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A CLIMATE FOR CHANGE?

Political Communication and the Prospects for Large-Scale Collective Action on Climate Change

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Political Communication and the Prospects of Large-Scale Collective Action on Climate Change

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Linde's research interests lie at the intersection of theories of collective action, political behavior, and political communication. He is especially interested in studying how (political) communication affects individual attitudes towards cooperation in large-scale collective action dilemmas. Empirically, his research mainly focuses on environmental and climate change policy.

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ABSTRACT

This thesis investigates the importance of communication for individual cooperation in large-scale collective action dilemmas. In large-scale dilemmas, involving thousands or even millions of participants, possibilities for communication are highly restricted beyond the immediate social vicinity of individuals. Furthermore, as the public goods on which individuals cooperate in large-scale dilemmas often are both distant and abstract in nature (climate change, ozone depletion, overpopulation), individuals need information about the characteristics of the resource in question, the relevant set of other actors participating, and the individual costs and benefits of cooperation.

To compensate for the lack of communication and first-hand information, individuals in large-scale dilemmas are generally assumed to rely on different forms of judgmental and behavioral 'heuristics' (e.g. social and personal norms) to make cooperative decisions. In this thesis I focus on how individuals use communications from trusted elite sources (notably political parties) as a behavioral heuristic when making cooperative decisions. The aim of the thesis is to investigate the relationship between political communication and large-scale collective action, and how this relationship varies with individual and contextual factors. This is studied in the context of climate change mitigation, which is a typical case of large-scale collective action.

Using a country comparative approach, and cross-sectional survey data, the results show that: (1) political communications both directly and indirectly (by shaping perceptions of collective efficacy and collective benefits) influences individuals' cooperative/non-cooperative decisions, and that this

effect goes beyond other individual level factors, e.g. ideology, income, education; (2) not only specific communications, but also perceptions of the overall political climate (degree of polarization and the average party stance) affects attitudes both directly and indirectly; (3) these effects are not isolated to certain environments, but (to varying degree) can be found across political contexts and parties. The results have important implications both practically for policy makers, by creating a deeper understanding of the formation of individual climate change attitudes, and theoretically, by creating a better understanding of how individuals make decisions in large-scale collective action dilemmas.

INTRODUCTION

This thesis engages with one of the fundamental questions of political science, the question of how groups and communities can produce and maintain collective goods. The overarching objective of the thesis is to investigate how communication affects public preferences for cooperation in large-scale collective action dilemmas. By merging theories on collective action and political communication the thesis tries to improve our understanding of how the political environment in a society can shape the preconditions for public participation in large-scale collective action. Specifically, the thesis focuses on investigating how communications from political parties – both individually and aggregately – affects public support for climate change mitigation policies.

Collective action theory is focused on the analysis of the strategic incentives and cooperative behavior of groups of individuals with a common interest in the provision of a public good (Hardin 1982). Based in the strategic logic of game theory and in the characteristics of public goods (non-rivalry/non-excludability), a collective action problem is said to occur when it is in each individual group member's interest to choose the non-cooperative option, even though all group members would benefit if everyone choose to cooperate. Dawes (1980:170) defines collective action problems (or social dilemmas) according to two main properties: "(a) the social payoff to each individual for defecting behavior is higher than the payoff for cooperative behavior, regardless of what the other society members do, yet (b) all individuals in the society receive a lower payoff if all defect than if all cooperate". Following, when left unresolved, collective action problems will leave all group members worse off than if cooperation had been achieved.

Despite this, it will never be in any individual's interest to choose a cooperative strategy.

While traditional formulations of collective action theory states that collective action will be impossible unless the group size is very limited or there are selective incentives to motivate cooperation (see e.g. Olson 1965), more recent research has shown that successful cooperation is possible under the right circumstances. Specifically, work by Nobel laureate Elinor Ostrom and others have demonstrated how groups with limited number of clearly defined actors, regularly interaction, access to face-to-face communication and clear information about the cooperative strategies of all group members often are able to self-regulate in order to overcome problems of collective action (Dietz, Ostrom, and Stern 2002). However, much less is known about the prospects for collective action in very large groups, such as cooperation around global public goods.

Large-scale collective action dilemmas are at the heart of many of the most pressing challenges facing modern society, such as climate change, resource depletion, and over-fishing, and have been described as the main challenge for political science to address (e.g. Ostrom 2003, Mansbridge 2014). Beyond the fundamental strategic nature of collective action (i.e. the incentive to free-ride), large-scale dilemmas are also characterized by involving a very large number of mutually anonymous resource users, high degrees of social and environmental uncertainty, and by a temporal and geographical displacement between group members' actions and their consequences (Lubell 2002, Van Vugt et al. 2000). This means that many of the factors found to promote cooperation in the smaller-scale dilemmas (e.g. the management of a common pasture), such as the ability of actors to monitor the resource, to regulate and enforce overuse, and to communicate

face-to-face (Dietz et al. 2002) are missing or fundamentally changed in large-scale dilemmas.

One of the main barriers to cooperation in large-scale dilemmas is the individual lack of strategic information, partly about the resource problem in question, but also about the cooperative intentions of other group members. This lack of information means that individuals have to make cooperative decisions under high degrees of environmental and social uncertainty (i.e. about the resource's characteristics and other group members behaviors). To overcome this uncertainty, and compensate for the lack of strategic information, individuals in large-scale dilemmas have been argued to rely on different forms of behavioral heuristics, such as generalized interpersonal trust (Bonniface and Henley 2008, Duit 2010, Harring and Jagers 2013) and social norms (Biel and Thøgersen 2007, Kallgren et al 2000, Cialdini et al. 1990) when making cooperative decisions. However, very little research has focused on the role of communication, and how different forms of communication interacts with, or impacts, the different behavioral heuristics previously identified to influence decision-making in large-scale dilemmas. In small-scale dilemmas, communication has been shown to 'dramatically increase' levels of cooperation (Biccheri 2002:1, see also Borstein and Rapaport 1988, Orbell et all 1990). Despite this, almost no studies have investigated what role, if any, communication has for decision making in large-scale dilemmas (for exceptions, see Bolsen et al. 2014a, 2014b, Staats, Wit and Midden 1995).

In order to overcome some of this shortcoming, the overarching objective of this thesis is to create a better understanding of individual decision making in large-scale collective action by studying how individual cooperative decisions are impacted by communications from elite sources.

Specifically, the thesis focuses on investigating the role of communication from political parties. While there is a range of different sources with potential influence over public preference formation (e.g. scientists, policy experts, journalists, celebrities, social media personalities), political parties have a unique role as interest representatives in most democratic systems. Given the logic of electoral competition, political parties have a given role at the center of political debate, from which they have a considerable influence over the framing of most policy issues (Slothuus and de Vreese 2010) and are uniquely well positioned to structure, mobilize, and influence public opinion (Leeper and Slothuus 2014).

Aim

With its focus on the role of political parties, the aim of the thesis is *to investigate the relationship between political communication and large-scale collective action, and how this relationship varies with individual and contextual factors*. Included in this aim is the ambition to explore the direct relationship between political communication and individual cooperative behaviors; to investigate possible individual level mechanisms by which these two factors relate two each other; and to study how these effects vary with individual and contextual factors.

The empirical part of the thesis focuses on public cooperation around climate change mitigation. Climate change mitigation is a typical case of a large-scale collective action problem, characterized by the negligible impacts and high costs of individual cooperation, a general lack of face-to-face communication and first-hand information, and the following difficulties with coordinating cooperative efforts (Lubell, Zahran and Vedlitz 2007). As a large-scale collective action dilemma, climate change is also in many aspects unique, both in its magnitude and in the time-scale involved, but also

from the fact that its slow, cumulative process makes it almost impossible to observe directly (van der Linden 2015, Weber 2010). Climate change mitigation is furthermore a highly politicized, and in many areas politically polarized, policy issue, which is evident both in international level negotiations (Christoff 2016, Gupta 2010, Harrison and Sundstrom 2010) and domestically in many countries (Bang 2015, Tranter 2013, Dupont and Oberthür 2015).

THEORETICAL FRAMEWORK

The aim of the present thesis is to investigate the relationship between political communication and large-scale collective action. To do so, a theoretical framework linking collective action theory to theories on political communication is developed.

Motives for cooperation

Traditional formulations of collective action theory (e.g. Olson 1965) are commonly based on assumptions of complete rationality and utility-maximizing individual behavior. However, these models have been criticized for giving a to narrow perspective on human motivation (Finkel, Muller and Opp 1998) and research in both field and laboratory settings have shown them to be unsuccessful in predicting behaviors in other than highly competitive situations (Ostrom 2003). For example, in one-shot prisoners' dilemma games, in which rational choice models predict complete defection, an average of about 40 to 60 % of participants chooses a cooperative strategy despite the obvious risk of being cheated in return (Ostrom and Walker 2003). To better reflect the full range of factors that guide individual attitudes towards participation in collective action, it has been argued that models of collective action must consider the limits of human rationality

and the importance of heuristics, moral and normative behavior, and reciprocal exchanges (Lubell and Scholz 2001, Ostrom 1998).

Overall, four main factors - collective benefits, personal efficacy, collective efficacy, and selective incentives – have been suggested to guide individual cooperative behavior (Finkel et al. 1989, Finkel and Muller 1998, Gibson 1997, Klandermans 1984). First, while conventional rational choice models of collective action argue that the individual choice to cooperate (or more likely to 'defect') is a purely strategic decision, newer research has argued that individual behavior also is affected by or the perceived collective benefits of successful cooperation (that is, the individual demand for the good). As the perceived collective benefits increases, the higher the likelihood is that an individual will choose a cooperative strategy (Finkel et al. 1989). Second, due to the large number of participants and the non-excludability of public goods, the individual marginal contribution to the probability of cooperative success is close to zero in large groups. This lack of personal efficacy is also one of the main motives for defecting behavior according to conventional rational choice models (Hardin 1982). However, contrary to rationalist expectations, individuals are often – either as a result of an 'illusion of self-efficacy' or an adherence to principles of 'collective rationality' - found to overestimate their personal importance for group success (Kerr 1996, Finkel et al. 1989). Following, individuals that feel more personal efficacious will be more prone to cooperate.

Third, irrespective of perceptions of collective benefits and feelings of personal efficacy, most individuals (though not all) are conditional cooperators who will refrain from cooperative behavior unless there at least is a reasonable chance for cooperative success. Cooperative behavior will as such depend on an individual estimation of the level of collective efficacy, that is, the perception whether the relevant group or collective will be able

to perform a given task or not (Bonniface and Henley 2008, Koletsou and Mancy 2011). As most forms of large-scale collective action (e.g. cooperation around climate change mitigation) is dependent on the efforts of both individual community members and political institutions to be successful, perceptions of collective efficacy are centrally related to two other concepts: interpersonal and institutional trust (see e.g. Biel and Thøgersen 2007, Duit 2010, Harring and Jagers 2013, Levi and Stoker 2000, Lubell and Vedlitz 2006, Sønderskov 2011). Fourth, and final, individuals have also been found to consider the selective incentives (the costs and benefits) related to participation when deciding whether to cooperate or not. Besides more material forms of incentives – such as the time, economic resources, and alternative costs that an individual must dispose of when participating in collective action - selective incentives can relate to the fulfillment of expectations of peers, enjoyment of social benefits of cooperating with likeminded, or the satisfaction of fulfilling one's internal sense of duty (Gibson 1997, Olson 1965, Lubell et al. 2007).

Communication in large-scale dilemmas

For many types of large-scale collective action, possibilities for individuals to accurately estimate things as the value of the public good (collective benefits), the cooperative intentions of other group members (collective efficacy), and the effectiveness of individual action (personal efficacy), is highly limited because of high degrees of social and environmental uncertainty (Van Vugt et al. 2000). This is perhaps especially true for the case of climate change mitigation where information about the origins, impacts, dispersion, and possible solutions of climate change for most people (at the present) are very hard to observe and even less so experience in everyday life (McCright 2011).

In these types of situations, where individuals are faced with the task of making complex choices under high degrees of uncertainty, political parties play a potentially important role in providing individuals with the necessary information for making these cooperative choices. Commonly, political parties influence public opinion in two main ways. First, they simplify and structure political reality and provide individuals with a limited number of alternatives to choose from. Individual voters do as such not choose the alternatives, but only chose between the alternatives presented to them. Second, political parties also work to inform, mobilize, and persuade voters to make specific choices among the alternatives presented to them. That is, parties do not only structure the political debate, but also influence what voters think about different political choices, and hence influence what choices goes with what predispositions (Leeper and Slothuus 2014).

In order to effectively utilized political communications to make well-grounded choices, individuals need ways to evaluate the information they are provided with. Previous research has identified two main ways in which individuals do so. First, the effectiveness of communication is dependent on how a given message is framed (Druckman 2001). A vast literature in a wide range of social science sub-disciplines have shown how public evaluations of political issues and policies are affected by how these issues are portrayed, or 'framed', in communication (Bolsen et al. 2014, Druckman et al. 2013, Petersen et al. 2010). That is, by emphasizing a subset of potentially relevant considerations, or by presenting a given set of information in either a 'positive' or 'negative' way, political actors can have potentially important impact on how an issue is understood (Druckman 2001). Second, besides the framing of communications, individuals have also been found to evaluate political messages based solely on who the source of a message is. By adopting attitudes congruent with messages sent by sources which an

individual trust (e.g. a politician of the party you support), individuals have an efficient way of forming attitudes that are aligned with their underlying predispositions (e.g. identities, ideology or values) without holding large amounts of information (Lupia and McCubbins 1998, Sniderman et al. 1991, Zaller 1992). The reliance of these so called 'party source cues' has been argued to be especially important for complex and abstract political issues such as climate change (Boudreau 2009, Nicholson 2012). It is the latter of these two ways of evaluating communications, the so called 'cue taking process', that is the focus of this thesis.

In a simplified way, the cueing process, by which individuals link political communications to specific predispositions, consist of two parts: source and a message. When a partisan source (e.g. a politician) sends a political message (e.g. advocating a stance on an issue), an individual voter recognizing the source will evaluate the message from a partisan perspective. That is, the source in combination with the message will 'prime' the individual to view the message from a partisan perspective. In the case that the source and the individual receiving the message share party label (i.e. support the same party), the individual will accept the message, largely without reflecting on the actual contents of the message. Conversely, if the source and the individual receiving the message support different parties, the message will be rejected, again without reflecting much on its contents (Goren et al. 2009). Acceptance or rejection of the message is as such more a matter of whether an individual voter trust the source, rather than an evaluation of the actual contents of the message.

In the case of large-scale cooperation around climate change mitigation, party cues can contain messages both about specific behaviors and policy attitudes, but also about the collective benefits, the level of personal and

collective efficacy, and the selective costs and benefits of cooperation. Specifically, these messages might, for example, contain information about: the risks associated with a changing climate (collective benefits), the individual moral responsibility to act in an environmentally friendly way (personal efficacy), the impact of concerted public efforts (collective efficacy), the role of government in mitigation (collective efficacy), the individual economic incentives of energy conservation (selective costs/benefits), and about the behaviors and policies that most effectively mitigate climate change (cooperation). The contents of these messages will, in turn, either independently, or interactively, influence individual attitudes towards cooperation (Bolsen et al. 2014a).

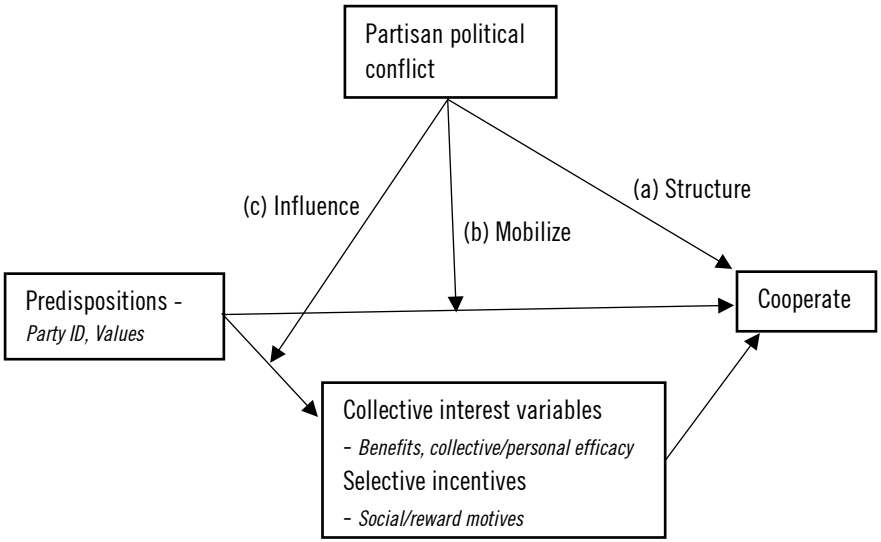

Figure 1. A theoretical model linking political communication to large-scale collective action

Following the above reasoning, the effect of party cues can be expected to both have direct and indirect effects on individual attitudes towards cooperation. First, by both structuring behavioral choices and policy alternatives (relationship (a) Figure 1) and by mobilizing voters to adopt party congruent attitudes/behaviors (relationship (b)), party cues can have a direct effect on the cooperative behaviors of individual voters. Second, by influencing individual perceptions of the benefits of cooperation, the personal and collective levels of efficacy, and of the selective costs and benefits of cooperation, party cues can indirectly influence individual behavioral choices. The resulting effect of individuals processing political communications from a partisan perspective, is that individual voters supporting different parties will form different attitudes about what behaviors are appropriate and what policies should be implemented, about the risks that climate change poses, and also about the possibilities for getting people and government to effectively cooperate. As political polarization increases, these differences will be even greater, and the chances for finding common ground with opposing partisans will decrease. Finally, as polarization increases individuals will be faced with an increasing number of conflicting messages about the characteristics of the problem, the different solutions available, and the effectiveness of different actions. This is likely to both directly influence individual perceptions of different cooperative actions, but also have an indirect effect by shaping perceptions of collective benefits, personal and collective efficacy, and selective costs and benefits.

Research questions

In light of the aim of the thesis, and the theoretical framework elaborated above, two research questions are formulated. These two questions will guide the empirical part of the thesis:

1) Do party cues affect individual choices to cooperate in large-scale collective action? If so, in what ways and to what extent? Included in this question is the ambition to both investigate the direct (relationship (b) in Figure 3) and the indirect (relationship (c) in Figure 3) relationship between party cues and individual cooperative decisions. The extent to which these relationships vary with individual and contextual factors will also be investigated.

2) To what extent does the political climate, particularly the degree of political polarization, affect individual choices to cooperate in large-scale collective action? Just like the first research question, this research question is interested in both the direct and indirect relationships in the theoretical model. Furthermore, it is also interested in investigating the effect of polarization both as a moderating factor to party cues and the effects of perceived polarization.

Overall, there are very few empirical studies investigating the above relationships. While there is a general understanding of how party cues influence individual attitudes (policy attitudes or candidate evaluations specifically), there is a lack of research investigating the importance of political communication generally, and party cues specifically, in the context of large-scale collective action dilemmas.

METHODOLOGY

In order to study the extent to which the investigated relationships vary across political contexts a country comparative approach is chosen. Based in a 'loose' application of the *Most Similar Systems Design* (MSSD) (see Anckar 2008:390), four cases: Sweden, Norway, Australia, and New Zealand, were

selected. All four countries are industrialized Western countries, with well-developed economies and stable parliamentary democracies. While the electoral systems differ somewhat between the countries, the four countries also have a largely similar party system defined by a left/right-division between the Social democrats/Labor Party, the Green Party, and possibly a Left Party and the Conservatives, the Liberal Party(-ies), and possibly a Christian Democratic party. All countries also have a far-right populist party represented in parliament, that commonly are closer aligned to the Conservative/Liberal block. Despite these similarities, there are clear differences in the nature of party politics on climate change in each country. These differences are in turn believed to be strongly related to the overarching climate of political communication in each country.

The data were collected by the use of a country comparative sample survey (see Appendix 1 for survey details). In the present case, the sampling procedure varied somewhat between the four cases, and combined both random probability sampling and non-probability sampling. In Sweden, the survey was administered as part of a large on-going online panel administered by the Laboratory of Opinion Research (LORE), at the University of Gothenburg. The sample was selected using proportional stratified random sampling, where the size of each stratum was decided based on census data from Statistics Sweden. The total number of respondents were 4022 (response rate 69.86%). In Australia, New Zealand, and Norway the surveys were administered by the sample provider Cint and by Survey Sampling International (SSI). Like the Swedish survey, these surveys were administered electronically. The samples collected by Cint and SSI were quota samples (with quotas for age and gender) with an aim of 2000 respondents from each country (1000 for each sample in New Zealand). In

total, the number of responses was 2268 in Australia, 2178 in Norway, and 2229 in New Zealand.

RESULTS

The empirical work was conducted in four separate studies, each focusing on a specific part of the theoretical model. Study I, which investigated the effects of partisanship and party cues in a context of political consensus (Sweden), discovered a significant positive relationship between party cues and individual support for CO_2-taxes (Table 1). This effect was retained even when controlling for partisanship, two measures of ideology (left/right and environmentalism), and a number of demographic control variables (age, gender, income, and education). The effect of party cues was also found to be positively moderated by political interest. This is a first indication of how individuals do rely on party source cues when making cooperative choices, and, how this effect also can be found in non-polarized political contexts.

Table 1. Policy support regressed on party cues

	Model 1	Model 2	Model 3
Party cue	0.203 (0.029)†	0.119 (0.028)†	0.122 (0.028)†
Political interest	0.147 (0.043)†	0.041 (0.041)	0.011 (0.042)
Cue x interest	0.116 (0.030)†	0.093 (0.027)†	0.101 (0.027)†
Left/right ideology		-0.099 (0.020)†	-0.10 (0.020)†
Environmentalism		0.229 (0.016)†	0.220 (0.016)†
Constant	0.332 (0.153)**	0.459 (0.150)†	0.288 (0.162)*
N	1954	1948	1948
F	97.065†	120.112†	86.884†
Adj. R2	0.296	0.403	0.416

Entries are unstandardized coefficients with heteroskedasticity consistent standard errors in parentheses. Grand mean centered variables. Party fixed effects suppressed. Dependent variable: *Policy support*. *=p<.10, **=p<.05, †=p<.01.

Two further findings are worth mentioning. First, as an indirect indication of the effect of party cues, the results also showed how the effect of partisanship (not party cues) was not isolated only to some policies (such as taxes) but could be found a across a wide range of different policies. Across the eight different policies studied, partisanship alone explained about 10-20% of the variance in policy support. While it is unclear whether these differences in policy attitudes are the results of individuals following party cues, it does not seem unlikely that this at least partly is an explanation. Second, the results also showed how the effects of party cues varied across parties such that supporters of some parties were more influenced than others. The effect of party cues was found to be the most important to supporters of the Left Party and the Sweden Democrats, both of which can be considered ideologically 'radical' in different ways. For four parties (the Green Party, the Liberal Party, the Center Party, and the Christian Democrats), the effect of party cues was insignificant when allowed to vary across parties. For the last two parties (the Social Democrats and the Moderate Party), the effect of cues remained just barely significant.

In Study II, the effect of party cues on public support for climate mitigation policy (CO_2-taxes) was investigated in a country comparative perspective. The results from the study (Table 2) showed how party cues is a significant predictor of policy support in all four countries, even when controlling for ideology (left/right and environmentalism), partisanship, and a number of demographic variables (age, gender, income, and education). However, the magnitude of this effect was found to vary across the four cases. The results furthermore showed how the effect of party cues was positively moderated by political awareness in three of the four cases. The other individual level moderator, party attachment, was only barely significant for one country and insignificant in the rest. In the last part of the analysis, the effect of party

cues was modeled such that it could vary across the four countries. This was done in order to compare the strength of the relationship between cues and policy support across the four cases. The results from this analysis indicated that there was a significant difference in the effect of party cues between New Zealand (which had a weaker effect) and the other three countries. While the limited country level sample size restricts possibilities for generalizations beyond the present cases, this is at least a first indication that the effect of cues varies across political contexts.

Table 2. Regressing policy support on party cues

	Australia	New Zealand	Norway	Sweden
Party cue	0.245 (0.039)†	0.168 (0.035)†	0.187 (0.040)†	0.172 (0.033)†
Political awareness	0.199 (0.050)†	0.058 (0.057)	0.079 (0.067)	-0.001 (0.046)
Party attachment	0.076 (0.063)	0.056 (0.067)	0.059 (0.076)	0.002 (0.051)
Polarization	-1.033 (0.372)†	-0.284 (0.214)	-0.827 (0.364)**	-1.015 (0.289)†
Cue x awareness	0.101 (0.032)†	0.084 (0.037)**	0.065 (0.040)	0.098 (0.029)†
Cue x attachment	0.004 (0.039)	0.004 (0.046)	0.080 (0.046)*	0.001 (0.031)
Cue x polarization	-0.068 (0.170)	-0,068 (0.123)	-0.035 (0.172)	0.231 (0.144)
Left/right ideology	0.022 (0.022)	-0.009 (0.024)	-0.025 (0.025)	-0.095 (0.021)†
Environmentalism	0.196 (0.020)†	0.167 (0.022)†	0.215 (0.024)†	0.220 (0.016)†
Constant	0.368 (0.155)**	0.496 (0.157)†	0.398 (0.142)†	0.747 (0.106)†
N	1219	1170	1182	1837
F	38.516†	12.896†	36.456†	66.849†
Adj. R2	0.365	0.175	0.359	0.422

Dependent variable: Policy support. *p<.10, **p<.05, †p<.01. Unstandardized coefficients. Group mean centered variables. Robust standard errors in parenthesis. Party fixed effects suppressed.

In Study III, the relationship between party cues and climate change risk perceptions (collective benefits) was investigated in a country comparative perspective (comparing all four countries in the sample). Two different measures of risk, abstract risk (Table 3) and concrete risk (Table 4), was

used to capture the fact that individuals evaluate risks differently depending on what they relate to. The first of these, abstract risk, captures risk for the earth's climate and future generations whereas the second, concrete risk, focuses on risk for the respondents, their families, their countrymen, and for people globally. Looking across the four countries, the results showed that respondents in the two Nordic countries generally were more concerned about the abstract risk, whereas the opposite seemed to be the case for Australia (there was no clear pattern for New Zealand). The results also showed that party cues are a significant predictor of both abstract and concrete risk, even when controlling for partisanship, ideology, and a number of demographic control variables (age, gender, income, and education). This is an indication that the effect of party cues not only affects individual cooperative choices directly, but also indirectly by shaping perceptions of climate change risk.

Table 3. Abstract risk perceptions

Independent variables	Sweden	Norway	Australia	New Zealand
Party cue	.076(.029)†	.122(.038)†	.164(.038)†	.026(.035)
Political awareness	-.081(.043)*	-.092(.064)	.171(.052)†	.015(.058)
Party attachment	.007(.053)	.018(.071)	-.059(.067)	.000(.073)
Polarization	-.661(.273)**	-2.066(.361)†	-2.181(.359)†	-.882(.222)†
Cue x awareness	-.010(.027)	.058(.037)	-.006(.030)	-.013(.033)
Cue x attachment	-.008(.033)	-.012(.043)	-.072(.038)*	.023(.045)
Cue x polarization	.054(.140)	.186(.167)	-.082(.156)	-.425(.112)†
Left/right ideology	-.057(.021)†	-.119(.024)†	-.235(.022)†	-.127(.026)†
Environmentalism	.238(.014)†	.154(.021)†	.172(.019)†	.140(.021)†
Constant	5.818(.109)†	5.140(.144)†	4.176(.146)†	4.338(.171)
N	1852	1187	1223	1173
F	41.156†	24.271†	27.050†	11.553†
Adj. R^2	0.323	0.302	0.299	0.159

Dependent variable: Abstract risk perceptions. *p<.10, **p<.05, †p<.01. Unstandardized coefficients. Standard error in parenthesis. Group mean centered variables. Party fixed effects and demographic control variables suppressed.

The results furthermore showed how the relationship between party cues and risk perceptions generally holds up well in a cross-country perspective. However, a number of differences were found between the two conceptualizations of risk. For the abstract risk perceptions, the relationship between party cues and perceived risk was significant for all countries except New Zealand. For the concrete risk, the relationship was significant for all countries except Sweden. It thus seems like the individual reliance on party cues for evaluating risks varies in cross-country perspective depending on what type of risk that is evaluated. Finally, just as in Study I and II, there were also some indirect evidence of the effect of party cues. Specifically, the results showed how partisanship alone is a strong predictor of climate change risk perceptions (for both conceptualizations of risk and across all countries).

Table 4. Concrete risk perceptions

Independent variables	Sweden	Norway	Australia	New Zealand
Party cue	.012(0.028)	.094(.032)†	.120(.033)†	.087(.031)†
Political awareness	-.063(.041)	.042(.054)	.196(.045)†	.118(.052)**
Party attachment	.065(.050)	-.050(.059)	-.050(.058)	-.217(.066)†
Polarization	.315(.260)	-.176(.303)	-.296(.310)	-.382(.199)*
Cue x awareness	.038 (.026)	.047(.031)	.056(.027)**	.059(.029)**
Cue x attachment	.020(.031)	.036(.036)	-.051(.033)	.000(.040)
polarization	-.005(.133)	.059(.140)	.248 (.136)*	-.148(.099)
Left/right ideology	-.010(.020)	-.048(.021)**	-.047(.019)	-.030(.024)
Environment	.241(.013)†	.225(.017)†	.228(.017)†	.179(.019)†
Constant	5.069(.104)†	4.306(.120)†	4.620(.127)**	4.299(.153)***
N	**1847**	1178	1218	1172
F	35.979†	24.966***	29.264***	11.852***

Adj. R^2	0.294	0.309	0.317	0.163

Dependent variable: Concrete risk perceptions. *p<.10, **p<.05, †p<.01. Unstandardized coefficients. Standard error in parenthesis. Group mean centered variables. Party fixed effects and demographic control variables suppressed.

Study IV investigated the relationship between perceived polarization and political trust (collective efficacy) in a country comparative perspective (comparing Australia and Norway). Similar to Study III, two measures of trust were used: political trust (measuring the perceived competence of political institutions) and political priority (measuring the perceived priority the institutions give to climate change mitigation). The effect of perceived polarization on these two measures of political trust was investigated for four different political institutions (parliament, political parties, cabinet and minsters, and governmental agencies) both separately and as index variables. Unexpectedly, the results showed that perceived polarization was unrelated to either of the two measures of trust in both countries (Table 5 and Table 6).

Table 5. Multivariate analysis: Political trust

Independent variables	Norway	Australia
Polarization	-.028(.569)	.005(.057)
Mean party stance	.222(.670)†	.249(.041)†
Incumbent party	-.033(.110)	.146(.080)†
Inc. x polarization	-.050(.636)	.005(.099)
L/R ideology	-.060(.020)	.151(.019)†
Attitude extremity	-.013(.024)	.053(.021)*
Constant	3.760(.170)†	.989(.325)**
Adjusted R^2	.049	.230
N	1382	1576
F	6.915†	40.282†

Dependent variable: Political trust. Standardized regression coefficients. Standard errors in parenthesis. Group mean centered variables. *=p<0.05, **=p<0.01, †=p<0.001.

Beside the effect of perceived polarization, Study IV also investigated how the perceived mean party stance (that is, the 'average' of all parties' position climate change mitigation) affected political trust. Unlike the measure of perceived polarization, the perceived mean party stance had a strong, positive and highly significant effect across both countries and both types of trust. So, while the degree of perceived polarization seems to be of limited importance to public political trust, the average position taken by parties seems to be of considerably bigger importance. Finally, by comparing the amount of explained variance across the two cases, there was again an indication that the explanatory power of the model varied contextually. Specifically, it seemed better suited to the highly polarized Australian context. Any such comparisons should though be made carefully, and further research is needed to better probe into the effects of context.

Table 6. Multivariate analysis: Political priority

Independent variables	Norway	Australia
Polarization	.011(.436)	-.036(.053)
Mean party stance	.376(.512)†	.328(.039)†
Incumbent party	.032(.085)	.120(.074)†
Inc. x polarization	-.015(.489)	.045(.092)
L/R ideology	.037(.016)	.182(.018)†
Attitude extremity	-.010(.018)	.038(.020)
Constant	3.876(.131)†	1.064(.301)†
Adjusted R^2	.151	.280
N	1370	1568
F	21.326†	51.691†

Dependent variable: Political priority. Standardized regression coefficients. Standard errors in parenthesis. Group mean centered variables. *=p<0.05, **=p<0.01, †=p<0.001.

DISCUSSION

Together, the findings from the four studies offer new interesting insights into how individuals make cooperative choices in large-scale dilemmas. While the results presented here are too limited to claim that communication has the same 'dramatic' effect on cooperation in large-scale collective action as in small-scale (see Bicchieri 2002), it is still clear that individual cooperative choices are significantly impacted by political communication. Given the limited attention that has been given to the role of communication in large-scale collective action, this is an important contribution to the literature on collective action. The results indicate how the reliance on political communications can be considered as an alternative way, in addition to the use of other heuristics (e.g. social norms and generalized trust), in which individuals can overcome the shortage of first-hand information in large-scale dilemmas.

But political communication should not only be considered as an alternative, but to some degree as a superordinate, heuristic that not only affects cooperative behaviors on its own, but also affects the application of other heuristics. As was shown in the results, the effects of political communications are not limited to cooperative actions directly (e.g. policy support), but also affects individual perceptions of collective efficacy (political trust) and collective benefits (risk perceptions). The degree to which individuals choose to follow social norms, such as norms of reciprocity, can thus be expected to be affected by the type of communications and individual receives. That this might be the case is also indicated by Bolsen et al. (2014a), who shows that political communications can shape collective action behavior by emphasizing the importance and efficacy of individual action.

This reasoning also resonates well with research on both social movements and social norms. It has for example been argued that social movements, by appealing to a given set of values (environmental, social, traditional), can trigger individual personal norms of responsibility and guilt, leading to different forms of collective behaviors (e.g. Stern et al. 1999). So, while individuals might hold a given set of values and beliefs that are necessary for engaging in collective action, these predispositions need to be activated to influence behavior. Similarly, research on social norms have shown how norms are unlikely to have any impact on behavior unless they have been made salient to an agent (Kallgren et al. 2000). Individuals that are unaware that a certain norm is in play, will as such not change their behavior according to this norm. The impact of social norms on behavior will, furthermore, also depend on whether an individual is focused on personal, societal, or situational norms (Cialdini et al. 1990). This kind of 'focusing process' could, at least partly, be driven by the influence of political

communications. The activation of social norms is also one of the main explanations to why communication matters in small-scale dilemmas (Bicchieri 2002).

Furthermore, just like the results in this study have indicated how (perceived) polarization has a negative influence on individual cooperative intentions (both directly and indirectly), so too have previous research shown that norm conflicts can have substantial impact on behavior. Specifically, when norms of several in-groups are made salient to an individual at the same time, they can have both a de-motivating as well as encouraging effect. For individuals with a positive attitude towards a behavior, norm conflicts can have an encouraging effect by enforcing the need for them to act in defense of their values. Contrary, individuals with a negative attitude towards a behavior will to a greater extent be de-motivated by the existence of a norm conflict (McDonald, Fielding, and Louis 2013). In a similar way, research focusing on the effects of polarization have indicated that individuals might be both encouraged and discouraged by high levels of perceived polarization (see e.g. Levendusky and Malhotra 2015, Lupu 2015, Sherman et al. 2003, Westfall et al. 2015).

A final, and related, point of discussion concerns the reasons to *why* political communication affects individual cooperative behaviors. There are several different (and partially competing) explanations to why communication has such strong effect in small-scale dilemmas. It has, for example, been suggested that (face-to-face) communication enables the sharing of information, increases levels of trust and expected reciprocity, elicit social norms, emphasizes certain values, and enhances group identities (see e.g. Bicchieri 2002, Orbell et al. 1988, Ostrom 1998, Simpson 2006, van der Kragt et al. 1983). These explanations are in many ways similar to the two

main theoretical perspectives explaining the influence of party cues. According to one perspective, party cues are seen as cognitive short-cuts that enable voters to form political attitudes that are consistent with their underlying predispositions (Downs 1957, Sniderman et al. 1991). This perspective is in many ways similar to small-scale explanations focusing on the sharing of information and on the enhancement of certain values. According to the second perspective, individuals follow party cues in order to align their attitudes to those of their in-group (Campbell et al. 1960, Greene 1999). This perspective is in turn closer to explanations focusing on the role of group identities. Given these similarities, it seems reasonable to assume that political communication fills many of the same functions for large-scale collective action that face-to-face communication does for small-scale collective action.

CONCLUSION

Many of the world's most pressing environmental problems, among them global climate change, are characterized by an underlying conflict between individual and collective incentives. These problems will therefore, most likely, not be solved by voluntary individual action. The effective resolution of these problems is instead dependent on government efforts to implement policies that through the use of coercion, information sharing, and monitoring, regulate individual behavior (Mansbridge 2014). However, the effectiveness of any policy regime requires widespread policy support among the public. Without support, any policy that tries to regulate individual behavior risk being both in-effective, costly, illegitimate, and short-lived (Citrin and Muste 1999, Joireman et al. 2001, Matti 2010). Understanding under what conditions individuals are willing to support, or

at least accept and comply with, such policies is instrumental for chances of mitigating global environmental problems.

The results from this thesis offers a number of insights that are important for policy makers and other actors to consider when designing, communicating, and implementing pubic policies. First, given the role political parties have in shaping public policy attitudes, it is important for to understand that the effectiveness of a given policy not merely is the result of it being economically rational or based in sound scientific evidence. Instead, policy makers must also, on top of these other factors, consider the political context in which a policy is meant to be implemented. If this is neglected, there is a risk that the policy will be both ineffective, inefficient, and short-lived due to electoral volatility. Second, the partisan dimension must also be considered when communicating climate change to the public. Fundamentally, it is important to understand that public beliefs and attitudes towards climate change not only is a matter of access to information. That is, a lack of concern for climate change, or support for a given policy alternative, is not necessarily an indication that an individual is underinformed about the consequences of a changing climate. Rather, a lack of concern, or low level of support, might equally well be grounded in other predispositions (e.g. party identities) activated by political communications. As a consequence, providing more information is not necessarily enough to change existing beliefs and attitudes.

Finally, the importance of considering the party-political dimension in policy design and communication is greater the more polarized a given political context is. Under high degrees of polarization, the effect of political communications is generally expected to increase, which will lead to increased polarization also among party supporters. Furthermore, the

findings in this thesis also shows that high levels of perceived polarization can lead to lowered levels of both climate change concern and policy support. As a result, high levels of polarization can simultaneously lead to increased polarization among party supporters as well as increased levels of detachment and disillusionment among independent voters. Under such circumstances it is especially important to understand, and to consider, the party-political dimensions in design, communication, and implementation of public policies.

Appendix 1. Survey details

Variable	Question	Scale
Policy support	What is your position on the following policy proposals? (1) A carbon dioxide tax on fossil fuels used for private consumption? (2) A carbon dioxide tax on fossil fuels used by the industrial sector? (3) A carbon dioxide tax on fossil fuel producing industries?	Completely disagree -3, -2, -1, Neither agree nor disagree 0, +1, +2, Completely agree +3
Risk perception	Below is a list of statements about climate change and its potential effects. To what extent do you agree (or disagree) with these statements? (1) Climate change will have a negative impact on my life. (2) Claims that the current levels of emissions have a negative impact on the earth's climate are exaggerated. (3) The lives of many [Australians] will be negatively affected by climate change. (4) Globally, the lives of many people will be negatively affected by climate change. (5) It's not certain that climate change will affect the lives of future generations. (6) Climate change will have a negative effect on my family's life.	Completely disagree (1), 2, 3, 4, 5, 6, Completely agree (7)
Political trust	Below is a list of actors and institutions whose decisions influence the climate. How much trust do you have in the following actors' abilities to positively impact the climate? (1) The parliament, (2) The government, (3) The political parties, (4) Governmental agencies	Not much trust 1, 2, 3, 4, 5, 6, A great deal of trust 7

Party cue	For each of the following political parties, report to what extent you think that they are for or against more forceful measures against climate change even if it means low or no economic growth for the country.	Strongly opposes 1, Opposes 2, Somewhat opposes 2, Neither opposes nor favors 4, Somewhat favors 5, Favors 6, Strongly favors 7
Political interest	Generally speaking, how interested in politics are you?	Very interested (1), somewhat interested (2), not very interested (3), not interested at all (4)
Party attachment	How closely attached are you to this party?	Very closely (1), somewhat closely (2), not very closely (3), Don't know/Rather not say (4)
Polarization	Weighted sum of squared distances between each party's position and the weighted mean position.	
Mean party stance	Weighted mean party stance	
Incumbent party	Dummy variable coded '1' for respondents supporting an incumbent party	
Attitude extremity	Distance between individual self-placement on personal norm scale and scale mid-point, recoded to 0-3 scale where higher numbers indicated more extreme attitudes	
Left/right ideology	There is sometimes talk of political attitudes falling on a left-right scale. Where would you place yourself on this left-right scale?	Furthest to the left 0, 1, 2, 3, 4, Neither left nor right 5, 6, 7, 8, 9, Furthest to the right
Environmentalism	There is sometimes talk of a green environmental dimension in [country] politics. Where would you place yourself on this green dimension?	Not green at all 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A great deal green 10

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