

Issues and Dimensions in Public Opinion

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ABSTRACT

The dimensional construction of political space is fundamental to the science of politics. Yet how many dimensions best describe public opinion is contested. This article suggests that issue selection is decisive for dimensional estimation. Because the major surveys of public opinion in contemporary democracies select different issues at contrasting levels of abstraction they produce widely divergent estimates of dimensionality. Consequently, this paper argues that the analyst must select the issues which produce dimensions, and that this choice—and the resulting dimensions—are useful or not in relation to the researcher's purpose. The implications of this for dimensional simplification are decisive, for the structure one detects in public opinion depends not only on the substantive topics at hand, but also on their generality.

Keywords: Dimensionality, issues, public opinion, left-right

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The dimensional construction of political space is fundamental to the science of politics. The terms “left” and “right” are among the most frequently used political concepts, and they infuse the efforts of political scientists to compare the preferences of every kind of political actor—including voters, social movements, political parties, governments. Left and right exist alongside a variety of nationally specific terms—including “liberal” and “conservative” in English speaking societies—which simplify political space as conflict along a single dimension.

Reducing the complexity of political conflict is both commonsensical and scientific. Voters have neither the time nor expertise to evaluate dozens, hundreds, or thousands of political issues. Political parties are induced to frame demands in ways that citizens can comprehend. Political scientists seek to compare the positioning of political actors across time and space, and therefore require a conceptual frame that allows comparison and symbolic manipulation.¹ Yet how many dimensions structure public opinion in a particular country is a vexed question (Converse 2000; Jennings 1992; Poole & Rosenthal 1997; Stimson 2004 and this issue; van der Brug & van Spanje 2009).

In this paper we show that there is no definitive answer. This is not just because one’s choice of reductive method may produce a different number of dimensions, sometimes with different content. There is a more fundamental reason that arises from the nature of public opinion. Opinion over what? Our claim is that it is not possible to sample the objects of public opinion because they do not compose a finite population.

The methodology of reduction is a deeply plowed field of knowledge, as is the analysis of the substantive influences on dimensionality arising from, say,

education or electoral competition. We know much less about the effects of issue selection. Our hunch, and the evidence presented here, suggests, however, that issue selection is decisive for dimensional estimation. Because the major surveys of public opinion in contemporary democracies select different issues at contrasting levels of abstraction they produce widely divergent estimates of dimensionality.

We argue that, one way or another, the analyst must select the issues which produce dimensions, and that this choice—and the resulting dimensions—are useful or not in relation to the researcher's purpose. The simplification of political space is, in the end, just that – a simplification that loses information in order to gain simplicity. Whether this is worth the effort depends on the purpose to which the simplification is put.

If the purpose is to describe or analyze public opinion in one country, a single dimension is sometimes sufficient to capture the bulk of variance across a limited number of major issues. If the purpose is to compare the sources or consequences of public opinion across several countries, the informational cost of imposing a single dimension is likely to be severe. To capture the variation that we detect among contemporary democracies requires that one conceives two, or perhaps more, dimensions.

The next section summarizes the debate over the number of dimensions, and the following sections explore inductive and deductive solutions using information provided by the major comparative surveys that probe public opinion on multiple political issues – the European Election Study, the European Social Survey, and the International Social Survey Programme.

One, two, or more dimensions?

The dimensionality of the beliefs, opinions, and values that constrain political choice has been a topic of discussion and debate since the French Revolution, when proponents of reform sat on the left of 1789 Estates General, and opponents sat on the right.

One approach has been to diagnose the foundations of political ideology. Beyond the diversity of interpretations, some common themes have been identified (Jost et al 2009). At the core is the choice between reform and the status quo, between change and stability. This was the principle that ordered seating in the fractious French Assembly, and it remains fundamental to political competition in almost all democracies. The notion that political choice involves change or stability is expressed in the self designation of those on the political right as “conservative.”

A second core aspect of political ideology concerns the preferred degree of equality, or in modern capitalist economies, the choice between equality, welfare, and authoritative regulation of market outcomes, on the one side, and a market economy with less welfare provision and authoritative regulation, on the other (Benoit & Laver 2006; Fuchs & Klingemann 1990).

In the post-World War II era, this economic dimension became the primary axis of electoral competition in liberal democracies (Lijphart 1999; Lipset 1981), and it features in almost all dimensional representations of public opinion. There is greater variation in the dimension of change versus stability, which is conceptualized as rejection or acceptance of traditional values (these can include religious values), a preference for liberty and individual choice versus order and authority, and inclusive

or exclusive conceptions of one's (national) community (Hooghe et al. 2002; Kitschelt 1994; Kriesi et al. 2008; Miller & Schofield 2003).

Those who conceive these two aspects of political ideology as psychologically related are drawn to a single dimensional conception of ideology. Jost et al (2007), building on the work of Adorno et al (1950), Rokeach (1960), and Allport (1954), proposes that both aspects are rooted in basic social psychological orientations to uncertainty and threat and therefore can be collapsed in a single dimension. Historically, in western Europe the demand for greater equality has been a demand for reform of the status quo, which suggests that the two dimensions may be conceived as a single dimension without much loss of information. The terms conservatism and liberalism refer equally to both dimensions. However, the experience of post-communist Central and Eastern Europe, where equality was regarded as the status quo, and reform implied greater individual freedom and greater inequality, suggests that the association between the two dimensions is conditional.

The debate between one versus two or more dimensional representations of political space has traversed several fields, including the study of political parties (Stoll 2010), political elites (Van der Brug and van Spanje 2009; Kissau et al. 2009), roll call voting (Benoit and Laver this issue; Hix et al. 2006), and legislative debate (Proksch & Slapin 2009). Political scientists have explored top-down effects on the structure of dimensionality, including the role of political elites in framing political discourse, electoral rules, the intensity and salience of party competition, and the number of political parties. They have been joined by political psychologists in

evaluating bottom-up effects at the individual level, including education, political interest, information, expertise, and involvement.

One aspect of debate has arisen from choice of reductive technique, a topic we discuss below. But there is another, more influential, reason why it has been challenging to bring empirics to bear on theory which arises from the nature of the political issue. Political issues do not form a natural population that can be sampled, but must be conceptualized at a particular level of abstraction. This is fundamental for our understanding of dimensionality because dimensionality itself is concerned with the connection between abstract principles and particular attitudes.

Which issues?

A population of citizens, voters, or countries can be sampled, but the population of political preferences is a slippery notion that escapes conventional sampling. The problem is not just that the number of issues—objects of political preference—has no finite limit, but that every issue can be subdivided time and time again. The issue of abortion, for example, can be broken down into sub-issues—abortion for the health of the mother; abortion before or after the first trimester; abortion after rape, abortion after incest, and so forth—each of which can be refined into more specific issues *ad infinitum*. It is fruitless to seek an atomic level where one can say, “Finally, I have arrived at the bottom, and now I can build up.” We are confronted not merely with an infinite set of political objects, like that of whole numbers, but with an *uncountably infinite set*, like the set of real numbers. To paraphrase Jonathan Swift, issues are divisible all the way down.²

This much is obvious to most political scientists, but some of the implications are surprising. If one wishes to evaluate how the dimensionality of public opinion varies across countries, a plausible place to look for information is in the major public opinion surveys that ask the same set of questions to random samples of respondents in different countries. Three mass surveys predominate in comparative research on public opinion: the European Election Study (EES), the European Social Survey (ESS), and the International Social Survey Programme (ISSP).³ These are methodologically rigorous, state-of-the-art surveys covering a range of democracies over extended time periods. Each survey asks respondents to reveal their attitudes over political issues by answering a dozen or more closed-ended questions (see Appendix). The questions are designed to tap issues raised in political discourse and which the respondent is likely to recognize as being of consequence for the society in which he or she lives.

Table 1 compares estimates of dimensionality for the twelve countries surveyed by all three instruments for the most recent available year. The results show that a vanilla approach to detecting dimensionality does not produce robust estimates. The results we present here use principal component analysis and multi-dimensional scaling, but the same conclusion can be reached with other reduction techniques.

[Table 1 about here]

The number of dimensions with eigenvalues greater than unity varies from three to five for the European Election Study, six to seven in the European Social Survey, and from eight to ten in the International Social Survey Programme. A glance at the figures reveals that the variation has more to do with the items asked than

with the countries in which they were asked. Why? We suspect that the answer has to do with the sheer number of survey items and their specificity. The more specific the question that an individual is asked, the less likely that ideology will determine the response. So one would expect to find more dimensions underlying responses to a set of questions asking whether government should spend in specific policy areas (as in the ISSP) than to general questions about whether government should intervene in the economy as a whole (as in the EES). Ideology bites hardest on abstract issues that can be answered in general terms irrespective of contextual factors. As one moves from general principles to specific instances, so ideological structure weakens, and the number of underlying dimensions increases. So the level at which one measures political issues matters a lot.⁴

This leads us to represent dimensionality in public opinion as a hierarchy in which political issues can be arrayed in levels according to their contextuality. At the apex of figure 1 is an item tapping left-right self-placement in France. In the second row are general items that make no reference at all to context, such as “income and wealth should be redistributed towards ordinary people,” or “large differences in income are acceptable to reward talent and effort.” In the bottom row are items that are slightly more contextual, such as “it is the responsibility of the government to provide childcare services for working parents.” The numbers next to the arrows are bivariate associations between the item and the general left-right dimension. Ideally, we would like to represent several levels of contextuality, ranging from general, context-free items to very specific questions asking respondents to express their preferences over government spending in particular fields (e.g. the arts or education) or over particular socio-cultural issues (e.g. abortion in case of incest;

immigration of trained professionals). However, the data we have are broadly consistent with the notion that the more general the item, the greater the extent to which it may be constrained by ideology.

A more revealing measure of dimensionality than the number of dimensions would estimate the dispersion of variance explained across all dimensions, not just the number of dimensions. This is what we seek to do by producing an Index of Dimensionality. The index is based on the same principle as the Rae Index measuring dispersion of the vote among political parties. We use the entire set of eigenvalues generated by a reduction algorithm to sum the squared proportions of variance that they explain. Here our interest is in aggregating public opinion to the level of the country, so

$$I_c = \sum p_d^2$$

where I_c is a country and p_d the variance explained by each dimension d .⁵

This measure allows one to distinguish between, say, eight dimensions that each explain one eighth of the variance ($I_c = 0.125$) and eight dimensions where the first explains 20 percent, the second 20 percent, and the remainder ten percent each ($I_c = 0.140$).

Not only do the surveys produce different results for individual countries, they produce different patterns of scores across the twelve countries estimated here. Table 2 reveals that there is little association between the indices when we use the same reduction method for the same set of countries. The association using principal components analysis varies between -0.174 and 0.121 and the association using multi-dimensional scaling varies between -0.372 and 0.289. One may conclude that

the estimates in table 1 tell one more about the measurement instrument than about the dimensionality of public opinion.

(Table 2 about here)

Every country has a principal dimension of public opinion and a main axis of party competition, but the way in which issues are related to each other varies (Bakker et al. this issue; Rovny and Edwards forthcoming). Table 3 regresses twelve issue items from the 2009 European Election Study on individual left-right self-placement in the Czech Republic and France. In both countries, individual left-right placement is significantly associated with attitudes concerning the economic left-right issues—private enterprise, state ownership, and economic redistribution. But only in France is left-right placement also associated with attitudes over immigration, European integration and homosexuality. In the Czech Republic these issues do not predict left-right self-placement at all. Whereas in France (and most other western democracies) those on the political right tend to be tougher on crime, in the Czech Republic, those on the right tend to be the softer-hearted.

(Table 3 about here)

Selecting issues, conceptualizing dimensions

If issues cannot be sampled, they must be selected. The major comparative public opinion surveys do this, but a vanilla method which uses all issues in a particular survey does not relieve the researcher from the burden of selection. An alternative is to select issues by assigning them to *a priori* dimensions, and then empirically assess the association among the dimensions and the extent to which the dimensions chosen by the researcher capture variance.⁶ This strategy has the

advantage of using a fixed conceptual frame to compare across societies and over time. So instead of inductively interpreting the dimensions that emerge, the researcher devises a dimensional frame to benchmark variation (Benoit and Laver, this issue).

Table 4 sets out the results of this approach for the 27 countries of the European Union surveyed in the European Election Survey. This survey is particularly appropriate because it frames its questions at a relatively high level of abstraction, and is thus likely to generate reasonably strong associations between responses that can be tapped by latent dimensions. The survey contains four items that tap economic left-right preferences (Appendix: Q57, Q59, Q61, Q63) and seven items that tap a socio-cultural dimension (Q56, Q58, Q60, Q62, Q64, Q66, Q67).⁷

[Table 4 about here]

A deductive approach in which items are assigned to *a priori* dimensions calls for principal factor analysis, which we use here, rather than principal component analysis. Whereas principal component analysis explores patterns of covariance among manifest variables—and is appropriate for an inductive approach to reduction—principal factor analysis estimates the shared variance among the manifest variables (i.e. issues) associated with a given latent variable (Costello and Osborne 2005). The first factor produced in principal factor analysis explains a larger share of the variance among the variables the researcher expects to form a single dimension and, of greater concern, the factor score is more robust to issue selection than the factor score derived from principal components analysis.⁸

The first column of table 4 reveals that the association between these basic dimensions varies both in strength and sign. A negative association indicates that

liberal socio-cultural values over immigration, same-sex marriage, abortion, crime, authority, and the family tend to go hand in hand with left economic values concerning private enterprise, state ownership, and equality. This is the predominant association in Western Europe, as it is in the United States and other English speaking democracies.⁹

But the association between the economic and socio-cultural dimension appears to be contextual, not inherent. Public opinion in the EU member states of Central and Eastern Europe has the opposite sign. In all ten countries, economic leftists tend to be less tolerant of same sex marriage, less willing to say that women should have freedom to decide on abortion, more in favor of harsher criminal sentences, and more opposed to immigration. So affinities among attitudes very much depend on the way issues are packaged over a country's history.

The slope for public opinion in France in table 4 is negative: the economic Left is socially liberal; the economic Right is socially conservative. This reflects a longstanding conflict pitting the *ancien régime*, rooted in the defense of hereditary privilege and religious values, against republican reform, civil rights, equality, and secularism. The flashpoint was the role of the Church in education, but the important point is that the religious cleavage between supporters and opponents of the Catholic Church reinforced the class cleavage. Under the pressure of manhood suffrage, the Church eventually created a catholic workers' movement with a catholic union federation, but the "weight of history" was strong, and a Christian democratic party, the MRP, set up after World War Two, survived less than twenty years (Lipset and Rokkan 1967).

The wrinkle in a uni-dimensional description of public opinion in France is the Right's repeated flirtation with state intervention in the economy. This has roots in the centralization of the *ancien régime* and Colbertian *dirigisme*. After World War Two, Gaullists—alongside communists—advocated an extensive economic role for the state. The surveys that we have indicate that the left-right divide in France is motivated by preferences over equality and state ownership, but does not show up much in the role of the state protection of the economy.¹⁰

The association between the economic and socio-cultural dimensions is reversed in Hungary where a nationalist and socially conservative Right has long resisted commodification which was associated with foreign, particularly Jewish, influence. Political struggle in Hungary did not center on questions of political democracy or economic equality, but rather on national autonomy. Prior to World War One, the chief division was between those who accepted autonomy in the Austro-Hungarian empire and those who demanded national independence. Contemporary Hungarian politics is deeply imprinted by the 1920 Treaty of Trianon, which reduced Hungary's territory by 70 percent and left about a third of ethnic Hungarians outside its boundaries. The consequence is that the left-right dimension is defined by national identity and the question of extra-territorial minorities. Today, the Hungarian ex-communist Left has moderate market-oriented views on the economy and accepts the status quo of extra-territorial Hungarians, whereas the Right combines national revanchism and economic populism (Márkus 1998).

The final columns of table 4 suggest that in most democracies, attitudes towards the role of the state in the economy are more coherent than socio-cultural attitudes over abortion, homosexuality, crime, or immigration. If we know your

attitude on privatization, we have a reasonably good chance of predicting where you stand on welfare spending or progressive taxation. The contest between social democracy and laissez-faire capitalism has shaped democratic competition across western societies and is hard-wired into most party systems. But there is good reason to be less confident that if we know your attitude on criminal sentencing, we can predict your views on same sex marriage or immigration. While the economic dimension is remarkably consistent across western democracies, the substantive content of the socio-cultural dimension varies quite a bit.¹¹

The associations between the economic and socio-cultural dimensions represented in table 4 suggest that the trade-off between simplicity and accuracy in dimensionalizing public opinion depends on the countries and time periods compared. If one wishes to analyze a single country, then it may be useful to simplify public opinion along a single dimension. But a one-dimensional frame does not travel well among countries that have contrasting signs. This is not because the economic and socio-cultural dimensions tend to be orthogonal. In fact, orthogonality is the exception. Four of the 27 countries in table 3 have a slope between 0.2 and -0.2, whereas nine lie between 0.2 and 0.4 or between -0.2 and -0.4 and a further fourteen have yet stronger slopes. The distribution is bimodal, which suggests that there are two opposite poles of affinity among the dimensions that structure public opinion.

Back to induction: promising approaches

Are there ways to select issues systematically as a basis for inductive simplification? We think the answer to this is positive, and review two promising approaches.

One strategy is to encompass items from multiple surveys. This reduces dependence on any one survey and any systematic bias it may have in selecting issues. If this bias is independent across surveys, then using multiple surveys reduces the bias of any one.¹² This is what Stimson, Thiébaud, and Tiberij (this issue) do in their study of public opinion in France. Their challenge is putting the responses to multiple surveys on the same page, so to speak, and to do this they aggregate responses to each survey item, summing the percentage for and against, and then combine the partial time-series that are available into a series for the entire period.

This approach is purpose driven. Combining surveys loses information at the individual level, but provides an aggregate estimation of how public opinion varies over time which can then be causally connected to the path of government policy.

A second strategy is to select issues based on their salience. One way to do this is to ask respondents directly about the importance they attach to particular political issues such as immigration, crime, or unemployment. However, this line of questioning is highly abstract and asks a lot of respondents. Open-ended questions may yield more reliable responses. The European Election Study, for example, asks an open-ended question about the most important problems facing one's country, and codes up to six such problems. Alternatively, one can ask experts, observe media, or evaluate the discursive content of elite debate.

Conclusion

“What you put in is what you get out.” This is true for any quantitative analysis, but it is sensitively true for reduction of political space in ways that repay examination. Political issues cannot be conceived as a natural population, and consequently they do not present themselves as objects that can be sampled. We believe that the implications of this are fundamental for the political scientist interested in generalizing about the dimensionality of public opinion using comparative survey data.

Connections among political attitudes in public opinion arise from the need to limit cognitive demands and hold consistent beliefs (Chong 2000; Sears 1993). Belief consistency depends on the extent to which objects of preference are perceived to resemble each other (Hooghe 2001: 206). We show that this depends not only on the substantive topic, but also on its degree of generality. Asking a respondent whether major public services ought to be state owned is likely to be more closely associated with a left-right dimension than asking whether hospitals or schools should be state owned. Asking a respondent whether women should be free to decide on matters of abortion is likely to be more closely associated with a latent socio-cultural dimension than asking whether a woman should be free to decide on abortion after the first trimester or whether a woman should be free to decide on abortion when the child is handicapped.

Ideology bites hardest on political issues that are de-contextualized. This helps explain why local politics is less ideologically driven than national politics. Local issues—location of an airport or road, whether to build a new school—are contextual issues that produce strange ideological bedfellows and reduce

dimensional coherence. Correspondingly, party labels are less useful as cognitive shortcuts as one moves from national to local politics.

The implications of this for dimensional simplification are decisive, for the structure one detects in public opinion depends not only on the substantive topics at hand, but also on their generality. Dimensional simplification can be understood as a shortcut for dealing with issues that are framed as abstractions with minimal reference to context. Nitty gritty concerns—lying closer to the decisions that most of us make on a day to day basis—dull the force of ideological reasoning.

The upshot is that the major comparative surveys arrive at widely divergent representations of the structure of public opinion. This makes an inductive approach to dimensionality problematic, and gives the researcher no option but to select the items for reduction. This we do, using a two-dimensional frame that sorts issues into those that tap preferences over equality and the role of the state in the economy and those that tap preferences over socio-cultural issues.

These dimensions are quite strongly associated in most of the countries we assess, which suggests that a uni-dimensional representation of public opinion does not impose an especially harsh loss of information. Our finding is consistent with the argument that there are two fundamental dimensions of preference formation, but that electoral competition produces pressures for uni-dimensional simplification (Stimson, Thiébaud, and Tiberij this issue).

In most countries, including the larger countries of western Europe, the two “lefts” go together. That is, a person who holds liberal socio-cultural values will tend to be on the economic left. But this is not always the case. In every Central and Eastern Europe country, economic leftist values go along with socio-cultural

conservatism. So while we detect few countries in which the dimensions of public opinion are orthogonal, the way in which basic values and attitudes connect can vary diametrically. The conclusion we draw from this is that a two-dimensional approach is necessary if one wishes to compare public opinion across countries with contrasting slopes, but that a one-dimensional approach may work for individual countries.

The findings in this article raise some basic questions for future research. If we are right that the level of generality of issue selection has a marked effect on the dimensionality that one detects in reduction, a next step is to experiment with item wording, and in particular item abstractness, to detail when and how this works.

Our finding that the pattern of associations between the major dimensions is bimodal distinguishes sharply between two claims that are viewed as mutually reinforcing. There is broad support in political psychology for the claim that there is an elective affinity between responses to uncertainty and to status differences, which are regarded as the foundations of political ideology: “[T]here is an especially good fit between needs to reduce uncertainty and threat, on the one hand, and resistance to change and acceptance of inequality, on the other, insofar as preserving the status quo allows one to maintain what is familiar and known while rejecting the risky, uncertain prospect of social change” (Jost et al. 2007: 990). Political scientists arrive at the same uni-dimensional picture by theorizing the effects of electoral competition and the virtues of simplicity in the face of cognitive limitations.

Yet the two arguments part company in our analysis. We find evidence for uni-dimensionality, but not for a fixed association between the major dimensions. A

next step would be to explore whether electoral competition creates pressures for *simplification* of the political space, while the *articulation* of this space—the association between the major dimensions—is exogenously determined by historical experience.

¹ Low dimensionality may be virtuous as well as elegant. Dimensional simplicity facilitates democratic choice. If individual preferences across issues can be represented as a single, peaked, dimension, then preferences can be translated into a consistent community-wide ranking (Black 1948; Downs 1957).

² “So naturalists observe, the flea
Has smaller fleas that on him prey;
And these have smaller still to bite ‘em
And so proceed ad infinitum.” (Swift 1733).

³ The European Election Study provides data on voter preferences for all the European Parliament elections held since 1979, covering all the participating countries. The European Social Survey is a biennial project beginning in 2002, collecting data in roughly 30 countries. The International Social Survey Programme’s four iterations on the role of government, from 1985 to 2006, cover a wide selection of developed countries and provide extensive data on citizen issue preference. The Eurobarometer and the World Value Survey cover similar numbers of countries, but have far fewer items that tap preferences over political issues.

⁴ The line of argument here is consistent with Ellis and Stimson’s (2009: 401) distinction between specific policy proposal and ideological rhetoric: “When specific social goals – public education, health care, a clean environment – dominate political discourse, liberals will generally expect to earn popular support. When symbols and ideological rhetoric dominate, conservatives can expect to win.”

⁵ Rae (1971).

⁶ A variation on this approach is to select individual issues to shed light on minimal dimensionality. Van der Brug and van Spanje (2009) examine four items from the European Social Survey to make the point that (unlike elite contestation) public opinion in Europe is not one-dimensional. They show that attitudes over immigration are only weakly associated with attitudes over the role of government in reducing income differences, suggesting that public opinion is structured in no less than two dimensions.

⁷ We exclude Q65 which asks respondents whether EU treaty changes should be decided by referendum.

⁸ The greater robustness of principal factor analysis compared with principal component analysis can be demonstrated by experiment. Create 100 datasets each having 13 variables and 1000 observations. The 13 variables are made up of three independent sets. Two of these sets contain six variables each, and these six variables are allowed to correlate with each other within the set (at random levels from $r = 0$ to $r = 0.99$); the third set contains two random variables. We perform both principal component and principal factor analyses on each dataset with unrotated, varimax and promax rotation. Principal factor analysis produces first factors that on average account for 36.3% more variance than the first factors produced by principal component analysis, and more importantly, produces factor scores that are less sensitive to the inclusion or exclusion of a single variable.

⁹ The exceptions are Luxembourg, Portugal, Cyprus, Finland, Ireland, and Malta. In the latter four countries, conservative national parties have historically developed populist economic appeals.

¹⁰ The association between left-right self identification and responses to the question “Politics should abstain from intervening in the economy” (EES, 2009) is -0.036 (sig = .28).

¹¹ One reason for this is that the class cleavage, pitting employers against employees, is common to all western democracies, whereas the national and religious cleavages vary in their incidence (Lipset & Rokkan 1967).

¹² Formally, error will diminish with the square root of the number of surveys (Marks 2007).

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Table 1: Measures of Dimensionality: Principal Component Analysis

	European Election Study 2009			European Social Survey 2008			International Social Survey Programme 2006		
	Index PCA	Dimensions	Index MDS	Index PCA	Dimensions	Index MDS	Index PCA	Dimensions	Index MDS
Denmark	0.118	3	0.133	0.083	6	0.131	0.067	9	0.082
Finland	0.111	3	0.120	0.083	6	0.108	0.066	8	0.076
France	0.114	4	0.120	0.086	5	0.124	0.068	10	0.084
Germany	0.118	3	0.121	0.088	6	0.135	0.062	10	0.070
Hungary	0.112	4	0.122	0.076	7	0.117	0.065	10	0.074
Netherlands	0.109	5	0.113	0.074	7	0.104	0.062	9	0.070
Poland	0.109	4	0.113	0.082	6	0.133	0.074	9	0.080
Portugal	0.103	4	0.107	0.097	6	0.155	0.072	8	0.079
Spain	0.107	3	0.112	0.092	7	0.153	0.057	10	0.067
Slovenia	0.107	4	0.119	0.084	7	0.127	0.056	9	0.064
Sweden	0.119	3	0.125	0.089	6	0.122	0.068	10	0.080
United Kingdom	0.116	3	0.117	0.084	7	0.137	0.062	10	0.067

Note: Index is calculated as: $I_C = \sum p_d^2$, where I_C is a country and p_d the variance explained by each dimension d .
PCA: Principal Component Analysis; MDS: Multi-Dimensional Scaling

Table 2: Correlation Matrixes

	European Election Study PCA	European Social Survey PCA
European Election Study PCA	1	
European Social Survey PCA	-0.174	1
International Social Survey Programme PCA	0.039	0.121

	European Election Study MDS	European Social Survey MDS
European Election Study MDS	1	
European Social Survey MDS	-0.372	1
International Social Survey Programme MDS	0.289	-0.080

Note: PCA: Principal Component Analysis. MDS: Multi-dimensional Scaling.
No correlation is significant at the 0.05 level.

Table 3: Determinants of Left-Right in the Czech Republic and France

	Czech Republic Left-Right	France Left-Right
Immigrants should be required to adapt to the customs of [country].	-0.06 (0.12)	-0.23*** (0.08)
Private enterprise - best way to solve [country]'s economic problems.	-0.40*** (0.08)	-0.20*** (0.07)
Same-sex marriages should be prohibited by law.	0.11 (0.08)	-0.19*** (0.06)
Major public services and industries ought to be in state ownership.	0.32*** (0.08)	0.24*** (0.06)
Women should be free to decide on matters of abortion.	0.23** (0.10)	-0.04 (0.10)
Politics should abstain from intervening in the economy.	-0.05 (0.08)	0.10 (0.07)
People who break the law should be given much harsher sentences.	0.28** (0.11)	-0.19** (0.07)
Income and wealth should be redistributed towards ordinary people.	0.57*** (0.08)	0.41*** (0.08)
Schools must teach children to obey authority.	-0.01 (0.12)	-0.05 (0.07)
EU treaty changes should be decided by referendum.	0.02 (0.08)	0.20*** (0.06)
A woman should be prepared to cut down on her work for her family.	-0.18** (0.08)	-0.09 (0.06)
Immigration to [country] should be decreased significantly.	-0.03 (0.10)	-0.31*** (0.07)
Constant	3.66*** (0.49)	5.97*** (0.52)
N	779	711
R-squared	0.18	0.27

Note: European Election Study 2009. OLS estimates with standard errors in parentheses.

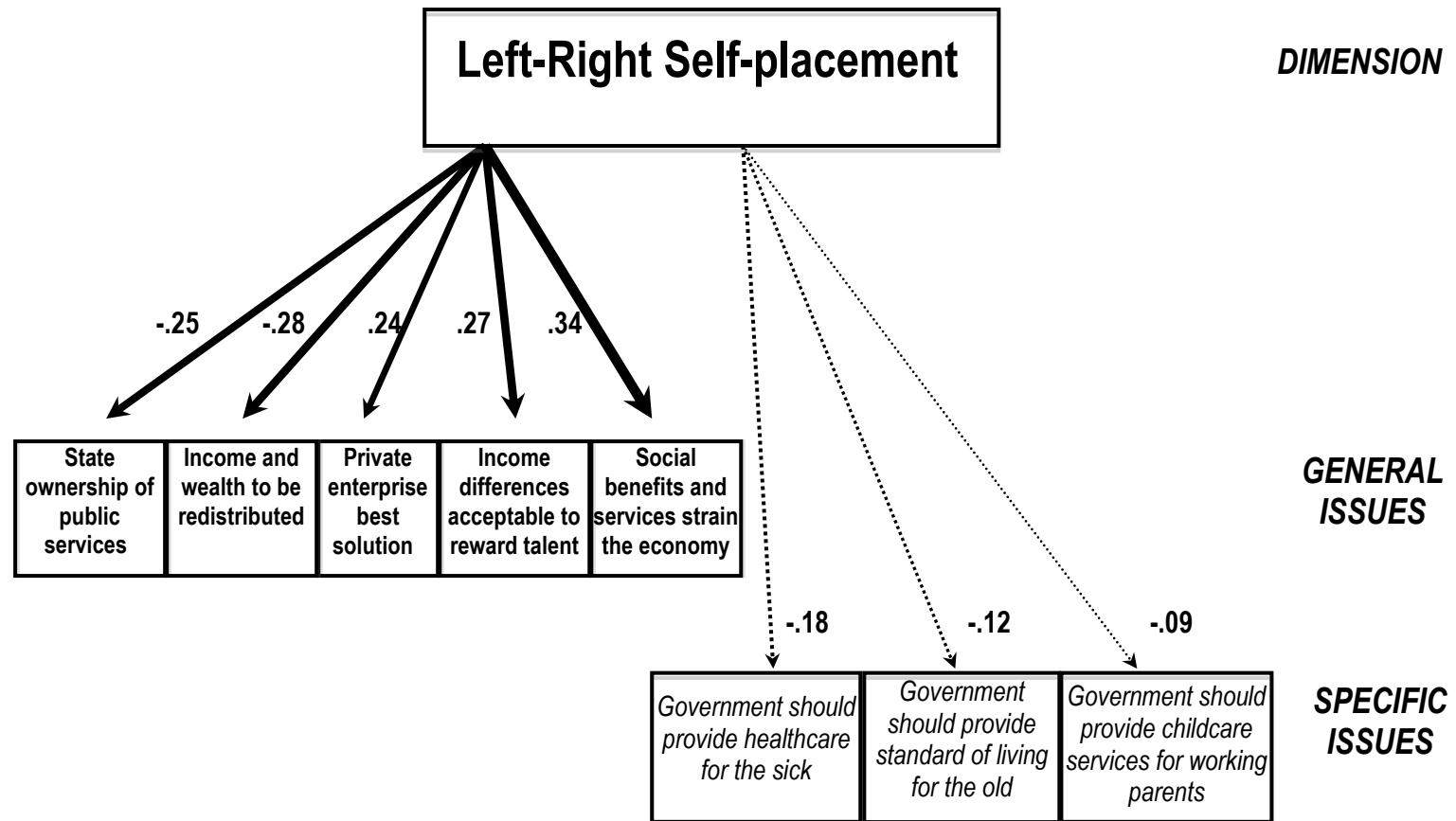
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Dimensional Structure in the Member States of the European Union

	Slope	Proportions of Economic Factor	Proportions of Social Factor
Austria	-0.25	1.68	1.12
Belgium	-0.36	1.88	0.98
Bulgaria	0.30	1.59	1.22
Cyprus	0.50	2.52	1.35
Czech Republic	0.45	1.72	1.03
Denmark	-0.54	1.77	1.01
Estonia	0.49	1.79	1.36
Finland	0.19	2.01	1.17
France	-0.45	2.08	1.17
Germany	-0.16	1.64	1.17
Greece	-0.29	1.39	1.24
Hungary	0.70	2.20	1.27
Ireland	0.32	2.63	1.35
Italy	0.37	2.32	1.24
Latvia	0.63	2.15	1.54
Lithuania	0.56	2.15	1.49
Luxembourg	0.25	2.53	1.24
Malta	0.41	1.87	1.51
Netherlands	-0.22	3.14	0.98
Poland	0.53	2.00	1.28
Portugal	0.51	2.44	1.30
Romania	0.45	1.85	1.40
Slovakia	0.45	1.62	1.24
Slovenia	0.53	2.24	1.04
Spain	-0.26	1.88	1.21
Sweden	-0.08	1.65	1.18
United Kingdom	-0.07	1.71	1.21

Note: European Election Study 2009. The social dimension excludes question q65 (EU treaty changes should be decided by referendum). The proportion in each cell is the eigenvalue divided by the sum of all eigenvalues in principal factor analysis. Negative eigenvalues cause the cumulative proportion of variance explained by a single factor to exceed one.

Figure 1. Dimensional Structure for France (2008-9)



Note: Thickness of the arrow indicates strength of association. 2009 European Election Study and 2008 European Social Survey. This figure displays only a subset of many possible associations. The items are: “state ownership of public services” (Q59, EES 2009); “income and wealth to be redistributed” (Q63, EES 2009); “private enterprise best solution” (Q57, EES 2009); “income differences acceptable to reward talent” (dfincac, ESS 2008); “social benefits and services strain the economy” (sbstrec, ESS 2008); “government should provide healthcare for the sick” (gvhlthc, ESS 2008); “government should provide standard of living for the old” (gvslvol, ESS 2008); “government should provide childcare for working parents”(gvcldc, ESS 2008).

APPENDIX: Issue Items in Major Public Opinion Surveys

European Election Study 2009

Variable Code	Variable Description
Q56	Immigrants should be required to adapt to the customs of [country]
Q57	Private enterprise is the best way to solve [country]'s economic problems
Q58	Same-sex marriages should be prohibited by law
Q59	Major public services and industries ought to be in state ownership
Q60	Women should be free to decide on matters of abortion
Q61	Politics should abstain from intervening in the economy
Q62	People who break the law should be given much harsher sentences than they are these days
Q63	Income and wealth should be redistributed towards ordinary people
Q64	Schools must teach children to obey authority
Q65	EU treaty changes should be decided by referendum
Q66	A woman should be prepared to cut down on her paid work for the sake of her family
Q67	Immigration to [country] should be decreased significantly

European Social Survey 2008

Variable Code	Variable Description
gincdif	Government should reduce differences in income
dfincac	Large differences in income acceptable to reward talent and effort
gvjbevn	Job for everyone, government responsibility
gvhlthc	Healthcare for the sick, government responsibility
gvslvol	Standard of living for the old, government responsibility
gvslvue	Standard of living for the unemployed, government responsibility
gvclcdr	Childcare services for working parents, government responsibility
gvpdllwk	Paid leave from work to care for sick family, government responsibility
sbstrec	Social benefits / services place too great strain on economy
freehms	Homosexuals should be free to live as want
pptyban	Ban parties that want to overthrow democracy
scnsenv	Science can be relied on to solve environmental problems
eufff	European integration has gone too far / should go further
imsmetn	Allow many/few immigrants of same race as majority
imdfetn	Allow many/few immigrants of different race as majority
impcentr	Allow many/few immigrants from poorer countries outside Europe
imbgeco	Immigration is bad/good for country's economy
imueclt	Cultural life is enriched/undermined by immigrants
imwbcnt	Immigrants make country worse/better place to live
ipeqopt	Important that people be treated equally, have equal opportunities
ipstrgv	Important that government is strong and ensures safety
impenv	Important to care for nature and the environment
imptrad	Important to follow traditions and customs

International Social Survey Programme 2006

Variable Code	Variable Description
V4	Obey laws without exception
V5	Organizing public protest meetings
V6	Organizing protest marches and demos
V7	Organizing national strike against Government
V8	Revolutionaries hold public meetings
V9	Revolutionaries publish books
V10	Worse type of justice error
Government and economy:	
V11	Cuts in Government spending
V12	Finance projects to create new jobs
V13	Less Government regulation of business
V14	Support industry to develop technologies
V15	Support declining industries to protect jobs
V16	Reduce working week to create jobs
Government should spend money on:	
V17	Environment
V18	Health
V19	Law enforcement
V20	Education
V21	Defense
V22	Retirement
V23	Unemployment benefits
V24	Culture and art
Government responsibility:	
V25	To provide job for everyone
V26	To control prices
V27	For Health Care
V28	To provide standard of living for old
V29	To help industry grow
V30	To provide standard of living of unemployed
V31	To reduce income differences
V32	For financial help for students
V33	To provide decent housing
V34	To enact laws to protect environment
