How MPs ties to Interest Groups Influence Legislative Co-sponsorship

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Abstract: This article investigates whether linkages between members of parliament (MPs) and interest groups influence MPs' agenda-setting behavior. Empirically, it focuses on MP-group ties and MPs' co-sponsoring of legislative proposals in the Swiss parliament. The analysis is based on statistical models for network data (ERGM), and controls for traditional explanatory variables of co-sponsorship behavior, such as MPs' party membership, legislative committee assignments, electoral districts, seniority in Parliament, and gender. On top of this, MP-group ties matter. On the one hand, MPs with ties to similar interest groups tend to mutually co-sponsor their proposals. On the other hand, MPs with ties to groups active in a specific policy domain are more likely to co-sponsor proposals in that domain. These findings have implications for the study of groups' lobbying, legislative behavior and representative democracy.
1. Introduction

This study investigates whether the interactions between elected members of Parliament (MPs) and interest groups have an impact on MPs' legislative co-sponsorship behavior. It assesses whether MPs who receive policy-relevant information from different types of interest groups work together in formulating and introducing legislative proposals on specific policy issues. In other words, the study focuses on whether interest groups, which have established relationships with MPs, have an influence on their legislative agenda-setting activities. This question is relevant and innovative for the literature on legislative behavior and networks, as well as for the literature on the policy influence of interest groups. This study brings these separate streams of the literature together while providing a first empirical assessment.

Co-sponsorship signals peer support. Peer support increases the capacity of MPs to pursue their strategic goals, such as to increase their parliamentary power, to secure their re-election and to promote their policy preferences (Fenno 1973; Kirkland 2001: 887; Bratton and Rouse, 2011). Political attention is a scarce resource and legislative agenda-setting represents a non-trivial challenge for MPs. MPs need to invest resources to recruit co-sponsors for their own policy proposals and, thereby, to increase the likelihood of attracting partisan, media and citizen attention and, eventually, support for their policy agenda. Accordingly, several studies have focused on MPs co-sponsorship behavior and have demonstrated that Representatives of the US Congress who share the same political ideology, who are members of the same legislative committee, who are elected in neighboring districts and who have similarities in (a minority status of) gender and race are more likely to co-sponsors each other's legislative proposals (Bratton and Rouse 2011:446). Partisan cohesion, policy expertise and electoral responsiveness to local voters are also key determinants of bills co-sponsorship in Argentina and Chile (Alemán and Calvo 2013:371-372). At the European level, MPs representing the same member state are likely to engage in co-sponsorship (Baller 2017). However, previous scholarship did not look
at the potential impact of interest groups on legislative co-sponsorship. The added-value of the present study is thus to test whether MPs-groups ties have an impact on co-sponsoring behavior, beyond the classical homophily relationships already identified among co-sponsors of legislative proposals.

Co-sponsorship has received attention in the field of legislative studies, but this paper argues that the phenomenon is also relevant for interest groups scholars. Indeed, both MPs and groups try to influence policy-making in order to realize the policy preferences of their respective constituencies. MP-group linkages can be conceptualized as exchange relationships. Groups provide technical expertise about policy issues, as well as strategic information about the policy position of their constituency. As a counterpart, MPs grant groups a privileged access to the parliamentary venue, or even commit themselves to actively support policy proposals promoted by groups (Berkhout 2013). Studies on various countries corroborate the importance of ties between interest groups and elected representatives (Rasmussen and Landeboom, 2013; Wonka, 2016; Eichenberger and Mach, 2017). However, previous studies have not scrutinized whether the linkages established between groups and MPs also have an impact on legislative co-sponsoring. This study fills in this research gap.

The potential influence of interest groups on MPs' co-sponsorship behavior has in addition a normative dimension. This is related to the broader question of which interests MPs do represent in parliament. If MPs promote the policy agenda of interest groups instead of representing the preferences of their electoral constituency, then the discrepancy between electoral constituency and group preferences could be a concern for representative democracy (Giger and Klüver 2016). The question addressed in this study is thus also relevant for assessing the quality of political representation.

The article is structured as follows. The theoretical section discusses the existing work on legislative co-sponsorship and introduces the research hypotheses. The methodological
section describes the Swiss parliament as an empirical setting and explains how our data capture co-sponsorship relations, MP-group ties and further variables. The results section focuses on two major empirical findings: First, MPs with ties to similar interest groups co-sponsor their respective legislative proposals. Second, MPs interacting with interest groups from a specific policy domain are more likely to co-sponsor legislative proposals in this policy domain, as compared to MPs not interacting with groups from the respective domain. Finally, the concluding section put this study into a broader perspective and identifies the next research steps.

2. Theoretical framework
Whereas some scholars consider legislative co-sponsorship as a form of "cheap talk" since most bills do not pass and co-sponsoring a policy proposal is a low-cost action for MPs (Kessler and Krehbiel 1996), others argue that legislative co-sponsorship accurately reflects the network support between elected representatives (Fowler 2006:458). Bratton and Rouse (2011:423) even claim that focusing on the co-sponsorship stage of the policy-making process is highly relevant to capture how MPs "introduce and endorse policy proposals that help them garner electoral support from relevant constituencies, serve to advance their political career, and allow them to translate their own policy interests into outcomes" (2011:423).

2.1. Homophily between MPs
The literature that aims at explaining legislative co-sponsorship has strongly focused on different types of homophily hypotheses. Homophily refers to the phenomenon observed in many different types of networks according to which actors who are similar with respect to some characteristic tend to form ties (McPherson, Smith-Lovin and Cook, 2001). Theoretical models based on homophily relations assume that MPs who are similar to each other are more
likely to work together to influence the parliamentary policy agenda and, in particular, to co-sponsor legislative proposals (Bratton and Rouse, 2011: 428-430; Alemán and Calvo, 2013: 359-363, Baller 2017: 4-5). Briatte (2016; on-line Appendix) summarizes the findings as follows: "Legislators are more prone to co-sponsor the work of other legislators when they share some characteristics, such as ethnicity (Bratton and Rouse, 2011), gender (Clark and Caro, 2013), constituency (Alemán and Calvo, 2013, Baller 2017) or committee membership (Kirkland and Gross, 2012, Baller 2017: 5-6)." Various types of homophily were assessed in existing research on legislative co-sponsorship networks.

First, MPs from the same party family are more likely to co-sponsor a policy proposal than MPs from different party families. MPs from the same party or party family have similar preferences about which policy priorities should be addressed by the parliament and, furthermore, about which legislative proposals are viable solutions to these policy problems. In addition, co-sponsoring the same bills allow them to showcase party cohesion about the policy agenda and to increase their "issue ownership" (Petrocik, 1996). A co-sponsorship strategy eventually contributes to achieve the policy-seeking and office-seeking goals of political parties (Strøm, 1990).

Second, MPs who are members of the same legislative committee are more likely to co-sponsor a policy proposal than MPs not seating in the same committee (Kirkland and Gross, 2012). Serving in the same legislative committee offers many opportunities to interact personally, to share policy information, to put arguments forwards and to negotiate acceptable policy solutions. Membership in permanent legislative committee obviously fosters the specialization of MPs (Gillian and Krehbiel 1987; Searing 1987; Strom 1998), who acquires a policy expertise that also grant them power and prestige among party peers and media. Repeated meetings constitute a favorable context for legislative co-sponsorship between committee members.
Third, it has been shown that the likelihood of co-sponsorship is higher between MPs who are competing in the same electoral district than between MPs living in different electoral jurisdictions. The rationale for this hypothesis is also quite obvious. MPs competing in the same district have a strong incentive to defend the policy interest of their local constituencies, in order to be reelected (Alemán and Calvo, 2013). For instance, if a distributive policy aims at delivering benefits to their region of origin, through financial subsidies, the building of new infrastructures or service delivery, MPs from this district will probably co-sponsor this legislative proposal. Such an agenda-setting behavior is highly attractive for MPs who want to claim the effective representation of their local electoral constituency.

Fourth, MPs are more likely to mutually co-sponsor their respective policy proposals than to co-sponsor a policy proposal formulated by a MP who does not return the favor. Reciprocity is one of the most basic phenomena in social networks of any type and an important component of social capital and the development of trust (Burt, 2005). MPs’ tendency to reciprocate is well assessed in the US congress, in both Chambers, and over the years (Fowler 2006:463-464).

2.2. Ties between MPs and interest groups

Previous studies focusing on MPs agenda-setting behavior have suggested the idea that ties between MPs and interest groups increase the likelihood of legislative co-sponsorship, but have not tested that idea empirically. For example, Louwerse and Otjes (2015: 479) claim that external agents such as lobbyists have an impact on the co-sponsoring attitudes of MPs working on the same policy area. Other authors also speculate that policy subnetworks at the issue level, including interest groups, might influence MP agenda-setting activities. Bratton and Rouse (2011: 447-448) suggest that a "small world" dynamic underlies informal networks collaboration, and Fowler (2006) insists on the issue connectedness of MPs (2006:472). Our
arguments below are based on this idea, which was developed originally by David Truman in *The Governmental Process* (1951: 345) and according to which informal legislative groups of MPs and interest groups representatives facilitate the circulation of trustworthy information, the mitigation of gridlocks and the negotiation of legislative proposals (see Fiellin 1962: 86; Ringe et al. 2016).

Interest groups try to influence policy-making but, by definition, do not compete for political office. Consequently, they cannot make binding political decisions and must cooperate with MPs for being able to influence legislative agenda-setting. One lobbying strategy consists in delivering policy information and political intelligence to MPs. On the other side, elected MPs hold a formal decision power, but they occasionally interact with interest groups in order to increase their information resources (Pfeffer and Salancik 2003; Berkhout 2013). The repeated interactions between groups and MPs lead to the development of informal relationships.

By building ties with interest groups, MPs are for instance able to gather insiders' information about the very nature of a policy problem to be solved by policy-makers, the expected effectiveness of a potential policy solution and its acceptability by groups' constituency. Previous scholarship on groups' lobbying has demonstrated that, in the US congress, the information transmitted by groups to MPs predominantly concern (problems with) the feasibility and implementation of public policies (Baumgartner et al. 2009:132-133). Yet, groups do not only deliver technical policy expertise to MPs, who can strategically use this policy information for their own agenda-setting activities. When groups lobby MPs, they also provide political intelligence about the policy-making process itself, such as procedural advice to monitor the strategic move of other MPs or interest groups (Hall and Deardorff, 2006:75). This political intelligence is a key asset for resource-constrained MPs and is thus likely to influence their co-sponsorship behavior.
Assuming that interest groups are key informants for MPs, MPs related to similar groups will be exposed to similar pieces of information, and MP-group linkages will stimulate informal cooperation among MPs as well as the co-sponsoring of legislative proposals within and across parties. Consequently, we expect that a relational network forms between MPs who are related to similar interest groups, but who do not necessarily share the same partisan ideology, policy opinions, electoral incentives, or other characteristics.

Interest groups can be similar with respect to two characteristics: First, they can be of the same type, that is, business groups (e.g. trade organizations, occupational groups or peak-level associations), citizen groups (e.g. public interest organizations, identity or religious associations) or institutional groups (e.g. associations of lower-level entities such as cantons or municipalities). Second, they can be similar in that they are specialized in the same policy domains. We formulate two hypotheses to address both dimensions. Hypothesis 1 postulates that two MPs with ties to similar interest groups are more likely to mutually co-sponsor their proposals than two MPs with ties to dissimilar interest groups. Additionally, we also expect that MPs are particularly active in co-sponsoring proposals which deal with issues from policy domains that correspond to their interest group profile. MPs with strong ties to interest groups form a specific policy domain are expected to benefit from privileged information about the group’s policy portfolio, and they will thus be proactive in putting related issues on the parliamentary agenda. Hypothesis 2 postulates that MPs with ties to interest groups from a given policy domain are more likely to co-sponsor policy proposals in that policy domain than MPs without such ties.

3. Case selection, data and method
The empirical study explains the legislative co-sponsorship behavior of MPs in Switzerland. Previous scholarship on co-sponsorship has focused either on presidential systems like the
United States (Kessler and Krebhiel 1996), Argentina and Chile (Alemán and Calvo 2013), or on parliamentary systems like the Netherlands (Louwerse and Otjes 2015) and Finland (Pajala et al. 2016) to test the homophily hypotheses (i.e. about party, policy specialization, electoral constituency and reciprocity) discussed in the previous section. The present study renews this perspective by analyzing legislative co-sponsorship in a different political system.

3.1. The Swiss Parliament

The Swiss case is particularly interesting to study for several reasons. First, there is no classical government-opposition dynamic in the Swiss “assembly-independent system” (Shugart and Carey 1992: 26; Schwarz et al. 2010). A vote of confidence does not exist, and the four parties forming the Government are not dependent on the support of all their MPs to succeed in Parliament. Thus, the Swiss Government system tends towards a separation of power system, in which MPs are less constrained than in traditional parliamentary systems, i.e. they are not necessarily expected to align to the party line or to rubber stamp decisions made at the executive level. Other traditional hypotheses besides the party homophily hypothesis should thus be important in the Swiss case.

Second, co-sponsorship is an interesting phenomenon to study in Switzerland, given that MPs give the impetus to about a fourth of legislative processes (whereas government initiates about half of the processes, Sciarini et al 2002).

Third, in a comparative perspective, Switzerland displays a very high share of parliamentary initiatives that are co-sponsored by other legislators (Briatte, 2016; on-line Appendix).

Finally, the Swiss Parliament is also an interesting case to look at due to its ‘militia character’. For decades, it was basically "composed of amateurs who combine their professional activities with their parliamentary duties" (Kriesi 2001: 60). The lack of MP’s resources
resulting from this "militia" system increases the MPs dependence on interest groups (Bailer 2011; Bütikofer 2013; Kriesi & Trechsel 2008; Z'ggragen & Linder 2004). In fact, the information resources that Swiss MPs have at their disposal are limited in comparative perspective (Schnapp & Harfst 2005; Vatter 2014).

3.2. Data and indicators
The dependent variable of this analysis is the network of co-sponsorship among MPs in the Swiss lower chamber, the National Council. In order to construct this network, we collected all legislative proposals submitted by MPs of the lower chamber between October 2011 and November 2015, covering thus one entire legislative period. MPs in Switzerland have different types of parliamentary proposals at their disposal. First, parliamentary initiatives represent the strongest instrument available to MPs, as these proposals allow them to launch a legislative process and draft a bill themselves. Second, motions allow the parliament to demand the government to take legislative action. Third, postulates require the government to deliver a report on a given issue. MPs can submit any of these parliamentary proposals in their name, and the parliamentary plenum decides on whether to accept or not a given parliamentary proposal. We then coded the co-signatures of other MPs on a given proposal to construct our network among MPs. Whenever MP A co-signed at least one proposal of MP B, we code a tie of 1 between MP A and MP B. In reality, the network of co-sponsorship is a valued network, as MP A can sign only one or many proposals of MP B. Our network thus corresponds to a dichotomized network with a threshold of 1, for a minimum of 1 signature.

Our main independent variables are coded as follows:

Ties to interest groups: Swiss MPs are requested to declare their ties (i.e. membership, seat in a group’s board) with interest groups. The resulting official “register of interests” is a rich source of observational data that allows matching individual MPs with specific interest
groups. Gava et al. (2016) showed that the average number of interest ties per MP has more than doubled in the last decade, from 3.5 in 2000 to 7.6 in 2011. Behind these values, there is considerable heterogeneity across individual MPs. Only 14 MPs did not declare any kind of ties to groups, whereas, at the other extreme, a single MP dominated the ranking of interest affiliations with ties to 51 different groups. The Swiss parliament offers thus an ideal setting for investigating the relationships between interest groups and elected MPs, as well as the potential influence of groups' advocacy on legislative co-sponsorship.

Types of interest groups: We capture the interest groups' diversity by means of seven subcategories: (1) Business groups (e.g. Swiss Bankers' Association); (2) professional groups formed by individuals who share the same occupation (e.g. Swiss Medical Association); (3) Unions; (4) Identity groups that primarily seek benefits for their own members or restrained constituencies (e.g. Swiss Automobile Club); (5) Public interest groups that focus on the attainment and protection of common goods, as for example environmental or humanitarian organizations; (6) religious groups including spiritual organizations, such as churches or other associations focused on the promotion or support of religious communities (e.g. Swiss Evangelical Alliance); and (7) institutional groups representing cantons or municipalities. We aggregate the first two subcategories into a "Business groups" category, the subcategories 3 to 6 constitute together the "Citizen groups" category, and the subcategory 7 (i.e., “Institutional groups”) constitutes its own category. For each MP, the number of ties to interest groups of each category was added up. In the model, the absolute difference between the number of respective ties is used to represent interest group profile similarity (i.e. the smaller the difference, the more similar two MPs’ profiles).

Policy domains: In order to identify policy domains, we have relied on the Federal Department (i.e., Ministry) in charge of the parliamentary intervention. This information is provided by the Parliamentary Services. We have aggregated the policy domains covered by
the seven Federal Departments into four major categories, namely economic issues (e.g. macro-
economy, taxes, labor or finances), social issues (e.g. health, education, environment), law and
order (e.g. crimes, individual rights, political institutions) and foreign affairs issues (e.g.
relations to the European Union and international organizations, defense). Again, as with
interest group types, the number of ties to interest groups of each category was added up for
each MP. In the model, the absolute difference between the number of respective ties is used to
represent interest group profile similarity.

Variables in the basic models, which do not refer to our core hypotheses but correspond
to the set of more established hypotheses in the respective literature on homophily relationships,
are operationalized as follows. First, party homophily is assessed through the parliamentary
group a MP belongs to, and introduced into the model as a nodematch term (assessing whether
there is a match between MPs belonging to the same parliamentary group). Second committee
homophily is assessed with a nodematch term, checking whether MPs sitting in the same
legislative committee tend to co-sponsor their proposals. Third, canton homophily is also
assessed through a nodematch term, testing if there is a match between MPs from the same
canton. Fourth, reciprocity is included in the models as an endogenous network parameter,
assessing the degree to which co-sponsorship ties from MP A to MP B do coexist with co-
sponsorship ties from MP B to MP A. Fifth, we also include a nodematch term to test for gender
homophily, as an additional control (Clark and Caro, 2013). Sixth, a further additional control
variable is represented by an MP’s seniority in parliament. This variable is assessed as the
number of months a MP has been a member of parliament until the fall session October 2015.
An indegree term then assesses whether legislative proposals by more senior MPs get signed
more than proposals by more junior MPs. Finally, the number of proposals simply count the
number of proposals a MP has deposited since in parliament, and a respective indegree
parameter assesses whether MPs with higher numbers of proposals get more signatures than
MPs with less proposals. It controls for the fact that MPs with a higher number of proposals have a higher probability to be co-sponsored (at least once) by any other MP.

Hypotheses are tested based on two types of parameters, for three types of interest groups (business, citizen, institutional), as well as four domains of interest groups (economic, law & order, social, foreign policy), respectively. A homophily term assesses whether the similarity of MPs in terms of the number of ties to interest groups of a given type or from a given policy domain lead MPs to mutually co-sponsor their proposals. This term is important for testing hypothesis 1. The out-degree parameter assesses whether the number of ties to interest groups of a given type or from a given policy domain is positively associated with the number of proposals that a MP co-sponsors. This term is important for the test of hypothesis 2, but also serves as a control variable in the homophily models. Finally, the in-degree parameter assesses whether MPs with a higher number of ties to interest groups of a given type or from a given policy domain tend to attract more co-sponsors for their proposals. This term is used as a control variable only.

### 3.3. Exponential Random Graph Models

We test our hypotheses by estimating Exponential Random Graph Models (Lusher et al. 2013; Cranmer et al. 2017). ERGMs allow for statistical inference on network data, which by definition are non-independent. Non-independency among observations in network data means that the probability of a co-sponsorship tie between two MPs might depend upon the structural properties of the network in which the two MPs are embedded. Standard regression models are unable to take this dependency into account and would erroneously attribute explanatory power to exogenous variables (Cranmer and Desmarais 2011; Lusher et al. 2013). Given the dependency among observations, error terms would be correlated across observations, standard errors would be too small, and p-values for exogenous variables too optimistic.
In order to avoid the assumption of relational independence, ERGMs model the probability of observing a given configuration of the network, as compared to all other possible network configurations with the same number of nodes and network density (Cranmer and Desmarais 2011). The structure of the network is modeled based on actor-level variables (in- and outdegree parameters in our models), dyadic variables (homophily parameters in our models), and endogenous network structures (reciprocity parameter in our models). The relation between the probability of a network \( m \) and the network statistics in \( \Gamma \) can be expressed by the following formula, where \( \Theta \) is the vector of \( k \) parameters that describe the dependence of \( P(Y_m) \) on the network statistics in \( \Gamma \) (Cranmer and Desmarais 2011):

\[
P(Y_m) = \frac{\exp(-\sum_{j=1}^{k} \Gamma_{mj} \theta_j)}{\sum_{m=1}^{k} \exp(-\sum_{j=1}^{k} \Gamma_{mj} \theta_j)}
\]

As represented in this formula, ERGMs calculate the probability of observing the given network configuration, as compared to all other network configurations that could potentially have been observed given the network size and density. ERGMs integrate an exponential family form log-likelihood function. Due to the very high number of possible network configurations, computing the exact maximum likelihood is however computationally too demanding (Cranmer and Desmarais 2011). Therefore, we estimate ERGMs using Markov Chain Monte Carlo Maximum Likelihood (MCMC-MLE), which approximates the exact likelihood by relying on a sample from the range of possible networks to estimate the parameters (Cranmer and Desmarais 2011). In a given step, MCMC-MLE proceeds by approximating the sum in the denominator of the likelihood function based on a series of networks sampled from the distribution parameterized with those parameters that maximized the likelihood using the previous sample of networks. This iterative optimization proceeds until the value of the approximate likelihood function no longer changes, that is, when the differences between the sufficient statistics of the observed network and the average of the sufficient statistics in the
sample of simulated networks are no longer significant (p greater than 0.05) (Cranmer and Desmarais 2011).

4. Analysis

In the legislative period 2011-2015, the 226\textsuperscript{1} Swiss MPs handed in a total of 2108 legislative proposals (with a minimum of zero proposals and a maximum of 49 proposals). On average, a MP handed in about 9.5 interventions during this period. An average proposal has about 18 co-sponsors.

Table 1 presents results for the basic model in the second column. The model in the third column allows assessing one aspect of hypothesis 1. It tests whether MPs with ties to similar types of interest groups (business, citizen, institutional) tend to co-sponsor their proposals. The basic model includes all variables which represent the various homophily hypotheses well established in the respective literature, as well as further controls. Adding to the basic model, the interest group type model includes in- and out-degree parameters for each of the three types of groups, as well as a group type homophily parameter. As explained in the data part, the in-degree parameter assesses whether MPs with higher values with respect to a given variable (in this case, the number of ties to interest groups of a given type) tend to attract more co-sponsors for their proposals, the out-degree parameter assesses whether the number of ties to a given type of interest group is associated with the number of proposals that MP co-sponsors. The homophily term assesses whether similarity in terms of the number of ties to interest groups of a given type lead MPs to mutually co-sponsor their proposals.

First, results from the basic model confirm the traditional hypotheses of legislative co-sponsorship. The significantly positive reciprocity parameter shows that – independently of other factors – MPs tend to co-sponsor the proposals of other MPs who also co-sponsor their

\textsuperscript{1} The Lower Chamber contains 200 MPs, and 26 MPs replaced others during the legislative period. 5 MPs were excluded from our analyses because of missing data on their interest group relations.
proposals. An even slightly stronger effect can be attributed to homophily between parliamentary groups. Not surprisingly, MPs from the same group tend to co-sponsor their proposals. Also cantonal homophily appears as an important predictor for co-sponsorship among Swiss MPs, as MPs from the same electoral constituency (canton) tend to co-sponsor their proposals. Committee membership is another important factor, as MPs sitting in the same legislative committee co-sponsor their proposals at higher rates than MPs that do not sit in the same committee. A last – and weak, but still significant – homophily effect can be observed for gender: MPs of the same gender tend to co-sponsor their proposals, independently of other factors. Two in-degree effects are included in the basic model: The significantly negative seniority parameter indicates that the longer an MP sits in parliament, the less co-sponsors (s)he gets on her or his proposals. Also, the model controls for the number of proposals, as MPs with a higher number of proposals have a higher probability to be co-sponsored (at least once) by any other MP. Finally, the edges parameter controls for the density of the networks.²

² In the other models including additional variables and testing our hypotheses, these basic effects are robust. The strength of the effects varies slightly depending on the other variables included or if only proposals from a given policy domain (last four models in Table 2) are analyzed. The only effect that changes is the gender homophily effect which becomes negative in the model that analyzes only proposals from the “law and order” domain. On proposals in this policy domain, men tend to sign women’s proposals, and vice versa.
<table>
<thead>
<tr>
<th></th>
<th>Basic model</th>
<th>IG type homophily</th>
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<tbody>
<tr>
<td>Edges (density)</td>
<td>-2.19 (0.04)</td>
<td>-2.38 (0.04)</td>
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<tr>
<td>Reciprocity</td>
<td>1.55 (0.04)</td>
<td>1.52 (0.04)</td>
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<tr>
<td>Party homophily</td>
<td>1.64 (0.03)</td>
<td>1.66 (0.02)</td>
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<td>Canton homophily</td>
<td>0.61 (0.03)</td>
<td>0.62 (0.04)</td>
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<tr>
<td>Committee homophily</td>
<td>0.33 (0.02)</td>
<td>0.32 (0.02)</td>
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<tr>
<td>Gender homophily</td>
<td>0.07 (0.02)</td>
<td>0.10 (0.02)</td>
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<td>Seniority (indegree)</td>
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<td>-0.01 (0.00)</td>
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<td>0.02 (0.00)</td>
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<td>Business IG outdegree</td>
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<td>Business IG indegree</td>
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<td>Citizen IG indegree</td>
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<td>Institutional IG homophily</td>
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BIC 46487 45975

Values in bold indicate significant parameters (p-value of 0.05 or lower).
Hypothesis 1 claims that MPs with similar interest group profiles tend to co-sponsor their proposals as they are exposed to the same type of information from their interest group contacts. The interest group type homophily model in the second column of Table 1 allows us to assess this claim. Whereas the in-degree and out-degree parameters for all three group’s types are mainly included as control variables, the respective homophily parameters are important. They show that MPs with similar numbers of ties to business groups tend to mutually co-sponsor their proposals. The same is true for citizen groups. Affiliations to institutional groups, by contrast, do not influence the co-sponsorship behavior of MPs. Institutional groups mainly defend federalist issues, as they represent cantons and municipalities. These actors might have other, more direct access options to agenda-setting and policy-making at the national level. Still, for two out of three group’s types, there is evidence that – independently of other, more traditional factors influencing co-sponsorship – the interest group profile of MPs matters for understanding their co-sponsorship behavior.

Hypothesis 1 should also apply to another type of interest group profile – the affiliations of MPs to interest groups from specific policy domains. We distinguish between the four broad policy domains dealing with economic issues, law and order issues, social issues, and foreign policy issues. The first model in Table 2 presents the respective results. Again, the in-degree and out-degree parameters are included mainly as control variables to clearly isolate potential homophily effects. It appears that with respect to three out of four interest group’s domains, homophily plays a role. The more similar two MPs are with respect to the number of affiliations to interest groups dealing with economic, law and order, or social issues, the more they tend to co-sponsor each other’s proposals. The respective coefficient for homophily between MPs with foreign policy group’s profiles does not reach statistical significance. Thus, there is also broad evidence in support of hypothesis 1 when it comes to homophily between MPs group’s domain profiles. Overall, we can thus confirm a tendency for MPs with similar interest group profiles
– in terms of the type of group or the policy domain a group is active in – to co-sponsor their proposals. The reason behind this effect is, according to our theoretical claims, that the respective MPs are exposed to the same information, i.e. technical expertise and political intelligence. However, we have to admit that the size of the respective effects is smaller than the size of most effects in the basic model. It is about as strong as gender homophily, but clearly less strong than the homophily effects related to political parties, cantonal constituencies, and assignments to legislative committees. Still, the interest group variables contribute to the explanatory power of the model, as indicated by the AIC and BIC coefficients that are lower in both homophily models as compared to the basic model.

Hypothesis 2 goes into more detail with respect to policy domains. It claimed that MPs with strong ties to interest groups from a given policy domain co-sponsor more proposals in this specific domain, as compared to MPs without such strong ties. The four domain-specific models in Table 2 provide empirical evidence for this claim. The respective models have a different dependent variable than the models in Table 1 and the first model in Table 2. As compared to the co-sponsorship network based on all proposals, these models only analyze the co-sponsorship network based on proposals belonging to the respective policy domain. In all four models, the respective out-degree parameter is significant and positive. This means that MPs with strong affiliations to groups from the respective policy domain tend to be more active in terms of co-sponsoring proposals than MPs without strong ties to the respective groups. Furthermore, the significant and positive in-degree and homophily parameters in all four models suggest that MPs with strong ties to groups from the respective policy domain also get more co-sponsors for their proposals in this domain, and that similar profiles also influence co-sponsorship. The latter result is not surprising, given that this effect was observed even for co-sponsorship on proposals dealing with any type of thematic issue. Overall, we can thus confirm
the hypothesis 2: There is a clear relation between the interest group profile of an MP in terms of policy domains, and the domain-related co-sponsorship activity of that MP.³

³ Further models, not displayed in the tables, indicate that the results in all models are very robust if indegree and outdegree parameters are added for left and right parties to the basic model (only the significant homophily parameter for social policy groups disappears from the interest group domain homophily model). The main results related to our hypotheses are also robust to higher thresholds for co-sponsorship (minimum of 2, 5 or 10 interventions instead of 1 intervention only).
<table>
<thead>
<tr>
<th></th>
<th>IG domain homophily</th>
<th>Economic issues only</th>
<th>Law &amp; order issues only</th>
<th>Social issues only</th>
<th>Foreign pol. issues only</th>
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<tr>
<td>Edges (density)</td>
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<td>-4.12 (0.06)</td>
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<td>Committee homophily</td>
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Values in bold indicate significant parameters (p-value of 0.05 or lower).
5. Conclusion

This study confirms previous scholarship on legislative co-sponsorship by demonstrating that traditional homophily relationships among MPs are strong predictors of co-sponsoring behavior. MPs who belong to the same party family, who are seating in the same legislative committee, and who represent the same electoral district are more likely to co-sign a legislative proposal. The standard of reciprocity is met as well, since MPs tend to co-sponsor the proposals of other MPs who also support their legislative initiatives. This empirical evidence concerns the Swiss parliament and has an added-value because Switzerland is neither a presidential nor a parliamentary system. The present study improves thus the external validity of homophily models that were already tested in the US presidential system or in European parliamentary democracies.

In addition, the empirical test of the hypothesis according to which linkages between MPs and interest groups matter for legislative co-sponsorship is a major contribution to the literature. This innovative claim is supported by the ERGMs used for statistical inferences on network data: MPs with similar interest group profiles (i.e. ties to business or citizen groups) tend to co-sponsor their proposals. Furthermore, MPs who have developed privileged ties with interest groups from a specific policy domain co-sponsor more proposals in this domain, as compared to MPs without such strong ties. Both effects improve the explanation of legislative co-sponsorship, even if the size of the effect of MPs-group ties on co-sponsorship behavior should not be over-estimated.

Compared to the strong ties developed between MPs sharing fundamental similarities (i.e. strong homophily relationships such as party membership or reciprocity), linkages between MPs and groups should be interpreted as weak ties. Indeed, they bring together policy actors with diverse professional background, personal objectives, organizational incentives, but also different roles in the policy-making process and levels of access to institutional venues.
However, such bridging ties have a high value (Granovetter 1973, 1983) since they foster the exchange of non-redundant policy information between MPs and groups’ representatives, the confrontation of different points of view on a policy domain and, ultimately, the development of creative policy solutions. These policy-specific cooperation ties increase information dissemination and diversity, and facilitate the negotiation of policy compromises. As highlighted by Kirkland (2011:889), "(the) value of weak ties is a result of their novelty of information or influence. By providing access to new resources, weak ties provide something strong ties cannot. The better the resources that weak tie provides the more useful the weak tie becomes". Assuming that interest groups are key informants for MPs and provide technical information and political intelligence, MP-group linkages stimulate informal MPs cooperation and the co-sponsoring of legislative proposals.

From a normative point of view, the empirical findings of this study deliver an encouraging and optimistic message. Indeed, MPs co-sponsor legislative proposal with MPs from the same party family and electoral constituency. So doing, they endorse a delegate role and represent the policy preferences of their voters, in line with the ideal-typical view of substantive representative democracy (Miller and Stokes 1963). MPs ties to interest groups do not push elected representatives to make defection from their electoral constituency when they co-sign a legislative proposal, but they may foster the elaboration of legislative proposals that are supported across party lines and electoral districts. In other words, interest groups may play a positive role in transmitting the importance of policy issues for diverse societal stakeholders to the parliamentary venue, and to legislative committees in particular. The ERGM results suggest that this articulation work is operated by both business and citizen groups, and that no systematic bias towards sectional groups characterizes legislative co-sponsorship.

Further interesting research questions with respect to the influence of MPs’ interest group profile on their co-sponsorship activity abound. In addition to the four homophily
variables discussed here (i.e. party family, legislative committee, electoral district and reciprocity), we may also consider the interaction effects between the MPs' specialization in a policy domain, on the one hand, and their respective party affiliation and electoral district, on the other hand. For instance, MPs who are ideology close and, thus, who have similar policy positions, will probably co-sponsor one another if they specialized in the same policy domain. Specialization in a legislative committee has a decisive influence on the policy issues on which the MPs are going to work together and, at the same time, party affiliation has an impact on choosing with whom (i.e. which committees members) MPs will co-sponsor a policy proposal (Lowerses and Otjes 2015:481).

The impact of MPs' policy specialization is also highly relevant for the impact of MPs-group ties on legislative co-sponsorship. It has been shown, for the Swiss case, that MPs seating in a legislative committee hold relevant group ties. There is a topical match between MPs affiliation to groups from a specific policy domain and the substantive area of competence of the legislative committee they are a member of. For example, MPs seating in the environment, infrastructure and energy committee have formal contacts with business associations (e.g. associations representing private electricity producers, public utilities or renewable technologies), but also with environmental and consumers associations (Gava et al 2016). Furthermore, this topical congruence is the consequence of both elected MPs carrying relevant group ties into the legislative committees, and MPs being proactively recruited by interest groups once they are assigned to a specific committee (Eichenberger and Mach 2017). In sum, upcoming studies should look in depth at interaction effects between the MPs policy specialization, traditional homophily variables and MP-group ties.

Finally, it was argued here that focusing on legislative co-sponsorship is adequate to capture the strategic goals and policy-making activities of elected representatives. However, we acknowledge that explaining why MPs co-sponsor each other's bills is not the same as
explaining why co-sponsored bills are eventually accepted by the Parliament as a whole. It makes sense to investigate how and why some MPs work together to introduce policy proposals on which all the MPs will then vote (Louwerese and Otjes, 2015:476) and whether the ties between interest groups and MPs influence these parliamentary agenda-setting activities. But the next logical step should be to assess whether the composition of co-sponsorship network in general, and the MPs affiliations to interest groups in particular, might also explain the success of co-sponsored legislative proposals. Indeed, previous scholarship on whether the number and types of co-sponsors has a positive impact on bill passage delivered rather mixed evidence (see Bratton and Rouse 2011:427; Craig 2015). Integrating MPs-groups ties as additional variable in these explanatory models is a promising research avenue. This would also be relevant from a normative point of view, since one study explaining vote in Parliament makes the strong claim that MPs affiliated to business groups are more likely to deviate from the preferences of their electoral constituency than MPs with ties to citizen groups (Giger and Klüver 2016). It is thus important to further investigate whether and how MP-groups linkages have different implications for the (un)biased representation of voters during the parliamentary law-making process, from agenda-setting to the adoption of legislation.
References


Wonka, A. (2016) "German MPs and interest groups in EU multilevel policy-making: The politics of information exchange", *West European Politics (forthcoming)*.