Cultural Theory, Rejection of Cultural Bias, and Party Preference

Abstract

What explains party preference? Ideology and values do but these explanations are undertheorized. We offer grid-group cultural theory (CT) to provide a theory of ideology and values to explain party preference. We aim to demonstrate the value of an operationalization of CT that includes rejection of cultural bias (rejection of political values and beliefs) to explain party preference. Our study builds on research that recognizes the importance of negative partisanship and of rejecting cultural biases and other values in party choice. We analyze the influence of cultural biases on party preference in Denmark, Finland, Iceland, Norway, and Sweden. We find that respondents' top two cultural biases explain up to a third of the variation in respondents' party support in these Nordic multiparty systems and that rejection of cultural biases is an important determinant of party preference. We discuss how our analysis can be extended to other party systems including those with only two major parties.

Keywords: Ideology, Values, Cultural Theory, Grid-Group Cultural Theory, Political Parties, Party Preference, Negative Partisanship

Introduction

We seek to make a theoretical, methodological, and empirical case for analyzing the cultural sources of party preference, particularly the role of rejection of cultural bias (rejection of values and beliefs). Specifically, we aim to demonstrate the value of operationalizing grid-group cultural theory (CT) (Douglas, 1999; Thompson et al., 1990; Wildavsky, 1987) as rejection of cultural bias and as a respondent's two strongest cultural biases, in whatever combination of support and rejection they occur, to explain party preference.

We compare our CT explanation incorporating rejection of cultural bias to ubiquitous left-right ideological and leading value-based explanations for party preference. While CT often but not always explains more variance in party preference than ideology (see also Grendstad 2003a), it consistently provides theoretical specification to these other explanations from a unified, coherent, generalizable position. Thus, CT may be viewed as a competitor but also as complementary to existing explanations.

We hope that our contribution will advance the study of values, ideology, partisanship, elections, and political culture in party politics. So-called negative partisanship (Brady and Sniderman, 1985; Feldman and Zuckerman, 1982) is more important than positive partisanship for explaining some partisan behavior (Abramowitz and Webster, 2016, 2018; Ridge, 2020; Webster and Abramowitz, 2017) and has been found in a variety of countries (Caruana, McGregor, and Stephenson, 2014; Estrada, 2005; Medeiros and Noël, 2014; McGregor, Caruana, and Stephenson, 2015; Rose and Mishler, 1998). Negative partisanship can arise from diverging worldviews (Hetherington and Weiler, 2009), which is how CT is commonly operationalized in survey research (Swedlow et al., 2020).

The Nordic Cultures Survey we analyze covers Denmark, Finland, Iceland, Norway, and Sweden. This study provides a unique opportunity to examine whether the rejection of cultural bias improves explanation of party preference in multi-party systems. It is the only multi-country, multi-party survey data that includes multi-item measures designed specifically to operationalize CT's conception of cultural biases (Grendstad et al., 1999). We find that respondents' top two cultural biases explain up to a third of the variation in respondents' party preference in these Nordic multiparty systems and that rejection of cultural biases is an important determinant of party preference. Our goal is to leverage these Nordic cultural data not only to provide a theoretically-specified account of the role values play in party preference in the Nordic countries but we also hope that CT and our methodological innovations help explain party preference elsewhere.

To situate our contribution in the existing theoretical landscape, we briefly describe the most recent and influential multi-dimensional value-based explanation for party preference in the Nordic countries (Knutsen, 2014, 2017a, 2017b, 2017c) before offering our CT approach.

"Value orientations may be the most central feature of culture," Knutsen (2014: 11) notes, "because they express shared conceptions of what is good and desirable." In a very significant set of studies, Knutsen (2014, 2017a, 2017b, 2017c) identifies five value dimensions that he shows to be important drivers of party preferences in the Nordic countries. Two of these are what he calls "old politics values" – religious v. secular values and left-right economic values. Old politics values are associated with value conflicts in industrial society while the three "new politics values" are associated with value conflicts in post-industrial society: environmental protection versus economic growth values, authoritarian v. libertarian

values, and what Knutsen (2014: 13) calls orientations toward immigration and immigrants that express values.

Moreover, the literature on values and party preference in the Nordic countries has long recognized that rejection of values plays a significant role in party preference. As Karlsen and Aardal (2016: 263), citing Oscarsson et al., 1997, explain

> An individual's attitude is conceived to be located in a series of latitudes or zones: the latitude of acceptance, non-commitment and rejection. From this theoretical perspective, we expect that the ideological pre-dispositions of a voter, that is, his or her political values, will decide which parties will be included in the latitude of acceptance and which parties will be rejected. For example, a voter with pro-immigration values is likely to include only parties that are positive towards immigration in her party set and reject parties hostile towards immigration.

Furthermore, when selecting from among parties within a party set, values and rejection of values continues to play a key role (regarding immigration in Europe, for example, see Ivarsflaten, 2008).

This is all good as far as it goes, but it does not go far enough in our view. The main shortcoming of these efforts to incorporate values in explaining party preferences is underdeveloped theory. They do not provide or develop a value-based theory to explain party preference. The values that ground these analyses are a historically contingent collection (as suggested by the old politics v. new politics distinction). They are not values used to create theory or values embedded in or derived from a unified, coherent theory like CT that claims to be generalizable across space, time, and units of analysis.

This is an avoidable shortcoming and missed opportunity. For not only is there a value-based theory available that *could be used* to explain party preference *but CT already has been used to explain aggregate cultural sources of party support and rejection* (Grendstad, 2003a, 2003b) *and to explore how combinations of support for, indifference to, and rejection of cultural biases explain party preference* (Olli, 1999, 2012) in the Nordic countries. We remind readers of these contributions and then innovate, using the top two cultural biases including rejection of cultural bias to explain individual level party preference.

In the first part of the paper, we provide background on Nordic parties and explanations for party preference, introduce CT, summarize its contribution to explaining Nordic party preferences, and describe our data and analytical methods. Then in the results part of the paper, we show how taking account of the top two cultural biases, including, importantly, the rejection of cultural biases, helps provide a new, more refined, and theoretically specified explanation for party preference. We next summarize and discuss our contribution, including how CT's explanation maps onto the five values analyzed by Knutsen (and many others) and will suggest how CT provides an explanation that accounts for and subsumes them. We close by outlining directions and resources for further research.

Background and Theory

1. Nordic Party Preferences

Some call ideology the most important determinant of party choice (Aardal, Bergh, and Karlsen, 2015), but left-right ideology varies across countries in its ability to explain party preferences (Gilljam and Oscarsson, 1996; Knutsen, 2017b). In the Nordic countries that we analyze here the preference for conservative, left socialist

and social democratic party families can to a large degree be explained by left-right orientation, whereas less so for agrarian, green, and progress party families (Grendstad, 2003a, 2003b). Consequently, multi-dimensional ideological explanations are needed (Gilljam and Oscarsson, 1996; Petersen, Slothuus, and Togeby, 2010).

Nordic countries have eight party families (Knutsen, 2017a). Conservative, Liberal, Agrarian, Social Democrat, and Communist once dominated (Berglund and Lindström, 1978). Over the years, the Socialist-Left took over the position the Communist party family occupied. And three new party families managed to get important positions: the Religious, the Radical Right and the Green.

Nordic party systems historically formed around five political cleavages, originating in socio-economic position, religion, language and the center-periphery conflict (Lipset and Rokkan, 1967). As voters have become less bound by their socio-cultural origins, the search for explanations in election studies has moved towards ideology and issue voting. For example, in Norway social background now explains just 8% while ideology explains 30% and issue voting 18% of party preferences (Aardal et al., 2015: 259).

Knutsen (2017b, 2017c) finds that the total effect of the five value orientations described above is larger than the total effect of five social structural variables on party preferences in each Nordic country. The five social structural variables were region, religion, class, gender, and urban-rural residency, which explain 33% while value orientations explain 50% of the variation in Nordic party preferences. These social structural variables and the five values together explain from 70% of the variation in party preference in Finland to 49% in Iceland (Knutsen, 2017b: 102). The economic left-right dimension is the value orientation that has the largest impact on

Nordic party preferences, with correlations ranging from 0.6 in Sweden to 0.5 in Iceland, which are large effects in Europe (Knutsen, 2017c: 80-98).

2. A Brief Primer on Ideological Multi-dimensionality and Cultural Theory

Scholars increasingly recognize the multi-dimensional nature of ideology (Carmines and D'Amico, 2015; Coughlin and Lockhart, 1998; Feldman and Huddy, 2014; Gilljam and Oscarsson, 1996; Petersen, Slothuus, and Togeby, 2010; Swedlow, 2008; Swedlow and Wyckoff, 2009), and the role of values in shaping party preferences (Goren, 2005; Goren et al., 2009; Jacoby, 2006, 2014; Keele and Wolak, 2006; Knutsen, 2017b, 2017c; Swedlow and Johnson, 2019; Swedlow et al., 2016). One approach is to add value dimensions to the left-right dimension (Knutsen, 2017b, 2017c). Others argue that different value dimensions underlie and cross-cut the left-right dimension (Carmines and D'Amico, 2015; Coughlin and Lockhart, 1998; Feldman and Huddy, 2014; Gilljam and Oscarsson, 1996; Grendstad 2003a; Petersen, Slothuus, and Togeby, 2010; Swedlow, 2008; Swedlow and Wyckoff, 2009). These scholars argue that the left-right dimension confuses, conflates, and inappropriately collapses these other value dimensions. In the US, economic and social/moral dimensions of liberalism and conservatism are the most frequently acknowledged (Carmines and D'Amico, 2015; Swedlow, 2008; Swedlow and Wyckoff, 2009). Conservatism fails to distinguish between social conservatives and economic conservatives who are socially liberal (i.e., libertarians or CT's individualists).

While there are many potential contenders to characterize sources of ideological and value multi-dimensionality, CT is arguably the most theoretically developed (see comparisons in Chai and Wildavsky, 1998; Coughlin and Lockhart,

1998; Grendstad, 2003a, 2003b; Grendstad and Selle, 1997, 1999; Johnson et al., 2021; Maleki and de Jong, 2014; Ripberger and Swedlow, 2021; Swedlow, 2008; Swedlow and Wyckoff, 2009; Swedlow et al., 2016; Swedlow and Johnson, 2019; Swedlow and Ripberger 2021; Thompson, Ellis, and Wildavsky, 1990; Verweij et al., 2020).

CT is a general social theory that is being used to advance subfield explanations in political science (6 and Swedlow, 2016; Johnson and Swedlow, 2019a; Swedlow, 2011; Swedlow, 2014). CT's core claim is that only certain combinations of *social relations* and *cultural biases* (values and beliefs) support each other, while the rest do not. These mutually supportive combinations, which can be used to create lasting institutions, are called *ways of life* or cultures. Two dimensions of social relations, *grid* – the extent of social rules and regulations – and *group* – the degree to which an individual's life is absorbed in and sustained by group membership – generate the institutional, relational aspect of culture as conceived in CT. Intersecting the grid and group dimensions in Figure 1 creates institutions that are *hierarchical* (high grid and group), *egalitarian* (low grid, high group), *individualistic* (low grid and group), and *fatalistic* (high grid, low group).

INSERT FIGURE 1

Perhaps not surprisingly, cultural theorists hypothesize that people in hierarchical relations value *order*, people in individualistic relations value *freedom*, people in fatalistic relations value (good) *luck*, and people in egalitarian relations value *equality* (Coyle, 1994; Swedlow, 2008; Swedlow et al., 2020). Valuing order means valuing hierarchical order, often found in traditional institutions, but also found in bureaucracy, while valuing freedom means valuing behavioral freedom to do

things, in both economic and social spheres. Valuing equality means valuing equality of results.

Returning to CT's core claim, CT hypothesizes that political values and relations cannot easily be mixed and matched without disrupting this functional relationship. For example, people in hierarchical relations cannot value freedom or equality more than order without undermining their relational pattern. Less obviously, beliefs regarding human nature, the environment, and economics are also associated with (again because they are functional for) each pattern of relations (Thompson, Ellis, and Wildavsky, 1990; Swedlow et al., 2020).

3. Cultural Theory, Left-Right Ideology, and Nordic Party Preferences

Grendstad (2003a, 2003b) pioneered the comparison of ideological and CT explanations for party preference in the Nordic countries. As Knutsen (1995) notes, and Grendstad (2003a) agrees, the simplicity of left-right ideology has its attraction: it is easy to use and understand because it has an ability to absorb new issues within a familiar framework. But as Grendstad (2003a: 1) warns, the "parsimony of the unidimensional left-right dimension may result in a conflation of, or failure to account for, important political distinctions." Sure enough, he finds that CT uncovers "excess empirical content." "Except in Norway, the left-right dimension is found to be a surrogate for the conflict between egalitarianism's equality of outcome and individualism's equality of opportunity. Sweden and Denmark are prototypical cases. Conservatism conflates individualism and hierarchy, whereas radicalism conflates egalitarianism and fatalism."

Grendstad (2003b: 208) further finds that CT makes "significant inroads into the left–right dimension's stronghold in accounting for voters' party preference."

While "the left–right dimension accounts well for differences between parties *within polities*," egalitarianism and individualism "are runners-up," and CT's cultural biases, particularly egalitarianism, better account for "differences between parties of similar origin *across polities*" (italics in original). "Sweden has the purest and simplest party cleavage, whereas Denmark has the most composite one. Across the Nordic countries, the green party family is most dissimilar, whereas the progress siblings are most alike" (193). Importantly for our study, Grendstad (2003b) shows that parties exhibit unique patterns of cultural support and rejection. Building on Olli (1999, 2012), we extend Grendstad's analyses of the distribution of aggregate party cultural support and rejection to analysis of individual level patterns of cultural support and rejection in Grenstad's data and develop an operationalization of CT focusing on respondents' top two cultural biases.

Data Source and Measures of Cultural Bias

Our study analyzes the data set created and analyzed by Grendstad (2003a, 2003b), *the Nordic Cultures Survey*, which contains a question on left-right self-placement, 20 questions on cultural biases, and a question about party preference. This is the largest multinational survey (N = 4,832) that employs multiple items derived from or inspired by the "cultural worldview" items created by Wildavsky and Dake (1990). Each of the samples from Norway, Sweden, Finland, and Denmark is close to 1000 respondents and representative for the population above 15 years of age. The sample size for Iceland was a bit smaller with 817 respondents. The survey was conducted as a computer assisted telephone interview in the local language by the national Gallup offices in late March and early April, 1999.

Each of the four cultural biases is measured by five Likert-type statements (see Appendix A). Each statement has five possible responses: completely disagree, partly disagree, neither disagree nor agree, partly agree and completely agree. Responses are standardized within each country to reduce the effect of differences in wording caused by translation. Standardized scores are recoded so that each one has the minimum value of 0, the average of 0.5 and the maximum value of 1. Each cultural bias is measured as the average of at least three responses measuring this bias. If the respondent has responded to two or fewer statements of five, the bias is coded as missing. Thus, zero is the country average and negative values show us that a respondent scores below it.

Cronbach's alpha of .6 typically indicates scale reliability (Heath and Martin, 1997). At the Nordic level, the Cronbach's alpha varies from .59 for the fatalistic bias to .65 for the egalitarian bias. Within Nordic countries, alphas range from .56 to .70 (see Appendix B), similar to other countries (Johnson and Swedlow, 2019a). We also assessed construct validity with a principle components analysis of the items used, confirming that each question loads mainly on one of the first four factors, readily recognizable as CT's cultural biases (see Appendix C). Assessments of the construct validity of similar CT survey measures in China, Canada, and the United States (Johnson and Swedlow, 2019b; Johnson, Swedlow, and Mayorga, 2019; Kiss, Montpetit, and Lachapelle, 2020; Swedlow et al., 2020; Xue et al., 2014, 2016) find that the face and content validity of these measures can be improved but that they satisfy other measures of construct validity, including factoring into the four cultural types. Despite the age of this survey, it is still rich and relevant as the operationalization of the four biases is valid, and in the absence of better data, it can and should be used for testing theory and demonstrating method.

In order to simplify presentation, we exclude all respondents who do not have valid responses to party preference, left-right orientation and the cultural biases. This leaves us with 3080 respondents who know which party they prefer and can place themselves on the left-right dimension running from 1 (left) to 9 (right). In Finland a scale running from 1 (left) to 10 (right) was used. The left-right orientation has been recoded so that it ranges from 0 (left) to 1 (right) in all countries.

Analyzing Combinations of the Top Two Cultural Biases

Most CT researchers assume that people can be classified into four cultural groups by the cultural bias they support most. This is done by comparing each respondent's four cultural bias scores, and assigning them to the culture on which they score highest. Table 1 shows the distribution of party preference across the four cultures based on support for those cultures. Egalitarians like the socialist left, social democratic, agrarian, liberal and green party families. Fatalists prefer the social democratic party family Hierarchs prefer the Christian party, while individualists like the conservative party family. When operationalized like this, cultural biases explain 5.6 percent of party preferences.

INSERT TABLE 1 HERE

In order to use cultural biases in a manner that allows us to study different combinations of support and rejection of cultural biases and how these relate to party preferences a new type of operationalization is required. We claim that the four cultural biases effects cannot be just added together (as in multivariate regression) and are better understood as combinations of support and rejection. The strength of the relationship between two categorical variables is calculated using the Uncertainty Coefficient (also known as Thiel's U), which shows the proportion of deviation from

full entropy. By multiplying U with 100 we get a number that can be interpreted similarly to R^2 (Garson, 2012). Changing four continuous scales into categories does inevitably lead to loss of some information, while simultaneously focusing the analysis on the information remaining. This method allows us to show the relative strength of rejection, which may be theoretically and empirically significant in influencing party preference.

For this analysis, we label respondents with capital letters to indicate support for and lower case letters to show rejection of a cultural bias. Indifference towards a bias is not given any letter. Thus a respondent labeled *HE* supports both hierarchy and egalitarianism, while *If* supports individualism while rejecting fatalism. We label this variable the Top Two Cultural Biases (T2CB).

We rank the biases based on absolute values, use only the two strongest ones, and the most important is listed first. Strong rejection is ranked ahead of weak support. For example, let us say Mary scores +2 on the hierarchical bias, +1 on the individualistic bias, -2.5 on the egalitarian bias, and 0 on the fatalistic bias. Mary's cultural combination is labeled as *eH*. Under the usual assignment made by CT survey researchers, Mary would be classified as a hierarch, while we are classifying her as rejecting egalitarianism and supporting hierarchy.

In the Nordic countries there are 57 different T2CBs present. Appendix D lists these combinations, the number of respondents, their party preferences, and left-right positions. In order to focus the discussion, we will examine only the 19 most frequent combinations, which have between 58 and 134 respondents. The respondents' party preferences in these most populated top two cultural categories are likely to have the greatest impact when they go to vote.

Results

1. How are the T2CBs related to the left-right orientation?

In Figure 2, we can see the T2CBs sorted by their mean left-right orientation. On the far left we have combinations like *iE, if,* and *ih*. Thus, the far left is defined by rejection of individualism. On the far right we have categories like *eI, ef*, and *eh*. Thus, the far right is defined by rejection of egalitarianism. These strong ideologues consequently share a propensity to define themselves culturally by what they are against rather than what they are for.

INSERT FIGURE 2 HERE

Previous research has shown that egalitarianism and individualism correlate negatively with each other, but the correlation is not significant when controlling for left-right ideology (Grendstad, 2003a: 16). Moreover, we can see in Figure 2 that the combinations furthest to the left (*iE*) and right (*eI*) seem to suggest that egalitarian and individualistic cultural biases indeed measure the same dimension, just in opposite directions, and are closely related to the left-right orientation. However, when support for egalitarian or individualistic cultural bias is combined with support for hierarchy or fatalism, a different story appears. The previously described relationship appears valid only for strong ideologues, but not for the bias combinations near the middle of the left-right position. Adding support for either hierarchy or fatalism brings the respondent's left-right position towards the middle. To simplify, one could say that if you combine support for two cultural biases the mean left-right position is somewhere close to the middle. These findings confirm that strong ideologues are culturally very different from weak ideologues, which has significant theoretical and practical implications (see, e.g., Jackson, 2014).

2. How do T2CBs influence party preference?

The first column of Table 2 shows the effect of the T2CBs, which explain 22 to 33 percent of the respondents' party preferences, when measured country by country, or 27 percent on average. If we aggregate all Nordic countries, the ability of the T2CBs to predict party preference is reduced to 9.5 percent. For comparison, the effect of left-right orientation on party preferences ranges from 12 percent in Denmark to 31 percent in Iceland, or 21 percent in average. If we analyze the Nordic countries as one sample, the left-right orientation explains 14 percent of the differences in party preference.

INSERT TABLE 2 HERE

If we compare the effects of the T2CBs with the effects of left-right orientation, we can see that in Denmark and Sweden cultural combinations are able to explain party preference much better than left-right position. In the three other countries the T2CBs explain party preference only slightly better than ideology. However, if we analyze the Nordic countries as one sample, left-right orientation explains party preferences better than the T2CBs. This is likely caused by the structure of the explanations. As parties in different countries within one party family differ from each other, the extra detail provided by top two cultural combinations becomes very useful, whereas at the Nordic level the extra details do not provide additional explanatory leverage.

Accordingly, when we examine the cultural sources of party preferences country by country we can see that the T2CBs provide significant "excess empirical content" (Grendstad, 2003a). Table 3 shows how the T2CBs structure respondents' party preferences. On the top row, 28 percent of respondents with *iE* prefer the socialist left party family and 33 percent prefer the social democratic party family, while only 4 percent prefer the conservative party family The effect thus goes both

ways; the T2CBs can both increase and reduce support. However, the level of support for the social democratic party family among *iE* is so close to the Nordic support, that the deviation is not significant, whereas the 11 percent preference for the green party family is significant, since the green parties have only 6 percent support on the Nordic level.

If we look at the levels of support for each party family in Table 3, we can see that for the socialist left party family it ranges from 1 to 28 percent, while the preference for social democratic party family ranges from 7 to 41 percent. The agrarian party family preference ranges from 8 to 28 percent, and the Christian party family from 0 to 10 percent. The preference for the liberal party family ranges from 1 to 14 percent. The preference for the conservative party family ranges from 4 to 54 percent, for the progress party family from 0 to 12, and for the green party family from 0 to 11 percent. These ranges are substantial and much larger than in Table 2, which tells us that knowledge of which cultural bias the respondent rejects and using information about two cultural biases simultaneously increases our ability to predict party preferences.[1]

INSERT TABLE 3 HERE

Despite the much better performance of cultural biases at the country level, we have chosen to keep the analysis here at the Nordic level. When the Nordic countries are analyzed as one, the national idiosyncrasies of the parties are downplayed, and the commonalities between cultural biases and the political positions of the party families are highlighted (Grendstad, 2003b).

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[1] A formal test confirms the utility of using two instead of only one cultural bias (Reference omitted: 432-441).

The socialist left and conservative party families are firmly rooted in the left-right orientation, as we can see in Figure 3, gaining their voters respectively from the left and from the right. One of the advantages of CT compared with the left right orientation can be seen when we look at how the cultural combinations can be interpreted as cultural positions that define who can be trusted and who cannot.

Rejection of the individualistic and hierarchical biases (*hi* and *ih*) increases the tendency to vote for socialist left, liberal and green party families. Whereas rejection of the hierarchical bias with support for the egalitarian bias (*iE*) leads to increased tendency to prefer the socialist left or the greens, but not the liberal party. We can also see that among *fe* the only party family that receives increased support is the green one. The left-right position does not help us explain how a leftist voter chooses between socialist left or the green party. The cultural biases explain also why for two categories of voters (*hi* and *ih*) the ideological distance between the socialist left, liberal and green party families is small, despite the liberal party being further to the right.

INSERT FIGURE 3 HERE

The cultural stronghold for the liberal party family is the rejection of hierarchy and rejection of fatalism. The cultural stronghold for the progress party family is the opposite of the liberal party family: *FH*, which also increases the support for the social democratic party. At the same time there are no cultural combinations where both the conservative and the progress party have increased support. The strongest tendency to vote for the social democratic party family is found among *FE.* For the Christian and agrarian party family there are background variables like religion and residence in non-urban areas that are important in explaining their party preferences, but it is still interesting to see what kind of cultural combinations increase their

support, since left-right is a poor predictor. The Christian party family does not have any significant support among these 19 most frequent cultural combinations. However, there are two, less populated, cultural combinations where the Christian party family has its own hierarchical stronghold (*H* and *Hi* in Appendix D). The agrarian party family has its cultural basis in *IH*. So it shares the support for individualism with the conservative party family, but combines it with support for hierarchy.

3. How does rejection of cultural bias influence party preference?

In table 4, we can see which cultural bias combinations give significantly increased support to a particular party family. We can see that 10 of these combinations consist of two rejections, 10 consist of support for two biases, and 10 consist of one rejection and one support. Therefore, rejection of a cultural bias seems to be a common cause for selecting a particular party (see also Appendix D).

INSERT TABLE 4 HERE

For several party families, rejection of cultural bias is a defining characteristic of their voters. We can see that the conservative party family's voters are characterized by support for individualism and rejection of everything else. The liberal party family voters are characterized by their rejection of hierarchical, individualistic, and fatalistic biases. The socialist left voters commonly reject individualistic and hierarchical biases. The green party voters reject hierarchical bias. For many voters, rejection of a bias or two makes it easier to choose a party. Some party families are mainly defined by support. Supporters of the social democratic party family are in favor of the egalitarian, hierarchical and fatalistic cultural biases. Supporters of the Christian party family are in favor of the hierarchical

cultural bias. Supporters of the progress party family are in favor of everything other than the egalitarian cultural bias.

Rejection of the individualistic bias differentiates socialist left voters from social democratic voters. Similarly, it is the rejection of the egalitarian bias that separates conservative voters from other voters on the right. These differences make sense and help us understand what differentiates the various party families.

But what of a seemingly small T2CB difference like *ih* versus *hi*? Even this can matter: *ih* increases the support for the Socialist left party and reduces the support for Social Democrat and Conservative Parties, when compared with the *hi* group. This tells us that when rejection of individualism is the strongest cultural bias it pushes respondents towards supporting the Socialist Left Party, when combined with rejection of hierarchy. We note this small but decisive difference so that others can make it a focus of further study and theorizing.

Our general point is simply that party family preferences can be better understood when we consider the rejection of cultural biases. Without information about rejection, it is difficult to understand how cultural biases influence the preferences that respondents have for particular political parties.

Summary, Discussion, and Directions for further Research

Much of party preference is explained by ideology and values but what explains ideology and values? That is, what explains the content of ideology and values or why particular values and beliefs influence party preferences? In other words, what theory of ideology and values explains party preference?

We reminded readers that CT has been used successfully to explain party preference in the Nordic countries. We aimed to demonstrate the value of an

operationalization of CT that included rejection of cultural bias (values and beliefs) and that used a respondent's two strongest cultural biases, in whatever combination of support and rejection they occurred, to explain party preference.

We have seen that the T2CBs, which give equal weight to rejection and support of biases, *explain party preferences fairly well*. These cultural bias combinations explain roughly 22 to 33 percent of the variation in party preferences within the national samples. In addition, we have seen which cultural bias combinations are overrepresented among the supporters of different party families. Rejection of a bias is an important element of the cultural foundation for most of these families. *Rejection of cultural bias thus seems to carry meaning that helps respondents choose a party*.

When CT, including our operationalization of it, outperforms left-right ideology in explaining party preference, it provides significant new information about the sources of party preference. These 57 culturally defined categories contain more information than a single left-right scale. But even when CT does not outperform ideology in this way, it is important to remember that CT provides a *theory* of ideology. By contrast, left-right ideology is just a set of labels for political beliefs, with only historically contingent explanation of where these beliefs originate; what they are about; how they are constrained; how they relate to other beliefs, values, relations, or behaviors; or the circumstances under which they might change.

The value of CT both for reducing and accounting for the complexity of party preference in multi-party systems is well demonstrated by CT studies of Nordic party preference (Grendstad, 2003b; Olli, 1999, 2012), including ours. The left-right orientation has problems distinguishing between voters in the middle, while the top two cultural biases divide this political middle into many smaller culturally distinct

categories that help us distinguish among the voters of liberal, progress, agrarian and to some degree Christian party families.

In Knutsen's analysis, left-right orientation explains more (Knutsen, 2017c: 80-98) than it does in our analysis. We believe this may be caused by choice of different statistical techniques, as he is using logit-analysis, whereas we are using simple cross tabulations, because our independent variable is on a nominal level. Another explanation may be that the measurements are from different surveys almost a decade apart. A third point that bears emphasis is that Knutsen's value-based explanation represents a particularly tough competitor. With CT, we are comparing a general theory's ability to explain party preferences in the Nordic countries with the most comprehensive configurational explanation available created specifically for those countries. Therefore, we should expect that Knutsen's value preferences outperform CT by a large margin, particularly since these value orientations, including left-right ideology that has been our particular point of comparison, are developed to apply in one context, whereas CT is a general theory that we are here applying in a particular place. Nevertheless, when we, in Table 2, compare the effect of the T2CBs and left-right orientation using the same measure (the uncertainty coefficient, U) in the same survey, we find that the cultural combinations explain more of the variation in party preferences than ideology.

Moreover, while existing value-based explanations for Nordic party preferences (Gilljam and Oscarsson, 1996; Knutsen, 2014, 2017a, 2017b, 2017c; Petersen, Slothuus, and Togeby, 2010) are like CT in that they both reduce and account for complexity, they do not do so from a coherent, unified, generalizable theoretical position. Here we conceptually map the most commonly used Nordic value dimensions onto CT's relational dimensions, seeking to show how CT encompasses

and subsumes them. Revisiting Knutsen's five value dimensions with CT allows us to locate these in CT's two-dimensional relational space and to suggest how these value dimensions are tied to the resulting relational patterns.

First, let us consider "old political values." Here, religious values are associated with the Christian church hierarchy while secular values define a morality where "the individual wants to make decisions for him- or herself without the guidelines of the church" (Knutsen, 2019: 97). In CT terms, this dimension runs from high to low grid, pitting hierarchy and fatalism against individualism and egalitarianism (Hammer, 1994). Similarly, left-right economic values, which are about "the role of government in creating more economic equality in society versus the need for economic incentives and efficiency" (Knutsen, 2014: 12), can readily be located on the CT map. The government role signals collective decision-making (high group) while references to equality implicate egalitarianism collectivism (high group, low grid) contrasted with the individualistic emphasis on economic efficiency and rewards commensurate with productivity found in markets (low grid and group) (Grendstad, 2003a; Intriligator, Wedel, and Lee, 2006; Wildavsky, 2001, 2006).

Similarly, "new political values" also can also readily be located on the CT relational and value map. Economic growth versus environmental values, Knutsen claims, are a specific expression of material versus post-material values: "Materialist values emphasize economic and physical security such as economic stability and growth, law and order, and a strong defense. Post-materialist values emphasize self-expression, subjective well-being, and the quality of life" (Knutsen, 2019: 98). Thus, materialist values are associated with a strong hierarchical state, possibly including a minimalist night-watchman state favored by individualists, whereas post-materialist values take us down-grid but not necessarily low-group, toward individualism but

even more toward egalitarianism (Grendstad, 2003a; Grendstad and Selle, 1997, 1999). Libertarian v. authoritarian values (Knutsen, 2019: 98) clearly pit individualism against either hierarchy or the despotic leadership associated with fatalism (Coyle, 1994; Favre, Swedlow, and Verweij, 2019; Ripberger and Swedlow, 2021), so it is low grid, low group versus high grid and either high or low group in terms of the relational patterns associated with these values.

Finally, orientations related to immigration and immigrants "are closely related to, and reflect basic values and beliefs about, different conceptions of national identity, ethnicity, and multiculturalism" (Knutsen, 2019: 98), thus raising significant questions about community boundaries and whether they will be extended to welcome immigrants. The high group cultures of hierarchy and egalitarianism will be more concerned than the low group cultures of individualism and fatalism with these questions and will answer them differently based on their differing values (Bovens and Trappenburg, 2006). Individualists, however, are concerned about boundaries defining personal space, such as property rights and civil liberties (Swedlow, 2017), so, to the extent these are implicated by immigration, they will become concerned too.

With this brief sketch of how the five values relate to CT's relational patterns and their accompanying values we hope to illustrate the utility of having a theoretically-derived conception of values when assessing the influence of values on party preferences. We also hope our mapping sketch inspires research that includes both the five value dimensions and CT cultural bias measures in the same instrument, so that the relationships we hypothesize among these value dimensions can be empirically assessed.

All this said, we do not claim that CT's greater theoretical coherence and complexity is or should always be superior to left-right ideological explanations for

every party scholar studying every party (see also Grendstad, 2003a). Nor do we claim that CT's greater theoretical coherence and lesser complexity is or should always be superior to historically contingent configurational value-based explanations. Rather, each party scholar must decide whether CT provides an attractive trade-off in coherence and complexity relative to other explanations for party preference for the parties they are studying, and whether CT should be used in combination with these other explanations, as we effectively have done here, or instead of them.

An obvious place to extend our analysis is to other multi-party systems. Recent research on the relationships among CT's cultures, partisanship, and policy advocacy coalitions in Europe (Hornung and Bandelow, 2021) and among CT's cultures, ideology, and risk perception in Canada may be good places to begin (Kiss, Montpetit, and Lachapelle, 2020) . Several CT studies also map the cultural complexion of European countries (Grendstad, 1999; Mamadouh, 1999a, 1999b).

Hornung and Bandelow (2021) may provide a particular attractive jumping off point since they analyze the 2016 European Social Survey. While they rely on single item measures of CT's cultures and operationalize cultural bias only as agreement with these items, their study includes three Nordic countries. In Sweden, parties appear to represent individual cultures, while in Norway and Finland, all parties seemingly only represent one culture (egalitarianism) (2016, 9). How would operationalizing cultural bias as the T2CBs change this analysis? How have the Nordic parties changed since 1999 in our terms?

CT operationalized as the T2CBs may also be useful for studying the influence of values on party preferences in two party systems like those of the United States, where CT has been used to identify the cultural coalitions underpinning the major

parties (Chai and Wildavsky, 1998; Nowlin and Rabovsky, 2019; Swedlow et al., 2016), to explain presidential preference (Ripberger and Swedlow, 2021), and to characterize the complex, multi-dimensional values and beliefs of ideological moderates and weak partisans (Jackson, 2014). CT provides a finite menu of ideologies and cleavages and coalitional possibilities (Gastil et al., 2011; Ripberger et al., 2012; Sotirov and Swedlow, 2021), often improves on ideological and partisan explanations (Swedlow and Johnson, 2019), and includes a causal theory of cultural change that can be used to create hypotheses about how ideological change happens (Grendstad, 2003a, 2003b; Robinson, 2014, 2016). When combined with spatial voting theory, CT can thus plausibly explain major changes in the cultural complexion of political parties (Chai and Wildavsky, 1998).

Swedlow and Ripberger (2021) may provide a particularly good jumping off point for those seeking to operationalize CT as T2CBs in the US because they analyze a decade's worth of annual national surveys containing new single item measures of CT, but other US survey data with both single and multiple item measures are available as well (Swedlow et al., 2020).

Figure 1. Cultural Theory's Grid and Group Dimensions and Cultural Types
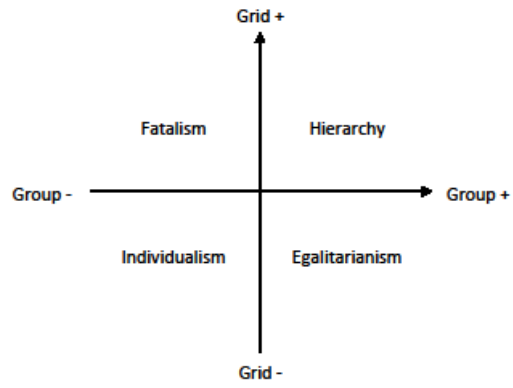
Figure 2: The Mean Left-Right Orientation by Top Two Cultural Biases
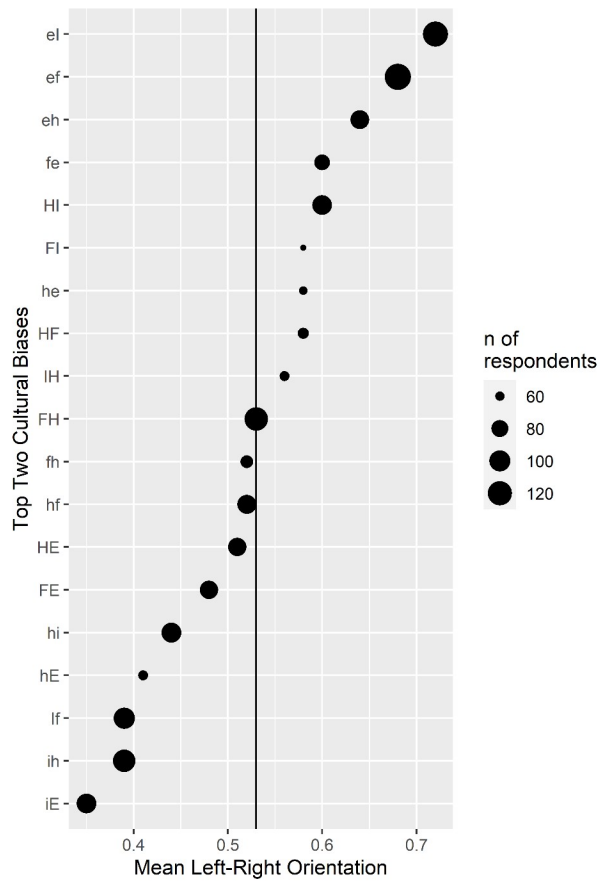
The vertical line shows the Mean Left-Right position among among all respondents.

Figure 3: Support for Party Family by Top Two Cultural Bias Combinations (percent)
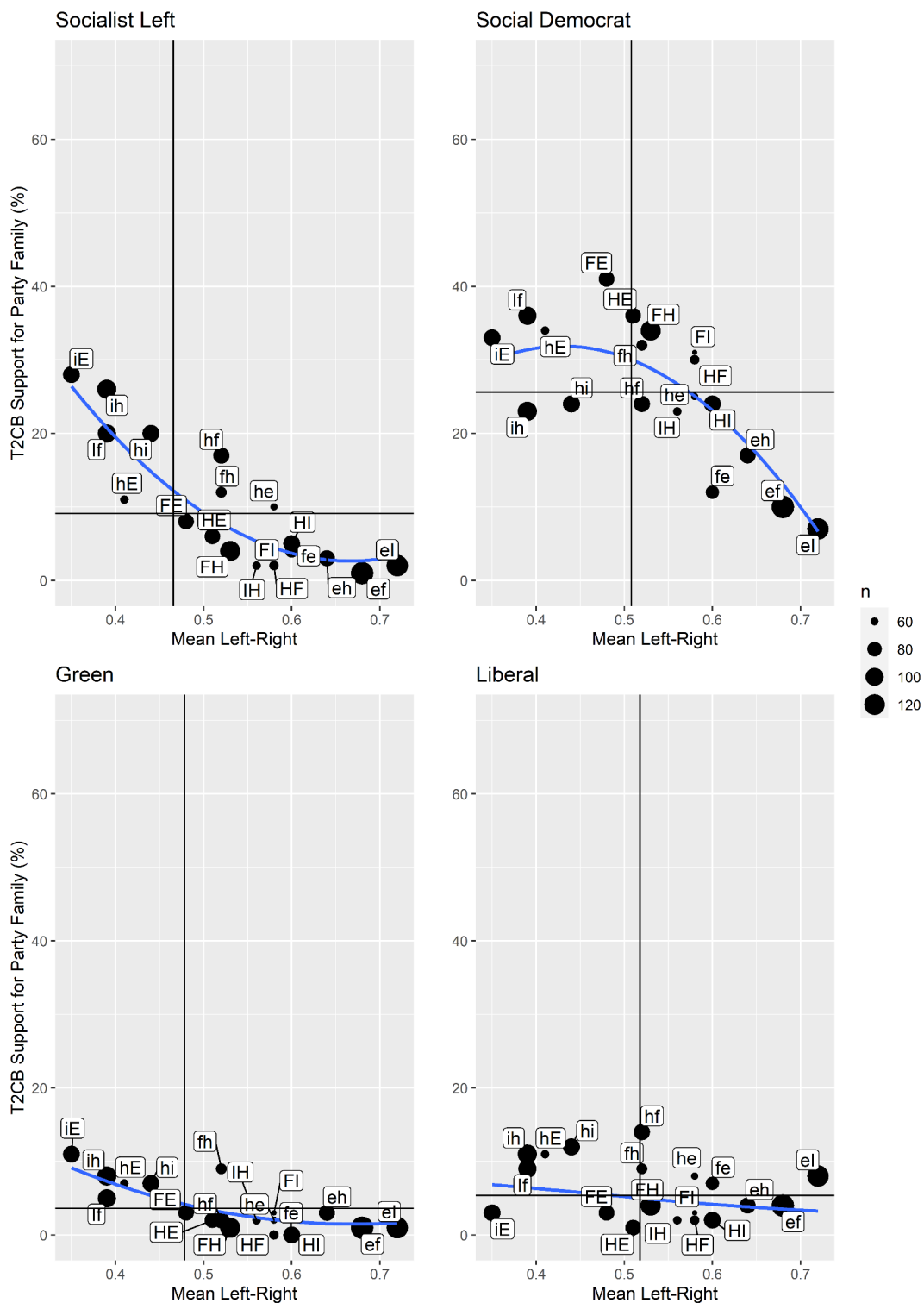
Horisontal lines show the level of Support for a Party Family among all respondents and the vertical the Mean Left-Right position among supporters of one Party Family.

Figure 3 (continued)
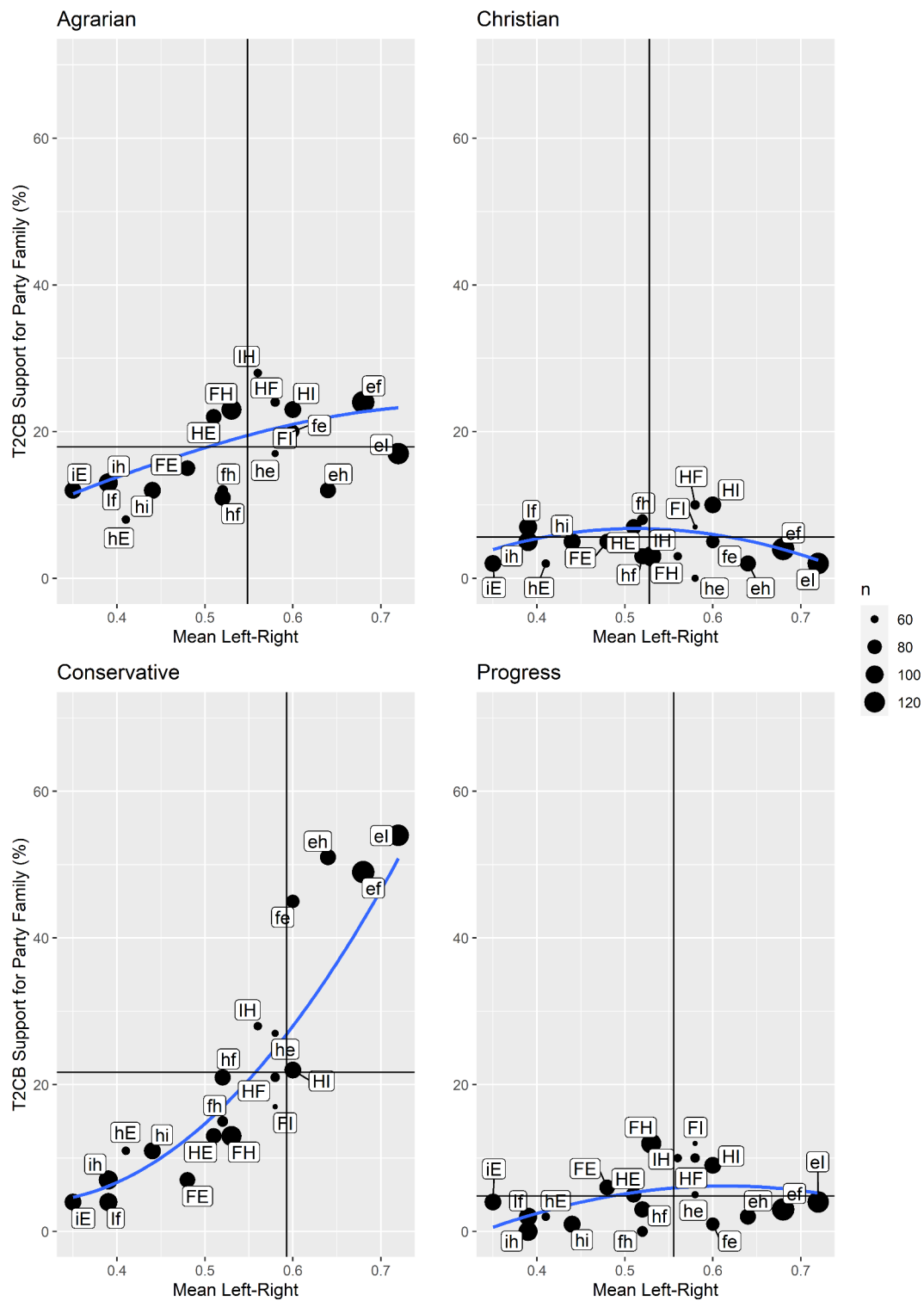
The Loess smoothed line uses all 57, while only the dots for
the 19 most common Top Two Cultural Biases are shown.

Table 1:   *Party Family Preference by Agreement with Cultural Bias (percent)*

Coherent Cultural Bias	Socialist Left	Social Democrat	Agrarian	Liberal	Christian	Conservative	Progress	Greens	Other	Sum	N	Mean Left-Right
Egalitarian	19 ***	31 ***	13 ***	8 **	4	8 ***	3 **	8 ***	6	100	839	0,42
Fatalist	7 *	30 **	19	5	5	17 **	6	3	8	100	593	0,52
Hierarch	4 ***	27	21 *	3 **	10 ***	22	5	1 ***	7	100	650	0,56
Individual-ist	5 ***	16 ***	19	5	4 **	38 ***	6	2 **	5 *	100	833	0,63
Total	9	26	18	5	6	22	5	4	6	100	2915	0,53

Source: NOS 1999. Two-sided levels of significance * p<0.05   ** p < 0.01   *** p < 0.001 are calculated from standardized expected deviations from cell frequency.

Table 2: *Party Family Preference Explained by Top Two Cultural Biases and Left-Right Po*sition in the Nordic Countries (percent)

Sample	Top Two Cultural Biases			Left-Right Orientation		
	Percent explained	Asymp. SE	Approx. Sig.	Percent explained	Asymp. SE	Approx. Sig.
Norway	23.6	1.2	.000	17,1	1,4	.000
Sweden	32.3	1.4	.000	23,4	1,7	.000
Denmark	22.0	1.2	.000	12,3	1,3	.000
Finland	22.4	1.2	.000	19,7	1,5	.000
Iceland	32.5	2.0	.000	31,2	2,6	.000
Average of Countries	26.6			20.7		
Nordic as one sample	9.5	0.5	.000	14.3	0.6	.000

Percent explained = U*100.   U is the Uncertainty coefficient (Thiel's U), which can be interpreted as proportion of explained variance. As the dependent variable is at nominal level, it is impossible to calculate R^2. Nordic N = 3080. Using all 57 Top Two Cultural Bias categories.

Table 3: *Party Family Preference Explained by the 19 most frequent Top Two Cultural Bias Combinations (sorted Left to* Right)

T2CB	Socialist Left		Social Democrat		Agrarian		Liberal		Christian		Conservative		Progress		Greens		Other		Sum	N	Mean Left-Right
iE	28	***	33		12		3		2		4	***	4		11	***	2		100	93	0.35
if	20	***	36	*	13		9		7		4	***	2		5		5		100	101	0.39
ih	26	***	23		13		11	**	5		7	***	0	*	8	**	6		100	108	0.39
hE	11		34		8	*	11	*	2		11	*	2		7		13	*	100	61	0.41
hi	20	***	24		12		12	**	5		11	**	1		7	*	7		100	94	0.44
FE	8		41	**	15		3		5		7	***	6		3		12	*	100	86	0.48
HE	6		36	*	22		1		7		13	*	5		2		8		100	86	0.51
hf	17	*	24		11		14	***	3		21		3		2		3		100	90	0.52
fh	12		32		12		9		8		15		0		9	*	3		100	66	0.52
FH	4		34	*	23		4		3		13	*	12	***	1		5		100	115	0.53
IH	2	*	23		28	*	2		3		28		10		2		3		100	61	0.56
FI	2	*	31		17		3		7		17		12	**	3		7		100	58	0.58
HF	2	*	30		24		2		10		21		10		0		3		100	63	0.58
he	10		25		17		8		0		27		5		2		5		100	59	0.58
HI	5		24		23		2		10		22		9		0		6		100	93	0.60
fe	4		12	**	20		7		5		45	***	1		0		5		100	75	0.60
eh	3		17		12		4		2		51	***	2		3		4		100	89	0.64
ef	1	***	10	***	24		4		4		49	***	3		1		4		100	134	0.68
eI	2	**	7	***	17		8		2		54	***	4		1		6		100	127	0.72
Nordic total	9		26		18		5		6		22		5		4		6		9		0.53

Two-sided levels of significance * p<0.05   ** p < 0.01   *** p < 0.001 are calculated from standardized expected deviations from cell frequency.

Table 4: Top Two Cultural Biases with Positive Effect on Preferred Party Family.

Socialist left	Liberal	Green	Social democratic	Progress	Agrarian	Conservative	Christian
iE	hf	iE	FE	FH	IH	eI	
ih	hi	ih	HE	FI		ef	none
hi	ih	hi	FH	HI		fe	
hf	hE	fh	if			eh	
if							

These combinations are the only statistically significant positive deviations for each party family in table 3.

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Appendices

Appendix A: Cultural Bias Items in the Nordic Cultures Survey 1999

Variable name	Statement	Mean	Std	Mode	Valid N
rh1	One of the problems with people today is that they challenge authority too often.	2.7	1.38	2	4473
rh2	The best way to provide for future generations is to preserve the customs and practices of our past.	3.8	1.23	5	4707
rh3	Society works best when people obey all rules and regulations.	3.7	1.30	5	4744
rh4	Respect for authority is one of the most important things that children should learn.	3.7	1.32	5	4699
rh5	Different roles for different sorts of people enable people to live together more harmoniously.	3.4	1.33	4	4333
re1	The world would be a more peaceful place if its wealth were divided more equally among nations.	3.8	1.34	5	4665
re2	What our country needs is a fairness revolution to make the distribution of goods more equal.	3.9	1.24	5	4599
re3	I support a tax shift so that burden falls more heavily on corporations and people with large incomes.	3.6	1.41	5	4588
re4	We need to dramatically reduce inequalities between men and women.	3.8	1.32	5	4662
re5	Decisions in business and government should rely more heavily on popular participation.	3.9	1.25	5	4547
ri1	Everyone should have an equal chance to succeed and fail without government interference.	4.1	1.12	5	4555
ri2	If people have the vision and ability to acquire property, they ought to be allowed to enjoy it.	4.5	.81	5	4736
ri3	People who are successful in business have a right to enjoy their wealth as they see fit.	4.2	1.11	5	4712
ri4	Competitive markets are almost always the best way to supply people with things they need.	3.7	1.25	4	4452
ri5	In a fair system, people with more ability should earn more.	3.6	1.33	4	4624
rf1	It seems that whichever party you vote for things go on pretty much the same.	3.1	1.60	5	4713
rf2	Cooperation with others rarely works.	1.9	1.22	1	4678
rf3	The future is too uncertain for a person to make serious plans.	2.6	1.48	1	4674
rf4	Most people make friends only because friends are useful for them.	1.9	1.25	1	4719
rf5	I feel that life is a lottery.	2.6	1.51	1	4714

The original variable in the file is coded from 1 to 5. The reported values here are prior to standardization.

Appendix B: Reliability of the Cultural Bias Scales

(Cronbach's Alpha)

Country	Hierarchical	Egalitarian	Individualistic	Fatalistic
Norway	.67	.63	.67	.61
Sweden	.56	.57	.57	.57
Denmark	.62	.62	.61	.57
Finland	.62	.70	.63	.62
Iceland	.58	.69	.57	.59
Nordic	.60	.65	.63	.59

All Cronbach's alphas are calculated country-wise on the standardized items. The Cronbach's alpha scores allow us to see how reliable the measurement of each bias is. As the table above shows, all four biases in the Norwegian and Finnish samples are measured with an acceptable level of reliability, while the measurement of biases in the Swedish sample are just below this threshold. In Denmark, the measurement of fatalism is under this threshold while the others are above it. In Iceland, only egalitarianism is measured adequately enough to be above this threshold. However, all biases are measured close to this threshold in every country.

Appendix C: Construct Validity of the Cultural Bias Scales

Factor Analysis of Cultural Bias Items. The Structure Matrix after Oblimin Rotation. NOS99.	*Component*				
	1=H	2=e	3=f	4=I	5
Eigenvalues	3.1	2.4	1.4	1.2	1.0
% of Variance	15	12	7	6	5
One of the problems with people today is that they challenge authority too often.	*.54*		-.40		
The best way to provide for future generations is to preserve the customs and practices of our past.	**.64**				-.26
Society works best when people obey all rules and regulations.	**.61**				**.32**
Respect for authority is one of the most important things that children should learn.	**.77**		-.20	.21	
Different roles for different sorts of people enable people to live together more harmoniously.	**.39**		-.30	.27	
The world would be a more peaceful place if its wealth were divided more equally among nations.		**-.65**			.27
What our country needs is a fairness revolution to make the distribution of goods more equal.	.20	**-.72**			
I support a tax shift so that burden falls more heavily on corporations and people with large incomes.		**-.61**		-.21	**-.31**
We need to dramatically reduce inequalities between men and women.		**-.61**			
Decisions in business and government should rely more heavily on popular participation.		**-.57**			**-.33**
Everyone should have an equal chance to succeed and fail without government interference.				**.53**	
If people have the vision and ability to acquire property, they ought to be allowed to enjoy it.				**.72**	
People who are successful in business have a right to enjoy their wealth as they see fit.				**.73**	
Competitive markets are almost always the best way to supply people with things they need.	.30			**.59**	
In a fair system, people with more ability should earn more.	.24			**.53**	.26
It seems that whichever party you vote for things go on pretty much the same.	.21		**-.36**		**-.62**
Cooperation with others rarely works.			**-.66**		
The future is too uncertain for a person to make serious plans.		-.21	**-.69**		
Most people make friends only because friends are useful for them.			**-.62**		
I feel that life is a lottery.			**-.59**		**-.29**

Extraction Method: PCA. Rotation Method: Oblimin with Kaiser normalization. The five strongest loadings on each factor are in bold. Loadings <|.2| are hidden.

We will not be using these four factors as indicators of cultural biases. Our purpose is only to confirm that the 20 items we are using relate to each other as expected.

We can see how the items relate to the first five dimensions, which are also the only ones with eigenvalues over 1. The first factor can be identified as the hierarchical bias, as the five items with highest loading on this factor are the five hierarchical items. In addition, there are a two individualistic items that contribute to this factor, but their loadings are much lower than the hierarchical items. The second factor has high loadings on the five egalitarian items. However, these loadings are negative, making this the anti-egalitarian factor. The third factor loads negatively on the fatalistic items, which allows us to identify this as the anti-fatalistic factor. However, two of the hierarchical items contribute to this factor in the same direction as the fatalistic items, which is unfortunate. The fourth factor loads positively on all five individualistic items, which allows us to identify this as the individualistic factor. Finally, the fifth factor loads inconsistently on the cultural biases, as there are both positive and negative loadings on each of the four cultural biases. It cannot be identified as measuring cultural bias, but perhaps it is related to belief in political efficacy. As its contribution to explaining variance is not much less than those of the third and fourth factors, choosing a four factor solutions seems appropriate.

One should also notice how these four factors differ in their contribution to explaining variance. Hierarchical and anti-egalitarian factors explain roughly twice as much as the anti-fatalistic and individualistic factors. These four identified factors together explain 40 per cent of the variation in people's responses to these items. The remaining 60 per cent of the variation in people's answers either comes from other sources or is purely random.

So far, we have confirmed several of the required characteristics of a valid measure. First, the four strongest factors are clearly related to cultural bias. Second, there are no 'foreign' items loading strongly on the factors related to one bias. One item, the first fatalism item, loads stronger on the fifth unidentified factor than on the anti-fatalism factor, which is unfortunate. There are also two hierarchical items that load on the fatalism factor. The third requirement is only partially confirmed. Even if the fifth factor is unidentifiable, it is still closer to the fourth in strength.

Appendix D: Party Family Preference in percent by *Top Two*

Cultural Bias Combination (sorted by Left-Right dimension)

Top 2 CB	Socialist Left	Soc. Dem.	Agrarian	Liberal	Christian	Conservative	Progress	Greens	Other	sum	N	mean Left-Right
iE	28 ***	33	12	3	2	4 ***	4	11 ***	2	100	93	0.35
Ei	32 ***	24	16	3	3	3 **	3	8	8	100	37	0.36
iF	11	27	18	7	9	7 *	2	7	11	100	44	0.38
If	20 ***	36 *	13	9	7	4 ***	2	5	5	100	101	0.39
ih	26 ***	23	13	11 **	5	7 ***	0 *	8 **	6	100	108	0.39
hE	11	34	8 *	11 *	2	11 *	2	7	13 *	100	61	0.41
Ef	12	34	15	5	5	15	0	10 *	5	100	41	0.41
Fi	16	45 *	13	3	6	13	3	0	0	100	31	0.43
hi	20 ***	24	12	12 **	5	11 **	1	7 *	7	100	94	0.44
EH	22 ***	33	17	0	9	7 *	2	2	7	100	54	0.44
E	9	41	22	0	3	6 *	9	3	6	100	32	0.45
Eh	17	37	10	7	0	3 *	7	10	10	100	30	0.45
fE	17	39	14	11	3	0 **	3	6	8	100	36	0.45
I	12	33	14	5	10	12	2	5	7	100	42	0.47
hF	15	10	20	5	5	20	0	5	20 **	100	20	0.47
Fi	14	32	14	4	14 *	10 *	2	8	2	100	50	0.47
FE	8	41 **	15	3	5	7 ***	6	3	12 *	100	86	0.48
EF	6	34	22	8	2	12	6	6	4	100	50	0.48
ie	4	26	17	7	9	24	2	4	7	100	46	0.49
H	10	30	13	5	18 **	18	3	0	5	100	40	0.49
Hi	8	20	20	8	16 *	16	4	0	8	100	25	0.50
HE	6	36 *	22	1	7	13 *	5	2	8	100	86	0.51
EI	6	29	16	2	8	16	6	6	10	100	49	0.52
hf	17 *	24	11	14 ***	3	21	3	2	3	100	90	0.52
iH	8	33	22	6	14 *	3 **	3	0	11	100	36	0.52
fh	12	32	12	9	8	15	0	9 *	3	100	66	0.52
IF	12	18	18	3	9	18	9	0	12	100	33	0.53
FH	4	34 *	23	4	3	13 *	12 ***	1	5	100	115	0.53
hI	10	21	2 **	7	2	33	12 *	2	10	100	42	0.53
Fh	10	19	19	5	10	19	10	5	5	100	21	0.54
H	0	38	17	10	3	10	7	7	7	100	29	0.54
Fe	4	29	32 *	4	4	14	7	0	7	100	28	0.55
fH	3	33	28	0	6	22	0	0	8	100	36	0.56
ei	0	22	28	3	6	25	0	3	14 *	100	36	0.56
av	3	29	24	3	8	21	0	8	5	100	38	0.56
IH	2 *	23	28 *	2	3	28	10	2	3	100	61	0.56
IE	10	29	13	3	3	26	13 *	3	0	100	31	0.57
I	7	24	17	7	2	22	17 ***	0	2	100	41	0.57
F	5	26	16	5	7	26	7	2	7	100	43	0.58
FI	2 *	31	17	3	7	17	12 **	3	7	100	58	0.58
HF	2 *	30	24	2	10	21	10	0	3	100	63	0.58
he	10	25	17	8	0	27	5	2	5	100	59	0.58
F	2	22	27	2	7	22	5	7	5	100	41	0.59
He	6	24	24	0	6	38 *	0	0	3	100	34	0.59
HI	5	24	23	2	10	22	9	0	6	100	93	0.60
fe	4	12 **	20	7	5	45 ***	1	0	5	100	75	0.60
Ie	7	22	24	4	7	27	4	0	4	100	45	0.60

Hf	3	20	15	5	5	35 *	8	3	8	100	40	0.61
eh	3	17	12	4	2	51 ***	2	3	4	100	89	0.64
E	2	16	21	2	5	35 *	7	2	9	100	43	0.64
Ih	0	43	29	0	0	14	0	0	14	100	7	0.64
If	3	10 *	33 *	5	3	38 *	8	0	3	100	40	0.66
fI	4	8 **	21	6	9	40 **	2	9 *	2	100	53	0.67
eH	0 *	17	21	4	8	33 *	13 *	0	4	100	48	0.68
ef	1 ***	10 ***	24	4	4	49 ***	3	1	4	100	134	0.68
eF	7	7 *	24	0	3	48 ***	7	0	3	100	29	0.72
eI	2 **	7 ***	17	8	2	54 ***	4	1	6	100	127	0.72
											3080	