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Speaking for the People? : Analysing the extent to which interest groups represent the opinion of the citizens and under which conditions they are more likely to do so

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Chapter 2: Group Type Bias and Opinion Representation

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Public Voices in the Heavenly Chorus?

Group Type Bias and Opinion Representation

Abstract

While strong voices in the academic literature and real-world politics regard interest groups as biased representatives of the public, we know little about the scope and consequences of such biases for democratic governance. We conduct the first cross-national comparison of group and public preferences analysing a new dataset of 50 issues in five West European countries. Despite the negative image of interest groups in politics, we find that their positions are in line with public opinion more than half the time. Moreover, while firms and business associations enjoy weaker support for their positions among citizens than public interest groups, they still enjoy the backing of a sizable share of the public. Additionally, we find no general pattern that communities with low interest group diversity are less likely to represent public opinion. Our findings have implications for democratic governance and discussions of how to conceptualise and measure biases in interest representation.

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2.1 Introduction

The issue of bias in pressure group systems remains one of the core topics in interest group research (Dür and Mateo 2013; Lowery and Gray 2016; Rasmussen and Gross 2015; Schlozman and Tierney 1986). Ever since Schattschneider's famous assertion that the heavenly chorus does not provide equal voice to all interests (1960), scholars have spent ample time investigating possible bias in the accent of interest representatives. Yet, while there is an abundant literature on bias in interest representation, there is a lack of a common benchmark for judging the representativeness of organised interests (e.g., Lowery et al. 2015; Lowery and Gray 2004; Schlozman 1984). Nevertheless a lot of empirical commentary operates with at least an implicit benchmark. Lobbyists are often criticised for representing special interests rather than the voice of the population as a whole. For instance, more than half of those asked in Germany and the UK in Transparency International's 2013 Global Corruption Barometer respond that their national governments are run by self-interested groups rather than for the benefit of the general public¹⁰.

We propose a new benchmark for assessing bias by conducting a study of opinion representation examining how closely the positions of interest groups and the public are aligned. Whereas a large literature studies ideological congruence between citizens and their representatives (e.g., Golder and Ferland 2017; Huber and Powell 1994), the alignment of public and interest group positions has not been examined in a systematic manner except in a few US studies (Claassen and Nicholson 2013; Gilens 2012; Page et al. 1987). Understanding whether and when lobbyists counter public preferences, and which lobbyists are representative of what the public wants is essential for understanding the role of lobbying in modern policy-making. Such an analysis is important to address both the public fears of lobbying capture, as well as for discussions in democratic theory on the role of groups (see Gilens and Page 2014).

Many argue that some group types are more likely to bias policy-making rather than considering the policy positions of these groups (Gray and Lowery 2000; Rasmussen and Carroll 2014; Schlozman and Tierney 1986). Focus is often on whether especially business interests are overrepresented compared to other group types or whether the representation of different substantive interests is ensured. Yet, the question remains *whether those types of*

¹⁰ <https://www.transparency.org/gcb2013> (accessed October 14, 2017).

interest groups and interest group communities subject to criticism are actually the ones least likely to represent the opinion of the general public.

To examine this question, we analyse a new dataset of 50 issues in five West European countries (Germany, the Netherlands, Denmark, Sweden and the UK). Our study is the first to systematically compare group and public preferences on a high number of specific policy issues in several countries. It provides a comprehensive account of the relationship between interest group positions and public opinion by relying on different ways of conceptualising and measuring opinion representation. We first conduct analyses at the level of individual groups examining whether the types of advocates conventionally expected to cause bias in the group community are less aligned with public opinion. Thereafter, a series of issue-level analyses scrutinise whether the likelihood of finding correspondence between public opinion and the opinion of the advocacy community on an issue is affected by how diverse a set of substantial interests the group community represents.

Rather than providing clear-cut support or disapproval of the negative view of groups, we show that advocates are on the same side as the public in a little over half of the cases. While there are some expected differences between group types in opinion representation our results also underline that group type is not as strong a predictor as conventional wisdom might lead us to expect. The positions voiced by firms and business groups enjoy the support of significantly lower shares of citizens than public interest groups but this pattern is less clear for other group types representing narrower interests. We also do not find consistent statistical evidence that an advocacy community with a biased distribution of advocates across different actor types is less likely to be aligned with public opinion on an issue. Our results have implications for democratic governance and how we conceptualise bias in interest group research.

2.2 Conceptualising the relationship between advocates and the public

We conduct an analysis of *opinion representation* examining how closely groups' preferences and public opinion are aligned on specific policy issues. Our approach is similar to the one used in the broader literature on political representation, in which the substantive overlap in the policy positions of citizens and elites has been studied through the concept of ideological congruence (e.g., Golder and Ferland 2017; Huber and Powell 1994). While our study looks at interest groups (rather than elected politicians) and citizens, we share the interest of this

literature in what Pitkin (1967) coined “substantive representation”. Hence, our analysis ultimately provides information about the incentive of interest groups to act as representatives for the people and promote their interests.

We make an important addition to existing work on group bias which predominantly relies on frequencies of group types (e.g., Gray and Lowery 2000; Rasmussen and Carroll 2014; Schlozman and Tierney 1986). By interest groups (or *advocates*), we refer to a broad range of non-state actors engaged in public policy-making, including membership associations, firms and expert organisations (Baroni et al. 2014). Including citizens in the equation helps us evaluate the perhaps most widespread criticism of lobbying, namely that it does not present a voice representative of the population (Gastil 2000; McFarland 1991). Only a few studies on the US have examined the alignment of interest groups and public opinion (e.g., Claassen and Nicholson 2013; Gilens 2012; Page et al. 1987). For instance, Gilens found that the policy preferences of interest groups and the public are uncorrelated but his study is restricted to the most powerful interests only.

While all our analyses of opinion representation examine how closely aligned the substantive policy positions of groups and the public are, they use different benchmarks for public opinion. Some measures calculate correspondence between groups and the public as a whole, whereas others indicate whether groups represent the median citizen. Hence, we speak to both a *proportional* vision of democracy expecting representatives to resemble the public at large (Pitkin 1967: 60-91) and a *majoritarian* emphasising their ability to represent the median citizen (for criticism, see de Tocqueville 1840).

Second, similar to the ideological congruence literature (Golder and Stramski 2010) the relationship between the public and groups can be analysed in several ways. We look at both ‘many-to-one relationships’ focusing on the alignment between citizens and individual interest group actors and ‘many-to-many relationships’ comparing the cumulative preferences of citizens and the entire group community on an issue.

2.3 Variation in Opinion Representation

One option is to see interest groups as transmission belts that help the public get its message across to policy-makers acting as ‘surrogates for the public’ allowing policymakers to produce outputs that ‘benefit directly from the public’s considerable wisdom and experience

with the topic at hand' (Furlong and Kerwin 2004: 354; see also Rasmussen et al. 2014). However, while groups may voice an opinion that is representative of that of the public, their role is usually not to represent the population on a given issue but a more limited set of interests (Lowery et al. 2015).

Importantly, the dangers of relying on groups as representatives should vary in different circumstances. Empirical studies of bias often expect that some types of groups and group communities are more likely to raise concerns (see e.g., Gray and Lowery 2000; Rasmussen and Carroll 2014; Schlozman and Tierney 1986). The underlying *mechanism* seems to be related to *the scope of the interests* represented either by the different group types or by different group communities. The expectation is that those that represent broader interests are more likely to act as representatives. Consequently, the capacity of different group types and group communities to represent public opinion is at the core of our theoretical framework.

We focus on cross-sectional variation in the alignment of groups and public opinion rather than conduct a dynamic analysis of how the two affect each other, since repeated measures of public opinion on our issues are not available. Yet our *theoretical predictions* take into account that *at a given point of time* this alignment may be the result of both similarities in the opinion of the two *before* an issue became subject to attention *and* affected by whether groups and the public have been able to influence the opinion of each other *in the course of* policymaking (Dür and Mateo 2014b; Kollman 1998). Thus, when speaking of opinion representation we remain open to the possibility that causality flows in both directions with both groups and the public being able to represent the opinion of each other.

It is widely expected that interest groups try to shape public opinion, even if the empirical evidence is mixed (e.g., Andsager 2000; Kim and Margalit 2017; McEntire et al. 2015; Page et al. 1987; Smith 2000). Nevertheless, we cannot rule out the opposite relationship; i.e. that some groups pay attention to the public when forming their positions. Interest group leaders can take cues from the public, which may affect their calculations which policy to defend (Holyoke 2003). We argue that interest groups that represent broader public interests are the ones most actively aiming at influencing public opinion, and the ones with the greatest need to respond to the shifts in public opinion to maintain support. Moreover, we expect the same logic to apply if we examine correspondence between the opinion of the entire group community on an issue and public opinion.

2.3.1 Variation across group types

Studies of bias are typically not equally concerned about all types of interest groups and frequently refer to Olson's (1965) seminal work (e.g., Schlozman 2010). He argued that special interest groups representing particular constituencies face fewer collective action problems mobilising than groups representing diffuse, public interests. Worries arise because those groups that should have the easiest time mobilising are also the ones least likely to be strong candidates for representing the general interests. The underlying assumption seems to be that there is a link between the scope of the interests of these groups and whether their opinion is aligned with public opinion.

We draw a distinction between 'diffuse' and 'concentrated' interests. The former represent wider societal interests often involving the provision of public goods (e.g., environmental and consumer groups). In contrast, concentrated interests in our terminology are those with a well-defined, narrow constituency that provide concentrated benefits to their members or supporters. The latter can both represent specific economic interests (e.g., business groups and trade unions) or specific identity subgroups (e.g., LGBT support groups, women's associations or particular hobbies).

Differences in how closely these diffuse and concentrated interests are aligned with public opinion may result from not only differences in the scope of interests they represent, but also from variation in their ability to influence public opinion. Diffuse interests may be more successful in swaying public opinion than groups representing concentrated constituencies. Citizen groups representing diffuse, mass-based interests are more likely to apply outsider lobbying strategies aimed at shifting public opinion by raising issue awareness (Kollman 1998). Going public is relatively cheap and effective for them (Dür and Mateo 2013: 663-4). Instead, groups representing concentrated interests – e.g., business associations and firms but also many trade unions and occupational groups – often have a comparative advantage in *inside lobbying* since they possess specialised information demanded by policymakers (ibid.). Perhaps as a result of such differences in lobbying focus, Page et al. (1987: 37) found that groups representing specific, narrow interests have a negative impact on public opinion, whereas broader, mass-based interests can have a positive one.

When considering the reverse relationship in which groups adapt to public opinion, we also expect the dynamic to work in a way that results in closer alignment with public opinion for diffuse interests than for concentrated interests. The latter should generally be less

responsive to public opinion when formulating their policy positions. Hence, even if all organisations aim to ensure survival (Klüver 2011b; Lowery and Gray 1995), they differ in their survival strategies. For many organisations representing concentrated interests ensuring organisational maintenance is frequently a question of delivering certain services to the more specific, narrow economic or identity interests they represent (Klüver 2011b). Being responsive to the concerns of the public could sometimes even be suicidal for them if this entails the risk of alienating their members and supporters. Instead, public interest groups typically rely on broad-based membership (Berry 1999; Bevan 2013) and satisfying both existing and potential members in the general public is therefore more likely to affect their survival. Failure to adapt their views to a shift in the public mood can potentially be costly, as members can withdraw their membership, possibly selecting another organisation that better represents their interests, and potential new members may be disincentivised from joining. Therefore, we predict that,

1: Opinion representation is less likely for groups representing concentrated as opposed to diffuse interests.

2.3.2 Bias in the interest group community

At the issue level, the configuration of interests might also affect the alignment between groups and public opinion. The mobilisation of diverse types of substantial interests on an issue can be expected to increase the likelihood that different parts of society are represented compared to one on which very homogenous groups mobilise. Hojnacki's recent contribution on bias argues that, while it is impossible to know what the proportion of different group types should be in an unbiased system, bias should generally be lower with a reduction of imbalances between the types of interests represented. According to her, 'a more heterogeneous mix of interests than currently exists would represent a move in the right direction' (Lowery et al. 2015: 1218).

Similarly pluralist theory leads us to expect that when many groups mobilise they do so to counterbalance each other. Truman famously argued how in cases of policy disequilibria occurring with some types of groups mobilising, other might mobilise and 'restore balance' (Truman 1951). Interest group research has indeed found some evidence that groups such as those representing citizen and public interests could have some 'countervailing power' to other types of groups such as business and professional associations (McFarland 2010:

42). Communities consisting of countervailing interests should thus have a higher chance of acting as agents of the general public.

The mobilisation of a diverse set of interest group types can also be expected to play a positive role in the alignment of public and advocacy opinion when we consider the ability of the two to influence each other. In the case of diversity, we would expect that, if a diverse set of groups is active, the public discussion is informed by multiple perspectives. If public opinion is responsive to (or maybe even *affected* by) group opinion, members of the public should ‘listen more’ to a group community representing a broad range of different interests than one representing only a few group types. In turn, it might also be easier for various segments of the public to affect the voice of the advocacy community when the public can interact with groups representing a multitude of substantial interests. In contrast, a less diverse set of groups may decrease the likelihood that any given segment of the public can have its voice heard. Communities where certain types of substantial interests dominate should therefore on average hold positions more at odds with the opinion of the general public. Our second prediction is thus that,

2: Opinion representation is less likely, the higher the level of concentration in the types of interest groups mobilised on an issue.

2.4 Analysis Design

Our dataset pools information on public opinion and interest group activity in five countries on altogether 50 issues. We do not expect overall differences in state-society structures between pluralist and corporatist types of systems to play a strong role for how closely the positions of groups and the public on specific policy issues are aligned. Yet, our selection of countries allows us to control for such system-level variation by including both systems typically classified as experiencing strong or moderate levels of corporatism (Denmark, Germany, the Netherlands, Sweden) and a more pluralist one (the UK) (Jahn 2016; Sioroff 1999).

All issues come from high-quality opinion polls of a representative sample of the adult population. All of the selected questions involve a call for future policy change on specific policy issues under national jurisdiction and measure responses on an agreement scale (Gilens 2012; Rasmussen, Mäder, et al. 2018). For example, one of our Dutch issues asks whether

euthanasia should be banned and a Swedish one concerns the question of allowing free downloads of films and music from the Internet. While sampling issues on which public opinion is available creates the risk of studying issues with higher salience than average (Burstein 2014), it increases the likelihood ‘that average citizens may have real opinions and may exert some political influence’ (Gilens and Page 2014: 568). Moreover, issues are selected in such a way that there is substantial variation in media saliency between them. The latter was measured by conducting a keyword search in a major national newspaper for each issue (*Politiken* in Denmark, German *Süddeutsche Zeitung*, *the Guardian* in the UK, *Dagens Nyheter* in Sweden, and the Dutch *de Volkskrant*). The 10 selected items per country (see Appendix B) also vary in policy type (regulatory, distributive, redistributive) and the level of public support for policy change.

The lowest unit in our analyses is an actor on an issue, of which we have 771 cases. We include all actors for whom we could identify a policy position either in favour of or against the specific call for policy change in the poll¹¹ and mapped advocacy on the issues for an observation period of up to four years (see also Gilens 2012)¹². Four separate rounds of data gathering (see Appendix A) yielded the sample of active advocates. First, student assistants coded all active advocates making statements on the issues in two broadsheet newspapers per country (one left- and one right-leaning, to control for potential differences in the overall tone of advocacy) as in favour of or against the proposed policy change¹³. Second, we conducted expert interviews on the 50 issues with policy officials who had worked on the issue in our observation period (response rate 82%), asking them to identify additional advocates to those identified in the media. Third, we also relied on in-depth desk research of online sources and physical archives to identify advocates involved in government interaction on the issues (e.g., public consultations and parliamentary committee hearings). Fourth, a survey was distributed to the advocates identified in step 1-3, in which respondents were asked to name the most important actors on an issue. The overall response rate was 34% and we received responses from 478 actors. Actors mentioned that did not appear in the other sources were added to the dataset and their positions were coded by searching for policy documents or position papers. Intercoder reliability tests conducted by two coders on 50

¹¹ 16 actors who expressed opposing positions are excluded from the analysis.

¹² More specifically, advocacy was measured one month prior to the relevant opinion poll and until a policy decision was taken on the issue or 4 years in the cases in which there was no reaction to the call for action.

¹³ In addition to the newspapers used to measure saliency in our sampling of policy issues, we coded articles from *Jyllands-Posten* in Denmark, *Frankfurter Allgemeine Zeitung* in Germany, *The Daily Telegraph* in the United Kingdom, *Svenska Dagbladet* in Sweden, and *NRC Handelsblad* in the Netherlands.

randomly selected units revealed a Krippendorff's alpha of .78 for the coding of positions and a score of .92 for the coding of group type.

There are multiple ways of comparing the preferences of groups and the public to measure opinion representation (see Appendix C for an overview of four different approaches). In the main paper, we focus on the *volume* of opinion representation at the level of individual groups, i.e. how large a share of the public is aligned with the group's position. This measure helps us assess not only whether an advocate is supported by the median member of the public but also how strong public support or opposition the group enjoys for its positions. As an example, an actor supporting change has a score of 100 on this 'many-to-one' measure when all respondents in the opinion poll supported change. At the issue-level, we look at the absolute percentage point difference in the shares of the interest group community and the public on an issue, which supported policy change. This 'many-to-many' measure allows us to directly compare the distributions of our dichotomous position measures. It ranges from 0 when support for change is identical in the two communities to 100 when the two are opposed. After our analyses we report on robustness checks using alternative measures of opinion representation.

To test Prediction 1 that opinion representation varies between groups representing concentrated and diffuse interests, our actor-level models include the type of advocate. We distinguish between: (1) public interest groups, (2) business groups, (3) firms, (4) trade unions and occupational associations, (5) hobby and identity groups, and (6) expert organisations, think tanks and institutional associations. Public interest groups are prominent examples of groups that 'seek to advance diffuse benefits to their members as well as everybody else' (Binderkrantz et al. 2014: 881) and include e.g., environmental and consumer groups and associations promoting international humanitarian work. Groups in the second, third, fourth and fifth categories all defend the interests of concentrated constituencies, with variation in whether the subgroups promoted are economic (as in the case of business groups, firms and trade unions) or identity based (as in the case of hobby and identity groups). Finally, expert organisations, think tanks and institutional associations may promote either diffuse or concentrated interests. Appendix D provides a more detailed list of the group types included in the six categories.

To test Prediction 2, our issue-level models include the Herfindahl-Hirschman Index (HHI), which indicates the distribution of advocates between the six categories of actor

types. Initially developed to measure the concentration of firms within an industry, the HHI equals the sum of the squared proportions of actors in the different categories and ranges from $1/\text{number of group types}$ (in our case $1/6$) to 1, 1 indicating the highest level of concentration with all groups falling into one category. The HHI can be criticised for implicitly assuming that our six categories of advocates are equally important for representing public opinion. Therefore, we also consider an alternative measure of issue-level bias by including the share of firms and business associations relative to all advocates on an issue. This measure also relates to frequent criticisms of bias in the literature owed to the dominance of business interests (Rasmussen and Carroll 2014; Schattschneider 1960; Schlozman and Tierney 1986).

We control for a number of additional factors. First, we include dummies for the different policy types in our sample distinguishing between distributive, regulatory and redistributive issues (Lowi 1964), and our measure for the media saliency of an issue. It records the number of articles in one daily newspaper per country; identified with a Boolean keyword search for articles published one month prior until one month after the question was asked in the opinion poll.¹⁴ The measure is standardised within each country and higher numbers indicate higher media attention. Second, we include country-fixed effects to control for unobserved heterogeneity between observations from the different countries. Finally, our issue-level analyses control for the number of actors on an issue, since the likelihood that the group community represents public opinion might be higher when many advocates are active¹⁵.

2.5 Analysis

Before our multivariate analyses, we start with some descriptives on congruence between group opinion and the public median. At the issue level, the share of policy issues where the majorities of interest groups and the public are aligned is 60% (see Appendix E). According to Table 2.1, the actor-level figures are similar with 54% of the individual advocates holding positions congruent with the public majority. As expected, we find higher congruence for public interest groups than for the actor types representing concentrated interests (significant at the 0.05 level or lower): 78% of public interest groups hold a position congruent with the

¹⁴ Our measure does not cover the whole observation to avoid bias resulting from issues that would experience policy change at a later stage and, hence, would receive more coverage in the time preceding change.

¹⁵ Given that we expect decreasing returns for the number of actors, the measure is logged in the analysis.

public majority, while the numbers for business groups and firms are 41% and 45%, respectively. Yet, no matter which of all the group types representing concentrated interests we examine, a sizable share of them are aligned with the public majority.

Table 2.1 Actor Level Congruence between Interest Groups and the Public Opinion Majority

		Diffuse Interests	Concentrated Interests				Mixed Interests	
		Public Interest groups	Business Groups	Firms	Trade Unions & Occupational assoc.	Hobby & Identity groups	Expert Organisations, Think Tanks & Institutional Associations	Total
Congruence	%	77.86	40.83	45.45	60.40	60.00	41.23	53.83
Total n	N	140	120	198	149	50	114	771

Turning to our multivariate analysis of the volume of opinion representation in Table 2.2, we find a similar pattern. Since advocates are nested in policy issues these regressions are run as multi-level regressions with random intercepts for the issues, first including actor types and country fixed effects only before including controls¹⁶. Public interests have a significantly larger share of the public on their side (58% according to Model 2) than firms and business groups (49% and 48% respectively). When comparing them to the other group types representing concentrated interests the evidence is more mixed¹⁷. The scores for hobby and identity groups are never significantly lower than for public interest groups, and the volumes of public support for trade unions and occupational associations are only significantly lower at the 0.10 level in the regression without controls¹⁸. With respect to the controls, there is no effect of policy types on the likelihood of having a higher share of the public on one's side, but media saliency negatively affects the volume of public support (albeit marginally). Moreover, German groups have a somewhat lower volume of public support for their views than the Swedish groups ($p < 0.10$ or lower).

¹⁶ A significant likelihood ratio statistic provides strong evidence that between-issue variance is different from zero in all of the regressions.

¹⁷ The remaining covariates in the calculation of margins in this and subsequent calculations are held constant at their observed values.

¹⁸ In addition to examining the extent to which different types of individual advocates are aligned with public opinion, Appendix E presents supplementary tests at the issue level where we compare measures for all actors belonging to a given group type on an issue to public opinion. These issue-level results also deliver mixed support for the expected relationship between group type and opinion representation put forward in Prediction 1.

Table 2.2 Share of the Public Supporting the Actor's Position

	(1)	(2)
	Volume	Volume
Group Type (ref.: Public Interest Groups)		
Hobby & Identity	-0.03 (0.03)	-0.03 (0.03)
Business Groups	-0.10*** (0.03)	-0.10*** (0.03)
Trade Unions & Occupational Groups	-0.05+ (0.03)	-0.04 (0.03)
Firms	-0.09*** (0.02)	-0.09*** (0.02)
Expert Org, Think Tanks & Institutional Assoc.	-0.14*** (0.03)	-0.14*** (0.03)
Issue-level Controls		
Country (ref: Germany)		
UK	0.00 (0.04)	-0.01 (0.04)
Denmark	0.05 (0.04)	0.05 (0.04)
Sweden	0.07+ (0.04)	0.08* (0.04)
Netherlands	0.01 (0.04)	0.02 (0.04)
Policy Type (ref: Distributive Issues)		
Regulatory		-0.00 (0.04)
Redistributive		-0.00 (0.04)
Standardised media saliency		-0.02+ (0.01)
Constant	0.57*** (0.03)	0.56*** (0.04)
Policy Issue Intercept	0.00 (0.00)	0.00 (0.00)
Level 1 Residual	0.04 (0.00)	(0.04) (0.00)
Number of Cases	771	771
AIC	-271	-268
BIC	-215	-199

Notes: Multi-level Linear Regressions with SEs in Parentheses, + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

As a next step, Models 3-8 test Prediction 2 that low diversity in the advocacy community weakens opinion representation by increasing the distance between the shares of support for policy change among groups and the public (Table 2.3). The first three models examine the effect of the level of concentration in the types of mobilised groups, starting with a model with the HHI only before introducing country fixed effects and issue-level controls.

Table 2.3 Absolute Percentage Point Difference between the Shares of the Public and Interest Groups on an Issue supporting Policy Change

	(3)	(4)	(5)	(6)	(7)	(8)
	Distance	Distance	Distance	Distance	Distance	Distance
HHI	0.30*	0.33**	0.17			
	(0.12)	(0.12)	(0.15)			
Share of business groups				0.00	-0.01	0.15
				(0.10)	(0.10)	(0.11)
Issue-level Controls						
Country (ref: Germany)						
UK		-0.03	0.02		-0.01	0.05
		(0.08)	(0.09)		(0.09)	(0.09)
Denmark		-0.12	-0.11		-0.09	-0.08
		(0.08)	(0.09)		(0.09)	(0.08)
Sweden		-0.08	-0.14		-0.05	-0.16+
		(0.08)	(0.09)		(0.09)	(0.09)
Netherlands		-0.07	-0.09		-0.04	-0.08
		(0.08)	(0.09)		(0.09)	(0.09)
Number of actors on an issue (logged)			-0.08			-0.13**
			(0.05)			(0.04)
Media saliency			0.06+			0.08*
			(0.03)			(0.03)
Policy Type (ref: Distributive Issues)						
Regulatory			-0.01			0.01
			(0.09)			(0.09)
Redistributive			-0.06			-0.09
			(0.09)			(0.09)
Constant	0.12*	0.17*	0.49*	0.26***	0.30***	0.66***
	(0.06)	(0.08)	(0.21)	(0.04)	(0.08)	(0.16)
Number of Cases	50	50	50	50	50	50
Adjusted R ²	0.11	0.07	0.07	-0.02	-0.08	0.09

Note: OLS Regressions with SEs in Parentheses, + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

In all three Models, the positive sign of the effect for the HHI is as expected indicating that the higher the bias in group types represented, the greater the distance between the share of the public and the interest groups supporting policy change. Yet, whereas this effect is significant at the 0.05 level in Model 3 and at the 0.01 level in Model 4, it fails to achieve significance in Model 5 adding controls. At best we therefore have mixed evidence that group communities in which the advocates are distributed unevenly across different advocacy categories display a lower likelihood of being congruent with the public majority¹⁹. Models 6-8 examine the impact of the alternative measure of issue-level bias, i.e., the share of business interests on an issue. While in two out of the three Models this measure has the expected sign with a higher share of business groups increasing the distance, it fails to achieve statistical

¹⁹ Robustness checks replacing the HHI with another commonly used measure of diversity: Shannon's H show similar results (see Models F1-F3 in Appendix F).

significance in all specifications. Overall, these findings indicate that there is no straightforward relationship between bias in the interest community on an issue and opinion representation. With respect to the controls, higher saliency results in a larger distance between the public and the interest groups (Models 5 and 8). Instead, a higher number of actors on the issue decreases the distance in Model 8. Finally, there are few differences between the countries with the exception of Swedish cases demonstrating a slightly lower absolute distance than German ones in one of the models ($p < 0.10$).

2.6 Additional measures of Opinion Representation

Our appendices G-I consider additional measures of examining the alignment between groups and the public. First, Appendix G examines the likelihood that individual groups (Models G1-G2) and the majority of groups on an issue (Models G3-G8) hold a position congruent with the public majority. Using this measure, we find somewhat stronger evidence that public interest groups are more closely aligned with the public. Yet, while their likelihood of being aligned with the public is significantly higher than for all other group types, 25% of them (according to Model G2) are not aligned with the public majority. Moreover, again we have at best mixed evidence that diversity matters in the issue-level analyses. While we find some marginally significant effects of the share of business groups in two of the three regressions, there are no statistically significant effects for the HHI.

Second, Appendix H conducts a similar test using a third measure of opinion representation, i.e. the correlation between the policy positions of groups and the public. As explained in more detail in the Appendix, this measure indicates whether advocacy support for a given policy change increases as *the level* of support for change in the general public increases. Similar to what we saw in the congruence analysis, public interest groups experience somewhat stronger opinion representation using this measure. Hence, the relationship between their positions and public opinion on an issue (see Table H1 and Figure H1) is generally stronger than for other group types. Using this measure, there is again little support for Prediction 2 in our issue-level regression (see Table H2). Hence, we do not find statistical evidence that the HHI or the share of business groups condition the relationship between support for policy change in the general public and the interest group community.

Finally, Appendix I explores variation in the share of the public holding the same position as the majority of the interest groups (pro/con policy change) on an issue. Here we

find a significant effect of the HHI at the 0.05 level in one of the three models before adding controls. Yet, the alternative measure of interest group bias at the issue-level, i.e. the share of business groups, is not significantly related to this measure either (see Table I1).

Overall, we see that, while there are some differences in findings depending on the conceptualisation and measurement of opinion representation, the vast share of the analyses do not present strong evidence for our two theoretical predictions. There is no general tendency for groups representing diffuse interests to clearly distinguish themselves from all the different groups representing narrower, concentrated constituencies. Even in the analyses where group type performs best as a predictor, a significant share of the groups expected to represent the public do not, whereas many groups expected to represent subsets of the public score higher than we might have expected. Second, we also find little evidence that measures of bias in the interest group community affect opinion representation at the issue level. At best, we find support for only one of two measures of group bias and the effects are never consistent across all the different model specifications. Overall, these additional analyses therefore give credence to the results in the paper.

2.7 Conclusion

Whether interest groups serve as a transmission belt of public preferences has been a recurrent theme in the academic literature and real-world politics alike. Strong voices warn of the potential biases in the group community that may not represent the public at large. Yet, whereas there is no shortage of recent studies demonstrating how the interest group community is dominated by business groups representing narrow and specific interests (e.g., Rasmussen and Carroll 2014; Schlozman and Tierney 1986), we know little about the scope and consequences of bias in practice. Even if interest groups are frequently criticised for obstructing democratic governance, their degree of representativeness is typically not examined with respect to a clear benchmark (Lowery and Brasher 2004).

To judge whether advocates represent public preferences, we conducted a systematic analysis of opinion representation using public opinion as a benchmark for assessing how closely interest group positions are aligned with citizen views. We compared information about public opinion and interest groups positions on 50 specific policy issues in five Western European countries using four different ways of conceptualising and measuring the alignment of public opinion and group preferences.

Our findings neither confirm nor disconfirm the fears of advocates as biased representatives of the public. Whether conducting the analysis at the individual or issue level, groups are congruent with the majority of the public a little over half of the time. This underlines the potential for groups to serve as a transmission belt but also reminds us to approach group involvement with a critical eye. Similar to what we have seen in research on the US, there is no correlation between the position of the group community as a whole and public opinion on an issue (Gilens 2012).

Our results underline that the relationship between group type and opinion representation is not as strong as conventional wisdom might lead us to expect: While firms and business groups enjoy weaker support for their positions among citizens than public interest groups, the pattern is less clear for other group types representing narrower interests. The fact that some types of interest groups represent narrower public constituencies does not disqualify them from acting in line with public preferences altogether. On the other hand, some public interest groups may be more distant from their grassroots and the public than is sometimes expected.

Our findings also show that having many different types of groups represented does not necessarily ensure that groups are more likely to represent public opinion. We do not find consistent evidence that how narrowly active advocates are distributed across group types affects opinion representation. Having the expectation that advocates should distribute evenly across a set of interest group categories for advocacy opinion to be in line with public opinion might be unrealistic. However, the findings are also at best mixed when using the relative dominance of business interests on an issue as an alternative measure of bias. These findings certainly do not rule out that the composition of the group community still plays a role for both democratic representation and, ultimately, policy responsiveness. Hence, we must remember that there may be many different ways of conceptualising and measuring bias in practice. However, they outline the challenges of drawing simple inferences about biases in representation based on group type alone. This is not least the case because even among actors belonging to the same group type there may be differences in policy positions and organisational attributes (Baroni et al. 2014). Our results also emphasise the importance of paying attention to multiple measures of opinion representation. Hence, while we found a number of similarities in the findings obtained from using four different conceptualisations and measurements, we also found smaller differences in the explanatory power of some of our key independent variables between the four. This underlines that opinion representation is a

multi-faceted concept and underscores the potential gains of being sensitive to its different conceptualisations in research designs.

Future research will be able to add to our study by theorizing and testing differences in opinion representation not only between those representing diffuse and concentrated interests but also between different subsets of groups within these broader categories, e.g., groups representing economic and identity interests. Hence, our empirical analyses underlined that there are also differences in opinion representation between groups representing narrower, concentrated interests. In addition, there is scope for exploring differences in opinion representation for larger numbers of policy issues and over longer periods of time in future studies. While our theoretical framework explicitly considers that the level of opinion representation at any given point of time is likely to be the result of both groups and the public having mutually influenced each other, our cross-sectional dataset does not allow us to directly examine the processes through which this happens. A key challenge for conducting such dynamic studies is the lack of public opinion data at the level of specific policy issues over longer time periods as well as the costliness of gathering longitudinal interest group data. However, as more public opinion data at the policy issue level becomes available and new technologies for extracting interest group data develop, future research will be able to pursue such a research agenda.

2.8 Appendices

Appendix A. Identification of interest groups

Stage 1: Media Content Analysis

For the set of selected policy issues, we identified articles based on keyword searches, which were subsequently content-coded with respect to reported statements by actors that address the policy in question. A statement was defined as the supply of information or the presentation of the opinion of an actor. It included direct and indirect quotes as well as more general information about statements made by actors (e.g. if the article stated that an actor has “said” or “holds a view” on something, it was considered a statement). Statements that were relevant to the wider topic but not to the specific policy issue, or to a related but distinct policy issue, were excluded. The analysis includes statements in favour of or against the policy action in question made by a broad set of non-state actors engaged in policy relevant activities on a given issue such as membership associations, firms and expert organisations. We refer to these as interest groups. Our analysis excludes individual citizens and experts as well as actors from the political systems in the five countries, such as political parties, civil servants and party officials.

Stage 2: Expert interviews

Additional advocates were identified from semi-structured expert interviews, which were carried out with a national policy official who worked on the policy issue during our observation period. Altogether, we conducted 41 interviews in the five countries between February and April 2016 (response rate 82%). Experts were presented with a list of advocates identified in the media content analysis and asked to name additional advocates that were active on the issues. Moreover, we asked the experts to state the policy positions of the newly added actors where possible. The specific questions posed to the experts were:

Based on an extensive analysis of media sources we identified the following list of advocates

[SHOW LIST].

- a) *Can you check this list and see whether there are any organised non-state actors missing who actively lobbied policy makers and/or the public on the issue between [date of PO question] and [end of observation period, i.e. policy adoption or 4 years after PO question]?*

[The interviewer may reiterate that we refer to organised non-state actors as including membership associations, and firms. We are interested in advocates who were successful, as well as those unsuccessful, in their attempts to influence the outcome. If the list is long, the interview should present it in parts, first showing the interest groups, then the experts, then the firms, then the IOs. Offer the respondent to add actors later on. Also mention that the additional columns are for later in the interview and not something to think about at this stage]

- b) *Please state what the position of the actors you have added was: pro, con, neutral, don't know [insert PO formulation]*

(to be completed in ACTOR LIST)

Stage 3: Desk research

We also conducted desk research of online sources and physical archives to identify additional actors who interacted with governmental institutions related to the sampled issues (e.g. public consultations and parliamentary committee hearings). Student assistants coded the positions of the actors in these sources where they contained information about an advocacy opinion on the issue addressed in the public opinion question (e.g. through consultation submissions). For actors identified in the desk research for whom this was not possible, student coders tried to gather the policy positions by conducting a search for policy documents or position papers by the actors on the issues using the same keywords as those used in the media coding.

Stage 4: Survey of Interest Advocates

As a final step, we carried out a survey among advocates that have been active on the 50 specific policy issues and were identified through the media content analysis, interviews or desk research. A total of 1,410 actors active on the specific issues received the survey, which was conducted between December 2016 and May 2017. Based on completed surveys, the overall response rate was 33.9%. The survey was designed in such a way that respondents were asked questions about the specific issues in which they had been involved. One of the questions in the survey asked the respondents to identify actors that had exerted the greatest impact on the (lack) of political decisions on the issue in question. It allowed the respondents to list up to five actors.

In your view, which non-state actors had the highest impact on the political decisions on the issue of #u_policytitleshort#?

Student coders subsequently checked whether the actors mentioned were already included in our dataset to which the newly mentioned actors were added. Thereafter, the assistants coded the positions of these actors, again by searching for policy documents or position papers using the same keywords as those used in the media coding.

Appendix B: List of policy issues

Country	Policy issue
Denmark	Building of a bridge for vehicles and trains across the Kattegat
	Reducing mortgage interest deduction from 33% to 25%
	Granting asylum to families with children among rejected Iraqi asylum seekers
	Reducing the unemployment benefit period by half from four to two years
	Strengthening the control of the Danish agriculture in order to take action against the misuse of antibiotics
	Controlled delivery of heroin for particularly vulnerable drug addicts at special clinics as a pilot scheme
	Introducing differentiated VAT
	Making schools' average test results public
	Cutting the allowances paid to young people between 25 and 29 years by half
	Creation of an equal pay commission
Germany	Financial support of Arcandor through public money
	Guaranteeing a pension above the poverty line for pensioners who have paid contributions for many years
	Supplying citizens with consumption vouchers to boost the economy
	Establishing a wealth tax
	State control of electricity prices
	Banning of computer games that glorify violence
	Cutting the tax exemption for night, Sunday, and holiday supplements
	Cutting coal subsidies
	Making it illegal to carry out a paternity test without the consent of the mother
	Cutting social benefits
Netherlands	Allowing all illegal immigrants who have lived in the Netherlands for a long time to stay
	Raising the retirement age to 67
	Abolishing the mortgage interest
	Spending more money on development aid
	Obligating stores to be closed on Sunday
	Ban of smoking in restaurants
	Banning embryonic stem cell research
	Allowing more asylum seekers
	Banning euthanasia
	Building new nuclear power plants

Sweden	Permanent introduction of a congestion charge in Stockholm
	Reinstating the wealth tax, which was abolished in 2007 and meant that anyone with a fortune of 1.5 million paid 1.5% in taxes
	Rescuing Saab through government funds
	Banning the construction of minarets in Sweden
	Reducing third-world aid
	Introducing a language test for Swedish citizenship
	Restricting the right to free abortion
	Making household and domestic services tax deductible
	Allowing free download of all films and music from the Internet
	Increasing the old age retirement age
UK	Giving amnesty to illegal immigrants who have spent ten years in Britain without getting into trouble with the police
	Scrapping ID cards
	Requiring food manufacturers to reduce the fat/salt content in their products
	Introducing a graduate tax, where graduates would pay an extra income tax on their income after graduating
	Allowing a third runway to be built at Heathrow Airport
	Reducing corporation tax
	Increasing Air Passenger Duty, to be paid by people taking both short-haul and long-haul flights
	Subsidising the building of new nuclear power stations
	Increasing the tax on large executive-style, estate, and 4x4 vehicles
	Downgrading 'ecstasy' from a class-A drug to a class-B drug

Appendix C: Types of Opinion Representation

Dimension/ level	<i>Individual level</i>	<i>Issue level</i>
<i>Volume</i>	Share of the public holding the same position (pro/con policy change) as the interest group	Share of the public holding the same position as the majority of the interest groups (pro/con policy change) on the issue
<i>Congruence</i>	Whether the majority of the public holds the same position (pro/con policy change) as the interest group	Whether the majorities of the public and the interest groups are on the same side on the issue (pro/con policy change)
<i>Correlation</i>	Relationship between degree of public support for policy change and the position of the interest group (pro/con policy change)	Relationship between the share of the public and the share of the interest groups on the issue supporting policy change
<i>Distance</i>		Absolute percentage point difference between the shares of the public and interest groups on the issue supporting policy change

Notes: Cells in bold display the measures used in the individual and issue-level analyses in the main paper.

Appendix D: Overview of interest group types

To classify groups, we rely on the coding scheme of the INTERARENA project (Binderkrantz et al. 2015) to which we have added firms and think tanks.

Public interest groups

- Environment and animal welfare
- Humanitarian – international
- Humanitarian – national
- Consumer Group
- Government reform
- Civil liberties
- Citizen Empowerment
- Other public interest

Business associations

- Peak-level business group
- Sector-wide business group
- Breed associations
- Technical business associations
- Other business group

Firms

Labour groups and occupational associations

- Blue-collar union
- White-collar union
- Employee representative committee
- Other labour groups
- Doctors' associations
- Other medical professions
- Teachers' associations
- Other occupational associations

Identity, hobby and religious groups

- Patients
- Elderly
- Students
- Friendship groups (i.e. non-specific groups related to a country)
- Racial or ethnic
- Women
- Lesbian/Gay/Bisexual/Transsexual
- Other – undefined - identity group
- Sports groups
- Other hobby/leisure groups
- Groups associated with the protestant church
- Roman/Catholic groups
- Other religious group

Expert organisations, think tanks and institutional association

Expert organisations

Think tanks

Associations of local authorities

Associations of other public institutions

Associations of managers of public institutions

Other Institutional associations

Appendix E: Alternative Tests of the Actor Type Hypothesis at the Issue level

In addition to examining the extent to which individual types of advocates are aligned with public opinion, we have conducted supplementary tests at the issue level where we compare measures for all actors belonging to a given group type on an issue to public opinion.

Table E1. Issue Level Opinion Representation across Advocacy Types

Actor type	Congruence: Share of issues with congruence between the majority of (different types of) advocates and the public on an issue (%)	Correlation: Bivariate relationship between share of the advocates on an issue and the public in favour of policy change	Volume: Average share of the public supporting the positions of the advocates on the issues (%)	Distance: Average distance between the public and advocates on the issues (percentage points)	N
Public Interest Groups	67	0.37*	55	36	30
Business Groups	40	-0.10	48	42	30
Firms	44	0.06	52	40	32
Trade Unions & Occupational associations	66	0.43*	60	33	35
Hobby & Identity Groups	53	0.16	55	37	19
Expert Organisations, Think Tanks & Institutional Associations	51	-0.09	47	45	41
All	60	0.21	54	26	50

Notes:

*Correlation is significant at the 0.05 level.

The number of cases per actor type is the number of issues on which the actor type mobilised.

Looking at congruence first, we see that the share of issues where there is congruence between the positions of the group community as a whole and the median member of the public is 60%, which is in line with our individual-level findings. Considering the correlation between the share of advocates on an issue in favour of policy change and the support for policy change in the general public, there is no relationship for the advocacy community as a whole: Pearson's r is only 0.21 and not significant at the 0.05 level.

Using the different measures, there is some variation in opinion representation between the actor types on the issues. Yet, the differences are not always in the expected direction: While

the share of issues where business groups and firms are aligned (40% and 44% respectively) with the majority of the public is lower than for public interest groups (67%), other groups representing concentrated interests: trade unions and occupational association actually score similarly high with respect to congruence (66%). Furthermore, both the position measures for public interest groups and for trade unions and occupational associations are correlated with public opinion. Scatterplots of the relationship between shares of the (different types of) groups and the public supporting policy change with fitted regression lines are shown in Figures E1 and E2. They underline the weak relationships between the two communities of actors.

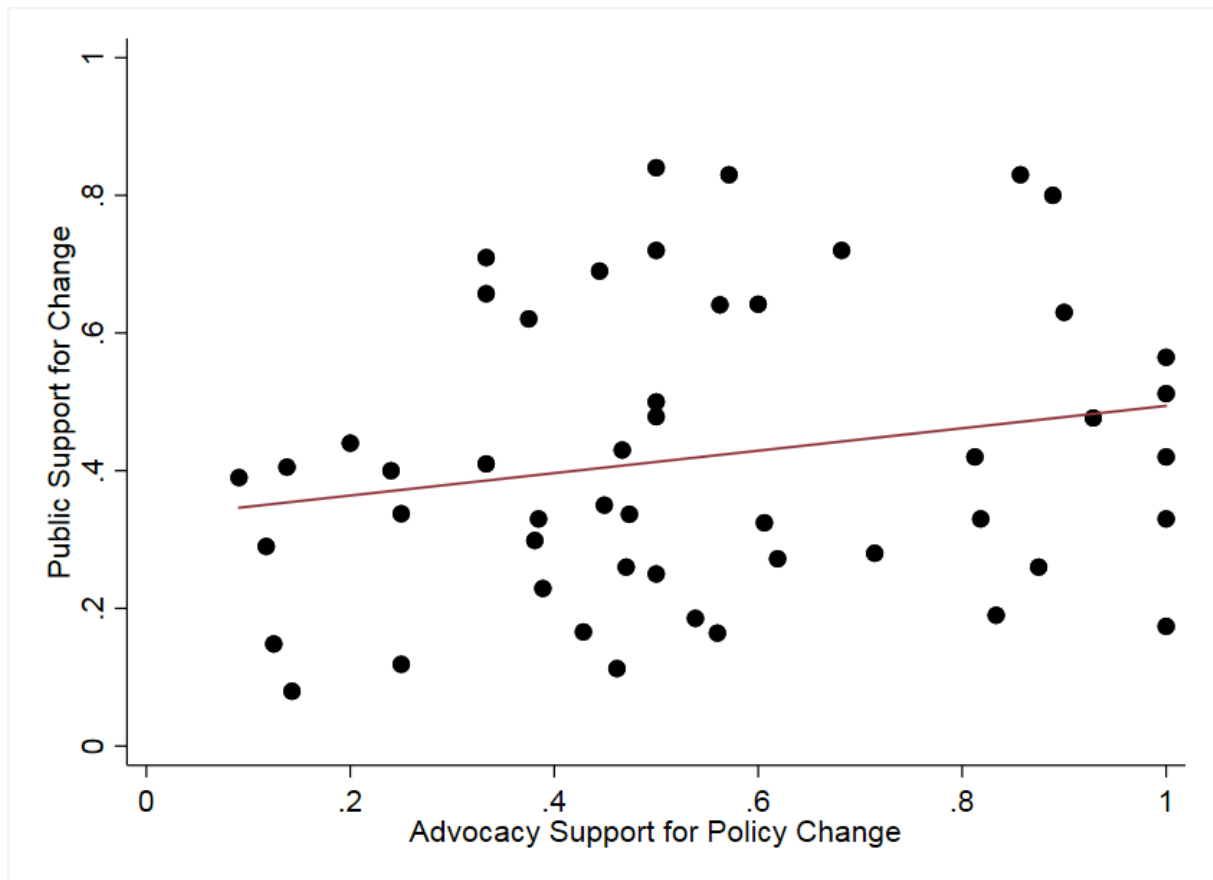


Figure E1. Scatterplot with fitted Regression Line for the Relationship between the Opinion of the Advocacy Community and Public Opinion on the Policy Issues

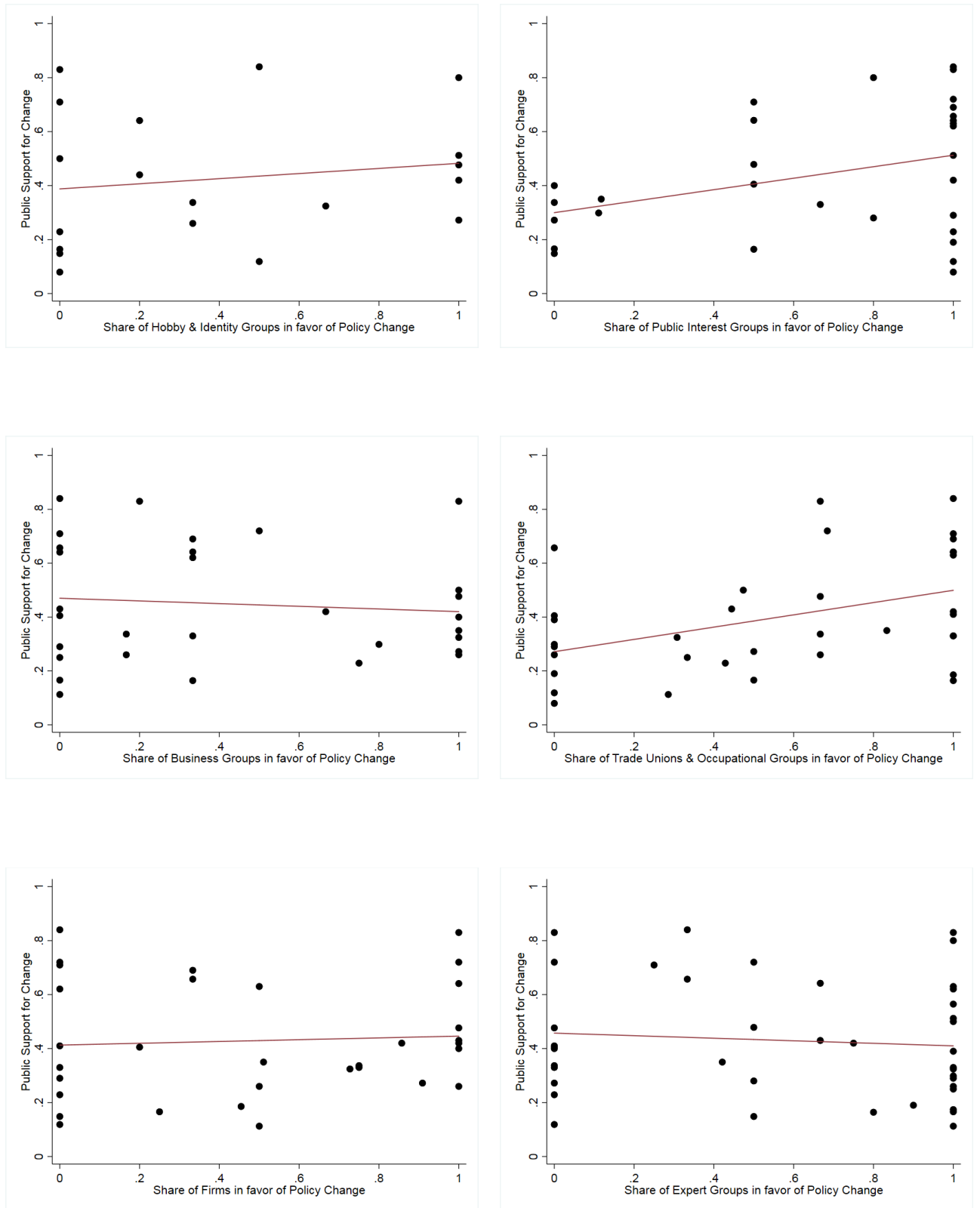


Figure E2. Scatterplots with fitted Regression Lines for the Relationship between the Opinion of different Types of Advocates and Public Opinion on the Policy Issues

Turning to the last two measures in Table E1, there is also no clear-cut support that public interest groups perform better than groups representing concentrated interests when it comes to representing public preferences. Looking at volume, the average share of the public supporting the positions defended by the majority of the public interest groups on the issues is 55%, which is very similar and never significantly different from the scores for the group types representing concentrated interests that range from 47 to 60%. Finally, when looking at the absolute difference in the share of the public and the different group types on an issue supporting policy change, public interest groups do not stand out. Their difference score (36 percentage points) is lower than that of business associations (42 percentage points) and think tanks (45 percentage points) but again very similar to that of trade unions and occupational associations and hobby and identity groups. Again these differences between public interest groups and the other group types are not statistically significant. In sum, also the issue-level results deliver mixed support for the expected relationship between group type and opinion representation put forward in Prediction 1.

Appendix F: Alternative specifications of Issue-level Opinion Representation with Shannon's H instead of the HHI index

Table F1: Absolute Percentage Point Difference between the Shares of the Public and Interest Groups on an Issue supporting Policy Change (OLS Regressions with SEs in Parentheses)

	(F1)	(F2)	(F3)
	Distance	Distance	Distance
Shannon	-0.14* (0.06)	-0.16* (0.06)	-0.08 (0.08)
Country (ref: Germany)			
UK		-0.04 (0.09)	0.02 (0.09)
Denmark		-0.13 (0.09)	-0.11 (0.09)
Sweden		-0.09 (0.09)	-0.14 (0.09)
Netherlands		-0.08 (0.09)	-0.10 (0.09)
Number of actors on an issue (logged)			-0.08 (0.05)
Media saliency			0.06+ (0.03)
Policy Type (ref: Distributive Issues)			
Regulatory			-0.01 (0.09)
Redistributive			-0.06 (0.09)
Constant	0.41*** (0.06)	0.49*** (0.09)	0.65*** (0.17)
Number of Cases	50	50	50
Adjusted R ²	0.09	0.07	0.06

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Note:

While both Shannon's H and the Herfindahl index are measures of how narrowly or widely observations are distributed across categories, there is the important difference between them that higher values of the HHI reflect a higher level of concentration in the observations, while the opposite holds for Shannon's H where higher values reflect greater diversity. For this reason the directions of the effects estimated with these two measures can be expected to be reversed.

Appendix G: Opinion Congruence

Table G1: Actor-level Congruence: Does the majority of the public holds the same position (pro/con policy change) as the individual interest group? (Multi-level Logistic Regressions with SEs in Parentheses)

	(G1)	(G2)
	Congruence	Congruence
Group Type (ref.: Public Interest Groups)		
Hobby & Identity	-1.13** (0.43)	-1.16** (0.43)
Business	-1.67*** (0.32)	-1.65*** (0.32)
Trade Unions & Occupational Groups	-0.92** (0.33)	-0.90** (0.33)
Firms	-1.58*** (0.29)	-1.56*** (0.29)
Expert Org & Think Tanks & Institutional associations	-1.61*** (0.32)	-1.59*** (0.31)
Issue Level Controls		
Country (ref: Germany)		
UK	0.26 (0.51)	0.21 (0.52)
Denmark	0.36 (0.52)	0.29 (0.51)
Sweden	0.66 (0.54)	0.62 (0.54)
Netherlands	0.43 (0.53)	0.37 (0.53)
Policy Type (ref: Distributive Issues)		
Regulatory		0.39 (0.52)
Redistributive		0.03 (0.52)
Media Saliency		-0.05 (0.18)
Constant	1.02* (0.43)	0.85 (0.61)
Policy Issue Intercept	0.88** (0.31)	0.83** (0.31)
Number of Cases	771	771
AIC	980	985
BIC	1031	1050

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Table G2: Issue-level Congruence: Are the majorities of the public and the interest groups on the same side on the issue (pro/con policy change)? (Logistic Regressions with SEs in Parentheses)

Model	(G3)	(G4)	(G5)	(G6)	(G7)	(G8)
	Congruence	Congruence	Congruence	Congruence	Congruence	Congruence
HHI	-0.58 (1.28)	-1.43 (1.46)	-1.50 (1.96)			
Share of business groups				-1.75+ (1.03)	-1.74 (1.13)	-2.56+ (1.39)
Issue Level Controls						
Number of actors on an issue (logged)			0.33 (0.64)			1.02+ (0.60)
Media saliency			-0.39 (0.42)			-0.65 (0.43)
Policy Type (ref: Distributive Issues)						
Regulatory			1.32 (1.14)			1.14 (1.16)
Redistributive			0.65 (1.10)			1.05 (1.15)
Country (ref: Germany)						
UK		0.98 (0.96)	0.71 (1.08)		0.92 (0.96)	0.46 (1.05)
Denmark		1.89+ (1.01)	1.82+ (1.06)		1.58 (1.00)	1.59 (1.07)
Sweden		2.46* (1.10)	2.96* (1.32)		2.32* (1.08)	3.35* (1.37)
Netherlands		1.87+ (1.01)	1.94+ (1.07)		1.53 (1.00)	1.81+ (1.09)
Constant	0.67 (0.66)	-0.33 (0.86)	-2.20 (2.73)	1.03* (0.48)	-0.20 (0.81)	-3.83+ (2.27)
Number of Cases	50	50	50	50	50	50
Pseudo R ²	0.003	0.12	0.15	0.05	0.14	0.20

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Appendix H: Opinion Linkage

Opinion linkage at the actor level

Model H1 and H2 show the effect of interest group type on opinion linkage for individual advocates. They do so by examining whether there is a difference between the interest group types in how strongly the share of public support for policy change is related to the likelihood that individual advocates also support policy change. To examine the conditioning impact of group type on the linkage we interact public opinion and group type in the models. Moreover, since the idea is also that the control variables might affect the relationship between the opinion of groups and the public, these variables are also interacted with public opinion in Model H2 where they are included. Figure H1 illustrates the predicted probability that different types of advocates hold a position in favour of policy change for different levels of public support for policy change.

Table H1: Actor-level Opinion Linkage: Relationship between degree of public support for policy change and the position of the interest group (pro/con policy change) (Multi-level Logistic Regressions with SEs in Parentheses)

Models	(H1)	(H2)
Dependent variable	<i>Opinion of advocate (In favour/against)</i>	<i>Opinion of advocate (In favour/against)</i>
Group Type (ref.: Public Interest Groups)		
Hobby & Identity	1.46 (0.99)	1.58 (1.02)
Business	3.08*** (0.81)	3.01*** (0.82)
Trade Unions & Occupational Firms	1.70* (0.80)	1.74* (0.82)
Expert Org & Think Tanks & Institutional associations	2.82*** (0.78)	2.76*** (0.79)
	3.96*** (0.79)	4.02*** (0.80)
Share of public in favour of policy change	6.19*** (1.59)	3.95 (3.60)
Interaction Effects		
Group Type*Share public in favour		
Hobby & Identity*Share public in favour	-4.54* (2.08)	-4.91* (2.13)
Business *Share public in favour	-7.10*** (1.82)	-6.99*** (1.83)
Trade Unions & Occupational *Share public in favour	-3.35+ (1.84)	-3.66+ (1.87)
Firms *Share public in favour	-5.65** (1.81)	-5.57** (1.82)
Experts, Think Tanks & Inst.*Share public in favour	-7.75*** (1.79)	-7.91*** (1.81)
Issue Level Controls		
Country (ref: Germany)		
UK	0.18 (0.50)	0.04 (1.28)
Denmark	0.54 (0.51)	-0.64 (1.17)
Sweden	0.06 (0.53)	-2.42* (1.24)
Netherlands	0.53 (0.52)	-1.01 (0.52)
Policy Type (ref: Distributive Issues)		
Regulatory		0.54 (1.36)
Redistributive		-0.58 (1.43)
Media Saliency		0.38 (0.43)
Interaction Effects with Controls		
Regulatory Issues*Share public in favour		-0.81 (3.40)
Redistributive Issues*Share public in favour		1.86 (3.48)
Media Saliency * Share public in favour		-0.19 (0.99)
UK* Share public in favour		0.57 (2.76)
Denmark* Share public in favour		2.71 (2.20)
Sweden* Share public in favour		6.11* (3.09)
Netherlands* Share public in favour		3.61 (2.66)
Constant	-3.00*** (0.80)	-1.98 (1.57)
Policy Issue Intercept	0.79** (0.29)	0.57* (0.23)
Number of Cases	771	771
AIC	993	1003
BIC	1072	1129

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

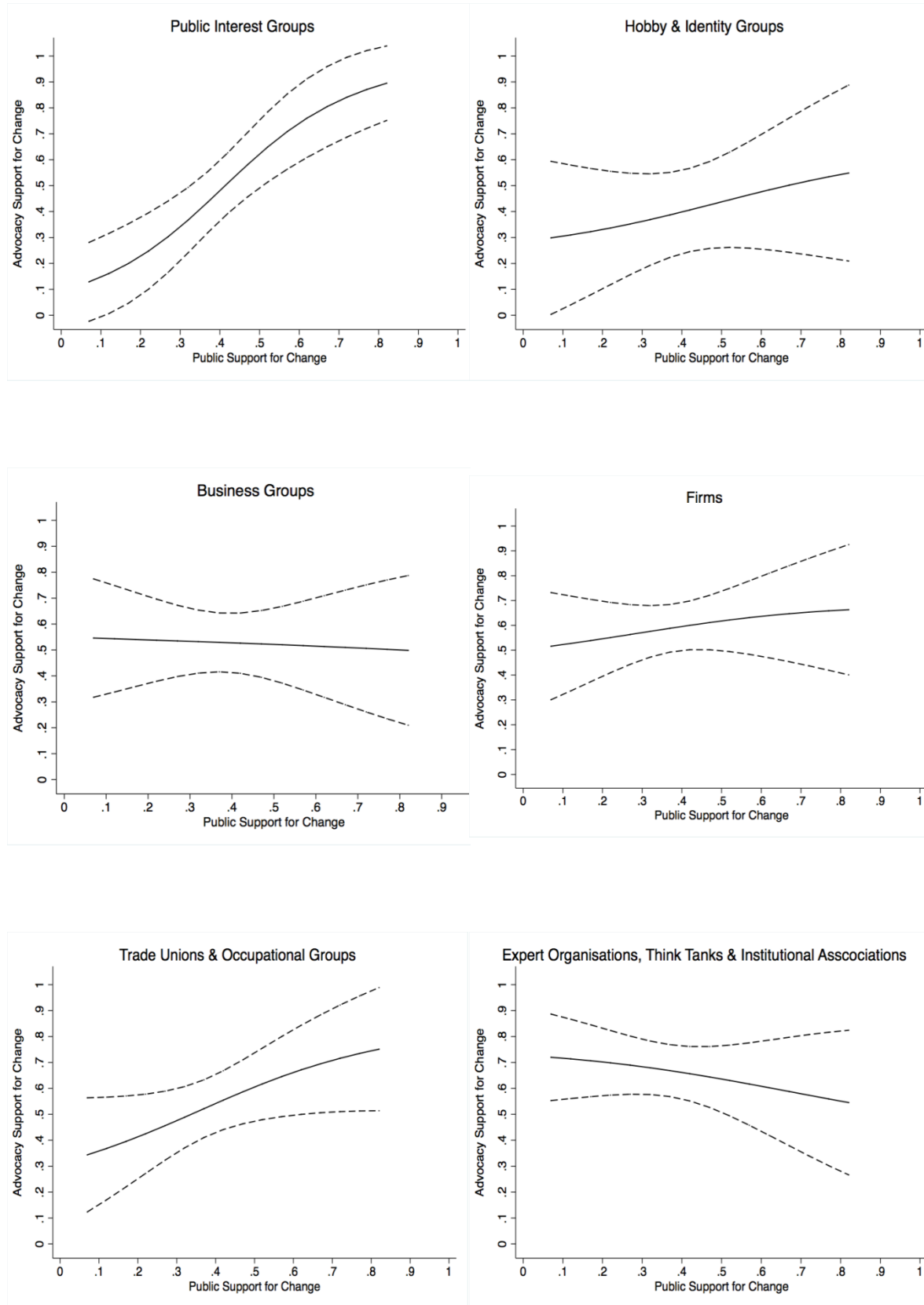


Figure H1: Predicted Probability of Advocacy Support for Policy Change for Different Types of Advocates (based on Model H2)

Opinion linkage at the issue level

Models H3 and H4 examine the effect of the two measures of bias on opinion linkage at the issue level. In order to do so, we include interactions between public opinion and the bias measures in the regressions allowing us to determine whether the relationship between the share of support for policy change by the public and the interest groups on an issue is conditioned by the bias measures.

Table H2: Issue-Level Opinion Linkage: Relationship between the share of the public and the share of the interest groups on the issue supporting policy change (OLS Regressions with SEs in Parentheses)

Model	(H3)	(H4)
Dependent variable	<i>Share of advocates in favour</i>	<i>Share of advocates in favour</i>
Share of public in favour	0.37 (0.39)	0.41 (0.28)
HHI	0.42 (0.38)	
Share of business groups		0.12 (0.30)
Interaction Effect		
HHI*Share of public in favour	-0.16 (0.86)	
Share of business groups *Share of public in favour		-0.43 (0.64)
Constant	0.23 (0.19)	0.39** (0.13)
Number of Cases	50	50
Adjusted R ²	0.08	0.00

Appendix I: Opinion Volume at the Issue Level**Table I1: Share of the public holding the same position as the majority of the interest groups (pro/con policy change) on the issue (OLS Regressions with SEs in Parentheses)**

	(I1)	(I2)	(I3)	(I4)	(I5)	(I6)
	Volume	Volume	Volume	Volume	Volume	Volume
HHI	-0.19 (0.14)	-0.27* (0.13)	-0.21 (0.16)			
Share of business groups				-0.12 (0.11)	-0.08 (0.10)	-0.17 (0.11)
Country (ref: Germany)						
UK		0.07 (0.09)	0.01 (0.10)		0.05 (0.09)	-0.02 (0.09)
Denmark		0.29** (0.09)	0.27** (0.09)		0.26** (0.09)	0.24* (0.09)
Sweden		0.27** (0.09)	0.31** (0.09)		0.24* (0.09)	0.33*** (0.09)
Netherlands		0.18* (0.09)	0.18+ (0.09)		0.14 (0.09)	0.16+ (0.09)
Number of actors on an issue (logged)			0.05 (0.05)			0.11* (0.05)
Media saliency			-0.06+ (0.04)			-0.09* (0.03)
Policy Type (ref: Distributive Issues)						
Regulatory			0.10 (0.10)			0.08 (0.10)
Redistributive			0.05 (0.10)			0.08 (0.10)
Constant	0.63*** (0.07)	0.50*** (0.08)	0.27 (0.22)	0.58*** (0.05)	0.43*** (0.08)	0.06 (0.17)
Number of Cases	50	50	50	50	50	50
Adjusted R ²	0.02	0.22	0.23	0.00	0.15	0.24

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

