in a dyadic independence setting. Yet, future research will need to look more closely at the reasons for parliaments to act as first movers when there is no prior event sequence. Why are there many instances in which chambers take the lead in the first place and overcome the fierce collective action constraints imposed on them by the threshold character of the EWS? Do chambers become first movers because their interests are crucially at stake? It may be the case that a strategic element adds to this: If parliaments can anticipate that being a first mover might cause peers to follow them, this should significantly mitigate collective action problems, and we should in fact expect to see many cases where lively interactions take place. Future research should therefore look more closely at these strategic considerations of first movers vis-a-vis myopic interest-based explanations.

Up to now, only two cases have been observed where the threshold for a collective veto was reached. This led first scholars to diagnose an inefficency of the EWS and to suggest a redirection of national parliaments' ressources to more salient matters like European economic governance (de Wilde and Raunio 2015). However, the problem is of a general nature. Do national parliaments have the general ability to act as a collective entity? Our results suggest they do. It may be the case that until now, the incentives for parliaments to participate in the EWS have been rather low since the payoffs were uncertain and the system was not built around classic parliamentary functions. However, the most recent political developments could lead to a reinforcement of the usage of the EWS. The latest deal of the British government with the EU opens the possibility to introduce a "red card" that could block EU legislative proposals by a 55 percent majority of national parliaments. If the yellow card system has not proved strong enough, the proposed developments will might impose strong incentives for parliaments to engage in the EWS and to act collectively.

Methodologically, we employed a relational event model. This is a combination of an inferential network model and survival analysis, and it has become popular across the social sciences in recent years although it has not been widely applied in political science yet. We also suggested and applied a permutation approach that allows us to distinguish between competing causal effects by reasoning about temporal counterfactuals. Future methodological research should assess in how far relational event models are applicable to political science questions, examine and compare estimation strategies for REMs, and apply our permutation approach to other situations where social influence and selection need to be disentangled.

More generally, our research contributes to ongoing work on the role of homophily in political network dynamics (Gerber, Henry and Lubell 2013). We contribute to this discussion by describing an institutional arrangement in which homophily between collective actors drives the behavior of the system. Our contribution suggests that homophily may come in very different flavors like coordination, imitation, shared third-party influences, or merely identical action due to shared attributes. Future research needs to pay attention to the exact causal mechanisms that are at work in a given context. Conceptually, disentangling these mechanisms will be an important contribution. Similar conceptual and causal problems plague the literature on policy diffusion (Maggetti and Gilardi 2016; Gilardi 2010), and researchers who deal with policy diffusion and those who deal with political networks should recognize the potential for diffusion among these two branches of literature (for an interesting first attempt, see Desmarais, Harden and Boehmke 2015).

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A Supplementary Information online

A.1 Model term for issue specificity

Issue specificity is included in the model as a *target node-match* term,

$$h^t_{\text{tnm}}(i,j) = \sum_{e \in E^t} w_t(i_e, j_e)[j_e \neq j][i_e = i][x_{j_e} = x_j], \tag{5}$$

where x_j indicates the Directorate General of the Commission that proposed law j.

A.2 Model term for chamber activity

Chamber activity is included in the model as a *sender activity term*,

$$h^t_{\text{sact}}(i,j) = \sum_{e \in E^t} w_t(i_e, j_e)[i_e = i]. \tag{6}$$

A.3 Timing of vetoes

Figure 5 shows the timing of the individual vetoes for 116 proposals. Five proposals were excluded from the diagram and the analysis as they include nine vetoes that were made over 200 days before the deadline. This seems to be an error in the IPEX database.

A.4 Pairwise correlation matrix

Table 2 reports the pairwise correlations between all continuous model terms.

A.5 Summary statistics

Table 3 reports summary statistics for the variables used in the analysis.

A.6 Comparison with a two-mode ERGM

As a robustness check, Table 4 reports the results of a two-mode exponential random graph model (ERGM) with the same data. The ERGM (Cranmer and Desmarais 2011) is a cross-sectional model, which cannot discriminate between selection and influence. To see this more clearly, consider a temporal sequence of five vetoes where the third actor in the sequence not only considers the two prior events in his or her homophily calculation but also the two posterior events. This may lead to a significant and positive homophily effect, but it is clearly not due to imitation of previous actions of others. It is not possible in an ERGM framework to distinguish between prior and posterior events or any sequence information at all. Therefore this ERGM robustness check can indicate for what variables a homophily effect is present, but it does not tell us whether it is a homophily effect due to selection or due to social influence.

This robustness check is still useful because it is a more established method than the relational event models reported in the main part of the article. If the variables that have a significant result in the REM also have a significant effect in the ERGM, this increases our confidence that the results are valid irrespective of the technique being employed. Table 4 indeed reports very similar results as the REM. If there are any deviations between the REM and the ERGM, then these are cases where the ERGM coefficient is more significant, due to the problem described in the previous paragraph.

The ERGM contains an additional model term for "chamber clustering," which introduces a baseline for the homophily effects. This is not necessary in the REM because this is taken care of at the estimation stage in the conditional logit model. Moreover, some model terms slightly differ. For example, the closest equivalent of the "chamber activity" term in the REM is a geometrically weighted degree term for the first mode ("GWDegree (first mode)"). The ERGM reports a model specification that is as close as possible to the REM.

The reduced model in the second column removes some of the model terms that are substantially unimportant for the results, which improves the Bayesian Information Criterion (BIC) somewhat.

Figure 6 reports the goodness of fit statistics of the two-mode ERGM. The sufficient statistics capture the endogenous properties of the network in an adequate way. This follows from the fact that the black line (the observed network statistic) and the boxplots (the same statistic for 1,000 simulated networks from the estimated model) are nearly identical.

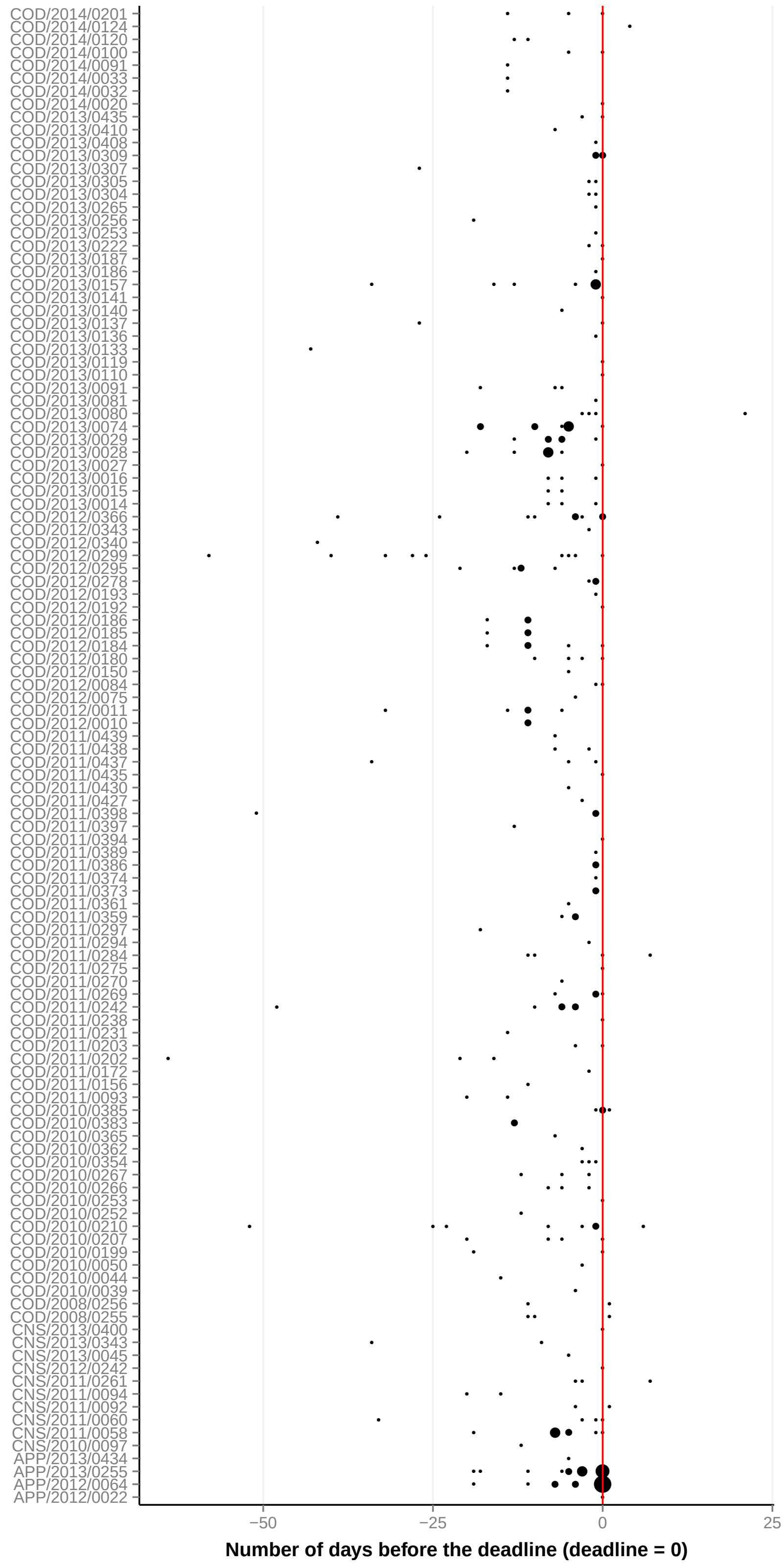

Figure 5: Timing of vetoes. Dots indicate how many days before the deadline chambers issued a veto. Dot size is proportional to the number of events occurring on the same day.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1: Ideological homophily													
2: EU accession homophily	0.45												
3: EU location homophily	0.39	0.51											
4: Institutional homophily	0.41	0.52	0.35										
5: Capacity	0.02	0.02	0.03	0.11									
6: Control	0.07	0.00	0.07	0.06	−0.10								
7: EU opposition	0.07	0.11	−0.03	0.17	0.03	0.09							
8: Abs. diff. in GDP	0.41	0.28	0.27	0.43	−0.03	0.01	0.01						
9: Abs. diff. in logged population	0.37	0.48	0.33	0.54	0.03	−0.02	0.11	0.75					
10: Constant GDP per capita	−0.10	−0.05	−0.06	0.00	0.01	−0.34	0.06	−0.08	−0.04				
11: Population (log)	0.01	0.04	0.07	0.01	0.62	0.05	−0.04	−0.07	−0.05	−0.27			
12: Mean import from indirect ties	0.28	0.53	0.50	0.61	0.22	0.00	0.15	0.22	0.39	0.05	0.17		
13: Chamber activity	−0.04	−0.08	−0.09	−0.07	0.04	0.07	−0.15	−0.08	−0.08	0.26	−0.08	−0.09	
14: Issue specificity	−0.03	−0.03	−0.05	−0.05	0.01	0.06	−0.08	−0.05	−0.05	0.11	−0.07	−0.06	0.41

Table 2: Pairwise correlation matrix

variable	type	level	nobs	mean/ percentage	sd	min	max	operationalization
Second chamber	constant	chamber	38	31.60%				0/1 dummy for second chambers
Capacity	constant	chamber	38	0.39	0.31	0.09	1.20	number of seats per chamber
Control	constant	chamber	38	1.71	0.58	0.33	2.67	level of control rights (Winzen 2012)
EU opposition	time-varying[a]	chamber	38	0.26	0.49	0.00	1.44	EU negative mentions (Volkens et al. 2013)
GDP per capita	time-varying (year)[b]	country	28	27.00	17.00	5.00	80.00	constant 2005 USDollar
Population	time-varying (year)[b]	country	28	18109.00	23316.00	423.00	80652.00	total population
Salience	constant	proposal	121	9.90%				0/1 dummy for proposals on agriculture
Party family	time-varying[a]	chamber	38					Party family of ruling party (Volkens et al. 2013)
Social democratic parties			9	23.70%				
Liberal parties			5	13.20%				
Christian democratic parties			6	15.80%				
Conservative parties			15	39.50%				
Ethnic and regional parties			1	2.60%				
EU entry round	constant	country	28					Year country joined the EU
1957			6	21.40%				
1973			3	10.70%				
1981			1	3.60%				
1986			2	7.10%				
1995			3	10.70%				
2004			10	35.70%				
2007			2	7.10%				
2013			1	3.60%				
Political system	constant	country	28					Armingeon et al. (2010)
Parliamentary system			15	53.60%				
Presidential system			3	10.70%				
Semi-presidential			10	35.70%				

[a] EU opposition and party family are time-varying variables. Values reported in this table represent average values of the ruling party with the longest ruling period between 2010-2014 for each chamber. [b] GDP per capita and population means are reported here for the year 2013.

Table 3: Summary statistics of control variables

	Full model	Reduced model
Edges	$-6.54\ (1.64)^{***}$	$-5.07\ (0.53)^{***}$
Primary and secondary hypotheses:		
Chamber clustering	$0.21\ (0.03)^{***}$	$0.21\ (0.02)^{***}$
Ideological homophily	$1.13\ (0.23)^{***}$	$1.05\ (0.21)^{***}$
EU accession homophily	$1.06\ (0.26)^{***}$	$0.96\ (0.24)^{***}$
EU location homophily	$0.11\ (0.35)$	$0.22\ (0.29)$
Institutional homophily	$0.87\ (0.21)^{***}$	$0.72\ (0.20)^{***}$
Control variables:		
Second chamber	$-0.08\ (0.19)$	
Capacity	$-0.32\ (0.41)$	
Control	$-0.15\ (0.21)$	
EU opposition	$-0.05\ (0.18)$	
Abs. diff. in GDP	$-4.79\ (7.21)$	
Abs. diff. in logged population	$-0.13\ (0.08)$	
Constant GDP per capita	$27.89\ (15.74)^{\cdot}$	$13.45\ (9.46)$
Population (log)	$0.14\ (0.12)$	
Mean trade with indirect ties	$0.00\ (0.00)$	
GWDegree (first mode)	$-1.05\ (0.60)^{\cdot}$	$-1.02\ (0.55)^{\cdot}$
Proposal clustering	$0.07\ (0.01)^{***}$	$0.07\ (0.01)^{***}$
Share of indirect ties with same DG	$2.95\ (0.37)^{***}$	$2.85\ (0.35)^{***}$
DG Agriculture	$0.32\ (0.18)^{\cdot}$	$0.29\ (0.16)^{\cdot}$
GWDegree (second mode)	$-2.63\ (0.26)^{***}$	$-2.53\ (0.26)^{***}$
Party family (baseline Social-Democratic):		
Socialist	$0.04\ (0.48)$	$0.21\ (0.45)$
Liberal parties	$0.34\ (0.29)$	$0.37\ (0.26)$
Christian democratic parties	$0.12\ (0.29)$	$0.09\ (0.25)$
Conservative parties	$0.04\ (0.24)$	$-0.08\ (0.21)$
Ethnic and regional parties	$-0.94\ (0.67)$	$-0.75\ (0.69)$
Entry round (baseline 1957):		
1973	$0.29\ (0.30)$	$0.19\ (0.24)$
1981	$0.48\ (0.85)$	$0.21\ (0.59)$
1986	$0.62\ (0.52)$	$0.45\ (0.34)$
1995	$0.04\ (0.35)$	$-0.15\ (0.31)$
2004	$0.65\ (0.55)$	$-0.00\ (0.30)$
2007 and 2013	$0.87\ (0.75)$	$0.16\ (0.49)$
Political system (baseline Parliamentary):		
Presidential	$0.31\ (0.31)$	$0.41\ (0.25)$
Semi-presidential	$0.46\ (0.26)^{\cdot}$	$0.48\ (0.23)^{*}$
AIC	2271.75	2264.15
BIC	2542.93	2469.59
Log Likelihood	−1102.87	−1107.08

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$, $^{\cdot}p < 0.1$

Table 4: Bipartite ERGM of the two-mode veto network

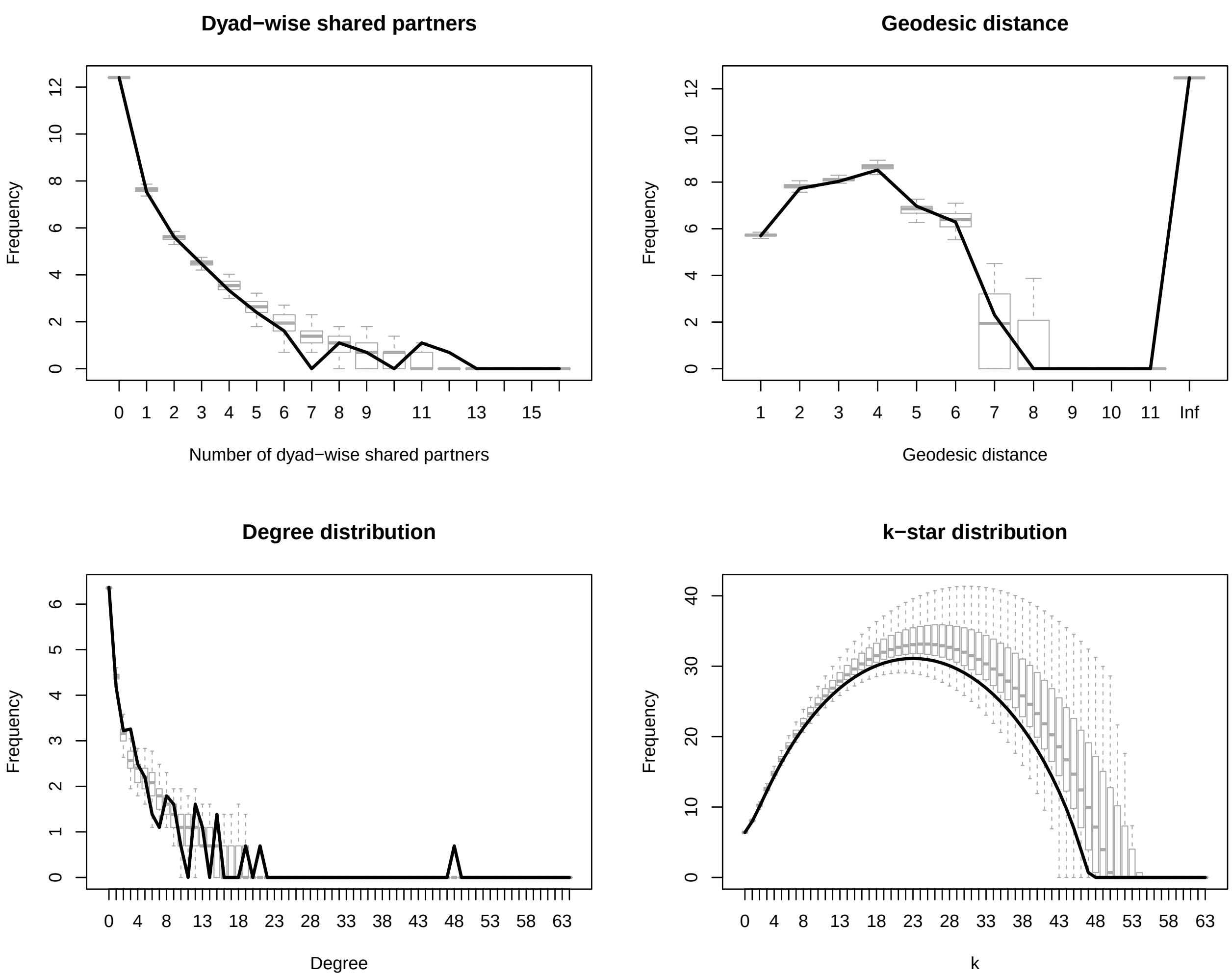

Figure 6: Goodness-of-fit assessment for the full model. The y-axis is log-transformed to display the nuances more clearly.